BEFORE THE ADMINISTRATOR
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

IN THE MATTER OF:	)	
	)	
LDEQ Title V Air Operating Permit No. 2363-V8	)	
	)	Permit No. 2363-V8
For ExxonMobil Fuels & Lubricant Company's Baton Rouge Refinery – Utilities Unit	)	
	)	
Issued by the Louisiana Department of Environmental Quality	)	

PETITION TO OBJECT TO THE TITLE V OPERATING PERMIT FOR THE UTILITIES UNIT AT EXXONMOBIL FUELS & LUBRICANT COMPANY'S BATON ROUGE REFINERY

Pursuant to § 505(b)(2) of the Clean Air Act, 42 U.S.C. § 7661d(b)(2), and 40 C.F.R. § 70.8(d), Louisiana Bucket Brigade, Earthjustice, Environmental Integrity Project, and Sierra Club ("Petitioners")[1] petition the Administrator of the U.S. Environmental Protection Agency ("EPA") to object to the above-referenced proposed Title V permit issued by the Louisiana Department of Environmental Quality ("LDEQ") for the "Utilities Unit" at the Baton Rouge, Louisiana refinery owned and operated by ExxonMobil Fuels & Lubricant Company ("Exxon").

The Utilities Unit includes the refinery's wastewater treatment system, which annually emits hundreds of tons of volatile organic compounds ("VOCs") and VOC hazardous air pollutants ("HAPs"). Both LDEQ and Exxon concede that the VOC emissions from the treatment system are highly variable. Yet the proposed permit does not contain monitoring and emission calculation methods that can ensure compliance with the limits for total VOCs from the treatment system. Among other problems, the permit fails to require Exxon to perform periodic studies to validate the accuracy of its predictive-modeling calculations of VOC emissions and fails to require Exxon to take into account site-specific biodegradation rates in calculating emissions from its biological treatment units, which are by far the highest emitters of VOCs (and VOC HAPs) in Exxon's treatment system. EPA has recognized that both validation and site-specific biodegradation rates are necessary to ensure accurate calculations of emissions from refinery wastewater treatment systems. The permit also contains no monitoring requirements at all for particulate matter ("PM") emitted by the treatment system's cooling tower. For all of these reasons and the additional reasons discussed below, EPA must object to the proposed permit's monitoring and emission calculation methods. EPA must also object for the independent reason

[1] The undersigned attorneys submit this petition on behalf of the Petitioners.

that LDEQ failed to provide a reasoned explanation for why the proposed permit ensures compliance with the VOC and PM limits.

Acute environmental justice concerns in the communities surrounding Exxon's refinery provide additional reason why EPA must pay special attention and object to the monitoring and emission calculation requirements for the VOC and PM limits here. These communities are densely-populated, predominantly communities of color and low-income, and are already overburdened by air pollution from this massive refinery, as well as Exxon's co-located chemical plant and other large nearby industrial sources. And the Baton Rouge region has historically struggled with attaining the NAAQS for ozone, for which VOCs are a precursor.

BACKGROUND

I. THE PROPOSED PERMIT ON WHICH THIS PETITION IS BASED

This petition asks EPA to object to the proposed Title V permit for the Utilities Unit at Exxon's Baton Rouge, Louisiana refinery (AI No. 2638, Permit No. 2363-V8). The permit action at issue here is a permit renewal combined with a permit modification.

LDEQ released the draft permit for public comment on December 20, 2019, with a comment deadline of January 23, 2020. LDEQ's Public Notice.[2] Petitioners timely submitted comments on January 23, raising all of the objections discussed below in this petition except for their arguments that the permit's monitoring and emission calculation methods are inadequate to ensure compliance with the PM limits for the Utilities Unit's cooling tower, and their argument that the proposed permit impermissibly allows Exxon to calculate the wastewater treatment system's VOC emissions using some unspecified "other model" besides the TOXCHEM model that the company currently uses.[3] *See* Ex. 1, Comments. Petitioners could not have raised their PM-related objections in comments because LDEQ did not indicate that the PM limits in question were for a cooling tower—or give any hint regarding how Exxon monitors PM emissions for those limits—until after the close of the public comment period. Nor did LDEQ insert the permit language allowing Exxon to rely on some "other model" for VOC calculations until after the comment period ended.

On March 27, 2020, Petitioners protectively petitioned EPA to object to the previous, draft version of Permit No. 2363-V8 because LDEQ had forwarded the draft permit to EPA for

[2] The public notice is available on LDEQ's Electronic Document Management System ("EDMS"), at: https://edms.deq.louisiana.gov/app/doc/view.aspx?doc=11977684&ob=yes&child=yes

[3] Petitioners Louisiana Bucket Brigade, Environmental Integrity Project, and Earthjustice filed these comments. Sierra Club was not listed on the comments.

the agency's 45-day review period prior to the conclusion of the public comment period. The arguments from this current petition replace those from the March 2020 petition.

Since the March 2020 petition, LDEQ has responded to some of Petitioners' significant comments on the draft permit, revised the permit (unfortunately without resolving all of the concerns raised in Petitioners' comments), and sent the revised, proposed permit to EPA for its review. This proposed permit restarted the clock for Petitioners to petition EPA on Permit No. 2363-V8, as EPA Region 6 has recognized.[4] Petitioners are timely filing this petition by the February 16, 2021 deadline listed on Region 6's website to petition EPA to object to the proposed permit.

II. PETITIONERS

Louisiana Bucket Brigade ("LABB") is a non-profit environmental health and justice organization based in the state of Louisiana. LABB works with communities that neighbor Louisiana's oil refineries and chemical plants and uses grassroots action to create an informed, healthy society with a culture that holds the petrochemical industry and government accountable for the true costs of pollution to create a healthy, prosperous, pollution-free, and just state where people and the environment are valued over profit.

Environmental Integrity Project ("EIP") is a non-profit, non-partisan watchdog organization that advocates for effective enforcement of environmental laws. EIP has three goals: (1) to illustrate through objective facts and figures how the failure to enforce and implement environmental laws increases pollution and harms public health; (2) to hold federal and state agencies, as well as individual corporations, accountable for failing to enforce or comply with environmental laws; and (3) to help communities obtain protections guaranteed by environmental laws.

Sierra Club is one of the oldest and largest national nonprofit environmental organizations in the country, with approximately 3.5 million members and supporters dedicated to exploring, enjoying, and protecting the wild places and resources of the earth; practicing and promoting the responsible use of the earth's ecosystems and resources; educating and enlisting humanity to protect and restore the quality of the natural and human environment; and using all lawful means to carry out these objectives. One of Sierra Club's priority national goals is promoting and improving air quality.

III. GENERAL TITLE V PERMIT REQUIREMENTS

[4] *See* https://www.epa.gov/caa-permitting/operating-permit-timeline-louisiana (listing February 16, 2021 as the deadline to petition EPA on the permit and stating that "EPA received a proposed permit on 10/28/20, and deadlines are updated accordingly") (last visited Feb. 11, 2021).

To protect public health and the environment, the Clean Air Act prohibits stationary sources of air pollution from operating without or in violation of a valid Title V permit, which must include conditions sufficient to "assure compliance" with all applicable Clean Air Act requirements. 42 U.S.C. §§ 7661c(a), (c); 40 C.F.R. §§ 70.6(a)(1), (c)(1). "Applicable requirements" include all standards, emissions limits, and requirements of the Clean Air Act. 40 C.F.R. § 70.2. Congress intended for Title V to "substantially strengthen enforcement of the Clean Air Act" by "clarify[ing] and mak[ing] more readily enforceable a source's pollution control requirements." S. Rep. No. 101-228 at 347, 348 (1990), *as reprinted in* A Legislative History of the Clean Air Act Amendments of 1990 (1993), at 8687, 8688. As EPA explained when promulgating its Title V regulations, a Title V permit should "enable the source, States, EPA, and the public to understand better the requirements to which the source is subject, and whether the source is meeting those requirements." Operating Permit Program, Final Rule, 57 Fed. Reg. 32,250, 32,251 (July 21, 1992).

Among other things, a Title V permit must include compliance certification, testing, monitoring, reporting, and recordkeeping requirements sufficient to assure compliance with the terms and conditions of the permit. 42 U.S.C. § 7661c(c); 40 C.F.R. § 70.6(c)(1). The D.C. Circuit has explained that Title V requires that a "monitoring requirement insufficient 'to assure compliance' with emission limits has no place in a permit unless and until it is supplemented by more rigorous standards." *See Sierra Club v. EPA*, 536 F.3d 673, 677 (D.C. Cir. 2008).

If applicable requirements themselves contain no periodic monitoring, EPA's regulations require permitting authorities to add "periodic monitoring sufficient to yield reliable data from the relevant time period that are representative of the source's compliance with the permit." 40 C.F.R. § 70.6(a)(3)(i)(B); *see also In the Matter of Mettiki Coal, LLC*, Order on Petition No. III-2013-1 (Sept. 26, 2014) ("Mettiki Order") at 7. The D.C. Circuit has also acknowledged that the mere existence of periodic monitoring requirements may not be sufficient. 536 F.3d at 676–77. For example, the court noted that annual testing is unlikely to assure compliance with a daily emission limit. *Id.* at 675. In other words, the frequency of monitoring methods must bear a relationship to the averaging time used to determine compliance. 40 C.F.R. § 70.6(c)(1) of EPA's regulations acts as a "gap filler" and requires that permit writers must supplement a periodic monitoring requirement inadequate to assure compliance. *Id.* at 675*; see also* Mettiki Order at 7.

In addition to including permit terms sufficient to satisfy EPA's Title V monitoring and reporting requirements, permitting authorities must include a rationale for the monitoring and reporting requirements selected that is clear and documented in the permit record. Mettiki Order at 7-8. *See also* 40 C.F.R. § 70.7(a)(5) ("The permitting authority shall provide a statement that sets for the legal and factual basis for the draft permit conditions ….").

If a state proposes a Title V permit that fails to include and assure compliance with all applicable Clean Air Act requirements, EPA must object to the issuance of the permit before the end of its 45-day review period. 42 U.S.C. § 7661d(b)(1); 40 C.F.R. § 70.8(c). If EPA does not object to a Title V permit, "any person may petition the Administrator within 60 days after the

expiration of the Administrator's 45-day review period … to take such action." 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). The Clean Air Act provides that EPA "shall issue an objection … if the petitioner demonstrates to the Administrator that the permit is not in compliance with the requirements of the" Act. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(c)(1); *see also N.Y. Pub. Interest Group v. Whitman*, 321 F.3d 316, 333 n.12 (2d Cir. 2003) (explaining that under Title V, "EPA's duty to object to non-compliant permits is nondiscretionary"). EPA must grant or deny a petition to object within 60 days of its filing. 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

GROUNDS FOR OBJECTION

For all of the reasons discussed below, EPA must object to the proposed Title V permit for the Utilities Unit because that permit fails to satisfy substantive requirements of the Clean Air Act and EPA's Title V regulations.

I. ENVIRONMENTAL JUSTICE CONCERNS MANDATE INCREASED FOCUS AND ACTION BY EPA TO ENSURE THAT THE PERMIT'S PROVISIONS—INCLUDING ITS MONITORING AND EMISSION CALCULATION PROVISIONS—ARE STRONG AND COMPLY WITH TITLE V REQUIREMENTS.

As Petitioners pointed out in their comments to LDEQ (at pages 1-3, 6), the areas surrounding the Exxon Baton Rouge refinery are communities of color with a large, dense, and low-income population that is overburdened by hazardous and other air pollution, including from Exxon's co-located Baton Rouge chemical plant. Together, Exxon's refinery and chemical plant are part of an industrial complex the size of at least 250 Superdomes.[5] Together, they released 1,342.9 tons of toxic air pollution in 2018, consisting of chemicals like benzene, chromium, polycyclic aromatic compounds, and a brew of other hazardous air pollutants, carcinogens, and metals.[6] As of January 1, 2020, Exxon's refinery was the fifth largest petroleum refinery in the U.S. in terms of operable capacity, with a capacity of 517,700 barrels per day.[7] The chemical plant is currently undergoing a $469 million expansion to build a new polypropylene resin unit.[8]

---

[5] NPR, Baton Rouge's Corroded, Overpolluting Neighbor: Exxon Mobil (May 2013), https://www.npr.org/2013/05/30/187044721/baton-rouge-s-corroded-overpolluting-neighbor-exxon

[6] *See* EIP & United Church of Christ, Breath to the People (Sacred Air and Toxic Pollution) (Feb. 2020) at 22, 24-25, https://d3n8a8pro7vhmx.cloudfront.net/unitedchurchofchrist/pages/24840/attachments/original/1582721312/FINAL_BreathToThePeople_2.26.2020.pdf?1582721312

[7] https://www.eia.gov/energyexplained/oil-and-petroleum-products/refining-crude-oil-refinery-rankings.php

[8] Business Facilities, ExxonMobil Investing $469M In Louisiana (March 2019), https://businessfacilities.com/2019/03/exxonmobil-investing-baton-rouge-louisiana/

And Exxon recently proposed spending several hundred million dollars on the refinery to position it for a potential major expansion in the coming years.[9]

The state-only limits for HAPs in the proposed Title V permit for the refinery's Utilities Unit alone (one of several Title V permits for the refinery) total over 600 tons of HAPs. Proposed Statement of Basis at 5-6.[10] The state-only limits in the recently proposed Title V permit for the refinery's reforming complex allow that complex to annually emit over 50 tons of HAPs.[11] Ex. 2, Reforming Complex Proposed Permit's Air Permit Briefing Sheet at 2-4.[12] And the state-only limits in a recent draft Title V permit for the refinery's "Specialties Complex" allow that portion of the refinery to emit over 650 tons of VOC HAPs. Specialties Complex Draft Permit's Air Permit Briefing Sheet at 3.[13]

In addition, other nearby sources also emit large amounts of air toxics and criteria pollutants. Those sources include the Formosa Plastics facility, which manufactures polyvinyl chloride resin and has plans for a $332 million expansion that will increase its capacity by

---

[9] The Advocate, ExxonMobil looks to invest more than $240 million in Baton Rouge refinery (December 16, 2020), https://www.theadvocate.com/baton_rouge/news/business/article_0aee8eb0-3fb4-11eb-a169-67bcf868197d.html

[10] For example, the cited pages from the statement of basis show that the permit's state-only limits allow the following tons per year of the following HAPs regulated under Clean Air Act § 112(b)(1), 42 U.S.C. § 7412(b)(1): 98.65 tons/year 2,2,4-trimethylpentane, 18.22 tons/year benzene, 5.77 tons/year biphenyl, 19.82 tons/year ethylbenzene, 43.84 tons/year methanol, 40.90 tons/year methyl ethyl ketone, 7.14 tons/year methyl isobutyl ketone, 155.48 tons/year methyl tert-butyl ether, 12.68 tons/year n-hexane, 22.19 tons/year naphthalene, 5.94 tons/year phenol, 85.05 tons/year toluene, and 101.72 tons/year xylene (mixed isomers). These same pages from the statement of basis explain that VOC HAPs may be emitted up to the individual state-only rates listed to "allow for potential variability of upstream operations" but that the Utilities Unit is limited to total VOCs of 460.78 tons per year.

The proposed permit and statement of basis are part of LDEQ's proposed permit package, which we obtained via email from EPA Region 6's Brad Toups.

[11] On January 29, Petitioners petitioned EPA to object to the Title V permit for the reforming complex because, among other reasons, its monitoring and reporting requirements are inadequate to ensure compliance with certain limits for VOCs.

[12] Like the proposed permit for the Utilities Unit, we also obtained the proposed Title V permit and statement of basis for the reforming complex via email from EPA Region 6's Brad Toups.

[13] For example, the cited pages from the draft permit show that the permit's state-only limits allow the following tons per year of the following HAPs regulated under Clean Air Act § 112(b)(1): 9.44 tons/year methanol, 435.31 tons/year methyl ethyl ketone, 211.35 tons/year methyl isobutyl ketone, and 4.29 tons/year toluene. The draft permit for the Specialties Complex is available here on LDEQ's EDMS website: https://edms.deq.louisiana.gov/app/doc/view.aspx?doc=12560073&ob=yes&child=yes

20%,[14] and a Honeywell International facility, which manufactures refrigerant chemicals and may undergo a $40 million expansion.[15] In 2003, in the span of less than a month, three separate accidents at the Honeywell plant collectively forced the hospitalization of five plant workers, caused the death of another worker, and created one instance where residents within a half-mile radius were required to shelter in their homes.[16] A simple Google Maps search shows that only a 1.5 mile drive separates the Exxon refinery from the Formosa plant, and less than a two mile drive separates the refinery from the Honeywell facility.[17] And across the Mississippi River, in West Baton Rouge, sits the Placid Refining refinery, which may soon undergo an $86 million expansion.[18] Further, a search on LDEQ's Emissions Reporting and Inventory Center ("ERIC") website[19] for sources of VOC pollution within three miles of the Exxon refinery also reveals other large nearby industrial air polluters, including Enterprise Products Operating LLC's Baton Rouge fractionator and propylene concentrator unit, Coastal Bridge Company LLC's Port Allen asphalt plant, Shell Catalysts & Technologies LP's Port Allen plant, and Intercontinental Terminals Company LLC's Anchorage chemical terminal. *See* Ex. 3, ERIC Report of 2018 Actual VOC Emissions Within Three Miles of Exxon Baton Rouge Refinery.

The communities surrounding Exxon's refinery include a significant population of people of color and low-income residents, as well as large numbers of community members who face increased vulnerability to health effects from air pollution due to their age (under 18 or over 65).[20] Specifically, EPA found, based on 2010 U.S. Census and American Community Survey data, that 3,890 people live within a one mile radius of refinery—of whom 97% are people of color, 30% are children under the age of 18, 9% are seniors age 65 and older, and over two-thirds

---

[14] *See* The Advocate, Formosa Plastics plans $332M plant expansion in Baton Rouge (August 2019), https://www.theadvocate.com/baton_rouge/news/business/article_5a44175a-c9a9-11e9-a49f-6794530f51bf.html

[15] *See* The Advocate, Honeywell considering investing $40M in Baton Rouge plant to expand refrigerant capacity (Oct. 2019), https://www.theadvocate.com/baton_rouge/news/business/article_1dccc3c8-f67f-11e9-8af5-873d97bc67d1.html

[16] CSB, Honeywell Chemical Incidents, https://www.csb.gov/honeywell-chemical-incidents/

[17] *See* https://www.google.com/maps

[18] *See* The Advocate, Crude oil refinery mulls $86M in West Baton Rouge plant upgrades (Oct. 2019), https://www.theadvocate.com/baton_rouge/news/business/article_2cd80436-eba8-11e9-8e2f-3bde22badfe0.html

[19] https://business.deq.louisiana.gov/Eric/EricReports/RadiusReportSelector?

[20] *See* Envt'l Justice Health Alliance for Chemical Policy Reform *et al.*, Life at the Fenceline: Understanding Cumulative Health Hazards in Environmental Justice Communities (2018), https://new.comingcleaninc.org/assets/media/documents/Life%20at%20the%20Fenceline%20-%20English%20-%20Public.pdf.

(2,689) live below the poverty level.[21] That same data show that 59,493 people live within a three mile radius of the Exxon refinery—of whom 92% are people of color, 28% are children under the age of 18, 10% are seniors age 65 and older, and nearly two-thirds (38,763) live below the poverty level. And that data shows that 141,275 people live within five miles of the refinery—of whom 81% are people of color, 25% are children under the age of 18, 10% are seniors age 65 and older, and over half (75,493) live below the poverty level.

In addition, ECHO indicates that the area surrounding the refinery is above the 80th percentile for ten different environmental justice indexes, including the National Air Toxics Assessment ("NATA") Air Toxics Cancer Risk index (with a percentile ranking of 96.2), the NATA Respiratory Hazard index (with a percentile ranking of 98.5) and the $PM_{2.5}$ index (with a percentile ranking of 89.4). And ECHO lists the refinery as being in a status of "High Priority Violation" in each of the previous 12 quarters. A recent report by EIP and the United Church of Christ, *Breath to the People*, highlighted the environmental injustice and highly toxic air in the area near this refinery.[22]

In these circumstances, as Petitioners' comments to LDEQ explained (at pages 1-3), there is a compelling need for EPA to devote increased, focused attention to ensure that all Title V requirements have been complied with—especially ensuring that monitoring and emission calculation requirements are adequate to assure compliance with the limits for Exxon's refinery. EPA has recognized this in responding to a prior Title V permit petition. *See, e.g.*, *In the Matter of United States Steel Corp. – Granite City Works*, Order on Petition No. V-2011-2 (Dec. 3, 2012) ("*Granite City Works* Order") at 4-6 (because of "potential environmental justice concerns" raised by the fact that "immediate area around the [] facility is home to a high density of low-income and minority populations and a concentration of industrial activity," "[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions [was] warranted") (citing in part to Executive Order 12898 (Feb. 11, 1994)).[23]

The environmental justice concerns are further heightened here because Exxon's refinery has experienced multiple major fires, explosions, and other accidents over the years. For example, on February 11, 2020, a release and subsequent combustion of hydrocarbons from an

[21] The Detailed Facility Report for the refinery from EPA's Enforcement and Compliance History Online (ECHO), which contains this information, is available here: https://echo.epa.gov/detailed-facility-report?fid=110043804185.

[22] EIP & United Church of Christ, Breath to the People, *supra* note 6, at 22-25.

[23] Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, Exec. Order 12898 (Feb. 11, 1994); *see also* EPA, EJ 2020, https://www.epa.gov/environmentaljustice/ej-2020-action-agenda-epas-environmental-justice-strategy; EPA, Plan EJ 2014, Considering Environmental Justice in Permitting (2014), https://nepis.epa.gov/Exe/ZyPDF.cgi/P100ETRR.PDF?Dockey=P100ETRR.PDF.

elevated pipe rack at the refinery caused a massive fireball to erupt.[24] Exxon reported that large amounts of air pollution were released during the ensuing fire (which lasted over six hours), including over 13,000 pounds of sulfur dioxide, 2,681 pounds of cancer-causing 1,3 butadiene, 33 pounds of benzene, 35,290 pounds of sulfuric acid, and over 62,000 pounds of "flammable vapor."[25] Earlier, in November 2017, a fire sent large flames and plumes of smoke into the air.[26] On November 22, 2016, an isobutane release occurred in the sulfuric acid alkylation unit at the refinery, resulting in four serious injuries to workers and injuries to two others.[27] In July 2012, an EPA inspection at the refinery revealed heavily corroded pipes and ruptured pipelines, pipes and other equipment that were overdue for inspection, inadequate documentation for emergency and shutdown procedures, and valves wrapped in garbage bags and secured with duct tape to protect them from corrosive vapors.[28] That inspection was preceded by a June 12, 2012 incident at Exxon's Baton Rouge chemical plant, in which a chemical leak resulted in the release of over 31,000 pounds of benzene and more than 13,000 pounds of toluene.[29] And on Christmas Eve 1989, several tanks at the refinery exploded, killing two plant workers and injuring five others, and also damaging buildings up to six miles away.[30]

Increased attention to the proposed permit's monitoring and emission calculation requirements for VOCs from the Utilities Unit is especially important here because the permit's state-only limits total over 600 tons of HAPs, the overwhelming majority of which are VOC HAPs.[31] *See* Proposed Permit's Air Permit Briefing Sheet at 3-5. As particularly relevant to the arguments raised below in this petition, the proposed permit's state-only limits for "WCLA-

---

[24] *See* Ex. 4, Feb. 18, 2020 Letter of Notification from Exxon to LDEQ; https://www.wbrz.com/news/crews-on-scene-of-large-chemical-plant-fire-in-north-baton-rouge/

[25] *See* Feb. 18, 2020 Letter of Notification; https://www.theadvocate.com/baton_rouge/news/article_7c9cff22-5277-11ea-8371-775fba1a956e.html

[26] https://www.cbsnews.com/news/baton-rouge-refinery-exxonmobil-fire-breaks-out/.

[27] https://www.csb.gov/exxonmobil-refinery-chemical-release-and-fire/.

[28] http://www.louisianaweekly.com/exxonmobil-is-scrutinized-in-baton-rouge-after-past-leaks/; https://www.npr.org/2013/05/30/187044721/baton-rouge-s-corroded-overpolluting-neighbor-exxon

[29] https://www.npr.org/2013/05/30/187044721/baton-rouge-s-corroded-overpolluting-neighbor-exxon; https://media.npr.org/documents/2013/may/exxon-60-day-8-14-12.pdf

[30] https://www.upi.com/Archives/1989/12/24/Exxon-storage-tanks-explode/4958630478800/?ur3=1; https://www.latimes.com/archives/la-xpm-1989-12-27-mn-1106-story.html. *See also* https://earthjustice.org/features/toxic-catastrophes-texas-national-chemical-disaster-rule at Testimonial of Baton Rouge resident William Fontenot.

[31] As noted above, the proposed permit states that VOC HAPs may be emitted up to the individual state-only rates listed to "allow for potential variability of upstream operations" but that the Utilities Unit is limited to total VOCs of 460.78 tons per year. Proposed Permit's Air Permit Briefing Sheet at 3-5.

ONSITES" allow,[32] among others, the following tons/year of the following VOC HAPs regulated under Clean Air Act § 112(b)(1): 94.45 tons/year 2,2,4-trimethylpentane, 16.78 tons/year benzene, 5.65 tons/year biphenyl, 16.22 tons/year ethylbenzene, 16.48 tons/year methanol , 34.05 tons/year methyl ethyl ketone, 6.60 tons/year methyl isobutyl ketone, 148.73 tons/year methyl tert-butyl ether, 11.24 tons/year n-hexane, 17.12 tons/year naphthalene, 5.10 tons/year phenol, 80.10 tons/year toluene, and 94.26 tons/year xylene (mixed isomers). Proposed Permit's Emission Rates for TAP/HAP & Other Pollutants at 1-2. And the proposed permit's state-only limits for "WCLA-OFFITES" allow, among others, tons/year of the following VOC HAPs regulated under § 112(b)(1): 27.36 tons/year methanol, 4.14 tons/year 2,2,4-trimethylpentane, 6.85 tons/year methyl ethyl ketone, 6.72 tons/year methyl tert-butyl ether, 5.05 tons/year naphthalene, 4.48 tons/year toluene, and 7.33 tons/year xylene (mixed isomers). *Id.* at 1. Combined, these limits show that, if WCLA-ONSITES and OFFSITES were together a single, stand-alone source, their potential VOC HAP emissions would be 24 times the major-source HAP threshold of 25 tons/year of any combination of HAPs.

Relatedly, the benzene fenceline data for the Baton Rouge refinery that Exxon has reported to EPA (under the National Emission Standards for Hazardous Air Pollutants ("NESHAP") requirements from 40 C.F.R. § 63.658) shows that the refinery is emitting large amounts of VOC HAPs. In fact, the data available for the refinery shows that such emissions have been dangerously close to the benzene level that triggers corrective action under § 63.658: the action level is an annual average of 9 µg/m^3 calculated every 14 days, and, as late as the first quarter of 2020, the refinery's annual average has been as high as 8.3 to 8.5 µg/m^3. *See* Ex. 5, Table of Fenceline Data.[33] And in the latter half of 2019, the refinery's annual averages were even closer to the action level, reaching as high as 8.9 µg/m^3 in September 2019 and 8.8 µg/m^3 in November 2019. *Id.* Although the refinery's most recently available annual averages have mostly been under 7.0 µg/m^3 (with a most recently available level of 6.6 µg/m^3 as of late September and early October 2020),[34] *id.*, these concentrations are still over twice the reference exposure level for inhalation of benzene that indicates chronic health harm to the hematologic system (3 µg/m^3), as determined by the California Office of Environmental Health Hazard Assessment.[35] Further,

---

[32] The proposed permit refers to the Utility Unit's wastewater treatment system as Water Clarification ("WCLA") sources. *See* Proposed Permit's Air Permit Briefing Sheet at 1. The WCLA sources include both wastewater collected throughout the refinery ("WCLA-OFFSITES") and "onsite" processing units ("WCLA-ONSITES"). *Id.*

[33] *See also* EIP, Monitoring for Benzene at Refinery Fencelines (Feb. 2020) at Table 2 (noting Exxon Baton Rouge refinery among those with fenceline values above federal acute minimal risk level), https://environmentalintegrity.org/wp-content/uploads/2020/02/Benzene-Report-2.6.20.pdf

[34] This data from the third quarter of 2020 is the latest data publicly available on EPA's website. *See* https://cfpub.epa.gov/webfire/reports/esearch.cfm (last visited Feb. 11, 2021).

[35] *See* OEHHA List of RELs, https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary; OEHHA Benzene REL (2014), https://oehha.ca.gov/media/downloads/crnr/benzenerelsjune2014.pdf

the refinery's two-week benzene fenceline averages in the second and third quarters of 2020 have been as high as 12.3 and 23.3 $\mu g/m^3$. Ex. 5.

In establishing its NESHAP fenceline monitoring requirements, EPA used benzene as an indicator pollutant, which EPA described as a surrogate, for all of the various fugitive HAPs (including VOC HAPs) emitted by refinery units, including wastewater treatment facilities. EPA explained:

> [W]e selected benzene as a surrogate … By selecting a single HAP as a surrogate for all fugitive HAP, we are able to establish a clear action level … As described in the proposal preamble, benzene is ubiquitous at refineries and present in nearly all refinery process streams, including crude oil, gasoline and wastewater.

80 Fed. Reg. 75,178, 75,196 (Dec. 1, 2015). *See also id.* at 75,192-93 (noting that "the sources addressed by the fenceline monitoring standard" include "refinery fugitive emissions sources such as wastewater collection and treatment operations, equipment leaks, heat exchange systems and storage vessels"). Thus, the high fenceline levels for benzene (which is itself a VOC HAP) reported by Exxon for the Baton Rouge refinery demonstrate that the refinery's units are emitting large amounts of VOC HAPs, and the Utilities Unit's wastewater treatment facilities could very easily be a significant source of these VOC HAPs. Without strong monitoring for the VOCs from the treatment system, there is no way to be sure whether or not this is the case.

A. LDEQ's Response Regarding These Environmental Justice Concerns Fails to Demonstrate that EPA Could or Should Ignore These Important Factors.

In its response to Petitioners' comments, LDEQ does not dispute that: (1) the communities near Exxon's Baton Rouge refinery are predominantly communities of color with a large, dense, low-income population; (2) these communities include large numbers of residents who face increased vulnerability due to their age; (3) Exxon's refinery and co-located chemical plant annually emit hundreds upon hundreds of tons of HAPs; and (4) the communities near the refinery are also surrounded by multiple other sources that emit large amounts of criteria pollutants and air toxics. Instead, LDEQ contends that environmental justice concerns do not "alter or enhance the … monitoring obligations under Part 70." RTC at 4. *See also id.* at 7 ("… EPA cannot object to the permit if it meets the requirements of the Clean Air Act.").

To begin with, only EPA—not LDEQ—has explicit duties under Executive Order 12898. *See* Executive Order 12898 at § 1-101 ("To the greatest extent practicable and permitted by law, … *each Federal agency* shall make achieving environmental justice part of its mission….") (emphasis added). Thus, EPA should give no credence to the state agency's assertions regarding EPA's duties under that federal executive order. While LDEQ has primary responsibility for Title V permitting within Louisiana (with oversight from EPA), the state agency's interpretation of EPA's responsibilities under Executive Order 12898 carries no weight here. EPA must fulfill its environmental justice obligations, and LDEQ's suggestion that environmental injustice should

not matter is only more reason for EPA to more thoroughly scrutinize the state agency's insufficient permitting here.

Further, Petitioners are not suggesting that Executive Order 12898 creates an obligation that EPA object to a Title V permit even when that permit meets all Clean Air Act requirements. As EPA recognized in its *Granite City Works* Order, however, Executive Order 12898 does inform EPA's review of the adequacy of those very requirements—including Title V monitoring requirements for facilities in low-income communities or communities of color that are overburdened by pollution, like the community surrounding Exxon's Baton Rouge refinery. *See Granite City Works* Order at 4-6. More specifically, in the *Granite City Works* Order, EPA recognized that: Executive Order 12898 "focuses federal attention on the environmental and human health conditions of minority populations and low-income populations with the goal of achieving environmental protection for all communities;" Title V "can help promote environmental justice … through the requirements for monitoring, compliance certification, reporting and other measures intended to ensure compliance with applicable requirements;" and "[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions is warranted" when the "immediate area around the [relevant] facility is home to a high density of low-income and minority populations and a concentration of industrial activity." *Id.* at 5-6.[36]

As EPA has elsewhere recognized, the "determination whether monitoring is adequate in a particular circumstance generally is a context-specific determination, made on a case-by-case basis." *In the Matter of Northeast Maryland Waste Disposal Authority- Montgomery County Resource Recovery Facility*, Order on Petition No. III-2019-2 (Dec. 11, 2020) ("*MCRRF* Order"). As part of that case-by-case determination, environmental justice factors, including the demographics of the surrounding community and amount of pollution burden borne by the community, are factors that must be considered in assessing whether a particular facility's monitoring and emission calculation methods are adequate to ensure compliance with the relevant applicable requirements. In communities that are disproportionately impacted by large

[36] In a Title V order issued at the eleventh hour before the recent change in presidential administrations, EPA asserted that it had no obligation to "conduct an EJ analysis during any of the permit actions at issue." *In the Matter of AK Steel Dearborn Works*, Order on Petition No. V-2016-16 (Jan. 15, 2021) ("*AK Steel* Order") at 18. EPA reached a similar conclusion in an order issued in 2019. *See In the Matter of Piedmont Natural Gas, Inc.- Wadesboro Compressor Station*, Order on Petition No. IV-2014-13 (March 20, 2019) ("*Piedmont Natural Gas* Order") at 10. Even if those orders were correctly decided (which Petitioners do not concede), they are inapposite here. Rather than addressing monitoring, reporting, and recordkeeping requirements, the 2021 order addressed a claim that no agency had analyzed the disproportionate impact of the increased emissions permitted by the preconstruction and operating permits at issue, *AK Steel* Order at 16-19, and the 2019 order similarly addressed a claim requesting the evaluation of cumulative or secondary impacts of the facility at issue, *Piedmont Natural Gas* Order at 9-11. Further, these orders did not address EPA's prior *Granite City Works* order, where the agency, citing Executive Order 12898, correctly concluded that potential environmental justice concerns warranted "[f]ocused attention to the adequacy of monitoring and other compliance assurance provisions." *Granite City Works* Order at 4-6.

amounts of pollution, it is especially important to ensure that members of the surrounding community can determine whether a facility that is releasing pollution that threatens their health is actually meeting its limits.

LDEQ also suggests that no increased attention to the refinery's monitoring and emission calculation requirements is due here because (LDEQ asserts) the air quality in the areas surrounding the facility is not impaired. RTC at 4-5. Under LDEQ's apparent position, environmental justice and health concerns related to air pollution can only be present in areas that do not attain the NAAQS or Louisiana's state-level ambient air standards for toxic air pollutants. Not so. Even in areas that meet the NAAQS (or Louisiana's ambient air standards for toxic air pollutants), emissions of air pollution from a particular source can severely impact the health of surrounding fenceline communities. For example, ozone and particulate matter have no known safe levels. *E.g.*, *Clean Wisc. v. EPA*, 964 F.3d 1145, 1158 (D.C. Cir. 2020) ("[N]o 'threshold concentration below which' ground-level ozone is 'known to be harmless.'") (citation omitted); Proposed Particulate Matter NAAQS, 85 Fed. Reg. 24,094, 24,108, 24,109 (Apr. 30, 2020). Similarly, as EPA has emphasized, air pollution during startup, shutdown, and malfunction events at industrial facilities has "real-world consequences that adversely affect public health." 80 Fed. Reg. 33,840, 33,850 (June 12, 2015). EPA has also recognized that ambient air monitors will not detect every NAAQS violation, particularly given the limited monitoring networks in many states. *Id.* at 33,939. Further, there are no state ambient air monitors located in the neighborhood directly adjacent to Exxon's refinery, where the nearest residences are only a block away from the fenceline.[37]And the closest monitor, the Capital monitor located southwest of Exxon's refinery, would not capture the facility's emissions most of the time given the prevailing and other typical wind directions for the area.[38]

LDEQ also ignores that Exxon's refinery and Utilities Unit emit massive amounts of VOC HAPs regulated under Clean Air Act § 112, 42 U.S.C. § 7412. Congress listed HAPs under § 112 due to their "inherently harmful characteristics," even at low levels of exposure. 80 Fed. Reg. 75,025, 75,031/1 (Dec. 1, 2015); S. Rep. No. 101-228, at 5 (1989), *as reprinted in* 1990 U.S.C.C.A.N. 3385, 3391. Even in small doses, they "cause or contribute to an increase in mortality or an increase in serious irreversible, or incapacitating reversible, illness." H.R. Rep. No. 101-490, pt.1, at 315 (1990) (quotation marks omitted). Exxon's emissions of these HAPs can cause significant health effects—including cancer and chronic non-cancer and acute health risks.[39]

---

[37] *See* https://www.deq.louisiana.gov/page/ambient-air-monitoring-program

[38] *See* https://weatherspark.com/y/11336/Average-Weather-in-Baton-Rouge-Louisiana-United-States-Year-Round#:~:text=The%20predominant%20average%20hourly%20wind,of%2051%25%20on%20June%203. at "Wind Direction."

[39] *See* EPA's Final Residual Risk Assessment for the Petroleum Refining Source Sector (Sept. 2015), EPA-HQ-OAR-2010-0682-0800.

Here, as noted above, the state-only HAP limits for WCLA-ONSITES and OFFSITES (the portions of the Utilities Unit at issue in this petition) combined are 24 times more than the major-source HAP threshold of 25 tons/year of any combination of HAPs. *See supra* at 9-10. The ONSITES portion of the wastewater treatment system is capable of emitting the following particularly large amounts of VOC HAPs (among others): 16.78 tons/year benzene, 34.05 tons/year methyl ethyl ketone, 148.73 tons/year methyl tert-butyl ether, 80.10 tons/year toluene, and 94.26 tons/year xylene (mixed isomers). Proposed Permit's Emission Rates for TAP/HAP & Other Pollutants at 1-2. And the OFFSITES portion of the treatment system is capable of emitting 27.36 tons/year methanol, among other HAPs. *Id.* at 1. Exposure to these HAPs can cause a range of significant acute and long-term adverse health effects. For example, benzene is a known carcinogen that can cause leukemia.[40] Acute inhalation exposure to methyl ethyl ketone can cause central nervous system depression, headaches, and nausea, and chronic inhalation studies for this HAP have reported neurological, liver, kidney, and respiratory effects.[41] Chronic inhalation exposure to methyl tert-butyl ether has resulted in central nervous system effects, respiratory irritation, liver and kidney effects, and decreased body weight gain in animals.[42] California includes toluene as a developmental toxicant.[43] The long-term health effects of xylene include memory impairment, red and white blood cell abnormalities, abnormal heartbeat (in laboratory workers), liver damage, mutagenesis (mutations of genes), reproductive system effects, and death due to respiratory failure.[44] And acute and chronic exposure to methanol by inhalation or ingestion can result in blurred vision, headache, dizziness, and nausea, and birth defects have been observed in the offspring of rats and mice exposed to methanol by inhalation.[45]

Further, LDEQ ignores that the communities surrounding Exxon's refinery have experienced persistent problems complying with the NAAQS for ground-level ozone. Louisiana

---

[40] CDC, Facts About Benzene, https://emergency.cdc.gov/agent/benzene/basics/facts.asp#:~:text=The%20Department%20of%20Health%20and,of%20the%20blood%2Dforming%20organs.

[41] EPA, Methyl Etyl Ketone, https://www.epa.gov/sites/production/files/2016-09/documents/methyl-ethyl-ketone.pdf

[42] EPA, Methyl tert-butyl ether, https://www.epa.gov/sites/production/files/2016-09/documents/methyl-tert-butyl-ether.pdf

[43] OEHHA, Toluene, https://oehha.ca.gov/chemicals/toluene

[44] Zoveidavianpoor, M., A. Samsuri, and S. R. Shadizadeh, "The Clean Up of Asphaltene Deposits in Oil Wells,"
Energy Sources, Part A: Recovery, Utilization, and Environmental Effects, 35 (2013), 22–31 <doi:10.1080/15567036.2011.619630>

[45] EPA, Methanol, https://www.epa.gov/sites/production/files/2016-09/documents/methanol.pdf

and EPA previously agreed that the Baton Rouge area should be designated as nonattainment for the 2015 ozone NAAQS, based on ozone air quality data from 2013-2015.[46] Even though EPA reversed course in 2018, designating the area as attainment/unclassifiable for the 2015 NAAQS,[47] the air in Baton Rouge was at 71 ppb ozone (above the 2015 ozone NAAQS of 70 ppb) as late as December 2017.[48] And East Baton Rouge Parish, where the refinery is located, was only redesignated from marginal to maintenance for the 2008 ozone NAAQS in 2017.[49] Before that, the parish was designated as moderate and severe, respectively, for the 1997 and 1979 ozone NAAQS.[50] The area's historic ozone problems are especially relevant here given that VOCs contribute to the formation of ground-level ozone and given the large amounts of VOCs at issue in Exxon's Title V permit for the Utilities Unit. In sum, LDEQ has not demonstrated that Exxon's emissions do not impair air quality or otherwise harm health in surrounding communities.

LDEQ also points to the fact that the proposed Title V permit reduces the permitted emissions of criteria pollutants (including VOCs) by 74.44 tons/year and HAPs (including benzene) by 5.29 tons/year as compared to the previous version of the permit. RTC at 5. But for the two pollutants at issue in this petition—VOCs and PM—this version of the Title V permit only reduces emissions by 5.29 and 5.39 tons/year, respectively. Proposed Permit's Air Permit Briefing Sheet at 3. Even with these reductions, the proposed permit still allows the Utilities Unit to emit large amounts of these two pollutants—460.78 tons/year of VOCs and 21.57 tons/year of PM2.5 and PM10. *Id.* And, as discussed above (*supra* at 6), the proposed permit's state-only HAP limits still total over 600 tons/year.

In its response to comments, LDEQ also takes issue with Petitioners' discussion of the fact that the area surrounding Exxon's refinery is above the 80th percentile for ten different environmental justice indexes, asserting that it is "not necessarily the case" that communities with a high index are disproportionately impacted. RTC at 5. But, as EPA's website explains, the EJSCREEN tool may help users identify areas with minority and/or low-income populations, potential environmental quality issues, and a combination of environmental and demographic indicators that is greater than usual.[51] EPA also explains that the indexes' use of a national

[46] EPA Technical Support Document, https://www.epa.gov/sites/production/files/2017-12/documents/la_120d_tsd_final.pdf

[47] April 30, 2018 Ltr. from EPA, https://gov.louisiana.gov/assets/docs/Letters/EPA-Ozone-ltr-2018.pdf

[48] The Advocate, Don't hold your breath: Louisiana waiting on air quality news that could affect business, gas prices (Dec. 2017), https://www.theadvocate.com/baton_rouge/news/business/article_7d24eec2-dc3c-11e7-b9ad-a37b7b271e25.html

[49] EPA Green Book for Louisiana, https://www3.epa.gov/airquality/greenbook/anayo_la.html

[50] *Id.*

[51] https://www.epa.gov/ejscreen/purposes-and-uses-ejscreen

percentile "tells you *what percent of the US population has an equal or lower value*, meaning less potential for exposure/ risk/ proximity to certain facilities, or a lower percent minority."[52] Here, the EJSCREEN report show that, for all eleven indexes listed, at least 82 percent of the national population has an equal or lower potential for exposure, risk, and proximity than the population surrounding Exxon's refinery.[53] For some indexes, the percentiles are much higher here. For example, for the NATA Air Toxics Cancer Risk index and NATA Respiratory Hazard Index, the communities surrounding Exxon's refinery have a higher potential for exposure, risk, and proximity than 94-plus percent of the U.S. population.[54]

In its response to comments, LDEQ also asserts that there have not been new high priority violations at the refinery in each of the previous 12 quarters. RTC at 5-6. Even if this is true, it does not make the environmental justice concerns here any less pressing, given the undisputable "high density of low-income and minority populations and [] concentration of industrial activity" at issue here. *See Granite City Works* Order at 4-6. Further, as LDEQ acknowledges, it still has not resolved one of the enforcement actions that LDEQ asserts is the reason for the high priority violation designation—an enforcement action initiated more than six years ago, in April 2014. *See* RTC at 6 (stating that "LDEQ and ExxonMobil are currently in settlement negotiations regarding CONOPP AE-CN-12-00215"). The fact that LDEQ has still not resolved violations that are over six years old highlights one reason why it is necessary that the public be able to determine through adequate monitoring and emission calculations whether Exxon is meeting the limits at issue in this permit: if Exxon is violating its limits and LDEQ and EPA do not adequately enforce compliance at the refinery, members of the public can bring a citizen enforcement suit in federal court to remedy those violations—but only if they know that the limits are being violated.

LDEQ also takes issue with Petitioners' discussion of the high benzene fenceline monitoring values at the refinery, citing EPA statements that the 9 $\mu g/m^3$ benzene action level is not an ambient air standard and does not correlate to any particular metric related to risk. RTC at 6. LDEQ ignores the primary reason that Petitioners cited to Exxon's high benzene fenceline values in the portion of their comments discussing environmental justice issues. As that portion of the comments makes clear (Comments at 3), Petitioners pointed out that the high fenceline levels demonstrate that the refinery's units are emitting large amounts of VOC HAPs—a fact that LDEQ does not directly dispute.

---

[52] https://www.epa.gov/ejscreen/how-interpret-standard-report-ejscreen (emphasis added).

[53] https://ejscreen.epa.gov/mapper/mobile/EJSCREEN_mobile.aspx?geometry={%22x%22:-91.17392,%22y%22:30.484917,%22spatialReference%22:{%22wkid%22:4326}}&unit=9035&areatype=&areaid=&basemap=streets&distance=3

[54] *Id.*

LDEQ's response that the benzene action level is not an ambient standard also misses the point in other ways. There are no national ambient standards for any air toxics, including benzene, but lack of an ambient standard does not mean that the risks from exposure to these pollutants are small. Petitioners agree that the actual benzene levels in the densely populated neighborhoods surrounding Exxon's refinery could be lower than the measurements at the refinery's fenceline, but those benzene levels in the surrounding neighborhoods could also be higher, depending on multiple factors including emissions from sources other than Exxon's refinery, emissions from portions of Exxon's refinery other than those contributing to the fenceline benzene values, chemical reactions in the atmosphere, weather conditions, and wind direction.[55] Ex. 6, Decl. of Dr. Ranajit Sahu Decl. at ¶¶ 6-7.[56] Regarding risk, LDEQ ignores that Exxon's benzene fenceline concentrations represent levels that correspond to an increased risk of cancer and other diseases. As explained above (*supra* 10), the fenceline concentrations of benzene at Exxon's Baton Rouge refinery have been over twice the lowest reference exposure level for inhalation of benzene (3 $\mu g/m^3$, as determined by the California Office of Environmental Health Hazard Assessment). And Exxon's highest two-week net benzene concentration of 30.5 $\mu g/m^3$ (in late May and early June 2019, *see* Ex. 5)[57] was even higher than the U.S. Department of Health and Human Services' Agency for Toxic Substances and Disease Registry minimal risk level for acute inhalation exposure to benzene (9 parts per billion, which is approximately equivalent to 30 $\mu g/m^3$).[58] The 30.5 $\mu g/m^3$ value is also higher than the reference exposure level for inhalation of benzene that indicates acute developmental harm, as well as health harm to the immune and hematologic systems (27 $\mu g/m^3$), as determined by the California Office of Environmental Health Hazard Assessment.[59]

In sum, LDEQ's response to comments does nothing to change EPA's responsibility to ensure that the Title V permit at issue here fully complies with the Clean Air Act and to protect

---

[55] As noted above, ECHO indicates that 59,493 people live within a three mile radius of Exxon's Baton Rouge refinery and 3,890 people live within a one mile radius of the facility.

[56] As noted below, Dr. Sahu has expertise in in engineering (including engineering issues related to petroleum refineries and chemical plants), the Clean Air Act and air pollution, and issues related to monitoring and testing of emissions of air pollution (including monitoring and testing of emissions from wastewater treatment units at refineries and chemical plants) and calculating those emissions. *See id.* at ¶¶ 2, 4-5, Att. A.

[57] Exxon claims that the 30.5 $\mu g/m^3$ value was attributable to a source not regulated under the refinery NESHAP provisions from Subpart CC of 40 C.F.R. Part 63. Ex. 5.

[58] This is defined as an estimate of daily exposure that is likely to be without appreciable risk of adverse effects over an acute duration (14 days or less). Agency for Toxic Substances and Disease Registry (ATSDR) "Toxicological Profile for Benzene." U.S. Department of Health and Human Services. August 2007, page 21.

[59] *See* https://oehha.ca.gov/air/general-info/oehha-acute-8-hour-and-chronic-reference-exposure-level-rel-summary; https://oehha.ca.gov/media/downloads/crnr/benzenerelsjune2014.pdf

the overburdened, low-income communities of color near Exxon's refinery from disproportionate adverse impacts of air pollution from the facility.

II. THE PROPOSED PERMIT'S MONITORING AND EMISSION CALCULATION REQUIREMENTS CANNOT ENSURE COMPLIANCE WITH THE HOURLY AND ANNUAL VOC LIMITS FOR THE REFINERY'S WASTEWATER TREATMENT SYSTEM.

As Petitioners comments generally explained (at pages 4-9), the proposed Title V permit does not include adequate monitoring, reporting, recordkeeping, or emission calculation requirements to ensure compliance with the federally-enforceable hourly and annual VOC limits for the Utility Unit's wastewater treatment system, which the proposed Title V permit refers to as Water Clarification ("WCLA") sources. *See* Proposed Permit's Air Permit Briefing Sheet at 1. The WCLA sources include both wastewater collected throughout the refinery ("WCLA-OFFSITES") and "onsite" processing units ("WCLA-ONSITES"). *Id.*

Specifically, in violation of the requirements from 40 C.F.R. §§ 70.6(a)(3)(i) and/or 70.6(c)(1), as well as the requirements from 42 U.S.C. §§ 7661c(a) and 7661c(c), the proposed permit's monitoring, emission calculation, and other requirements cannot ensure compliance with the federally-enforceable 23.62 average lb/hour and 103.47 tons/year limits for VOCs from WCLA-OFFSITES or the 73.29 average lb/hour and 321.00 tons/year limits for VOCs from WCLA-ONSITES.[60] *See* Proposed Permit's Emission Rates for Criteria Pollutants and CO2e at 2.

Specific Requirement 2 is the proposed permit's only provision that LDEQ uses to try to ensure compliance with the hourly and annual VOC limits for WCLA-ONSITES. In addition to

[60] Nowhere in the proposed permit package (including the proposed Title V permit and response to comments) does LDEQ specify the authority for, or origin of, these VOC limits (or the PM limits discussed in the next section), *i.e.*, whether they are limits from a New Source Review or Prevention of Significant Deterioration permit, the Louisiana State Implementation Plan, or some other applicable requirement. The limits are federally enforceable because nothing in the permit designates the limits as "state only." *See* 40 C.F.R. § 70.6(b)(1)-(2) (all terms and conditions in a Title V permit are federally enforceable, except for those specifically designated as not being federally enforceable). Further, in a January 17, 2020 phone call, LDEQ permit writer Shannon Pusateri confirmed that the limits are federally enforceable.

Because we do not know the origin of the limits, it could be that the underlying limits were originally accompanied by monitoring or emission calculation requirements that were not carried over and listed in the permit, in violation of § 70.6(a)(3)(i)(A)—or that the limits were never accompanied by any monitoring or emission calculation requirements, in which case § 70.6(a)(3)(i)(B) would mandate that LDEQ add sufficient monitoring and emission calculation requirements into the Title V permit to ensure compliance with the limits. Or, if the limits were originally accompanied by monitoring or other related requirements but those requirements cannot ensure compliance with the limits, then § 70.6(c)(1) would require LDEQ to supplement the original monitoring and other requirements.

some general recordkeeping and reporting language,[61] Specific Requirement 2 provides the following regarding the monitoring and calculation of VOC emissions:

> The permittee shall calculate emissions using TOXCHEM (or other model approved by EPA and/or LDEQ) configured to reflect the current design and operation of the wastewater treatment system. Emissions shall be calculated using values of the following parameters:
>
> - ambient temperature and local wind speed as obtained from either the National Oceanic and Atmospheric Administration (NOAA) weather station located at the Baton Rouge Metropolitan Airport (the airport is located less than 3 miles north northeast of the refinery) or from an onsite meteorological station;
>
> - flow rate as monitored in accordance with the terms and conditions of the Baton Rouge Refinery's LPDES permit for Outfall 001;
>
> - temperature, pH, and the dissolved oxygen concentration of the influent wastewater as monitored continuously;
>
> - concentrations of total suspended solids, oil/grease, and volatile and semi-volatile constituents in the influent wastewater as monitored monthly;
>
> - mixed liquor suspended solids in the biological treatment system as monitored monthly;
>
> - concentration of return activated sludge as monitored monthly;
>
> - operational status of the aerator blowers; and
>
> - tank levels.
>
> If data is collected more frequently than as described above, all valid values or measurements shall be used for purposes of calculating inputs to TOXCHEM or other approved model. For parameters that are monitored continuously, data availability shall be dictated by Part 70 General Condition V. During downtime of the continuous monitoring systems (e.g., for maintenance, calibration, etc.), parameters may be estimated using engineering judgment.

[61] The first four sentences of Specific Requirement 2 require Exxon to: quarterly calculate emissions; keep the records on site and available for inspection; and report emissions above the permit limits as a violation. These very general recordkeeping and reporting provisions cannot, by themselves, ensure compliance with the VOC limits for the wastewater treatment system.

Thus, under Specific Requirement 2, Exxon is to monitor certain inputs and use TOXCHEM (or some "other model approved by EPA and/or LDEQ") to calculate VOC emissions from WCLA-ONSITES.

Specific Requirement 1 is the proposed permit's only provision that LDEQ uses to try to ensure compliance with the hourly and annual VOC limits for WCLA-OFFSITES. In addition to some general recordkeeping and reporting language,[62] Specific Requirement 1 provides only the following regarding the monitoring and calculation of VOC emissions:

> The permittee shall calculate emissions using TOXCHEM (or other model approved by EPA and/or LDEQ) configured to reflect the current design and operation of the wastewater treatment system. Inputs of organic and inorganic constituents shall be adjusted as necessary based on LPDES sampling results.

Specific Requirements 1 and 2 cannot ensure compliance with the 23.62 average lb/hour and 103.47 tons/year VOC limits for WCLA-OFFSITES or the 73.29 average lb/hour and 321.00 tons/year VOC limits for WCLA-ONSITES for five separate reasons:

First, the proposed permit cannot ensure compliance with the 73.29 average lb/hour and 321.00 tons/year VOC limits for WCLA-ONSITES because the permit does not require Exxon to use site-specific biodegradation rates when determining VOC emissions from ONSITES, as discussed in paragraphs 9-20 of the attached declaration from Dr. Ranajit Sahu, who has expertise in engineering (including engineering issues related to petroleum refineries and chemical plants), the Clean Air Act and air pollution, and issues related to monitoring of emissions of air pollution (including monitoring emissions from wastewater treatment units at refineries and chemical plants) and calculating those emissions (*see id.* at ¶¶ 2, 4-5, Att. A).[63]

As EPA's Emissions Estimation Protocol for Petroleum Refineries v.3 (April 2015) ("Emissions Protocol")[64] makes clear, site-specific biodegradation rates are necessary to ensure

---

[62] Like Specific Requirement 2, the first four sentences of Specific Requirement 1 require Exxon to: quarterly calculate emissions; keep the records on site and available for inspection; and report emissions above the permit limits as a violation. As with Specific Requirement 2, these very general recordkeeping and reporting provisions cannot, by themselves, ensure compliance with the VOC limits for WCLA-OFFSITES.

[63] The relevant paragraphs from Dr. Sahu's declarations are not merely incorporated into this petition by reference. *See* 40 C.F.R. § 70.12(a)(2) ("… the Administrator will not consider arguments … or other information incorporated into the petition by reference."). Instead, the cited paragraphs from the declaration directly support the petition's arguments that the proposed permit's monitoring and emission calculation provisions are flawed for the reasons discussed herein. In addition, the paragraphs from Dr. Sahu's declaration cited above and below in this petition also directly support the additional facts and arguments for which we cite the declaration as support.

[64] The Emissions Protocol, which is the latest version of this protocol, is available here: https://www3.epa.gov/ttn/chief/efpac/protocol/Protocol%20Report%202015.pdf

accurate calculations of VOC emissions from wastewater treatment facilities at refineries. *See id.* at 7-1 – 7-3, 7-6 – 7-9. EPA's Emissions Protocol ranks emission measurement and estimation methods "in order of preference, with 'Methodology Rank 1' being the preferred method, followed by 'Methodology Rank 2,' and so on."[65] *Id.* at 1-1. The protocol requests refinery owners and operators "to use the highest ranked method … **for which data are available**." *Id.* (emphasis in original). EPA's protocol ranks direct measurement as the preferred method for determining emissions from covered and vented wastewater treatment units. *Id.* at Table 7-1. The protocol lists: predictive modeling (such as accomplished through TOXCHEM) with site-specific factors and biodegradation rates followed by validation as Methodology Rank 2a; predictive modeling with site-specific factors and biodegradation rates (*i.e.*, without validation) as Methodology Rank 2b; and predictive modeling with site-specific factors (*i.e.*, without either validation or site-specific biodegradation rates) as Methodology Rank 2c.[66] *Id.*

Here, the proposed permit does not require Exxon to use either site-specific biodegradation rates or validation. *See* Proposed Permit's Specific Requirements 1-2; RTC at 14. Thus, the proposed permit's monitoring and emission calculation methods for VOCs from Exxon's wastewater treatment system only qualify as (at best) Methodology Rank 2c, which ranks fourth out of six in terms of EPA's preferred methods for monitoring and calculating these emissions. *See* Emissions Protocol at Table 7-1. Only engineering estimates based on wastewater treatment plant load and engineering estimates based on crude throughput rank as less accurate than the proposed permit's requirements for monitoring and calculating VOC emissions. *See id*.

In particular, EPA's Emissions Protocol explains that "site-specific data provide the most accurate results" and that the "factors that can have the most dramatic impact on air emissions from a biological treatment unit are the ones impacting biodegradation." *Id.* at 7-8. And specifically regarding biological treatment units, the protocol states that "it is important to obtain and use site-specific variables when estimating emissions to obtain accurate results" for these units because they "are complex and vary significantly in design, operation, and treatment efficiency, resulting in units that are difficult to characterize." *Id.* at 7-6 – 7-7. More specifically, "[m]ultiple fate and transport mechanisms are often involved in the ultimate removal of a specific compound," and these mechanisms "may compete against each other." *Id.* at 7-7. In addition, "biological treatment systems are dynamic in nature, resulting in shifts in the dominant fate mechanism." *Id.*

EPA's Emissions Protocol states that "the biological treatment unit will most likely be the first uncovered process in the wastewater treatment system and potentially the greatest source of air emissions." *Id.* The biological treatment units are indeed the greatest sources of VOC air

[65] The Emissions Protocol is "intended to provide guidance and instructions … for the purpose of improving emission inventories for the petroleum refining industry." *Id.* at 1-1. That the protocol provides guidance for improving emission inventories does not make it any less relevant in the context of evaluating monitoring and emission calculation methods in the Title V context.

[66] Methodology Ranks 2a through 3b all apply to uncovered units. *Id.*

emissions at ONSITES, by far, according to data that Exxon submitted in conjunction with its application for this Title V permit renewal. *See* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF pp. 16-41.[67] That information identifies the Aggressive Biological Treatment unit (TK0102) as capable of emitting 3,299.13 "lb/d" (which presumably means pounds per day) total of air pollutants, including the following significant lb/d of the following VOC HAPs (among others): 83.59 benzene; 81.02 ethylbenzene; 57.04 hexane; 375.43 methyl tertiary butyl ether; 387.85 toluene; 440.54 2,2,4-trimethylpentane; 149.64 m-xylenes; 162.54 o-xylenes; and 153.85 p-xylenes. *Id.* at PDF p. 25. *See also* Proposed Permit's Inventories at pp. 1, 6-7 (identifying Aggressive Biological Treatment unit as "TK0102" and listing it as part of Common Requirements Group for WCLA Onsites Tanks). Exxon's application information also identifies other biological treatment units—the BIOX Aeration units (TK0303A-B)—as large emitters of VOCs and VOC HAPs.[68] That information identifies the BIOX units are each capable of emitting over 500 "lb/d" total of air pollutants, including being capable of each emitting over the following lb/d of the following VOC HAPs (among others): 77.4 methyl ethyl ketone; 184.42 methyl tertiary butyl ether; 9.5 naphthalene; and 14.67 toluene. *See* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF pp. 19, 31. *See also* Proposed Permit's Inventories at pp. 3, 6, 8 (identifying these units by number and listing them as part of Common Requirements Group for WCLA Onsites Tanks).[69]

Despite these large VOC emissions from Exxon's Aggressive Biological Treatment unit and BIOX Aeration units and the fact that site-specific biodegradation rates are needed to ensure the accurate calculation of emissions from biological treatment units (as EPA's Emissions Protocol recognizes and recommends), the proposed permit does not require the use of site-specific biodegradation rates—and thus is unable to ensure compliance with the VOC limits for WCLA-ONSITES. Sahu Decl. at ¶¶ 11-20. Specific Requirement 2 requires ONSITES VOC emissions to be calculated using, among other things, mixed liquor suspended solids in the

[67] This email and the accompanying data are available on LDEQ's EDMS site here: https://edms.deq.louisiana.gov/app/doc/view.aspx?doc=11799691&ob=yes&child=yes

[68] The proposed permit indicates that the BIOX units are biological treatment units. *See* Proposed Permit Air Permit Briefing Sheet at 1 ("The water then flows to secondary treatment, which includes biological treatment in the BIOX tanks and clarifiers.").

[69] Exxon's application information also identifies the Pretreat Air Flotation units (TK0202A-B) as significant emitters of VOCs, but the Aggressive Biological Treatment unit is by far the largest emitter of them all according to Exxon's estimates, followed by the BIOX units. *See* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF pp. 18-19, 25, 28, 31. *See also* Proposed Permit's Inventories at pp. 1-3, 6-8 (identifying these units by number and listing them as part of Common Requirements Group for WCLA Onsites Tanks). That same data that Exxon submitted in August 2019 shows that, for WCLA-OFFSITES, the portions with the highest VOC emissions appear to be Rain Basins 1-2 and "CPS," which presumably refers to the central process sewers. *See id.* at PDF pp. 6-12.

biological treatment system and concentration of return activated sludge as monitored monthly,[70] as well as the operational status of the aerator blowers and tank levels. While these inputs can affect biodegradation rates, many other factors also affect biodegradation, and additional information that the permit does not require Exxon to monitor or take into account is needed to calculate site-specific biodegradation rates. Sahu Decl. at ¶ 15. *See also* Emissions Protocol at 7-6 – 7-9. That additional information beyond what is required by the proposed permit includes, among other things, biomass concentration levels, types and composition of the biomass, and the degree of mixing, which affects the mass transfer of oxygen and VOCs to the biomass as well as removal of products or metabolites from the biomass. Sahu Decl. at ¶ 15.

A Title V permit that fails to require the use of site-specific biodegradation rates is even less likely to ensure compliance with the VOC limits for ONSITES here because VOC emissions from the refinery's wastewater treatment system are extremely variable, as discussed in Dr. Sahu's declaration at paragraphs 16-20. Even LDEQ "acknowledges that emissions from ExxonMobil's wastewater treatment system can be highly variable." RTC at 10. Exxon also recognizes the same and noted that the proposed permit contains high state-only limits for individual VOC HAPs to account for that variability: Exxon's application for the Title V renewal states that, "*[t]o account for the inherent variability of wastewater streams*, a higher concentration [than average concentration] for each pollutant was used to estimate the individual [state-only] emission limits for [VOC HAPs for WCLA-OFFSITES and WCLA-ONSITES]."[71] Exxon's Dec. 2018 Application for Renewal of Title V Permit for Utilities ("Application") at PDF pp. 149-50 (emphasis added).[72] In fact, the proposed permit's individual state-only limits for VOC HAPs from ONSITES total over 540 tons/year—roughly 70% higher than the federally-enforceable 321.00 tons/year limit for total VOCs.[73] *See* Proposed Permit's Emission Rates for TAP/HAP & Other Pollutants at 1-2. Thus, these state-only limits for VOC HAPs show that the ONSITES units are capable of emitting VOC HAPs at much higher combined rates than

[70] The microorganisms that biodegrade the VOCs in the treatment system's wastewater live on suspended solids, and return activated sludge helps stabilize or maintain biomass at desired levels. Sahu Decl. at ¶ 15.

[71] Exxon indicates that the individual HAP limits were based on the "average feed concentration" from a 2002 run of TOXCHEM "plus two standard deviations." August 7, 2019 email from R. Wyatt to S. Pusateri at PDF p. 14. LDEQ later approved increased state-only limits for two individual HAPs, hexane and methanol, in 2014 and 2006, respectively. *Id.*

[72] The application is available on LDEQ's EDMS site here: https://edms.deq.louisiana.gov/app/doc/view.aspx?doc=11445060&ob=yes&child=yes

[73] In particular, the proposed Title V permit's state-only limits for WCLA-ONSITES allow the following tons/year of the following VOC HAPs regulated under Clean Air Act § 112(b)(1): 94.45 tons/year 2,2,4-trimethylpentane, 16.78 tons/year benzene, 5.65 tons/year biphenyl, 16.22 tons/year ethylbenzene, 16.48 tons/year methanol , 34.05 tons/year methyl ethyl ketone, 6.60 tons/year methyl isobutyl ketone, 148.73 tons/year methyl tert-butyl ether, 11.24 tons/year n-hexane, 17.12 tons/year naphthalene, 5.10 tons/year phenol, 80.10 tons/year toluene, and 94.26 tons/year xylene (mixed isomers). Proposed Permit's Emission Rates for TAP/HAP & Other Pollutants at 1-2.

the federally-enforceable limits for total VOCs. The state-only limits also show that the federally-enforceable annual and hourly VOC limits of 73.29 lb/hour and 321.00 tons/year for ONSITES could easily be exceeded in any given year. Sahu Decl. ¶ 17.

The proposed Title V permit's annual limit for total VOCs from ONSITES also shows the variability of VOC emissions here. Exxon indicated that the WCLA-ONSITES total VOC limit was calculated by applying a "contingency factor" of 1.294 to results from a 2002 run of TOXCHEM. *See* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF pp. 13. Presumably Exxon used that "contingency factor" due to the variable nature of emissions from ONSITES.[74] Sahu Dec. at ¶ 18.

In particular, VOC emissions from Exxon's Aggressive Biological Treatment unit and BIOX Aeration units—and thus VOC emissions from WCLA-ONSITES—could vary depending on the biodegradation rates in the wastewater treatment system. Sahu Decl. ¶ 20. Those biodegradation rates in turn could vary over short and long periods of time depending on, among other things, wastewater, ambient, and biomass conditions. *Id.*

Second, the proposed permit cannot ensure compliance with the 73.29 average lb/hour and 321.00 tons/year VOC limits for WCLA-ONSITES or the 23.62 average lb/hour and 103.47 tons/year VOC limits for WCLA-OFFSITES because the permit does not require Exxon to conduct periodic validation studies to ensure that the predictive model calculations from TOXCHEM (or any other model Exxon may choose to use) are accurate, as discussed in paragraph 21 of Dr. Sahu's declaration. As discussed above (*supra* at 21), the ranking of emission calculation methodologies in Table 7-1 of EPA's Emissions Protocol makes clear that validation is necessary to accurately calculate emissions from wastewater treatment systems. The Emissions Protocol further explains (at 7-9):

> [Validation] is accomplished by secondary direct or in-direct measurement techniques such as offgas collectors, [Differential Absorption Light Detection and Ranging ("DIAL")], concentration-profile methods. Direct measurements are taken of a modeled process unit, and the results are compared. Favorable comparisons are indicative of accurate predictive modeling, whereas poor comparisons could be the result of incorrect assumptions or errors in the model. If corrective actions are necessary, a review of the constants and site-specific variables should be conducted.

Periodic validation is especially important for TOXCHEM, since most of the program's underlying emission estimation methods are based on theoretical or empirical simplifications of

[74] Neither Exxon nor LDEQ provides any support for the accuracy or basis of this specific contingency factor. Sahu Decl. at ¶ 19. The use of this contingency factor cannot ensure that the emissions from WCLA-ONSITES will not exceed the VOC limits, especially given the highly variable nature of wastewater VOC emissions, Exxon's own recognition that the ONSITES units are capable of emitting VOC HAPs at much higher combined rates than the limits for total VOCs, and the fact that the limits were established based on model runs in 2002—almost 20 years ago. *Id.* Conditions could have—and likely have—changed in the wastewater treatment system since that time, affecting the amount of VOCs emitted by the system. *Id.*

very complex wastewater treatment processes involving transfer of VOC compounds (of which there are many, with varying properties) from the liquid phase (including VOCs that may be bound to suspended solids in the wastewater) to the solid and gas phases. Sahu. Decl. at ¶ 21. Periodic validation is also necessary here because the VOC emissions from Exxon's wastewater treatment system are highly variable (*see supra* at 23-24). Sahu. Decl. at ¶ 21.

Third, as discussed in Dr. Sahu's declaration at paragraphs 22-27, the proposed permit cannot ensure compliance with the VOC limits for ONSITES or OFFSITES because it does not require Exxon to monitor VOCs concentrations in the wastewater or flow at representative locations in the treatment stream. In fact, the permit gives no indication where in the treatment train Exxon is to monitor VOCs concentration(s) in the wastewater. Specific Requirement 2 only provides that Exxon's emissions calculations for ONSITES are to use "concentrations of … volatile and semi-volatile constituents in the influent wastewater as monitored monthly," without giving any details regarding where that monitoring is to take place. Likewise, Specific Requirement 1 also fails to give any such details for OFFSITES, providing only that "[i]nputs of organic and inorganic constituents shall be adjusted as necessary based on LPDES sampling results."

This language from Specific Requirement 1 also gives no indication regarding where flow is to be measured for OFFSITES. For ONSITES, Specific Requirement 2 provides that calculations are to take into account "flow rate as monitored in accordance with the terms and conditions of the Baton Rouge Refinery's LPDES permit for Outfall 001." Outfall 001 is the point at which the treated wastewater is discharged to the Mississippi River, along with other waters, such as stormwater runoff and miscellaneous non-process wastewater. Ex. 7, Exxon's LPDES Permit at 2-3; Ex. 8, March 5, 2020 Ltr. from Exxon to LDEQ (noting that the flow meter for Outfall 001 sometimes becomes inundated by the Mississippi River).

VOC concentration in wastewater and wastewater flow rate are vital factors in determining VOC air emissions from wastewater treatment units. Sahu Decl. at ¶ 23. EPA recognizes this in its Emissions Protocol, listing "constituent influent concentration" and "wastewater flow rate" as "critical inputs" in determining emissions from various portions of the wastewater treatment train, including wastewater collection systems,[75] primary weirs, oil-water separators, dissolved air flotation units, equalization tanks, and biological treatment units. Emissions Protocol at Tables 7-2 – 7-7. EPA's listing of "constituent *influent* concentration" as a critical input for these various types of wastewater treatment units also makes clear that the concentration of VOCs in the wastewater should be measured at the influent to, at the least, each major-emitting unit. Measuring the VOC concentration in the wastewater and flow at various representative locations in the treatment train is important because emissions from each specific unit in the train will depend on the influent VOC concentration and flow to that unit—not the VOC concentration or flow at the influent to (or outlet of) the entire wastewater treatment system as a whole or some other non-representative point. Sahu Decl. at ¶ 23. Here, measuring these

[75] For collection systems, EPA uses the term "constituent concentration at [point of generation]" instead of "constituent influent concentration." Emissions Protocol at Table 7-2.

inputs at representative locations is especially important given the highly variable nature of the VOC emissions from WCLA-ONSITES (*see supra* at 23-24), which is presumably due to the variable nature of conditions—including VOC concentrations and flow—in the wastewater treatment stream. Sahu Decl. at ¶ 24. In particular, if Exxon is measuring VOC concentrations in the wastewater at a point (or points) downstream of treatment units that are large emitters of airborne VOCs and/or after the wastewater has been treated to a certain extent, this will underestimate—or fail to fully take into account—airborne VOC emissions from those upstream sources. *Id.*

To ensure compliance with the VOC limits for ONSITES, Exxon should be required to measure VOC concentration and flow at the influent of, at the least, the highest emitting units in the wastewater treatment train—the Aggressive Biological Treatment unit, BIOX Aeration units, Pretreat Air Flotation units (TK0202A-B), and any other high-emitting units.[76] Sahu Decl. at ¶ 25. While the permit requires Exxon to measure flow at Outfall 001, to accurately calculate emissions, flow should instead be measured further up in the treatment stream at the points where VOC concentration in the wastewater is also measured—before the point at which the refinery's wastewaters are discharged to the Mississippi River.[77] *Id.* Measuring flow at these points instead of Outfall 001 is important because it would more accurately characterize the total VOC load to each relevant unit. *Id.* To ensure compliance with the VOC limits for OFFSITES, Exxon should be required to measure VOC concentration at the point of generation and flow for, at the least, the highest emitting portions of OFFSITES—Rain Basins 1-2, "CPS" (presumably the central process sewers), and any other high-emitting units.[78] *Id.* at ¶ 27.

Fourth, the proposed permit cannot ensure compliance with the VOC limits for WCLA-ONSITES or OFFSITES because it does not require frequent enough monitoring of VOC concentration in the wastewater or flow, as discussed in Dr. Sahu's declaration at paragraphs 28-30. Specific Requirement 1 does not say anything about the frequency of monitoring for OFFSITES, other than opaquely referring to unspecified "LPDES sampling results." For ONSITES, Specific Requirement 2 provides that "concentrations of total suspended solids,

---

[76] Exxon's permit application materials indicated that these were the largest emitting units/portions of WCLA-ONSITES, with the Aggressive Biological Treatment unit being the largest emitter of them all, by far. *See supra* at 21-22.

Also note that there are already flow meters installed at the BIOX Aeration units (TK0303A-B). *See* Ex. 8, March 5, 2020 Ltr. from Exxon to LDEQ at PDF p. 2.

[77] If Exxon is measuring VOC concentration in the wastewater at Outfall 001 (the proposed permit gives no indication whether this is the case), after the wastewater has been treated, after VOCs have escaped to the atmosphere further up in the treatment stream, and after the wastewater has mixed with stormwater runoff and other waters, that would obviously underestimate the VOC concentration and VOC air emissions at the upstream units. Sahu Decl. at ¶ 26.

[78] Exxon's permit application materials indicated that these were the largest emitting units/portions of WCLA-OFFSITES. *See supra* at 22, n.69.

oil/grease, and volatile and semi-volatile constituents in the influent wastewater" are to be "monitored monthly." And, as noted above, Specific Requirement 2 provides that Exxon is to monitor flow rate "in accordance with the terms and conditions of the Baton Rouge Refinery's LPDES permit for Outfall 001." As discussed above (*supra* at 25-26), Outfall 001 is not the proper location to measure flow. Putting that issue aside, while the LPDES permit requires continuous measurement of flow at Outfall 001, it only requires reporting of monthly average and daily maximum MGD flow. Ex. 7, Exxon's LPDES Permit at 2. Thus, it is unclear under the proposed Title V permit's Specific Requirement 2 whether Exxon is supposed to use the monthly average flow, daily maximum flow, or some other flow figure (such as daily or hourly average) at Outfall 001 to calculate the VOC air emissions.

As discussed above (*supra* at 25), flow and VOC concentration in the wastewater are critical inputs needed to accurately calculate VOC air emissions from refinery wastewater treatment systems. As discussed in Dr. Sahu's declaration at paragraphs 29-30, monitoring of VOC wastewater concentrations once per month and monitoring of flow once per month (or day) are not frequent enough to accurately calculate VOC air emissions from the treatment system—and thus cannot ensure compliance with the annual or average hourly VOC limits for ONSITES and OFFSITES. Both flow and VOC wastewater concentrations are highly variable and can easily change over short periods of time depending on operational conditions at the refinery, such as production rates at various units, status of specific process units, or if there is a turnaround taking place. These changes in flow and VOC wastewater concentration will in turn affect VOC air emissions from the treatment system. Monthly monitoring of VOC concentrations and monthly (or daily) monitoring of flow cannot capture the requisite variability and would thus underestimate VOC emissions from the treatment system. To ensure compliance with the VOC limits for ONSITES and OFFSITES, the Title V permit should instead require Exxon to monitor flow on a continuous basis and use hourly average flows in its emissions calculations. The permit should also require Exxon to monitor VOC concentrations on a daily basis.

The variability of flow, in particular, is shown by the Discharge Monitoring Reports ("DMRs") that Exxon has submitted under its LPDES permit. *See* Ex. 9, April-Oct. 2020 DMRs. The DMRs show that, across the span of just seven months in 2020, the highest daily maximum flow (16.547, from May 2020) at Outfall 001 was over 10% higher than the lowest daily maximum flow (14.998, from October 2020):

Month	**Monthly Average (MGD)**	**Daily Max (MGD)**
October 2020	13.651	14.998
September 2020	14.447	15.706
August 2020	14.726	15.876
July 2020	14.708	16.396
June 2020	13.911	15.872

May 2020	14.812	16.547
April 2020	14.083	16.054

The flow variability is also shown by the fact that these values—along with most of the monthly average flows—from the DMRs are above the values from the LPDES permit itself, which states that estimated flow for Outfall 001 is 14.02 MGD- Max 30-day. Exxon LPDES Permit at 2.

Fifth, the proposed permit cannot ensure compliance with the VOC limits for ONSITES or OFFSITES because both Specific Requirements 1-2 allow Exxon to calculate VOC emissions using some "other model approved by EPA and/or LDEQ." Such "other model" besides TOXCHEM could have significant problems (such as errors or incorrect assumptions)—even more serious than TOXCHEM's deficiencies—that would render it unable to ensure compliance with the VOC limits for the wastewater treatment system. Sahu Decl. at ¶ 31. The language from Specific Requirements 1-2, however, would allow Exxon to use "[an]other model" without seeking to amend its Title V permit—thus avoiding public notice and comment and, if only LDEQ approval is obtained, EPA review (and thus the ability of the public to petition EPA to object to the change) regarding use of the different model. If Exxon wishes to use another model to calculate VOC emissions, it can follow the applicable Title V permitting rules and apply for a significant modification to its Title V permit to allow for use of that different model—thus allowing the public, EPA, and affected states to weigh in on the change.[79] *See* 40 C.F.R. § 70.7(e)(4)(i) ("At a minimum, every significant change in existing monitoring permit terms or conditions and every relaxation of reporting or recordkeeping permit terms or conditions shall be considered significant."); LAC 33:III.527.A.2.b-c.[80]

Environmental justice concerns here mandate increased, focused attention to ensure that all Title V requirements—especially monitoring, recordkeeping, reporting, and compliance certification requirements—have been complied with for the WCLA-ONSITES and OFFSITES VOC limits. This is especially true because the proposed permit's individual state-only limits for

[79] Significant permit modifications are not effective until after there has been an opportunity for public comment and review by EPA and affected states. 40 C.F.R. § 70.7(a), (e)(4)(ii); LAC 33.III.519.C-1-2, 527.B-3-5, 531.A.1.c, A.3.c, B.1, 533.C.1.

[80] Even if a revision to the permit to specify use of a different model did not constitute a significant change to monitoring requirements (it would) that could only be approved through a significant permit modification, the revision would at the least constitute a non-significant change to monitoring, reporting, or recordkeeping requirements that could only be approved through a minor permit modification. *See* 40 C.F.R. § 70.7(e)(2)(i)(A)(2) ("Minor permit modification procedures may be used only for those permit modifications that … [d]o not involve significant changes to existing monitoring, reporting, or recordkeeping requirements in the permit"); LAC 33:III.525.A.2.c. Unlike the proposed permit's current language, a minor permit modification would allow for review of the different model by affected states and EPA (and thus provide the public an opportunity to petition EPA to object). 40 C.F.R. § 70.7(a)(1)(ii), (e)(2)(iii), (h). Louisiana's permitting regulations provide the same. *See* LAC 33:III.525.B.6, 527.B.5, 531.A.2.c, 533.B.1.

VOC HAPs from WCLA-ONSITES total over 540 tons/year (*see supra* at 23)—and the permit's individual state-only limits for VOC HAPs from WCLA-OFFSITES total over 60 tons/year.[81]

Increased, focused attention to ensure that all Title V requirements have been complied with is also especially important because, as discussed above, the benzene fenceline data for the refinery shows that it has been dangerously close to the 9 µg/m^3 annual-average level that triggers corrective action under the NESHAP requirements. *See supra* at 10-11. And that data also shows that the refinery experiences large spikes in VOC HAP emissions—meaning that emissions are highly variable (not steady-state). For example, during the sampling period March 20–April 3, 2019, the benzene fenceline data yielded a value of 4.9 µg/m^3 for those two weeks, but then, during the next sampling period (April 3-17), the value shot up to 11.1 µg/m^3. *See* Ex. 5. And over the next few sampling periods, the fenceline benzene values continued to be very high (with values of 10.5, 11.3, 13.4 and 30.5 µg/m^3),[82] before finally dropping to 7.3 µg/m^3 during the June 12-26 sampling period. *Id.* And the refinery's two-week benzene fenceline averages in the second and third quarters of 2020 have spiked to as high as 12.3 and 23.3 µg/m.^{3} *Id.*

Emissions of VOCs from the refinery's wastewater treatment system could be significantly contributing to these large spikes in VOC HAPs shown by the fenceline monitoring data—but without adequate monitoring requirements for the VOC emissions from the treatment system,[83] there is no way to know whether that is the case. Sahu Decl. ¶ 8. Finally, increased, focused attention to ensure that the monitoring and emission calculation requirements for VOCs from the treatment system meet Title V's mandate is necessary here because the communities surrounding Exxon's refinery have experienced persistent problems complying with the NAAQS for ground-level ozone. *See supra* at 14-15.

A. EPA Should Require LDEQ to Revise the Title V Permit to Mandate the Use of Site-Specific Biodegradation Rates and Periodic Validation Studies, Among Other Things.

As Petitioners' comments explained (at pages 8-9) and as discussed in Dr. Sahu's declaration at paragraphs 32-36, to remedy the above-described problems and ensure compliance

[81] In particular, the proposed Title V permit's state-only limits for WCLA-OFFSITES allow (among others) the following tons/year of the following VOC HAPs regulated under Clean Air Act § 112(b)(1): 27.36 tons/year methanol, 4.14 tons/year 2,2,4-trimethylpentane, 6.85 tons/year methyl ethyl ketone, 6.72 tons/year methyl tert-butyl ether, 5.05 tons/year naphthalene, 4.48 tons/year toluene, and 7.33 tons/year xylene (mixed isomers). Proposed Permit's Emission Rates for TAP/HAP & Other Pollutants at 1.

[82] Exxon claims that the 30.5 µg/m^3 value was attributable to a source not regulated under the refinery NESHAP provisions from Subpart CC of 40 C.F.R. Part 63. Ex. 5. Regardless, data from earlier periods shows that the refinery is capable of very large spikes in fenceline benzene values. For example, for the two weeks from September 19–October 3, 2018, the refinery reported a value of 22.1 µg/m^3. *Id.*

[83] Fenceline monitoring data for more than just benzene would also help in this regard.

with the average hourly and annual VOC limits for WCLA-ONSITES and OFFSITES, EPA should require LDEQ to revise the proposed Title V permit as follows:

The permit should require Exxon to—at least quarterly—calculate site-specific biodegradation rates for VOCs and use these rates in calculating VOC emissions from WCLA-ONSITES.[84] When calculating biodegradation rates, Exxon should be required to: take into account preferential biodegradation, degradation by-products, and co-metabolism; dose the constituent of interest in the appropriate ratio with organic compounds found in the real-world system of Exxon's biological treatment units; and when assessing all the fate mechanisms involved in compound degradation, take into account biodegradation, hydrolysis, and adsorption. *See infra* at 35; Emissions Protocol at 7-8 – 7-9. The permit should include a protocol for calculating site-specific biodegradation rates that includes these requirements, and Exxon should be required to submit the protocol to LDEQ for approval, subject to public comment.

The permit should also require Exxon to conduct periodic validation studies for ONSITES and OFFSITES—at least annually[85]—through measurement techniques such as offgas collectors, DIAL, Solar Occultation Flux, or concentration-profile methods. If such validation shows that modeling and calculation methods are inaccurately estimating emissions from the wastewater treatment system, then Exxon should be required to adjust the modeling or calculation methods to yield accurate results.

As discussed above, to ensure compliance with the VOC limits for ONSITES, Exxon should be required to measure VOC concentration and flow at the influent of, at the least, the highest emitting units in the wastewater treatment train—the Aggressive Biological Treatment unit, BIOX Aeration units, Pretreat Air Flotation units (TK0202A-B), and any other high-emitting units.[86] And to ensure compliance with the VOC limits for OFFSITES, Exxon should be required to measure VOC concentration and flow at the point of generation for, at the least, the highest emitting portions of OFFSITES—Rain Basins 1-2, "CPS" (presumably the central process sewers), and any other high-emitting portions. The permit should require this monitoring of flow to be conducted on a continuous basis, with hourly average flow used in Exxon's calculations of VOC air emissions. The permit should also require the VOC concentration in the

[84] Site-specific biodegradation rates should be determined at least quarterly, since ambient conditions such as temperature (along with other factors such as biomass concentration levels, types and composition of the biomass, wastewater conditions, and the degree of mixing – *see supra* at 23, 24) can have a significant impact on these rates. Sahu Decl. at ¶ 32. *See also id.* at ¶ 20. The permit could possibly require Exxon's emissions calculations to use rolling quarterly rates, established by averaging the biodegradation rates across the previous eight quarters. *Id.* at ¶ 32.

[85] If multiple annual validation studies show that TOXCHEM is accurately estimating VOC emissions, then the frequency of validation studies could possibly be relaxed—to, say, once every other year. Sahu Decl. at ¶ 34. The permit should also provide that, if annual validation shows that TOXCHEM is not accurately estimating VOC emissions, then the frequency of validation studies will be increased. *Id.*

[86] As noted above, there are already flow meters installed at the BIOX Aeration units (TK0303A-B). *See* Ex. 8, March 5, 2020 Ltr. from Exxon to LDEQ at PDF p. 2.

wastewater to be measured on a daily basis. If daily sampling shows that VOC concentrations are relatively constant for a particular unit or portion of the treatment train (*i.e.*, they don't vary by more than an appropriate specified percentage from day to day), then the frequency of sampling for the VOC concentration levels for that particular unit or potion could be reduced to weekly.

The permit should also be revised to remove the language allowing Exxon to calculate VOC emissions from ONSITES and OFFSITES using some "other model approved by EPA and/or LDEQ." If Exxon wishes to use another model, it can apply for a significant modification to its Title V permit to allow for use of that model.

Strong monitoring and reporting requirements are especially important here—and EPA should provide specific instruction in keeping with the above—because of the environmental justice concerns noted above, the highly variable nature of the VOC emissions from the wastewater treatment system (as both LDEQ and Exxon recognize), the high (and variable) benzene fenceline data reported by Exxon under NESHAP requirements, the massive amount of VOC HAPs that the wastewater treatment system is capable of emitting, and the Baton Rouge area's persistent problems complying with the NAAQS for ground-level ozone.[87] *See supra* at 5-11, 14-15, 23-24, 29.

Only a permit that contains the above changes can ensure the accurate calculation of VOC emissions from Exxon's wastewater treatment system because of the complicated nature of wastewater treatment facilities and the extreme variability of VOC emissions from the system (*see supra* at 23-24), as well as the other issues discussed above. Sahu Decl. at ¶ 36. Thus, the above changes are needed to ensure compliance with the 23.62 average lb/hour and 103.47 tons/year VOC limits for WCLA-OFFSITES and the 73.29 average lb/hour and 321.00 tons/year VOC limits for WCLA-ONSITES.

B. Petitioners Raised All but One of Their Objections Regarding the Monitoring and Emission Calculation Requirements for VOCs from the Wastewater Treatment System with Reasonable Specificity During the Comment Period.

LDEQ's draft Title V permit and statement of basis did not list <u>any</u> monitoring or emission calculation methods that Exxon uses to ensure compliance with the permit's 23.62 average lb/hour and 103.47 tons/year limits for VOCs from WCLA-OFFSITES or the 73.29 average lb/hour and 321.00 tons/year limits for VOCs from WCLA-ONSITES. *See* Comments at 4. Only after the close of the comment period did LDEQ add new Specific Requirements 1 and 2 to the proposed permit—the requirements that now address how Exxon is to determine

[87] Even if EPA does not specifically instruct LDEQ to require all of the above permit fixes, EPA's order responding to this petition should—because of the environmental justice concerns present here, the highly variable VOC emissions at issue, and the other factors noted above— give LDEQ explicit direction on how it might remedy the permit's inability to ensure compliance with the VOC limits for the wastewater treatment system, rather than simply leaving it to LDEQ to further explain why it thinks that the current permit requirements can ensure compliance here.

compliance with these hourly and annual VOC limits for ONSITES and OFFSITES. *See, e.g.*, RTC at 20 ("LDEQ agrees … that the permit should be amended to require monitoring of the relevant inputs to the TOXCHEM model …. See Specific Requirements 1 and 2 ….). And only after the close of the comment period did LDEQ add the permit language (from Specific Requirements 1 and 2) allowing Exxon to calculate VOC emissions from ONSITES and OFFSITES using some "other model [besides TOXCHEM] approved by EPA and/or LDEQ."

Even though the draft permit contained no conditions to ensure compliance with the VOC limits for ONSITES and OFFSITES, Petitioners—anticipating that Exxon might determine compliance with the VOC limits by using TOXCHEM, which Exxon's application indicates was used to calculate the VOC limits in the first place[88]—raised their above objections from this petition with reasonable specificity during the comment period, except for the objection regarding the newly-inserted permit language allowing Exxon to use some "other model." More specifically, Petitioners' comments objected that: the draft permit did not ensure compliance with the hourly and annual VOC limits for ONSITES and OFFSITES; VOC emissions from Exxon's wastewater treatment system are highly variable; strong monitoring requirements are important due to environmental justice concerns, the large amounts of VOC HAPs emitted by the treatment system, and the refinery's high and highly variable benzene fenceline data; the use of TOXCHEM modeling alone, if Exxon indeed used TOXCHEM to calculate emissions for compliance purposes, could not ensure compliance with the VOC limits; and LDEQ should revise the permit to require the use of site-specific biodegradation rates, periodic validation studies, and continuous (at least hourly) monitoring of flow and VOC concentration[89] in the wastewater at representative portions of the treatment train. *See* Comments at 4-9. LDEQ's response to comments—in which the Department responds to Petitioners' comments regarding the inadequacy of the draft permit's monitoring and emission calculation requirements for the VOC limits (including comments regarding the TOXCHEM modeling that Petitioners guessed Exxon might use for purposes of demonstrating compliance with the treatment system's limits)—shows that the comments gave LDEQ ample notice of Petitioners' objections. *See* RTC at 10-14; *see also infra* at 33-40 (discussing why LDEQ's response to comments is inadequate).

When commenting, however, Petitioners could not reasonably have anticipated that LDEQ—after the close of the comment period—would insert the new permit language allowing Exxon to calculate VOC emissions based on some "other model approved by EPA and/or LDEQ." Thus, it was impracticable to raise an objection to that permit language in comments. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). Further, the grounds for Petitioners' objection to that permit language arose after the comment period, when LDEQ inserted new Specific Requirements 1 and 2 (including the "other model" language) into the proposed permit. *See id.*

[88] *See, e.g.*, August 7, 2019 email from R. Wyatt to S. Pusateri at PDF pp. 3-5, 13-14.

[89] The comments stated that, if hourly VOC concentrations showed relatively constant values, the frequency of sampling for that input could be reduced to daily—or perhaps weekly with almost no variability. Comments at 8-9.

If EPA believes that certain other objections above were not raised with reasonable specificity during the comment period, it was impracticable to raise those additional objections in comments because Petitioners were unable, during the comment period on the draft permit, to review the requirements (Specific Requirements 1-2) that LDEQ newly inserted into the proposed permit to purportedly ensure compliance with the hourly and annual VOC limits for the wastewater treatment system. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). Further, the grounds for any objections not raised in Petitioners' comments arose after the comment period, when LDEQ inserted the new Specific Requirements 1-2 into the proposed permit. *See id.* Put another way, Petitioners could not have raised every single detail of their objections to permit conditions that did not exist during the comment period. *See Portland Cement Ass'n v. EPA*, 665 F.3d 177, 186 (D.C. Cir. 2011) ("We should be especially reluctant to require advocates for affected … groups to anticipate every contingency. To hold otherwise would encourage strategic vagueness on the part of agencies and overly defensive, excessive commentary on the part of interested parties ...."); *see also Chesapeake Climate Action Network v. EPA*, 952 F.3d 310, 320 (2020) ("It was simply impracticable for Petitioners to predict how EPA would cure the missing [] component and then submit preemptive attacks on such hypothetical solutions."); *Clean Air Council v. Pruitt*, 862 F.3d 1, 10 (D.C. Cir. 2017) (looking to whether final rule was a "logical outgrowth" of proposed rule to determine whether 42 U.S.C. § 7607(d)(7)(b)'s impracticability prong met,[90] and holding that final rule fails logical outgrowth test if commenters "would have had to divine the agency's unspoken thoughts ….") (citation and internal quotation marks omitted).

C. LDEQ's Response to Comments Is Inadequate to Address the Problems with the Permit's Monitoring and Emission Calculation Requirements for VOCs from the Wastewater Treatment System.

LDEQ's response to comments is inadequate to address any of the above-discussed problems with the proposed permit's monitoring and emission calculation requirements for VOCs from WCLA-ONSITES and OFFSITES:

Site-specific biodegradation rates. As discussed above (*supra* at 20-24, 30), the Title V permit should require the use of site-specific biodegradation rates in the calculation of VOC emissions from WCLA-ONSITES. LDEQ's response to comments states the following regarding biodegradation rates:

[90] Using language similar to 42 U.S.C. § 7661d(b)(2), § 7607(d)(7)(B) provides the following with respect to judicial review of rules and other final actions by EPA: "Only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment … may be raised during judicial review. *If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment* (but within the time specified for judicial review) …, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed." (Emphasis added).

> The commenter also suggests that ExxonMobil should be required to "take into account site-specific data on biodegradation factors for its biological treatment unit(s), as described in the Emissions Estimations Protocol at 7-8 through 7-9." In the referenced passage, EPA notes that the "methods used to determine the fraction of organic constituent biodegraded are provided in 40 CFR part 63, Appendix C."[91] Notably, Appendix C specifically allows the use of TOXCHEM to calculate the liquid-phase mass transfer coefficient for a biological treatment unit, subject to stipulations set forth therein.

RTC at 14. To begin with, LDEQ does not even discuss whether Exxon actually uses TOXCHEM to calculate the liquid-phase mass transfer coefficient (or calculates that coefficient at all); LDEQ only states that Appendix C allows the use of TOXCHEM for this calculation.[92] In addition, importantly, despite the fact that Appendix C may allow the use of TOXCHEM to calculate the liquid-phase mass transfer coefficient for a biological treatment unit, this coefficient is not the same thing as a site-specific biodegradation rate. Instead, the coefficient is only one of several required inputs needed to determine a biodegradation rate under the methods listed in Appendix C, as discussed in Dr. Sahu's declaration at paragraphs 37-38.[93] More specifically, Appendix C lists five different possible procedures for determining compound-specific biodegradation rates, and three of these procedures (Method 304B, inlet and outlet concentration measurements, and multiple zone concentration measurements) allow the use of TOXCHEM to calculate the liquid-phase mass transfer coefficient, subject to certain stipulations. 40 C.F.R. Part 63, App. C at § III. Under each of these three procedures that allow the use of TOXCHEM to determine that coefficient, once the liquid-phase mass transfer coefficient is determined,

---

[91] LDEQ cites the Emissions Protocol at 7-8.

[92] If Exxon were to use TOXCHEM to calculate this coefficient, it would need to follow the stipulations listed in Appendix C, as LDEQ recognizes. In addition to giving no indication as to whether Exxon uses its computer program to determine the coefficient or calculates the coefficient at all, LDEQ gives no indication as to whether Exxon complies with these stipulations. Those stipulations are as follows:

> *The programs must be altered* to output a KL [liquid-phase mass transfer coefficient] value which is based on the site-specific parameters of the unit modeled, and the Henry's law values listed in Table I *must be substituted* for the existing Henry's law values in the programs. … *The owner or operator should be aware these programs do not allow modeling of certain units*. To model these units, the owner or operator shall use one of the other appropriate procedures as outlined in this appendix. *The owner or operator shall not use a default value for KL*. The KL value determined by use of these models shall be based on the site-specific parameters of the specific unit.

40 C.F.R. Part 63, App. C at § III.A (emphasis added).

[93] The liquid-phase mass transfer rate reflects what fraction of VOCs may transfer between phases (*e.g.*, solids and liquids) in wastewater. Sahu Decl. at ¶ 37. Depending on the particular VOC, biodegradation can occur on solids and/or in the adjacent liquid surfaces. *Id.* Thus, the rate of liquid-phase mass transfer can affect the biodegradation rate but does not represent the biodegradation rate. *Id.*

additional calculations and inputs are then required to determine biodegradation rates.[94] In short, to the extent LDEQ is suggesting that the proposed permit requires Exxon to calculate—or that TOXCHEM necessarily calculates—site-specific biodegradation rates, this is wrong. *See* Sahu Decl. at ¶ 38.

Even if Exxon does use TOXCHEM to calculate the liquid-phase mass transfer coefficient and in turn uses this coefficient and other required inputs to determine biodegradation rates using the procedures outline in Appendix C (there is absolutely no indication that this is the case), LDEQ ignores the problems with using Appendix C—problems that EPA points out in the Emissions Protocol:

> Although these methods [from Appendix C] have been successfully used to estimate biodegradation rates, there are concerns. Specifically, it is argued that dosing the bioreactor with only one constituent of interest yields inaccurate biodegradation rates compared to those dosed with a mixture of compounds commonly encountered by the microorganisms. Preferential biodegradation, degradation by-products, and co-metabolism are important factors to consider when determining biodegradation rates that are not addressed in the recommended methods. Yerushalmi and Guiot (1998) reported biodegradation rates of benzene and toluene that were 62.9 and 16.4 times greater, respectively, when used as the sole substrate, versus a mixture of organic compounds. It is recommended that the constituent of interest be dosed in the appropriate ratio with organic compounds found in the real-world system (as described in Appendix C). Additionally, the methods do not distinguish between biodegradation, hydrolysis, and adsorption. Rather, the results of the BOX test are a summation of the three primary fate mechanisms common to aerated bioreactors. This fact is important to consider when assessing all the fate mechanisms involved in compound degradation.

Emissions Protocol at 7-8 – 7-9. Any use by Exxon of the methods from Appendix C would need to address these concerns to ensure compliance with the VOC limits at issue, as discussed above (*supra* at 30). See Sahu Decl. at ¶ 39. This is especially so because the biological treatment units are by far the largest emitters of VOCs in Exxon's wastewater treatment system (*see supra* at 21-22) and because the "factors that can have the most dramatic impact on air emissions from a biological treatment unit are the ones impacting biodegradation." Emissions Protocol at 7-8. But

---

[94] *See* 40 C.F.R. Part 63, App. C at § III.A ("This KL [liquid-phase mass transfer coefficient] value shall be inserted in Form II (line 6). Estimation of the Fe fraction of applicable organic compounds emitted from the wastewater to the atmosphere and f^{bio} [fraction of individual applicable organic compounds in the wastewater biodegraded in a biological treatment unit] must be done following the steps in Form III. Form III uses the previously calculated values of K1 [first order biodegradation rate constant] and KL, and site-specific parameters of the full-scale bioreactor as input to the calculations. Forms I, II, and III must be completed for each organic compound in the wastewater to determine Fe and f^{bio}."); § III.C ("After KL and K1 are determined, Form III is used to calculate Fe and fbio for each organic compound."); § III.E ("The TOXCHEM … model may also be used to calculate KL for the biological treatment unit, with the stipulations listed in Procedure 304B. Compound concentration measurements for each zone are used in Form XIII to calculate the f^{bio}. A copy of Form XIII is completed for each of the compounds of concern treated in the biological unit.").

there is no indication that Exxon uses Appendix C to calculate biodegradation rates, much less that it has made any effort to address these concerns.

Validation. As discussed above (*supra* at 24-25, 30), the Title V permit should require Exxon to perform periodic validation studies to confirm the accuracy (or inaccuracy) of TOXCHEM estimations of VOC emissions from WCLA-ONSITES and OFFSITES. LDEQ, however, "does not believe periodic validation studies are necessary" "[b]ecause TOXCHEM is an EPA-accepted model that … utilizes site-specific wastewater characteristics and process design and operating information to calculate air emissions." RTC at 14. Regardless whether TOXCHEM is an "EPA-accepted model" and regardless whether it "utilizes site-specific wastewater characteristics and process design and operating information," EPA itself recognizes that the use of predictive modeling programs such as TOXCHEM can result in inaccurate emissions calculations, as well as the need to conduct periodic validation studies to confirm the accuracy of—or identify inaccuracies in—emission calculations from these predictive modeling programs. *See* Emissions Protocol at 7-9; *see also id.* at 7-2 ("Although successful use of the available predictive models has been demonstrated, reporting facilities have expressed concerns regarding … accuracy …."). EPA explains that "poor comparisons" between predictive modeling and validation studies "could be the result of incorrect assumptions or errors in the model"—and that, "[i]f corrective actions are necessary, a review of the constants and site-specific variables" from the modeling "should be conducted." *Id.* Thus, EPA correctly ranks predictive modeling with site-specific factors but without validation as being less accurate than use of such modeling followed by validation. *See id.* at Table 7-1.

Validation is especially needed here because of the highly variable nature of VOC emissions from Exxon's wastewater treatment system and because of the issues with TOXCHEM identified above: most of the program's underlying emission estimation methods are based on theoretical or empirical simplifications of very complex wastewater treatment processes (*see supra* at 24-25). Sahu Decl. at ¶ 40. Further, validation is especially needed if Exxon's Title V permit continues not to require Exxon to measure flow and VOC concentrations at representative locations in the treatment train or frequently enough, and if the permit continues not to require the use of site-specific biodegradation rates. *Id.*

Measurement of VOC concentration and flow at representative locations. As discussed above (*supra* at 25-26, 30-31), to ensure compliance with the VOC limits for WCLA-ONSITES and OFFSITES, the Title V permit should require Exxon to monitor VOC concentrations in the wastewater and flow at various representative locations in the treatment train. Petitioners specifically commented that Exxon "should … be required to … monitor wastewater flow and pollutant concentration in the wastewater at representative portions of the wastewater treatment stream." Comments at 8. Similarly, Petitioners commented, regarding the 2002 TOXCHEM modeling that Exxon used to establish the WCLA-ONSITES and OFFSITES limits, that "Exxon has not indicated where in the wastewater treatment train it measured flow rate and pollutant concentration, and Exxon's sampling location(s) could be in areas that yield results that are not representative of flow and concentration in other important areas of the treatment train." *Id.* at 7.

LDEQ did not respond to this first significant comment, in violation of 40 C.F.R. § 70.7(h)(6). Apparently in response to the second of these comments, LDEQ stated that the "sampling" used to establish the limits in the first place was conducted at some unspecified location "downstream of the wastewater collection and equalization tanks" and that "flow was measured at LPDES Outfall 001." RTC at 12. Even if the location of this VOC concentration sampling done roughly two decades ago was clear from LDEQ's response (it is not), that location may not be the same location that Exxon currently measures VOC concentrations. Further, there is no indication that sampling at some unspecified location "downstream of the wastewater collection and equalization tanks" was done at representative locations in the treatment train.[95] Sahu Decl. at ¶ 41. In particular, it does not appear that Exxon measured VOC concentration at the influent of the highest emitting units in the wastewater treatment train—the Aggressive Biological Treatment unit, BIOX Aeration units, Pretreat Air Flotation units, Rain Basins 1-2, or "CPS." Monitoring at these locations is required to ensure compliance with the hourly and annual VOC limits for ONSITES and OFFSITES. *See supra* at 26. Finally, as discussed above, to ensure compliance with the VOC limits, flow should be measured at the same points in the treatment train that VOC concentration in the wastewater is measured—not at Outfall 001. *See supra* at 25-26.

The frequency of monitoring. As discussed above (*supra* at 26-28, 30-31), the proposed Title V permit does not require Exxon to monitor VOC concentrations or flow frequently enough to ensure compliance with the VOC limits for WCLA-ONSITES or OFFSITES. LDEQ asserts that the "input parameters for each component within the wastewater treatment system are prescribed by [TOXCHEM]; thus, it is not necessary for this information to be specified in the permit." RTC at 13. TOXCHEM, however, does not specify the frequency or location of monitoring. Sahu Decl. at ¶ 42.

LDEQ also argues that "continuous/hourly monitoring" of all parameters "is not warranted." RTC at 14. The Department explains its position as follows: "The commenter recognizes that is appropriate to reduce the frequency of monitoring once the variability of a parameter can be reasonably determined. Such is the case here. ExxonMobil has decades of monitoring and sampling data collected under a variety of operating conditions such that the ranges of chemical concentrations in the influent wastewater and other relevant parameters (e.g., concentration of return activated sludge) has been well established." *Id.*

To begin with, LDEQ mischaracterizes Petitioners comments. Petitioners did not "recognize[] that is appropriate to reduce the frequency of monitoring *once the variability of a parameter can be reasonably determined*." Petitioners instead commented: "If *hourly sampling* shows that VOC concentrations *are relatively constant* (*i.e.*, they don't vary by more than an appropriate specified percentage from day to day), then the frequency of sampling for the VOC concentration levels *could be reduced to daily, or perhaps even weekly* if the concentrations

[95] Without any details, LDEQ states that "[u]se of this location allow[ed] ExxonMobil to account for the water and water treatment chemicals added to the system downstream of the wastewater collection and equalization tanks." RTC at 12.

show *almost no variability*." Comments at 8-9 (emphasis added). As this emphasized language from the comments make clear, Petitioners only suggested that, if hourly sampling of VOC concentrations showed little variability, then the frequency of monitoring that parameter could be reduced to daily—or in limited circumstances with almost no variability, weekly.[96]

Here, however, Exxon is only required to monitor ONSITES VOC concentrations in the wastewater monthly (and at some unspecified intervals for OFFSITES)—far less often than hourly, daily, or weekly. And Exxon is only required to monitor flow at some unspecified intervals, which could be as infrequently as monthly (or even less frequently for OFFSITES). Further, LDEQ does not indicate how often or where in the treatment stream Exxon has monitored in the past. Any past monitoring that was not frequent enough (*e.g.*, only monthly) or not done at representative locations in the treatment train would fail to detect the variability of the underlying inputs for calculations, such as VOC wastewater concentration and flow. Sahu Decl. at ¶ 43. Also, importantly, LDEQ points to no data showing that the VOC concentrations—or other parameters—are not variable or show little variability. Instead, the Department, without any support, only baldly claims that Exxon's unspecified "decades" of data has established the "ranges of chemical concentrations … and other relevant parameters." It is unclear whether even LDEQ has seen this unspecified data. Even if Exxon knows the "ranges," those ranges of VOC concentration and other relevant parameters could exhibit great variability. Sahu Decl. at ¶ 43. As discussed above (*supra* at 27), VOC concentration in the wastewater and flow are highly variable and can easily change over short periods of time depending on operational conditions at the refinery. Finally, as discussed above (*supra* at 27-28), Exxon's DMR reports show that flow from the wastewater treatment system is variable.

In a footnote, LDEQ also asserts that "incoming flow to WCLA-OFFSITES is mainly stormwater, and actual emissions are typically very low." RTC at 14, n.28. The Department adds: "For example, year-to-date VOC emissions from this source total less than 1 ton. Thus, comprehensive monitoring is not necessary or reasonable …." *Id.* LDEQ, however, points to no actual data to support its assertion that emissions from OFFSITES are "typically" low. Nor does LDEQ explain what qualifies as "very low," other than for the 2020 year-to-date data. Further, regardless what the 2020 year-to-date VOC emissions from OFFSITES were as of the time that LDEQ wrote its response to comments and regardless whether those emissions are "typically" low, there is no reason that the VOC emissions from OFFSITES could not be very high—to the point of exceeding the VOC permit limits—in other years, depending on conditions such as spills and other upsets upstream of the central process sewers. Sahu Decl. at ¶ 44. In fact, the very high VOC limits for OFFSITES—23.62 average lb/hour and 103.47 tons/year—show that emissions from this portion of the wastewater treatment system can be high in a given year. *Id.* Presumably Exxon would not seek such high limits if it did not expect significant VOC emissions from OFFSITES, which includes water from the central process sewers and wet gas scrubber settling ponds (August 7, 2019 email from R. Wyatt to S. Pusateri at PDF p. 5). Also, if Exxon is not

[96] After consulting with Dr. Sahu about the newly-inserted monitoring requirements for ONSITES in the proposed permit, Petitioners have determined that daily sampling of VOC concentration is adequate—giving Exxon the ability to reduce the frequency to weekly if the daily sampling shows little variability. *See supra* at 30-31.

monitoring frequently enough or at the correct locations (*e.g.*, if it is measuring VOC concentration after it has been diluted by stormwater coming into the system) and is not validating the accuracy of its TOXCHEM calculations through regular validation studies, that would also underestimate emissions from OFFSITES. *Id.*

Variability. Even though LDEQ "acknowledges that emissions from ExxonMobil's wastewater treatment system can be highly variable," the Department asserts that the "permitted [state-only] rates of individual HAPs do not signify that VOC limits can 'easily be exceeded in any given year.'" RTC at 10. LDEQ adds: "That the sum of the individual HAP emissions exceeds total VOC emissions is a product of how potential HAP emissions were calculated specifically to address variability …. However, aggregate (VOC) HAP emissions must comply with the annual and hourly limits for total VOC." *Id.* This response merely proves Petitioners' point (*supra* at 23-24) that the wastewater treatment system's VOC and VOC HAP emissions are highly variable and thus require strong monitoring and emission calculation requirements. And the fact that "address[ing] variability" resulted in VOC HAP limits for ONSITES totaling over 540 tons/year—roughly 70% higher than the federally-enforceable 321.00 tons/year limit for total VOCs—does show that the ONSITES 321.00 tons/year limit could easily be exceeded. Sahu Decl. at ¶ 45.

That total VOC limits were calculated using a "contingency factor" of 1.294 (RTC at 12) does not make it any less likely that the ONSITES (or OFFSITES) annual and average hourly VOC limits could be exceeded, as discussed in Dr. Sahu's declaration at paragraphs 46-47. A 30 percent "contingency factor" is a rather small one—and is especially small given the highly variable nature of wastewater VOC emissions (which LDEQ and Exxon concede) and Exxon's own recognition that the WCLA-ONSITES units are capable of emitting VOC HAPs at far higher combined rates than the limits for total VOCs.

Further, Exxon's TOXCHEM model runs in 2002 that were used to calculate the VOC limits for ONSITES and OFFSITES (*see* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF pp. 5, 13-14) likely underestimated the VOC emissions from ONSITES and OFFSITES. As discussed above (*supra* at 37), it does not appear that the sampling for either flow or VOC concentration in the wastewater was conducted at representative locations in at least the ONSITES treatment train. In addition, the VOC concentration sampling used in the 2002 TOXCHEM modeling was not conducted frequently enough. LDEQ states that the VOC limits "were based on operational data and weekly wastewater sampling conducted over a 26-month period to ensure that variability in the wastewater influent and operations was captured." RTC at 12. Weekly sampling, however, would not be frequent enough to capture the variability of VOC emissions from the wastewater treatment system—especially without a showing that previous sampling was done more frequently (*i.e.*, daily) and that the more frequent sampling showed very little variability. Further, if Exxon's monitoring and emission calculation methods in 2002 suffered from the additional same problems that the proposed permit suffers from (*i.e.*, if Exxon did not use site-specific biodegradation rates and did not perform any studies to validate its TOXCHEM calculations), the company's calculations would likely have further

underestimated—and would not have accounted for the variability of—VOC emissions from ONSITES and OFFSITES.

Even if a 30% cushion in the VOC limits was adequate to ensure that the limits would not be exceeded as of 2002 (it was not), conditions could have—and in fact have—changed in the wastewater treatment system in the almost two decades since that time, affecting the amount of VOCs emitted by the system. *See* Sahu Decl. at ¶ 48. Among other things, changes in the refinery such as changes in the crude slates and process units could affect VOC concentrations in the wastewater. In fact, the permit record shows that Exxon requested and received revised, significantly higher ONSITES limits for two individual VOC HAPs (hexane and methanol)—presumably because either conditions changed or because Exxon's original calculations did not adequately predict the variability of these VOC HAPs. *See* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF p. 14. The limits for both pollutants more than doubled: the hexane limit was increased from 4.87 to 11.24 tons/year in 2014, and the limit for methanol was increased from 7.95 to 16.48 tons/year in 2006. *Id.* And the flow through the wastewater treatment system has also increased in the past roughly two decades: in 2002, the average flow rate (which was measured at Outfall 001, RTC at 12) was 12.96 MGD, but today the flow rate at that outfall is much higher, with monthly average flows in April through October 2020 all above 13.6 MGD, reaching as high as 14.812 in May 2020.[97] *See* August 7, 2019 email from R. Wyatt to S. Pusateri at PDF p. 13; *supra* at 27-28.

III. THE PROPOSED PERMIT'S MONITORING AND EMISSION CALCULATION REQUIRMENTS CANNOT ENSURE COMPLIANCE WITH THE HOURLY AND ANNUAL PM LIMITS FOR THE UTILITY UNIT'S COOLING TOWER.

The proposed permit also cannot ensure compliance with the following federally-enforceable PM10 and PM2.5 limits for WCLA-ONSITES: 4.05 average lb/hour, 4.95 max lb/hour, and 17.75 tons/year. *See* Proposed Permit's Emission Rates for Criteria Pollutants and CO2e at 1. Despite Petitioners' comment that the draft permit did not contain any provisions to ensure compliance with these PM limits (Comments at 4, 8), the proposed permit also contains no provisions addressing how Exxon is to monitor or calculate PM emissions from ONSITES (nor any reporting or recordkeeping requirements related to PM emissions from ONSITES). Because the proposed permit contains no such provisions addressing the PM emissions, it cannot possibly ensure compliance with the hourly or annual PM limits for ONSITES, in violation of the requirements from 40 C.F.R. §§ 70.6(a)(3)(i) and/or 70.6(c)(1), as well as the requirements from 42 U.S.C. §§ 7661c(a) and 7661c(c).[98]

[97] The only DMRs Petitioners reviewed were those from April to October 2020. Other DMRs could show even more variability.

[98] As with the VOC limits discussed above, the proposed Title V permit does not specify the authority for, or origin of, the PM limits for WCLA-ONSITES, *i.e.*, whether they are limits from a New Source Review or Prevention of Significant Deterioration permit, the Louisiana State Implementation Plan, or some other applicable requirement. The limits are federally enforceable because nothing in the permit designates the limits as "state only." *See* 40 C.F.R. § 70.6(b)(1)-(2) (all terms and conditions in a Title V permit are

In its response to comments, LDEQ indicates for the first time that PM emissions at WCLA-ONSITES "originate from the cooling tower that is part of the wastewater treatment system and used to maintain the wastewater within acceptable temperature ranges for optimal microbial activity within the biological treatment system." RTC at 12. LDEQ adds that Exxon "monitors the flow rate through the cooling tower continuously and the total dissolved solids (TDS) concentration weekly to demonstrate compliance with PM_{10} and $PM_{2.5}$ limitations."[99] *Id.* This monitoring, however, cannot ensure compliance with the hourly or annual PM limits because it is not listed in the permit. Any monitoring or calculation methods for these limits must be clear on the face of the Title V permit.

Even if the permit did include these monitoring requirements, they could not ensure compliance with the hourly and annual PM limits for ONSITES for two separate reasons, as discussed in Dr. Sahu's declaration at paragraphs 49-54.

First, this monitoring could not ensure compliance with the PM limits because LDEQ has not specified how the results of the flow monitoring and TDS sampling are then to be used to calculate PM emissions from the cooling tower. PM emissions from cooling towers are generated when cooling water evaporates and leaves particulate matter formed by the crystallization of dissolved solids. The primary drivers of PM emissions from cooling towers are flow rate of the cooling water, the amount of TDS in the cooling water, and the drift rate. Once Exxon has the TDS results and flow data, are there assumptions, emission factors, and/or other parameters that are used to calculate PM emissions? In particular, in its calculations of the PM emissions, Exxon may be taking into account certain manufacturer assurances—or making certain assumptions—regarding the drift rate, based on the control efficiency of any drift eliminators in the cooling tower. The permit must list any assumptions, manufacturer assurances, emission factors, and/or other parameters that are used to calculate PM emissions.

If Exxon relies on certain manufacturer design assurances or other assumptions regarding drift rate and/or control efficiency of any drift eliminators, the permit would need to establish a mechanism to validate that these assurances or assumptions are accurate. In particular, if not properly maintained, the baffles for drift eliminators can deteriorate, become misaligned, break,

---

federally enforceable, except for those specifically designated as not being federally enforceable).

Because we do not know the authority for the limits, it could be that the underlying limits were originally accompanied by monitoring or emission calculation requirements that are not listed in the permit, in violation of § 70.6(a)(3)(i)(A)—or that the limits were never accompanied by any monitoring requirements, in which case § 70.6(a)(3)(i)(B) would mandate that LDEQ add sufficient monitoring, reporting, recordkeeping, and other requirements into the Title V permit to ensure compliance with the limits. Or, if the limits were originally accompanied by monitoring or other related requirements but those requirements cannot ensure compliance with the limits, then § 70.6(c)(1) would require LDEQ to supplement the original monitoring and other requirements.

[99] LDEQ also states that "TOXCHEM is not (and cannot be) utilized for this purpose." LDEQ is wrong. TOXCHEM can be used to determine PM emissions from cooling towers. Sahu Decl. at ¶ 50. *See also* https://www.hydromantis.com/Toxchem-unit-processes.html at "Miscellaneous."

or wear out over time, and passages can become clogged with deposits. All of this can result in drift rates that are much higher than assumed or stated in original manufacturer assurances. This, in turn, can lead to much higher actual PM emissions than those calculated using inaccurate manufacturer assurances or assumptions regarding drift rate.

Second, monitoring TDS concentration weekly is not frequent enough to ensure compliance with either the hourly or annual PM limits—especially the maximum hourly limit. The TDS levels in refinery cooling towers can vary greatly from hour to hour, depending on cooling water quality (which can change due to additives to reduce algae and fungi in the cooling water system, anti-corrosion agents, and the like, all of which can increase TDS), what processes at the refinery the cooling water is being used for, and the TDS content in the water before additives are added and before it is used to cool processes at the refinery. Sahu Decl. at ¶ 54; *see also* AP 42, Fifth Edition, Compilation of Air Pollutant Emissions Factors, Volume 1: Stationary Point and Area Sources, Chapter 13.4 at Table 13.4-2 (listing summary statistics for TDS content in circulating water, and listing range of TDS values of 380 - 91,000 ppm). Weekly sampling cannot capture the variability of TDS and thus cannot ensure compliance with the annual, let alone hourly, PM limits for the cooling tower.

As with the VOC limits for the wastewater treatment system, environmental justice concerns here mandate increased, focused attention to ensure that all Title V requirements—especially monitoring and emission calculation requirements—have been complied with for the hourly and annual PM limits for WCLA-ONSITES. *See supra* at 5-11.

A. EPA Should Require LDEQ to Take Specific Steps Revise the Title V Permit to Ensure Compliance with the PM Limits for the Cooling Tower.

As discussed in Dr. Sahu's declaration at paragraph 55, to remedy the above-described problems and ensure compliance with the hourly and annual PM limits for the cooling tower, EPA should require LDEQ to revise the proposed Title V permit in the below specific ways. Strong monitoring and reporting requirements are especially important here—and EPA should provide specific instruction to LDEQ to require the below permit changes—because of the environmental justice concerns noted above and the variable nature of PM emissions from cooling towers.[100] *See supra* at 5-11, 41-42.

First, the Title V permit must specify the exact monitoring and emission calculation methods (including any assumptions regarding drift rate) to be used to calculate PM emissions from the cooling tower. If Exxon is relying on certain manufacturer assurances or other assumptions regarding drift rate and/or control efficiency of any drift eliminators, the permit

[100] Even if EPA does not specifically instruct LDEQ to require all of the these permit changes, EPA's order responding to this petition should—because of the environmental justice concerns present here and variable nature of PM emissions from cooling towers— give LDEQ explicit direction on how it might remedy the permit's inability to ensure compliance with the cooling tower's PM limits, rather than simply leaving it to LDEQ to further explain why it thinks that the monitoring discussed in its response to comments can ensure compliance with the tower's PM limits.

should require semi-annual inspections and maintenance of the drift eliminators, along with detailed requirements for maintenance per manufacturer's instructions. In addition, LDEQ must establish in the permit record that any relied-upon assumptions or manufacturer assurances regarding the drift rate are accurate.

Second, the Title V permit should require Exxon to continuously (or at least hourly) monitor TDS.

B. During the Comment Period, Petitioners Could Not Have Raised Their Objections Regarding the Monitoring Requirements for PM from the Cooling Tower.

LDEQ's draft Title V permit and statement of basis did not indicate that the 4.05 average lb/hour, 4.95 max lb/hour, and 17.75 tons/year PM limits in question were for a cooling tower. Nor did the draft permit materials give any hint regarding the monitoring or emission calculation methods that Exxon uses to determine PM emissions from the cooling tower. *See* Comments at 4. Only after the close of the comment period did LDEQ explain in its response to comments that "[p]articulate matter emissions originate from the cooling tower that is part of the wastewater treatment system."[101] RTC at 12. And only after the close of the comment period did LDEQ explain that Exxon "monitors the flow rate through the cooling tower continuously and the [TDS] concentration weekly to demonstrate compliance with [PM] limitations." *Id.*

Because Petitioners could not reasonably have anticipated during the comment period that the PM limits in question were for a cooling tower or how Exxon monitors the PM emissions, it was impracticable for Petitioners to raise in comments their objections regarding this monitoring and Exxon's emission calculation methods. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d). *See also Portland Cement Ass'n*, 665 F.3d at 186 ("We should be especially reluctant to require advocates for affected … groups to anticipate every contingency. To hold otherwise would encourage strategic vagueness on the part of agencies and overly defensive, excessive commentary on the part of interested parties ...."); *see also Chesapeake Climate Action Network*, 952 F.3d at 320 ("It was simply impracticable for Petitioners to predict how EPA would cure the missing [] component and then submit preemptive attacks on such hypothetical solutions."); *Clean Air Council*, 862 F.3d at 10 (holding that final rule fails logical outgrowth test if commenters "would have had to divine the agency's unspoken thoughts ….") (citation and internal quotation marks omitted). Further, the grounds these objections arose after the comment period, when LDEQ explained for the first time (in its response to comments) that the PM limits were for a cooling tower and how the PM emissions are monitored. *See* 42 U.S.C. § 7661d(b)(2); 40 C.F.R. § 70.8(d).

[101] LDEQ's response to comments cites to PDF p. 147 of Exxon's application for the Title V renewal. RTC at 12. That page of the application says nothing regarding any PM emissions from the cooling tower or how the tower's PM emissions are monitored or calculated.

IV. IN VIOLATION OF 40 C.F.R. § 70.7(A)(5), LDEQ FAILED TO PROVIDE A REASONED EXPLANATION FOR WHY THE PROPOSED PERMIT ENSURES COMPLIANCE WITH THE VOC AND PM LIMITS AT ISSUE HERE.

As Petitioners' comments explained (at page 6), in addition to the failure of the proposed Title V permit to ensure compliance with the hourly and annual VOC limits for WLCA-ONSITES and OFFSITES and the hourly and annual PM limits for WCLA-ONSITES (as discussed in the preceding pages), the permit and permit record are also deficient for the independent and separate reason that LDEQ has not adequately explained how the proposed Title V permit provisions can ensure compliance with these limits. LDEQ's statement of basis does not even discuss why the permit's monitoring, reporting, or other requirements are adequate to ensure compliance with these limits. And, as discussed above, LDEQ's response to comments does not provide a reasoned explanation for how the proposed Title V permit provisions can ensure compliance with these limits.

LDEQ's failure to provide a reasoned explanation in the permit record for why it believes the permit conditions are sufficient to assure the refinery's compliance with these hourly and annual VOC and PM limits violates 40 C.F.R. § 70.7(a)(5)'s requirement that permitting authorities "provide a statement that sets forth the legal and factual basis for the draft permit conditions." *See also* Mettiki Order at 7-8 ("In addition to including permit terms sufficient to satisfy EPA's part 70 monitoring requirements, permitting authorities must include a rationale for the monitoring requirements selected that is clear and documented in the permit record.") (citing § 70.7(a)(5) and prior Title V orders).

In violation of Title V requirements (as reflected in 40 C.F.R. § 70.7(h)(6)), LDEQ did not respond to Petitioners' significant comment raising this precise objection regarding LDEQ's failure to offer a reasoned explanation for why the monitoring and other permit requirements ensure compliance with these VOC and PM limits. Thus, Petitioners cannot "explain how [LDEQ's] response to the comment is inadequate to address the issue raised in the public comment." *See* 40 C.F.R. § 70.12(a)(2)(vi).

Respectfully submitted this 12th day of February 2021,

/s/ Emma Cheuse
Emma Cheuse
Earthjustice
1001 G St. NW Suite 1000
Washington, D.C. 20001
(202) 667-4500 ext. 5220
echeuse@earthjustice.org

/s/ Corinne Van Dalen
Corinne Van Dalen
Earthjustice
900 Camp Street, Unit 303
New Orleans, LA 70130
(415) 283-2335
cvandalen@earthjustice.org

/s/ Gabriel Clark-Leach
Gabriel Clark-Leach
Environmental Integrity Project
1206 San Antonio Street
Austin, Texas 78701
(512) 637-9478
gclark-leach@environmentalintegrity.org

/s/ Patton Dycus
Patton Dycus
Patton Dycus Law, LLC
315 W. Ponce de Leon Ave., Suite 842
Decatur, Georgia 30030
(404) 446-6661
pattondycuslaw@gmail.com

CC, without Attachments:

Bryan Johnston, Administrator, LDEQ, Air Permits Division, bryan.johnston@la.gov
Shannon Pusateri, Environmental Chemical Specialist III, LDEQ, Air Permits Division, Shannon.Pusateri@la.gov
Jeff Robinson, Branch Chief, EPA Region 6, robinson.jeffrey@epa.gov
Brad Toups, EPA Region 6, Toups.brad@epa.gov
Brady J. Fontenot, Air Permits & Compliance Section Supervisor, ExxonMobil Fuels & Lubricants Company Baton Rouge Refinery, brady.j.fontenot@exxonmobil.com
Russell O. Williams, Ill, BRCX Air Permitting Renewals Coordinator, ExxonMobil Fuels & Lubricants Company Baton Rouge Refinery, russell.o.williams@exxonmobil.com

LIST OF EXHIBITS

1) Comments of Louisiana Bucket Brigade, EIP, and Earthjustice on draft Title V permit for Exxon Baton Rouge refinery Utilities Unit

2) Exxon Reforming Complex – Air Permit Briefing Sheet from proposed Title V permit

3) ERIC report of actual VOC emissions within three miles of Exxon Baton Rouge refinery

4) Feb. 18, 2020 Letter of Notification from Exxon to LDEQ

5) Table of Exxon Baton Rouge NESHAP fenceline benzene data

6) Declaration of Dr. Ranajit Sahu

7) LPDES Permit for Exxon Baton Rouge refinery

8) March 5, 2020 Letter from Exxon to LDEQ, requesting a “letter of no objection”

9) April-October 2020 Discharge Monitoring Reports