



August 1, 2017

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Submitted via email to cdphe.aqcc-comments@state.co.us and hand-delivery

Earthjustice submits these comments on behalf of Colorado Latino Forum, Colorado People's Alliance, Cross Community Coalition, Denver Community Planning Council, Elyria & Swansea Neighborhood Association, Protégéte, Sierra Club, Western Resource Advocates, and WildEarth Guardians ("Commenters"). These comments respond to the Colorado Air Quality Control Commission's ("Commission") Notice of Public Comment Hearing Regarding Suncor Energy (U.S.A.), Inc. ("Suncor"), Commerce City Refinery Plants 1 and 3 – Adams County, Title V Operating Permit Modification (960PAD120), and are timely submitted as directed in that notice and pursuant to Colorado regulations. 5 Colo. Code Regs. § 1001-1:VII(D)(12) (Procedures for Public Comment Hearings on Permit Applications).¹ Submitted along with these comments is a Technical Report by Dr. Ranajit Sahu ("Sahu Report").²

COMMENTS SUMMARY

Suncor is one of the largest sources of air pollution in the Denver-metro area. It has a poor compliance history with numerous documented permit violations and several recent accidents have forced community members to shelter in place. The communities closest to Suncor are already overburdened with many other sources of pollution, and have high Latino and low-income populations; a textbook case of environmental injustice. Commenters have members and constituents living in the area affected by the Suncor refinery who are concerned about air pollution and safety threats caused by Suncor.

¹ By email to Joel Minor dated July 20, 2017, Ms. Theresa Martin confirmed that written comments would be accepted by the Commission through the end of the public comment hearing, consistent with this regulation.

² Due to their file size, appendices with exhibits to these comments and Dr. Sahu's report will be provided to both the Commission and the Division on USB drives during the August 2, 2017 hearing. We can provide an additional USB drive by mail if the Division would like one.

Despite the Colorado Air Pollution Control Division (“the Division” or “APCD”) already having approved dozens of modifications to the Title V Permit for Suncor Plants 1 and 3 since it was last renewed in 2012, Suncor has requested a dozen more modifications. At the very least, because the Division is modifying Suncor’s permit, it must ensure that the permit is in full compliance with all current federal regulations. These include the Environmental Protection Agency’s (“EPA”) 2015 regulations requiring fence-line monitoring, which Commenters urge the Division to robustly implement so that community members can have adequate data about their exposure to dangerous carcinogens like benzene. Additionally, the Division must incorporate chemical disaster preparedness regulations EPA adopted earlier this year to protect the community and Suncor workers from potentially deadly accidents. Finally, the Division must incorporate requirements from Colorado’s recently-submitted ozone State Implementation Plan into the permit, including a more robust analysis of what pollution controls constitute Reasonably Available Control Technology than has been conducted to date.

Moreover, the Division should terminate the historical artifact of the Suncor Refinery having two Title V permits, one for so-called Plants 1 and 3, and one for Plant 2. For over a decade, Suncor has controlled and operated a single, increasingly intertwined refinery. It should have one Title V permit, not two.

The complexity of Suncor’s operations has made it incredibly difficult for the public to follow prior requests and to understand Suncor’s newest request for dozens of permit modifications. Although the Division staff have provided Commenters with many public records about Suncor, the records provided have not been sufficient to demonstrate or allow for a meaningful analysis of Suncor’s currently-proposed modifications. The Division should provide the public with sufficient information and analysis necessary to assure that the public can understand, and comment on, Suncor’s proposed modifications to its permit, as well as future similar proposals.

The dozens of modifications to Suncor’s permit in recent years have come against a backdrop of the refinery steadily increasing production, and broadening its inputs to include dirtier crudes, such as tar sands and heavy oil from the Bakken formation. To Commenters’ knowledge, the Division has never performed a cumulative health and safety assessment about what these changes mean for the health of community members, and should do so now to inform the Division’s and the public’s review.

One modification Suncor requests would, for the first time ever, set a permit limit for hydrogen cyanide emissions from the refinery. This limit makes no attempt to reduce hydrogen cyanide emissions, and is apparently intended only to relieve Suncor of its reporting obligations for this dangerous pollutant. The Division should not enable this attempt to avoid reporting requirements under the Emergency Planning and Community Right to Know Act and the Comprehensive Environmental Response, Compensation, and Liability Act.

Suncor has classified all twelve of its proposed permit modifications (and indeed, all of the dozens of its prior modifications) as below the significance limit for purposes of the Clean Air Act. But a careful look at Suncor’s analysis, assumptions, and the documentation in the record suggests that many are not truly below the significance limit or that the Division has not

shown that they are below the significance limit. It is essential for the community that all Clean Air Act requirements be met, including ensuring that any significant increases are appropriately evaluated so that the necessary additional controls can be included in the permit. Multiple modifications that Suncor has proposed, including the modifications to the Tank Degassing Thermal Oxidizer, the AU Flare, and the East-West Transfer, are not supported by adequate data to prove that they should be able to avoid analysis of the emission increases they will cause, pursuant to the Prevention of Significant Deterioration (“PSD”) and nonattainment New Source Review (“NSR”) requirements. Moreover, evidence in the record suggests that Suncor’s proposed Hydrodesulfurizer “Rerate” project is in fact just a component of a prior set of modifications that the Division previously approved, which, if aggregated, would exceed the PSD or nonattainment NSR thresholds. By Suncor’s own admission when it originally proposed these modifications, they increase the refinery’s emissions above the significance threshold—unless they are split up into multiple modifications, as Suncor has done here. All related modifications must be considered together, requiring reopening of those prior modifications to ensure the Division meets Clean Air Act requirements.

Particularly alarming is the fact that the Division has not required an adequate review of or control for the emissions increases that the Major Process Vent (“MPV”) modification will cause. Suncor’s methodology for showing that the MPV modification falls below the significance threshold rests on the illegal claim that unpermitted emissions from accidents and malfunctions (including, under Suncor’s own reasoning, incidents such as the October 2016 release that forced nearby community members to shelter in place) should be effectively included in the baseline. In other words, Suncor is claiming that the MPV modification (and apparently other current and future modifications) will not increase emissions very much beyond the status quo because Suncor’s emissions are already very high—as a result of illegal, unpermitted emissions. The Division cannot approve of this blatant violation of the letter and spirit of both federal and Colorado statutes and regulations. Communities need health and safety protections from emission spikes and accidental releases, and the Division should follow through on its original concern about this issue, to ensure that proper flare gas recovery or other Best Available Control Technology (“BACT”) or Lowest Achievable Emission Rate (“LAER”) is put in place to address additional emissions that this modification will cause.

In sum, Commenters respectfully request that the Commission direct the Air Pollution Control Division of the Colorado Department of Public Health and the Environment (“CDPHE”) to address the concerns described herein, to ensure a holistic evaluation of health risk and impacts from this refinery, and to ensure that both of the refinery’s permits are updated and include sufficient monitoring, testing, and other terms and conditions needed to assure and strengthen oversight of compliance with applicable clean air standards, regulations, and requirements, including public information and transparency. Further information on these comments is provided below and in the accompanying Sahu Report, and available by request.

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INTRODUCTION

The Suncor Refinery is located in Colorado’s most overburdened neighborhoods. It is already one of the largest sources of pollution in the state, and it routinely violates its air pollution permits. Community members, including Commenters’ members, live near the refinery and are repeatedly forced to shelter in place, breathe unhealthy air, and live in fear of refinery accidents. Given Suncor’s track record, the community’s demographics, and Colorado’s precarious ozone nonattainment status, it is imperative that the Division carefully scrutinize Suncor’s request to increase its pollution even further. Moreover, the Division must provide transparent public communication about Suncor’s current and proposed air pollution to ensure that the refinery’s neighbors, who lack many of the resources found in more affluent communities, can fully understand the health and safety implications of actions taken by state regulators.

BACKGROUND ON THE COMMUNITY AND LOCAL AIR QUALITY

I. Suncor

Suncor is a massive refinery that the Division classifies as consisting of three facilities. Plants 1, 2, and 3.³ Suncor acquired what it classifies as Plants 1 and 3 from ConocoPhillips in 2003.⁴ It acquired what it now classifies as Plant 2 from Valero in 2005.⁵

Suncor’s emissions represent one of the largest sources of air pollution in the Denver-Metro area.⁶ Table A, below, adapted from a spreadsheet provided by the Division, shows

³ See generally CDPHE, Suncor Energy (U.S.A.) Inc. – Commerce City Refinery, Plant 1 (West Plant) and Plant 3 (Asphalt Unit) Draft Operating Permit at 1 (May 11, 2017), https://www.colorado.gov/pacific/sites/default/files/AP_SuncorEnergy%28U.S.A.%29CommerceCityMay11_Perm.pdf.

⁴ ConocoPhillips refinery sold for \$150M, Denver Business Journal (Apr. 15, 2003), <https://www.bizjournals.com/denver/stories/2003/04/14/daily13.html>.

⁵ Steve Raabe, Suncor purchases Valero oil refinery, Denver Post (June 1, 2005), <http://www.denverpost.com/2005/06/01/suncor-purchases-valero-oil-refinery/>.

⁶ See EPA, 2015 TRI Factsheet: County – Adams County, CO (updated June 2, 2017),

Suncor’s reported emissions of a variety of pollutants for the past decade. Alarming, emissions of several pollutants, including volatile organic compounds (“VOCs”) have increased significantly in recent years.

Table A, Total Suncor Emissions, 2006–2016 (tpy)⁷

Year	Toluene	N-Hexane	Xylenes	Benzene	NOx	SO ₂	VOCs
2006	0.59	3.7095	0	1.72065	758.07	1497.88	1035.503
2007	0	0	0	0.373375	741.524	609.16	287.9746
2008	0	0	0	0.373375	757.954	673.54	261.3956
2009	0	0	0	0.290505	916.7649	582.8012	250.0378
2010	0	1.2853	0	0.324505	837.3996	406.0165	293.6118
2011	0	3.4865	0	0.62463	670.4249	233.7468	315.1798
2012	0	3.4865	0	0.62463	670.4249	233.7468	315.1798
2013	0	1.62	0	1.64028	764.0674	216.899	423.5265
2014	1.112	12.499501	1.245	0.8521	776.4297	248.9436	389.6466
2015	1.131748	13.27943	1.312089	0.76805	562.643	183.1488	416.1139
2016	48.47715	76.262233	19.71539	35.14605	554.0995	398.639	560.0566

Suncor has repeatedly violated its air pollution permits, and has been subject to numerous enforcement actions as a result.⁸ Both EPA and CDPHE have documented Suncor’s history of

https://iaspub.epa.gov/triexplorer/tri_factsheet.factsheet?&pstate=CO&pcounty=adams&pyear=2015&pParent=TRI&pDataSet=TRIQ1 (Suncor is third largest overall pollution source in Adams County, and second largest air pollution source, with approximately 162,740 pounds of total pollution and 79,418 pounds of air pollution); *see also* EPA, *2015 TRI Factsheet: County – Denver, CO* (updated June 2, 2017), https://iaspub.epa.gov/triexplorer/tri_factsheet.factsheet?&pstate=CO&pcounty=denver&pyear=2015&pParent=TRI&pDataSet=TRIQ1 (by comparison, largest source of pollution in Denver County releases only 56,747 pounds of air pollution).

⁷ Adapted from Spreadsheet emailed to Joel Minor, Earthjustice, by Adam Wozniak, Colorado Air Pollution Control Division (July 19, 2017).

⁸ EPA, ECHO (Enforcement Compliance and History Online), *Detailed Facility Report* (last visited June 6, 2017), <https://echo.epa.gov/detailed-facility-report?fid=110032913024>; *see, e.g.*, EPA, *Conoco, Inc. Refinery Civil Judicial Settlement* (last updated Oct. 13, 2016), <https://www.epa.gov/enforcement/conoco-inc-refinery-civil-judicial-settlement> (covering previously owned Conoco portion of the Commerce City refinery); EPA, *Valero Refinery Settlement* (last updated Dec. 19, 2016), <https://www.epa.gov/enforcement/valero-petroleum-refinery-settlement> (covering previously owned Valero portion of the Commerce City refinery).

violating its permits.⁹ Suncor appears frequently in the Division’s quarterly enforcement reports.¹⁰ Table B below documents some recent enforcement cases against Suncor and the penalties Suncor has paid.

Table B, Recent CDPHE Enforcement Cases Against Suncor

Case No.	Violation	Case Opened	Case Closed	Penalty	Source Report
2011-049	NESHAP Subpart FF & NSPS Subpart QQ	8/6/11	Not provided	\$100,000	Q3 2013
2013-029	RACT Violations	2/19/13	12/18/15	\$0	Q1 2016
2014-122	Reporting & Emissions	12/3/14	6/7/17	\$46,785	Q3 2015 & Q2 2017
2014-123	Reporting & Emissions	12/3/14	6/7/17	\$171,240	Q2 2017
2016-119	Emissions & Recordkeeping	6/18/16	n/a	\$31,290	Q1 2017

Frequent accidents and other serious pollution releases have raised significant concerns in neighboring communities, with alarming orange clouds of smoke often seen rising above the refinery from miles away.¹¹ During an October 2016 incident, nearby residents were forced to shelter in place.¹² Less than six months later, in March 2017, flames shooting out of the refinery

⁹ EPA, *EPA Enforcement: National Petroleum Refinery Initiative* at 62 (Feb. 11, 2011), <https://www.epa.gov/sites/production/files/documents/refineryinitiative-powerpoint021111.pdf> (noting that Suncor Energy acquired the Denver, Colo. Refinery in 2003, later integrated with adjacent refinery acquired from Valero in 2005); *see, e.g.*, Colorado Air Compliance Tracking and Inventory System, *Enforcement Case Summary Report Without Comments* at 3 (Apr. 11, 2017), www.colorado.gov/pacific/sites/default/files/AP_EnfAct1stQtr2017.pdf (Suncor cited for enforcement action resolved in Jan. 2017).

¹⁰ Enforcement reports dating back to Quarter 1 of 2013 are available on the Division’s website, <https://www.colorado.gov/pacific/cdphe/enforcement-action-reports>.

¹¹ Bruce Finley, *Suncor oil refinery spewed hundreds of pounds of toxic gases over Denver—again—after Xcel power outage*, Denver Post (Mar. 16, 2017), <http://www.denverpost.com/2017/03/16/suncor-oil-refinery-toxic-gas-denver-xcel/>; Bruce Finley, *Suncor refinery accident released 75,600 pounds of sulfur dioxide, 150 times daily limit*, Denver Post (Oct. 28, 2016), <http://www.denverpost.com/2016/10/28/suncor-sulfur-dioxide-release/>; Kevin Simpson, *et al.*, *Suncor refinery power failure produces yellow plume, prompting safety measures*, Denver Post (Oct. 14, 2016), <http://www.denverpost.com/2016/10/14/commerce-city-suncor-hazmat/>; Ben Markus, *Commerce City Oil Refinery Beset By Violations*, Colo. Pub. Radio (Apr. 3, 2012), <http://www.cpr.org/news/story/commerce-city-oil-refinery-beset-violations>.

¹² *Suncor Energy to restart operations Saturday*, Fox 31 Denver (Oct. 14, 2016), <http://kdvr.com/2016/10/14/orange-chemical-cloud-coming-from-suncor-energy-plant-in-commerce-city/>; *see also* U.S. Dep’t of Energy, *Energy Assurance Daily 2* (Oct. 14, 2016), <https://www.oe.netl.doe.gov/docs/eads/ead101416.pdf>.

forced local officials to close Brighton Boulevard.¹³ During the March 2017 incident alone, Suncor exceeded its permitted limits for sulfur dioxide (“SO₂”) emissions alone by more than 500 pounds per hour.¹⁴

These impacts have very real impacts on community members. For example, Guadalupe, a Protégéte member, resides in Westminster Colorado with her three children and husband. Her husband is a construction contractor in the Denver Metro area. On the morning of October 14th, just like any other Friday, Guadalupe was getting ready to take her kids to the park after lunch to get some of their daily exercise. Just as Guadalupe was about to leave the house, she received an uneasy call from her husband warning her not to leave the house under any circumstance. Highway 270 was closed due to an accident in the refinery just as he was going on his lunch break in Commerce City, CO. He wasn’t very sure of what was happening, as he could just see a large amount of orange smoke coming out of the refinery, but one thing he was completely sure is that he did not want his family near that pollution. In that call he desperately wanted to ensure that she closed all windows and kept the kids playing in the living room. Since that day, they constantly worry when going on long walks away from the house, when they go to a Rapids Game at the Dick's Sporting Goods Park and even when they try to enjoy the outdoors at the Rocky Mountain Arsenal.

These incidents are nothing new at Suncor. In 2012, Suncor paid \$2.2 million to settle a lawsuit over its air pollution.¹⁵ In November 2010, new reports discussed a thick yellow cloud rising from the refinery.¹⁶ Nor are accidents at the refinery limited to air pollution. In 2005, a massive fire forced the refinery to shut down.¹⁷ In 2007, neighbors reported a smoking flare at the refinery just days after the Division issued a Compliance Advisory to Suncor because of over 70 violations of air pollution laws at the refinery between 2005 and 2007.¹⁸ In 2012, a malfunction in the FCCU released catalyst dust and forced a four-day shutdown.¹⁹ In 2011 and 2012, Suncor spilled over 785,000 gallons of toxic sludge into Sand Creek, resulting in benzene

¹³Anica Padilla, *Flames seen shooting from Suncor Refinery*, Fox 31 Denver (Mar. 12, 2017) <http://kdvr.com/2017/03/12/flames-seen-shooting-from-suncor-refinery-saturday-night/>.

¹⁴Suncor, *CDPHE Malfunction Reporting Form* (Mar. 13, 2017), <https://cbsdenver.files.wordpress.com/2017/03/cdphe-march-11-13-2017-plant-1-exceedances-1.pdf>.

¹⁵Bruce Finley, *Suncor refinery in Commerce City to pay for air-pollution violations*, Denver Post (Apr. 2, 2012), <http://www.denverpost.com/2012/04/02/suncor-refinery-in-commerce-city-to-pay-for-air-pollution-violations/>.

¹⁶Jeremy Nichols, *When You are Engulfed by a Cloud of Gas*, Huffington Post (Nov. 5, 2010), http://www.huffingtonpost.com/jeremy-nichols/when-you-are-engulfed-by- b_779324.html.

¹⁷U.S. Dep’t of Energy, *Energy Assurance Daily 2* (Dec. 19, 2005), <https://www.oe.netl.doe.gov/docs/eads/ead121905.pdf>.

¹⁸Rocky Mountain Clean Air Action, *Suncor Needs Refining* (Sept. 16, 2007), <http://denverozone.blogspot.com/2007/09/suncor-needs-refining.html>.

¹⁹U.S. Dep’t of Energy, *Energy Assurance Daily* at 3 (June 7, 2012), <https://www.oe.netl.doe.gov/docs/eads/ead060712.pdf>; Bruce Finley, *Suncor oil refinery back up after release of dust forced shutdown*, Denver Post (June 6, 2012), <http://www.denverpost.com/2012/06/06/suncor-oil-refinery-back-up-after-release-of-dust-forced-shutdown/>.

levels 24,000 times the drinking-water standards.²⁰ It eventually paid \$1.9 million to settle a lawsuit over the pollution.²¹

As demonstrated in the attached spreadsheet, since January 1, 2013, Suncor has filed at least 40 malfunction reports, and at least 21 permit deviation reports.²² This plethora of reports does not even represent a complete report of all upsets and accidents at Suncor during the period. Notably, no malfunction reports are available for the first half of 2013. Although the Quarterly Excess Emission Reports for Quarters 1 and 2 of 2013 both state that a list of malfunction reports is attached as an Appendix, the Appendix is not available on CDPHE's Web Drawer system. In addition to these missing reports, there are numerous startup/shutdown reports, root cause failure analyses, and consent decrees documenting Suncor's permit violations available in the Web Drawer. Even this incomplete dataset reveals that Suncor released at least 4 tons of excess SO₂ during 2013 and 2014.²³ A careful review of this data by CDPHE is warranted because, as discussed below, *see infra* pp. 50–54, Suncor includes all emissions from this time period, *including* these unpermitted emissions, in its baseline.

II. Denver-Area Communities

As described in greater detail in the June 9, 2017 Request for Public Comment Hearing submitted by Earthjustice on behalf of Cross Community Coalition, the Suncor Refinery is located in Commerce City, just north of Denver, and is surrounded by communities—the north Denver neighborhoods of Elyria-Swansea and Globeville, and Commerce City in Adams County—that face the greatest environmental health risks of any part of the Denver-Metro area.²⁴ The concentration of environmental health risks in the area makes the area a textbook overburdened community, because these neighborhoods are also home to high percentages of

²⁰ See Karen Crummy, *Suncor spill clean-up at Sand Creek near Denver is months, years away*, Denver Post (May 25, 2012), <http://www.denverpost.com/2012/05/25/suncor-spill-clean-up-at-sand-creek-near-denver-is-months-years-away/>; Bruce Finley, *Cleanup orders at Colorado's Suncor refinery spill into Sand Creek officially issued* (Dec. 1, 2011), www.denverpost.com/2011/12/01/cleanup-orders-at-colorados-suncor-refinery-spill-into-sand-creek-officially-issued/.

²¹ Bruce Finley, *Suncor to pay \$1.9 million to settle lawsuit over South Platte spill*, Denver Post (Nov. 18, 2013), <http://www.denverpost.com/2013/11/18/suncor-to-pay-1-9-million-to-settle-lawsuit-over-south-platte-spill/> (discussing water pollution incident).

²² See Rachel Calvert, Earthjustice, *Suncor Malfunction Reports, 2013–17* (July 31, 2017) (data compiled by searching in CDPHE, *Environmental Records Web Drawer*, <http://environmentalrecords.colorado.gov/HPRMWebDrawer/Record> (search for all air quality related reports from AIRS ID 001-0003)).

²³ See *id.* at cells E3, E5, and E29.

²⁴ See generally Ava Farouche, Earthjustice, *Curated EJScreen and Other Demographic Background Maps of North Denver's I-70 Corridor* (Nov. 15, 2016).

Latino and low-income residents.²⁵ This matters because “CDPHE is committed to eliminating health disparities and promoting health equity and environmental justice.”²⁶ The state legislature has found that “[a]lthough Colorado as a whole is a healthy state, African Americans, Hispanics, and Native Americans, who represent over twenty-five percent of the population, are disproportionately impacted by disease, injury, disability, and death,” and declared that “[m]ounting evidence demonstrates that factors such as . . . environment play a significant role in health, and if addressed, can create better health outcomes.” Colo. Rev. Stat. § 25-4-2201(1)(a), 1.5(c). Thus, the General Assembly—and CDPHE—have made a commitment to addressing disparate health impacts of pollution on overburdened communities, such as those surrounding Suncor.

Located northeast of the Suncor Refinery, Commerce City is a rapidly-growing home rule municipality in Adams County with a population now over 50,000, nearly 46% of which is Latino.²⁷ The older, more densely populated neighborhoods in southwestern Commerce City, located closest to Suncor, are even more heavily Latino. The three Commerce City U.S. Census tracts closest to the refinery, number 87.05, 87.09, and 89.01, are 64%, 70%, and 64% Latino, respectively.²⁸ 20% of children in Commerce City live below the poverty line.²⁹ By comparison, Adams County as a whole is 38% Latino, and 19.9% low-income.³⁰

²⁵ See EPA, *EJ 2020 Action Agenda* at Appx. B (2016–2020), www.epa.gov/sites/production/files/2016-05/documents/052216_ej_2020_strategic_plan_final_0.pdf (defining Overburdened Community as “[m]inority, low-income, tribal, or indigenous populations or geographic locations in the United States that potentially experience disproportionate environmental harms and risks. This disproportionality can be as a result of greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative or lack of positive environmental, health, economic, or social conditions within these populations or places. The term describes situations where multiple factors, including both environmental and socio-economic stressors, may act cumulatively to affect health and the environment and contribute to persistent environmental health disparities.”).

²⁶ CDPHE, Office of Health Equity, *Exploring Health Equity in Colorado’s 10 Winnable Battles 2* (2013), www.chd.dphe.state.co.us/Resources/pubs/HealthDisparitiesReport2013.pdf; see also CDPHE, *Health equity and environmental justice resources* (last visited July 28, 2017), www.colorado.gov/cdphe/health-equity-and-environmental-justice-resources.

²⁷ Commerce City, CO, *History*, <http://www.c3gov.com/explore/history> (last visited Aug. 1, 2017).

²⁸ See U.S. Census Bureau, *Census Interactive Population Search* (2010), www.census.gov/2010census/popmap/ (calculations on file with author).

²⁹ U.S. Census Bureau, *Selected Economic Characteristics, 2011-2015 American Community Survey*, https://factfinder.census.gov/faces/nav/jsf/pages/community_facts.xhtml (search for “Commerce City, Colorado”).

³⁰ Colo. Dep’t of Transp., *I-70 East Final Environmental Impact Statement and Section 4(f) Evaluation* at 5.2-23–24, -29. (Jan. 2016), <http://www.i-70east.com/reports.html#feis>.

Located south of the Suncor Refinery, Elyria, Swansea, and Globeville are long-established residential neighborhoods that have been largely left behind by Denver’s recent boom in community improvements. Elyria-Swansea’s population is 84% Latino, 44% low-income, and 41% Limited English Proficiency.³¹ Globeville is 68% Latino, 53% low-income, and 31% Limited English Proficiency.³² By comparison, the City and County of Denver as a whole is 32% Latino, 28% low-income, and 14% Limited English Proficiency.³³ Elyria, Swansea, and Globeville have among the highest rates of several diseases associated with air pollution, including asthma, cancer, cardiovascular disease, diabetes, and obesity.³⁴ A recent Health Impact Assessment (“HIA”) found that the neighborhoods have 39% higher emergency room rates for child asthma-related events than other Denver neighborhoods.³⁵ The HIA specifically referenced Suncor’s planned emissions “event[s]” and flaring as examples of “significant” air quality issues in the area.³⁶ A separate, 2003 study found higher than expected rates of several cancers in Globeville and Elyria-Swansea.³⁷ The average life expectancy for a Globeville resident is 73 years, and for an Elyria-Swansea resident is 78 years.³⁸ By comparison, the average life expectancy for a Stapleton resident (located just a few miles to the east) is 84 years.³⁹

The zip code in which Elyria-Swansea and Globeville are located, 80216, which is immediately south of Suncor, has been identified in a nationwide property and real estate database as the most polluted in the nation.⁴⁰ The study considered air quality, Superfund sites, pollution listed in EPA’s Toxic Release Inventory, and Brownfields and former drug labs.⁴¹ 80216 scored 455 in the index, and the next highest score, zip code 92408 in San Bernardino,

³¹ *Id.*

³² *Id.*

³³ *Id.*

³⁴ Gretchen Armijo & Gene C. Hook, Denver Dep’t of Env’tl Health, *How Neighborhood Planning Affects Health in Globeville and Elyria Swansea* at 16–17 (Sept. 2014), https://www.denvergov.org/content/dam/denvergov/Portals/746/documents/HIA/HIA%20Composite%20Report_9-18-14.pdf (“HIA”); see also Denver Dep’t of Env’tl. Health, *Health Impact Assessment* (last viewed June 8, 2017), <https://www.denvergov.org/content/denvergov/en/environmental-health/community-health/health-impact-assessment.html>.

³⁵ HIA at 16 (calculations on file with author).

³⁶ *Id.* at 21.

³⁷ *Id.* at 17.

³⁸ *Map: In Denver, Your Neighborhood Can Say A Lot About How Long You’ll Live*, Colo. Pub. Radio (Dec. 2, 2015), <http://www.cpr.org/news/story/map-denver-your-neighborhood-can-say-lot-about-how-long-youll-live>.

³⁹ *Id.*

⁴⁰ RealtyTrac, *17.3 Million U.S. Homes with Combined Value of \$4.9 Trillion in Zip Codes with High Environmental Hazard Risk* (Feb. 16, 2017), <http://www.realtytrac.com/news/home-prices-and-sales/2016-environmental-hazard-housing-risk-index/>.

⁴¹ *Id.*

CA, was 400.⁴² Perhaps unsurprisingly, given that the 80216 zip code was identified as the most polluted in the nation, a different study also identified it as the most polluted in Colorado.⁴³

Although air quality issues in the Denver-Metro area are concentrated near Suncor, the entire Denver-Metro area has its own air quality issues. As the Division is well aware, both Denver and Adams County are part of the Northern Front Range nonattainment area for the 2008 8-hour ozone National Ambient Air Quality Standards (“NAAQS”).⁴⁴ Because the area failed to attain the NAAQS by the applicable attainment date of July 20, 2015, the Northern Front Range has already been “bumped up” to moderate nonattainment status.⁴⁵ As was discussed during the July 20, 2017 Air Quality Control Commission meeting, if there are even a few more days this summer in which ozone levels at Denver-area monitors exceed the NAAQS, it is likely that the area will be reclassified as a serious nonattainment area. At this point, when efforts should be made to decrease emissions of ozone precursors in order to secure expeditious attainment of the 2008 ozone NAAQS, any incremental increase in any ozone precursor, including VOCs and nitrogen oxides (“NOx”), should be of major concern to both the Division and the Commission. Indeed, such concerns have led the Division to propose a rulemaking proceeding for the Commission to address ozone precursor emissions from upstream components of the petroleum sector.⁴⁶

Unfortunately, it appears that even in the few days since the Commission’s regular July meeting, there have been enough exceedances to confirm that the Northern Front Range will again fail to meet the 2008 ozone NAAQS. According to the Max Air Quality Index concentrations reported on the Division’s website, there have been numerous NAAQS exceedances to date in 2017.⁴⁷

Table C, 8-hour Ozone Levels at Northern Front Range Monitors, 2017

Monitor	Date	Max 8-hr Ozone Reading (ppb)
NREL	6/8/17	75
NREL	6/29/17	76
NREL	7/1/17	88

⁴² *Id.*

⁴³ Groundwork Denver, Inc., *Healthy Air for North Denver: CARE Grant Final Report* at 1 (Dec. 23, 2008), https://archive.epa.gov/air/care/web/pdf/hand_report.pdf.

⁴⁴ EPA, *Colorado 8-hour Ozone Nonattainment Areas (2008 Standard)*, https://www3.epa.gov/airquality/greenbook/map/co8_2008.pdf; see also CDPHE, *History of Ozone in Colorado*, <https://www.colorado.gov/pacific/cdphe/ozone-planning-chronology> (last viewed June 7, 2017).

⁴⁵ 81 Fed. Reg. 26,697, 26,714 (May 4, 2016).

⁴⁶ CDPHE, *Ozone Planning Information for Industry* (last visited July 27, 2017), <https://www.colorado.gov/pacific/cdphe/ozone-planning-information-industry>.

⁴⁷ APCD, Air Quality Reports (last visited July 27, 2017), <https://www.colorado.gov/airquality/report.aspx> (under “Max AQI Concentrations” search for 8-hour Ozone values for Denver-area monitors between 01/01/17 and present date).

NREL	7/2/17	79
NREL	7/5/17	78
NREL	7/6/17	78
NREL	7/16/17	76
NREL	7/24/17	78
NREL	7/27/17	81
Boulder Reservoir	7/14/17	75
Chatfield	7/5/17	76
Chatfield	7/6/17	75
Chatfield	7/7/17	79
Welch	7/5/17	76
Welch	7/24/17	77
Rocky Flats	7/1/17	75
Rocky Flats	7/2/17	75
Rocky Flats	7/5/17	75
Rocky Flats	7/23/17	77
Rocky Flats	7/24/17	76
Rocky Flats	7/27/17	75

Thus, recent monitoring data indicates that the Denver area will continue to fail to attain the 2008 ozone NAAQS and that the residents of the Denver-Metro area, including the communities near Suncor, will continue to be exposed to air pollution that harms their health and the health of their families. As the law requires, the Division must secure additional reductions in the emissions of ozone precursors and do more to secure expeditious attainment of the NAAQS.⁴⁸ Denver’s air quality is too poor to countenance incremental additions of ozone precursors, and any failures to comply with air quality permits governing emissions of ozone precursors are unacceptable.

III. Commenters

The Colorado Latino Forum is dedicated to increasing the political, social, educational, and economic strength of Latinas and Latinos.

Colorado People’s Alliance (“COPA”) is a racial justice, member-driven organization dedicated to advancing and winning progressive social change locally, statewide and nationally. COPA builds power to improve the lives of all Coloradans through leadership development, organizing and alliance building.

⁴⁸ The burden is on the Division to establish that any of these monitoring data reflect exceptional events. Moreover, these data represent the most accurate representation of air quality data in the Denver-Metro area during the relevant time period. Therefore, credible evidence shows that the Northern Front Range is likely to fail to attain the 2008 ozone NAAQS and that any incremental addition of NOx or VOCs are antithetical to the goal of expeditious attainment of the nation’s health-based air quality standards.

Cross Community Coalition (“CCC”) is a registered neighborhood organization (“RNO”) with the City of Denver that was recognized by the City in 2015. It represents the entire community in the area bordered by Colorado Boulevard to the east, the Denver/Adams County line to the north, the South Platte River to the west, and 38th Street and 40th Avenue to the south. CCC is a grassroots organization that seeks to assist, serve, and represent the neighbors in this community. CCC is honored to take up the mantle of a previous iteration of CCC, which was a neighborhood services organization that advocated for and served north Denver residents for decades. CCC devotes much of its advocacy to improving air quality in north Denver.

The Denver Community Planning Council (“DCPC”) is a charitable organization made up of planning and other professionals and grassroots community leaders. The primary purpose of the DCPC is to research, analyze, and promote policies and plans for the future of Denver that are environmentally just, environmentally safe and healthy, environmentally conservative and sustainable, procedurally inclusive and transparent, and fiscally sound. A second purpose is to seek to defend communities in Denver put at risk by policies and plans adjudged to violate the values set forth in the organization’s primary purpose. All members volunteer their time and effort to the fulfillment of these purposes.

The Elyria and Swansea Neighborhood Association (“ESNA”) is an RNO with the City of Denver. We represent residents and small business owners within the geographical neighborhoods of Elyria and Swansea in north Denver. ESNA’s mission is to educate and inform the community and facilitate informed discussion of the many, unique issues and challenges facing our neighborhoods. We provide grass-roots access for residents and property owners to the dialogue formulating and implementing the common future we all share. That mission includes public meetings and outreach, advocacy of our common interests and goals to our civic leaders, as well as specific projects that provide tangible benefit for the community. Our future in Elyria and Swansea is threatened at all levels: many large, outside forces are acting on these neighborhoods, and ESNA is an advocate for the interests of its residents, and a bulwark against outside interests interfering with the cohesion of these affected communities.

Protége is a program of Conservation Colorado (“CC”) whose mission is to protect Colorado’s environment and quality of life by mobilizing people and electing conservation-minded policymakers. Protége organizes the Latino community to take action against the dangers that climate change presents to our neighborhoods and the urgent actions that our community should take to make sure that we are sitting at the table of local, state, and national decision making processes on issues like: clean air and energy efficiency, water quality and the protection of our public lands. Protége is building a more powerful and effective voice for Latino communities and leaders in the fight against climate change by promoting clean energy for a healthy future for all the residents of Colorado.

Sierra Club’s mission is to explore, enjoy, and protect the wild places of the earth; to practice and promote the responsible use of the earth’s ecosystems and resources; to educate and enlist humanity to protect and restore the quality of the natural and human environment; and to use all lawful means to carry out these objectives. In addition to helping people from all backgrounds explore nature and our outdoor heritage, Sierra Club works to promote clean energy, safeguard the health of our communities, protect wildlife, and preserve our remaining

wild places through grassroots activism, public education, lobbying, and legal action. Sierra Club currently has more than 777,000 members nationwide, and more than 73,000 members and supporters in Colorado.

Western Resource Advocates (“WRA”), which has its main office in Boulder Colorado and staff and members who live and work near the Suncor Refinery, is dedicated to protecting the West’s land, air, and water to ensure that vibrant communities exist in balance with nature. We use law, science, and economics to craft innovative solutions to the most pressing conservation issues in the region. We work to guarantee that the West will have clean air and clean water to support healthy communities and vital habitat.

WildEarth Guardians is a nonprofit environmental advocacy organization dedicated to protecting the wildlife, wild places, wild rivers, and health of the American West. Through its Climate and Energy Program, Guardians works to expose the true cost of fossil fuels in order to advance clean energy.

COMMENTS AND ISSUES ON SUNCOR REFINERY PERMIT MODIFICATIONS

I. Legal and Regulatory Background

Congress enacted the Clean Air Act (the “Act”) in response to the “mounting dangers to the public health and welfare” caused by air pollution. 42 U.S.C. § 7401(a)(2). The Act is designed “to protect and enhance the quality of the Nation’s air resources so as to promote the public health and welfare and the productive capacity of its population,” including through “pollution prevention.” *Id.* § 7401(b)(1), (c). In 1990, Congress strengthened the Act’s control requirements to ensure achievement of the statute’s public health goals, including by adding Title V of the Act. S. Rep. 101-228, at 11 (1989), *reprinted in* 1990 U.S.C.C.A.N. 3385, 3397 (highlighting evidence that millions of people were still exposed to high levels of harmful air pollution).

Although parts of the country have made important progress in addressing air pollution, some communities remain pollution hot spots. The Denver region has consistently failed to meet EPA’s health-based standards for ozone. Ozone levels here are higher than the current national standard, showing that the ambient air contains a level that is unhealthy, especially for vulnerable people like children, the elderly, and those who suffer from asthma or other respiratory and heart concerns.

The Clean Air Act is designed to protect particularly vulnerable communities, like those in Denver and surrounding areas, by reducing the dangerous levels of air pollution they breathe. *See, e.g.*, 42 U.S.C. §§ 7502-15 (requiring particular protections in nonattainment areas); S. Rep. 101-228, at 35, 129, 1990 U.S.C.C.A.N. at 3421, 3514 (regarding amendments to the toxics program, citing “an equity concern, the very high risk of health problems experienced by individuals living near large industrial facilities or in highly developed urban corridors”).

A primary way in which the Act seeks to protect public health is through prohibiting stationary sources of air pollution from operating without a valid permit or in violation of the terms of a permit, which is designed to include health-based emission limits and other

requirements to assure compliance with those limits, pursuant to Title V. 42 U.S.C. §§ 7661a, 7661c. “The permit is crucial to implementation of the Act: it contains, in a single, comprehensive set of documents, all [Clean Air Act] requirements relevant to the particular source.” *Virginia v. Browner*, 80 F.3d 869, 873 (4th Cir. 1996). Under Title V of the Act, Colorado has an approved state permit program, pursuant to the Clean Air Act. 42 U.S.C. § 7661a; 65 Fed. Reg. 49,919, 49,921 (Aug. 16, 2000) (granting full approval to Colorado’s Title V permitting program effective October 16, 2000).

Sources like refineries also may not increase their emissions significantly in areas like the Denver area that are subject to the nonattainment new source review and prevention of significant deterioration requirements, without ensuring that they put additional controls and other measures in place to prevent harm to air quality. *See, e.g.*, 42 U.S.C. §§ 7410, 7470-79 (PSD requirements), 7501-7504 (requirements for nonattainment areas), 7511-7511c (additional provisions for ozone nonattainment areas).

Colorado’s air permit program is also subject to state law and regulatory requirements, including those that implement and supplement the national requirements. Colo. Rev. Stat. § 25-7-101 *et seq.* (“Colorado Air Pollution Prevention and Control Act”); *see, e.g.*, Colo. Rev. Stat. § 25-7-114.3 (operating permits); Colo. Rev. Stat. § 25-7-201 (prevention of significant deterioration program); Colo. Rev. Stat. § 25-7-301 (attainment program). Colorado law also includes a strong legislative declaration making it “the policy of this state to achieve the maximum practical degree of air purity... to attain and maintain the national ambient air quality standards, and to prevent the significant deterioration of air quality.” *Id.* § 25-7-102. The law further directs that “it is the purpose of this article to require the use of all available practical methods which are technologically feasible and economically reasonable so as to reduce, prevent, and control air pollution throughout the state of Colorado.” *Id.* The law also declares that “the prevention, abatement, and control of air pollution in each portion of the state are matters of statewide concern and are affected with a public interest,” and that the law is enacted “for the purpose of protecting the health, peace, safety, and general welfare of the people of this state.” *Id.*

II. The Division Should Update the Suncor Refinery Permits to Include Terms and Conditions To Assure Compliance With All National and State Requirements.

Title V of the Act and Colorado state law require the Division to incorporate into the permit all applicable national and state standards, regulations, and requirements. 42 U.S.C. §§ 7661a(b)(5)(A), (C); 7661c(a); 40 C.F.R. § 70.7(a)(1)(iv); 5 Colo. Code Regs. § 1001-5:3C.V.C.1; *see also United States v. Cemex, Inc.*, 864 F. Supp. 2d 1040, 1045 (D. Colo. 2012) (“Title V permits do not generally impose any new emission limits, but are intended to incorporate into a single document all of the Clean Air Act requirements applicable to a particular facility and to provide for monitoring and other compliance measures.” (quotation omitted)).

Commenters appreciate many of the Division’s effort to fulfill these requirements including by adding terms and conditions to the permit to implement the 2015 Refinery Sector Rule Revisions. However, Commenters respectfully request that the Division modify the permit and impose additional requirements on Suncor, as discussed below.

A. Add Additional Fenceline Monitoring To Assure Compliance With All Applicable Standards.

The permit modification includes certain new requirements for fenceline monitoring that are part of the 2015 EPA National Emission Standards for Hazardous Air Pollutants (“NESHAP”). Petroleum Refinery Sector Risk and Technology Review and New Source Performance Standards; Final Rule, 80 Fed. Reg. 75,178 (Dec. 1, 2015) (“2015 Rule”). EPA established those requirements after recognizing that they are needed to supplement existing practices and ensure leaks and other releases from refineries currently escaping control are discovered and addressed promptly.⁴⁹

Commenters, however, urge that the Division strengthen the permit terms and conditions implementing the fenceline monitoring requirements for the following reasons. The Division should strengthen the monitoring requirements in the permit because, as discussed in the first section of these comments, there are particular circumstances that warrant additional attention to and monitoring of emissions from the Suncor facility. In particular, this is an ozone nonattainment area where the community is already subject to unhealthy ambient air pollution. The community is predominantly Latino and low-income, and in an area that also includes significant other pollution sources and sources of environmental hazards. The Suncor Refinery has had serious accidents and releases in the past, as summarized above in Part I of the Introduction, *supra*. The community has faced two shelter-in-place orders since fall 2016, alone, due to extreme releases of pollution into the air. Thus, there are particular environmental justice concerns and public health concerns that warrant strengthening monitoring requirements in this permit, to fulfill the Division’s responsibility to act in the public interest. In light of Suncor’s recent violations and compliance issues, strengthening monitoring and reporting requirements is particularly warranted to assist the Division in exercising its responsibility and duty to assure compliance with the standards and permit requirements.

For these reasons, the Division should add permit terms and conditions to increase monitoring and reporting requirements in the following ways, to fulfill Title V requirements to include “monitoring... to assure compliance.” 42 U.S.C. §§ 7661a(b)(5)(A), 7661c(a); 40 C.F.R. § 70.6(a)(3)(i)(A); 5 Colo. Code Regs. § 1001-5:3C.V.C.16.a.

1. The Division should require public notice and comment on Suncor’s fenceline monitoring plan.

The 2015 Rule requires Suncor to determine monitor locations. 40 C.F.R. § 63.658(c). These locations will be critical to the nearby communities and the community should have input on how the fenceline monitoring plan is designed, including where monitors will be placed. The Division should require Suncor to present its fenceline monitoring plan, including proposed locations, to the Division and have the Division take public comment on that plan, and assure that monitors are placed in ways appropriate to assure compliance with the standards. Although

⁴⁹ See, e.g., 79 Fed. Reg. 36,880, 36,920–22 (June 30, 2014); Fenceline Monitoring Technical Support Document, EPA-HQ-OAR-2010-0682-0210.

certain plans must be presented to EPA, not all must be, under the Rule. It would strengthen the Division's ability to perform oversight and ensure that fenceline monitoring is appropriately tailored to the facility to require Suncor to submit plans to the Division, as well as to take public comment on them.

2. The Division should require submission of corrective action plans to the Division and provide for public notice and comment.

In the event the benzene concentration action level ($9 \mu\text{g}/\text{m}^3$) is exceeded, the 2015 Rule requires Suncor to submit a corrective action plan to EPA. 40 C.F.R. § 63.658(h). The Division should similarly require this to be submitted to the Division itself so it can exercise its state oversight authority, and also can release this plan for public review and comment. That way if the Division determines, after reviewing public comment, that additional corrective action is needed to protect air quality and public health, it can take appropriate action to ensure that occurs.

It is important that the Division review and decide whether to approve corrective action plans, as well as take public notice and comment on these plans. Under the Rule, EPA may never act on a plan. The Division has independent oversight authority and should ensure that Suncor implements corrective action.

3. The Division should require submission of monitoring data to the Division as soon as possible, and every two weeks thereafter, after collection.

The 2015 Rule requires reporting of data in the facility's quarterly reports. The 2015 Rule allows a refinery to wait until it has collected twelve months of data before reporting this to EPA. 40 C.F.R. § 63.655(h)(8) ("The owner or operator need not transmit these data prior to obtaining 12 months of data."). This would mean that Suncor would not be required to submit these data before 2019, as part of its first-thereafter quarterly report. The Division and the affected communities need this information sooner. Therefore, the Division should add a permit term to require Suncor to submit the monitoring data as soon as it begins fenceline monitoring in January 2018, and every two weeks thereafter.

The passive samplers must be placed in the field for two weeks and then their results analyzed. Therefore, it is possible for Suncor to collect the information from those samplers and report it sooner to the Division, and release it to the public for review. In view of Suncor's prior compliance problems, the number of people that live in close proximity to the refinery, and the community concerns about air pollution and emission spikes, the Division should require Suncor to report the monitoring results to the Division, and make the data publicly available, at least, every two weeks, as soon as it is collected from the monitors through electronic reporting. Monitors for criteria pollutants throughout the state already make data available on a daily basis through electronic reporting. The Division should require this to be made publicly available online on Suncor's website, or provide an online location where this will be made available in a publicly accessible format. EPA originally stated that it would create such a platform, but has not yet done so, and it is unclear whether EPA will ever do so (or if it does, how long it would take). The Division should not wait for EPA, it should take action on its own.

Although the national corrective action level ($9 \mu\text{g}/\text{m}^3$) is what triggers corrective action requirements under the 2015 Rule, it would be appropriate for the Division to consider requiring corrective action, under state requirements, even if the monitoring data show benzene at a lower level that nonetheless indicates health concerns or before an annual average has been determined. The national correction action level is higher than the threshold at which harm is known to occur. For example, in 2014, California updated its 8-hour and chronic reference exposure level for benzene to $3.0 \mu\text{g}/\text{m}^3$, which is equivalent to 1 ppb, three times lower than the 2015 Rule's concentration action level.⁵⁰ Therefore, if the Division requires more prompt reporting, and discovers benzene concentrations are at a health-threatening level, it could determine whether or not additional action is required under the 2015 Rule. This would strengthen protections for a community that is facing a severe set of cumulative health threats from this facility, as well as other emissions from other nearby sources.

Similarly, were the Division monitoring these data, it would be in a position to protect public health by requiring corrective action based on short-term concentration levels, regardless of what annual averaging might be. By ensuring that the permit requires monitoring data to be reported to the Division, and that these data be reported at least every two weeks immediately after being collected, the Division would retain its discretion to take additional action, in the event it finds this is necessary under its authority. Commenters also urge the Division to set a short-term concentration level in the permit that is more protective, following the California EPA value—to ensure that corrective action is taken if there is one or more readings of $3.0 \mu/\text{m}^3$ found during any two week period.

There is precedent for short-term corrective action thresholds, particularly at a facility like Suncor that has a history of air pollution violations and spikes. For example, EPA's enforcement division recognizes that short-term corrective action thresholds are essential requirements for fence-line monitoring programs to help identify sources of illegal fugitives.⁵¹ At Shell Deer Park, EPA is requiring corrective action based on a five minute standard and an hourly standard. Any five-minute period, where the fence-line monitor picks up benzene concentrations above 50 ppb triggers a corrective action requirement.⁵² The Division need not decide to set such a threshold now; but it should require reporting of monitoring data to the

⁵⁰ Cal. EPA, OEHHA, *Final Report: Benzene Reference Exposure Levels* (June 27, 2014), http://www.oehha.ca.gov/air/chronic_rels/BenzeneJune2014.html.

⁵¹ Consent Decree, *United States v. Shell Oil Co.* at App'x 2.9 at 2-5 (July 10, 2013) (“Shell Deer Park Consent Decree”), <http://www2.epa.gov/sites/production/files/2014-07/documents/sdp-cd.pdf>; Consent Decree, *United States v. Flint Hills Res. Port Arthur, LLC* at App'x 5.1 at 2 (Mar. 20, 2014), http://www2.epa.gov/sites/production/files/2014-03/documents/flinthills-cd_0.pdf (“Flint Hills Consent Decree”) (At Flint Hills Resources in Port Arthur, EPA's consent decree has corrective action requirements for fence-line readings of 1-3 butadiene or benzene that average above 25 ppb for an hour; although this is not a refinery it can and should be considered relevant for Title V permitting purposes due to the similar emissions, and monitoring methods available and put in place by EPA's consent decree).

⁵² *Id.*

Division and the public so that it can carefully observe the emissions of the facility and ensure that, if needed, it takes such action in the future to safeguard public health.

4. The Division should shorten the timeline needed for corrective action.

Event	Timeframe	Corrective Action Requirement
First Exceedance of Corrective Action Threshold	Within 5 days of detection (but no longer than 35 days after sampling shows an exceedance)	Initiation of root cause analysis.
	Within 45 days of detecting an exceedance	Root cause and corrective action analysis must be complete.
	None	Completion of corrective action.
Exceedance of Corrective Action Threshold Immediately After Completion Corrective Action of First Exceedance	60 days from second exceedance.	Submit corrective action plan to EPA; EPA has 90 days to review and approve the plan.
If there is another Exceedance.	See above.	Another plan is required.

The Division should strengthen the above requirements to include the following compliance provisions:

- **Root Cause Analysis and Corrective Action Analysis** – The Division should require Suncor to complete these actions within 5 days of initiating the root cause analysis.
- **Initial Corrective Action** – The Division should require Suncor to complete the corrective action within 5 days. Without a concrete deadline, a problem could linger indefinitely and become catastrophic. Furthermore, Suncor could delay completing the initial corrective action and might never trigger the second corrective action requirement of submitting a plan to EPA, or the requirement proposed above, to the Division as well as for public review.
- **Further Corrective Action** – Suncor should be required to develop a new corrective action plan within 14 days if further corrective action is needed. This way, the Division can determine whether prompt action is required (even if EPA is still reviewing it). Otherwise, leaking pollution can go on for 5 months after repeated exceedances before a facility takes any corrective action.
- **Specific Reporting and Action** – The Division should also require immediate reporting and specific corrective action, such as automatic shutdown and additional

higher-quality monitoring (such as UV-DOAS). The Division should also require oversight, such as an inspection and audit by Division staff or an independent expert, until the problem has been fully resolved and any repetition of the event prevented.

5. The Division should strengthen the root cause analysis and corrective action requirements.

First, the root cause analysis under the 2015 Rule contains no specific requirements, only suggestions.⁵³ The Division should, at minimum, require Suncor to inspect for leaks and repair all leaks found. A root cause analysis with no actual requirements is not likely to produce meaningful corrective action.

Second, if after corrective action, monitoring at Suncor still shows an exceedance for the next sampling episode, then the 2015 Rule would require the facility to “develop a corrective action plan,” including actions completed to date and “additional measures that the owner or operator proposes to employ to reduce fence-line concentrations below the action level, and a schedule for completion of those measures.”⁵⁴ Again, the 2015 Rule requires no specific corrective action. At least the permit should state that Suncor would, in such circumstances, be required to do more than it did after the first root cause analysis, where the prior corrective action clearly did not correct the problem.

Third, an exceedance of the action level should clearly be deemed a violation of the emission standards and the Title V permit, such that all applicable statutory and regulatory penalties and consequences will apply until the facility ends and corrects the problem.

6. The Division should supplement the 2015 fenceline monitoring requirements with higher-quality, real-time monitoring.

UV-DOAS or another type of real-time technology will ensure the source actually finds and addresses a problem with fugitive emissions. The passive sampling required by the 2015 Rule will not capture problems in real-time, and could result in months of delay in even identifying the problem (unless, as proposed above, the Division requires at least every two-week reporting of the monitoring data). Where, as here, Suncor has had serious releases of pollution within the last few months that have required sheltering in place, there is a strong justification for the Division to ensure that the community receives real-time monitoring protections, to know a release is happening as it happens and to ensure a tailored response, rather than having to wait to assess afterward or wonder while sheltering in place what the community is actually being exposed to. Such monitoring technology also allows consideration of additional

⁵³ 40 C.F.R. § 63.658(g) (providing that root cause analysis and corrective action “may include, but is not limited to...”).

⁵⁴ § 63.658(h)).

pollutants, not just benzene, which would be appropriate in this area as well where there are many different pollutants of health concern to the community.⁵⁵

Suncor's history of compliance problems shows that there is a serious need for stronger monitoring than what is required by the 2015 Rule's passive sampling alone. Therefore, to supplement that, the Division should require that if Suncor has more than one exceedance in the same year, the permit will require as corrective action that the refinery employ UV-DOAS for at least 1 year to monitor, identify, correct, and assure ongoing compliance after the exceedance problem is fixed. Information on this type of monitoring, which uses open-path technology and would ensure real-time detection of pollution releases, is included as an attachment to these comments, as part of a summary of different kinds of open-path fence-line monitoring that the Division should review and consider requiring.⁵⁶ In addition, the Division should consider requiring automatic shutdown and other independent oversight actions by expert staff or an independent expert.

Prior Consent Decrees require the use of gas chromatographs which, while not open-path, are multi-pollutant detectors that provide highly time-resolved data, and are an additional type of monitoring technology that the Division should consider in the event it determines not to require UV-DOAS.⁵⁷

B. Add Accidental Release Prevention, Emergency Response, and Related Requirements to Assure Compliance With EPA's 2017 RMP Rule.

As part of this modification to meet newly applicable national requirements, the Division should also include terms and conditions in the permit to ensure compliance with the new 2017 national standards set under Clean Air Act § 112(r). 42 U.S.C. § 7412(r)(7); *see also* Colo. Rev. Stat. § 25-7-109.6 (Colorado accidental release prevention program). The 2017 Risk Management Program Amendments (known as the "Chemical Disaster Rule" or "RMP Rule"), were originally promulgated in January 2017, and were slated to take effect by March 14, 2017. 82 Fed. Reg. 4594, 4594 (Jan. 13, 2017). EPA has since delayed the effective date to February 19, 2019, but has not changed or removed any of the substantive requirements it contains. Thus, at least as of that date, Suncor will be required to comply with some of the Rule's emergency response preparedness measures. Further, the February 19, 2019 deadline will trigger subsequent deadlines for all other requirements the Rule contains. The Rule may well take effect sooner as litigation has been filed contesting the delay of the Rule based on the irreparable harm

⁵⁵ Consent Decree, *Nat. Res. Def. Council v. BP Products N. Am., Inc.*, App'x E (May 23, 2012) (Dkt. No. EPA-HQ-OAR-2010-0682-0177) ("BP Whiting Consent Decree"); Shell Deer Park Consent Decree, *supra* n.51, at App'x 2.9; Flint Hills Consent Decree, *supra* n.51, at App'x 5.1.

⁵⁶ *See* Env'tl. Integrity Project, *Additional Information on the Need for Fence-line Monitoring* (April 2015) (summary of open-path fence-line monitoring technology implemented at some refineries around the U.S.).

⁵⁷ *See* BP Whiting Consent Decree, *supra* n.55.

communities like Denver face from the postponement of the implementation of the Rule's protections.⁵⁸

1. EPA's 2017 Chemical Disaster Rule

EPA's Chemical Disaster Rule, which is designed specifically to address the danger posed by petroleum refineries like Suncor, is a significant update to the Clean Air Act Risk Management Program. *See* 82 Fed. Reg. at 4596 & tbl. 1. EPA issued this rule to protect the people most vulnerable to death, poisoning, injury, and other harms from chemical disasters: facility workers, first responders, and fence-line community members.⁵⁹

EPA had been considering possible revisions to its regulations since at least 2012, when a coalition of over fifty labor, environmental, health, and safety groups filed a petition urging EPA to require chemical facilities to recognize and adopt inherently safer technologies.⁶⁰ After a series of major disasters at chemical facilities, President Barack Obama signed an executive order directing federal agencies to modernize regulations to prevent chemical disasters.⁶¹ EPA then requested information on its chemical safety regulations from the public, 79 Fed. Reg. 44,604 (July 31, 2014), and took comment on a proposed update, in consultation with the U.S. Chemical Safety Board ("CSB"), Occupational Safety and Health Administration, and Department of Homeland Security. 81 Fed. Reg. 13,638, 13,644–45 (July 14, 2016).

On December 21, 2016, after extensive public comment and hearings, EPA signed the final Chemical Disaster Rule, concluding that under the prior regulations, "major incidents" continued to occur, and emphasizing "the importance of reviewing and evaluating current practices and regulatory requirements, and applying lessons learned from other incident investigations to advance process safety." 82 Fed. Reg. at 4600. EPA highlighted a series of recent chemical disasters as showing the need for and guiding its action:

In addition to the tragedy at the West Fertilizer facility..., a number of other incidents have demonstrated a significant risk to the safety of American workers and communities. On March 23, 2005, explosions at the BP Refinery in Texas City, Texas, killed 15 people and injured more than 170 people. On April 2, 2010, an explosion and fire at the Tesoro Refinery in Anacortes, Washington, killed seven people. On August 6, 2012, at the Chevron Refinery in Richmond, California, a fire involving flammable fluids endangered 19 Chevron employees and created a large plume of highly hazardous chemicals that traveled across the

⁵⁸ *See Air Alliance Houston et al. v. EPA*, D.C. Cir. No. 17-1155; *see also New York v. Pruitt*, D.C. Cir. No. 17-1181 (lawsuit filed by set of 11 States challenging the Delay Rule). The State of Colorado is not currently part of this litigation.

⁵⁹ *See EPA, Regulatory Impact Analysis* at 9–10, EPA-HQ-OEM-2015-0725-0734 (Dec. 16, 2016) ("RIA").

⁶⁰ Petition to EPA to Exercise Its Authority Under Section 112(r) of the Clean Air Act to Prevent Chemical Facility Disasters Through the Use of Safer Chemical Processes, EPA-HQ-OEM-2015-0725-0249 (July 25, 2012).

⁶¹ Exec. Order No. 13,650, 78 Fed. Reg. 48,029 (Aug. 7, 2013).

Richmond, California, area. Nearly 15,000 residents sought medical treatment due to the release. On June 13, 2013, a fire and explosion at Williams Olefins in Geismar, Louisiana, killed two people and injured many more.

Id. at 4599 (footnotes omitted); *see also* 81 Fed. Reg. at 13,644.

EPA based the rule on data from 2,291 incidents at facilities covered by the RMP Program, which occurred between 2004 and 2013, including 1,517 where facilities reported measurable harm on- and off-site.⁶² A review of EPA’s data shows that 997 of these incidents caused physical harm, reported as 59 deaths, and 17,099 injuries, hospitalizations, or other health impacts that required people to seek medical treatment.⁶³ In total, these incidents also required almost 500,000 people to evacuate or shelter-in-place; and resulted in over \$2 billion in property damage.⁶⁴ EPA tallied the quantified damages from RMP-covered facility accidents at about \$274.7 million per year. 82 Fed. Reg. at 4597.⁶⁵ Many of these accidents occurred at refineries and some are similar to the more recent incidents at Suncor that have taken place since EPA closed the record on which the 2017 rule was based.

EPA determined the Chemical Disaster Rule would reduce the frequency and magnitude of chemical disasters. 82 Fed. Reg. at 4597. Specifically, the Rule clarifies and enhances the preventative measures of the RMP framework applicable to processes at facilities that have potential to cause significant off-site impacts or have had a fatal or serious accident within the last five years. Under the Chemical Disaster Rule, if a facility experiences an incident that results in a “catastrophic release” or which “[c]ould reasonably have resulted in a catastrophic release,” it must investigate the root cause of the incident with the goal of preventing a similar future incident. 40 C.F.R. §§ 68.3, 68.60, 68.81; *see also* 81 Fed. Reg. at 13,648–49 (listing examples of “missed opportunities to address the proper causes of the incidents, share the lessons learned[,] and prevent further similar accidents” because of lack of this requirement). The Rule also requires that compliance audits be conducted by a third party when incidents have occurred or other conditions are met at a facility. 40 C.F.R. §§ 68.58, 68.79; *see also* 81 Fed. Reg. at 13,654–58 (finding that, despite prior self-auditing requirement, “[i]ncident investigations often reveal that these facilities have deficiencies in some prevention program requirements” and providing examples); 81 Fed. Reg. at 13,654 (noting the “CSB identified a lack of rigorous compliance audits as a contributing factor behind the March 23, 2005[,] explosion and fire at the BP Texas City Refinery” which “killed 15 people, injured another 180, led to a shelter-in-place order that required 43,000 people to remain indoors, and damaged houses as far away as three-quarters of a mile from the refinery.”).

For the three industry sectors with the highest accident rates—including petroleum refineries—the Rule also requires facilities to assess “safer technology and alternative risk

⁶² RIA at 80; *see also* EPA, RMP Facility Accident Data, 2004-2013 (Feb. 2016), EPA-HQ-OEM-2015-0725-0002 (“Accident Data”).

⁶³ RIA at 87 (calculations on file with author).

⁶⁴ *Id.*

⁶⁵ *See also id.* at 10–11.

management measures applicable to eliminating or reducing risk from process hazards.” 40 C.F.R. § 68.67(c)(8); 82 Fed. Reg. at 4632. Facilities must consider safer practicable ways to use or store hazardous chemicals and determine whether to implement such methods. 40 C.F.R. §§ 68.67(c)(8)(i)-(ii); *see* 81 Fed. Reg. at 13,663 (“there is a benefit in requiring that some facilities evaluate whether they can improve risk management of current hazards through potential implementation of [inherently safer technologies] or risk management measures that are more robust and reliable”); *see also* 82 Fed. Reg. at 4629.

In addition, as a result of the Rule, all regulated facilities are required to coordinate annually with local first responders and emergency planning committees to strengthen preparation to protect communities in the event of accidents and disasters. Emergency preparedness requirements include: testing notification systems, ensuring facilities provide emergency coordination information, and scheduling simulated-emergency tabletop exercises at least once every three years and field exercises at least once every ten years. *See, e.g.*, 40 C.F.R. §§ 68.96(a), 68.90(b)(5), 68.93, 68.96(b); *see also* 82 Fed. Reg. at 4595. As EPA found, providing first responders with “easier access to appropriate facility chemical hazard information ... can significantly improve emergency preparedness and their understanding of how the facility is addressing potential risks.” 82 Fed. Reg. at 4596; *see also* 81 Fed. Reg. at 13,671-72 (listing examples of poor coordination and noting that “recent feedback provided to EPA’s [docket] and during Executive Order 13650 listening sessions indicate that many regulated sources have not provided for an adequate emergency response.”).

Finally, so that vulnerable fence-line communities may more effectively participate in emergency preparedness exercises and be aware of hazards and appropriate ways to respond, the Rule also strengthens interactions between facilities and concerned community members. *See, e.g.*, 40 C.F.R. §§ 68.210(e) (public meeting requirement), 68.210(b) (requiring information on chemical hazards, accident history, and emergency response to be provided to community members); 82 Fed. Reg. at 4596. These provisions will help community members assure themselves “that the facility is adequately prepared to properly handle a chemical emergency,” to “improve their awareness of risks[,] ... and to be prepared to protect themselves in the event of an accidental release.” 81 Fed. Reg. at 13,681; 82 Fed. Reg. at 4668-70; *see also* 81 Fed. Reg. at 13,678 (noting that “[p]oor communication between facility personnel and first responders, as well as poor communication between facility personnel and communities, has been shown to contribute to the severity of chemical accidents” and providing examples).⁶⁶

2. The Division Should Include Terms and Conditions To Implement the 2017 Rule.

Due to the serious safety concerns at the Suncor Refinery, including the two releases and shelter-in-place events since October 2016, the Division should include terms and conditions in

⁶⁶ Additional information is included in Risk Management Program (RMP) Final Rule Questions & Answers (June 2017), https://www.epa.gov/sites/production/files/2017-06/documents/rmp_final_rule_qs_and_as_6-12-17_0.pdf.

the permit that immediately implement all of the Chemical Disaster Rule’s requirements.⁶⁷ It is particularly important to include the significant new requirements for petroleum refineries such as Suncor. The permit should direct Suncor to perform a safer technology alternatives assessment (“STAA”) and consider implementing inherently safer technologies and measures, to prevent and reduce accidental chemical releases.

The 2017 Rule does not direct Suncor to implement any particular safety measure but it does require Suncor to assess these and consider implementing these measures. This process would lead to significant safety improvements for the community. Overall, the CSB found that the type of STAA requirement included in the Final Rule is critical to preventing chemical disasters, stating that: “the CSB has investigated numerous major process safety incidents over the years, including the Chevron and Tesoro incidents, where the implementation of inherently safer design and materials of construction could have prevented the incident.”⁶⁸

For example, for a refinery like Suncor, the measures it should consider to implement this rule may include equipment like back-up power to reduce accidental releases like the one it had recently due to a power outage.⁶⁹ There may be chemicals Suncor could use that are safer, if released accidentally, than ones it is currently using. Another option is setting up an anonymous worker reporting system, to ensure workers at Suncor can directly and anonymously contact the Division to make sure Suncor addresses maintenance and other problems that can lead to uncontrolled pollution releases and other safety hazards. Additional examples from the

⁶⁷ Section 112(r)(7)(E) of the Clean Air Act directs that “[e]ach regulation or requirement under [§ 7412(r)(7)] shall for purposes of section 7413, 7413, 7416, 7420, 7604, and 7607 of this title and other enforcement provisions of this chapter, be treated as a standard in effect under subsection (d) of this section.” 42 U.S.C. § 7412(r)(7)(E). Therefore, the Division should treat the 2017 Rule as a standard in effect, and implement its requirements to ensure adequate enforcement in the Suncor Title V permits. *See also id.* § 7412(r)(11) (noting state authority to go beyond the national requirements, stating that nothing in this subsection limits the ability of a State to adopt or enforce a requirement “that is more stringent than” the national § 7412(r)(7) requirements).

⁶⁸ CSB, *Investigation Report: Catastrophic Rupture of Heat Exchanger (Seven Fatalities) Tesoro Anacortes Refinery* at 113 (May 2014) (*hereinafter* “Tesoro Investigation Report”), <http://www.csb.gov/file.aspx?DocumentId=600>.

⁶⁹ *See generally, e.g.*, Hydrocarbon Publishing Co., *Refinery Power Outage Mitigations* (2014); U.S. PIRG Education Fund, *Needless Risk: Oil Refineries and Hazard Reduction* (Aug. 2005).

California Refinery Safety Taskforce and other sources show the types of anonymous reporting measures that should be considered.⁷⁰

There also may be additional maintenance and prevention measures Suncor can and should put in place to prevent and reduce the occurrence future incidents like those it has had recently. As some examples, the CSB has provided information on various measures that could have prevented other recent refinery fires, explosions, and other accidents, and many of these are measures Suncor may benefit from considering and implementing. For example, when a worker was injured at the Delaware City Refinery on November 29, 2015, the CSB investigated and found that safety steps, including hazard analysis, could be implemented to prevent accidents and protect health, and on May 18, 2017, the CSB released a Safety Bulletin to prevent similar accidents.⁷¹

The CSB has identified “preventive maintenance” as a “Driver of Critical Chemical Safety Change,” finding that: “[n]on-existent or poor preventive maintenance programs has been a recurring root cause in CSB investigations.”⁷² Examples of these primary root causes include: inadequate mechanical integrity programs; delayed or deferred preventive maintenance; and ageing infrastructure of equipment at chemical facilities.”⁷³

⁷⁰ California is in the process of updating its rules to include this and other requirements. Cal. Dep’t of Indus. Relations, *Standards Presentation to CA OSHA Board, § 5189.1 Process Safety Management for Petroleum Refineries* at 25 (2017), <http://www.dir.ca.gov/OSHSB/documents/Process-Safety-Management-for-Petroleum-Refineries-txtbrdconsider.pdf> (“Effective procedures to ensure the right of all employees, including employees of contractors, to anonymously report hazards.”); Cal. Dep’t of Indus. Relations, News Release No. 2017-37, *Landmark Workplace Safety and Health Regulation Approved to Reduce Risk of Major Incidents at Oil Refineries in California* (May 18, 2017), <http://www.caloes.ca.gov/FireRescueSite/Documents/CalARP%20Program%204%20Modified%20Proposed%20Regulations%202016%20-%20February%2014,%202017.pdf>; see also, e.g., NASA, *Aviation Safety Reporting System*, <https://asrs.arc.nasa.gov/index.html> (last visited Aug. 1, 2017); NASA, *Aviation Safety Reporting System Program Briefing* (2016), https://asrs.arc.nasa.gov/docs/ASRS_ProgramBriefing2016.pdf; Near Miss, *About*, <http://www.firefighternearmiss.com/About> (last visited Aug. 1, 2017); Elsevier Public Safety, *Nat’l Fire Fighter Near-Miss Reporting System, Annual Report 2008* (2009), http://firereports.nationalnearmiss.org/DesktopModules/Bring2mind/DMX/Download.aspx?EntryId=29&Command=Core_Download&language=en-US&PortalId=2&TabId=348.

⁷¹ CSB, *CSB Releases Safety Bulletin into 2015 Chemical Release and Flash Fire at the Delaware City Refining Company* (May 18, 2017), <http://www.csb.gov/csb-releases-safety-bulletin-into-2015-chemical-release-and-flash-fire-at-the-delaware-city-refining-company/>; CSB, *Safety Bulletin, Key Lessons for Preventing Incidents When Preparing Process Equipment for Maintenance, Flash Fire at the Delaware City Refinery, Incident Date: Nov. 29, 2015* (May 2017), http://www.csb.gov/assets/1/19/Final_DCRC_Bulletin1.pdf.

⁷² CSB, *Preventive Maintenance* (last updated July 27, 2017), <http://www.csb.gov/recommendations/preventive-maintenance/>.

⁷³ *Id.*

Recent CSB Recommendations Involving Preventive Maintenance came from a number of refinery incidents, as well as other types of releases, including the:

- 2012 - Chevron Refinery Fire
- 2010 - Tesoro Refinery Fatal Explosion and Fire
- 2009 - Silver Eagle Refinery Flash Fire and Explosion and Catastrophic Pipe Explosion
- 2007 - Valero Refinery Propane Fire
- 2005 - BP America Refinery Explosion
- 2001 - Marcus Oil and Chemical Tank Explosion
- 2001 - Motiva Enterprises Sulfuric Acid Tank Explosion.⁷⁴

For example, an investigation of the Chevron fire showed that for 10 years prior to the incident, Chevron workers had “recommended on several occasions” that inspections or upgrades occur on the very piping that failed on August 6, 2012, after those recommendations “were not implemented effectively.”⁷⁵ For years before the April 2010 Tesoro refinery fire that killed 7 workers, equipment “frequently leaked flammable hydrocarbons during startup, sometimes resulting in fires. Tesoro management had been complacent about these hazardous leaks and did not always investigate the cause of the leaks.”⁷⁶

The CSB has also evaluated prior incidents, including one at the Motiva Enterprises refinery in 2001 and found that there are safer methods to engage in “hot work practices” that can both save workers lives and prevent incidents that “have the potential to result in a major catastrophic accident.”⁷⁷

Additionally, the CSB has found that “[i]nadequate or poor emergency planning or response has been a recurring finding in the [CSB’s] investigations.”⁷⁸ There are 14 CSB investigations that have found deficiencies in a community’s, facility’s or emergency responder’s response to an incident at a chemical facility, including one at a refinery (2009 Citgo Refinery hydrofluoric acid release and fire) and “information sharing between facilities, emergency responders and the community” is one of the key recommendations the CSB made to address this.⁷⁹

There may also be additional measures Suncor and the Division should consider implementing to reduce threats to the community, both to prevent future accidental releases like

⁷⁴ *Id.*

⁷⁵ CSB, *Final Investigation Report: Chevron Richmond Refinery Pipe Rupture and Fire, Chevron Richmond Refinery #3 Crude Unit, Richmond California* at 7 (2015).

⁷⁶ Tesoro Investigation Report at 6.

⁷⁷ CSB, *Safe Hot Work Practices* (last visited Aug. 1, 2017), <http://www.csb.gov/recommendations/hot-work/>.

⁷⁸ CSB, *Emergency Planning & Response* (last updated Feb. 6, 2017), <http://www.csb.gov/recommendations/emergency-response/>.

⁷⁹ *Id.*

those it has had, and to ensure adequate emergency response. Very little information was provided to the community around the two recent shelter-in-place incidents. It is critical for Suncor to provide additional information to the community and to first-responders on the hazards and emergency response preparedness plans it has in order to help community members prepare, to reduce harm and disruption to their lives in the event additional releases occur, and so that they can advocate for stronger protections, as needed, with the relevant authorities including the Division.

C. Reopen the Plant 2 Permit To Add the 2015 Rule and 2017 Rule Requirements.

In view of the new 2015 and 2017 requirements described above, the Division should also reopen Suncor's Plant 2 permit and update that permit to include all of these requirements. *See* 42 U.S.C. § 7661a(b)(9); 40 C.F.R. § 70.7; 5 Colo. Code Regs. § 1001-5:3C.V(B)(4) (permit modifications must "provide for compliance with all applicable requirements"). As the Division recognizes, it must implement the 2015 Rule and there are several proposed permit modifications to do so.⁸⁰ The Division states that it intends to do this as well for the Plant 2 Permit, but provides no information as to why that has not yet occurred.⁸¹

In addition, for similar reasons as discussed above, the Division must also reopen Suncor's Plant 2 permit to update that permit with terms and conditions that assure compliance with the 2017 Chemical Disaster Rule. *See supra* Part II.B.

D. Require Suncor to Comply with all Applicable SIP Requirements

Colorado law requires that the Division may not issue a Title V permit until it has determined that "[p]ermit conditions provide for compliance with all applicable requirements and the requirements of this Regulation Number 3." 5 Colo. Code Regs. § 1001-5:3C.V.B.4. One such "applicable requirement" is the current State Implementation Plan ("SIP"). *Id.* § 1001-5:3A.I.B.9.b (defining "applicable requirement" as "[a]ny standard or other requirement provided for in the state implementation plan").

As discussed above, last year EPA determined that Colorado's Northern Front Range area failed to attain the 8-hour ozone NAAQS by the attainment date of July 20, 2015, and therefore reclassified it as a "moderate" nonattainment area. 81 Fed. Reg. 26,697, 26,714 (May 4, 2016). As a result of this reclassification, the Division and the Regional Air Quality Council ("RAQC") have developed, and submitted for EPA approval, a revised ozone SIP summarizing measures that the state will take in order to attain the NAAQS.⁸² The Commission approved the

⁸⁰ CDPHE, *Technical Review Document for Modification to Operating Permit 96OPAD120*, at 19–20, 35, 37 (May 11, 2017) ("TRD"), www.colorado.gov/pacific/sites/default/files/AP_SuncorEnergy%28U.S.A.%29CommerceCityMay11_TRD.pdf.

⁸¹ *Id.* at 20.

⁸² *See generally* CDPHE, *State Implementation Plan for the 2008 8-Hour Ozone National Ambient Air Quality Standard* (Nov. 17, 2016), https://raqc.egnyte.com/dl/q5zyuX9QC1/FinalModerateOzoneSIP_2016-11-29.pdf ("SIP").

SIP revisions on November 17, 2016, and it was submitted to EPA for approval on May 16, 2017.⁸³

The SIP identified Suncor's uncontrolled VOC emissions as 4840.1 tpy, and controlled VOC emissions as 421.6 tpy.⁸⁴ It identified its uncontrolled NOx emissions as 576.9 tpy, and its controlled NOx emissions as 526.9 tpy. Commenters question why there is a discrepancy between these figures and Suncor's actual annual emissions, as reported by the Division itself, which for 2016 were 560.06 tpy VOC and 554.1 tpy NOx. *See supra* Table A. At a time when Colorado is failing to attain the national ozone standards, *see supra* pp. 12–13, an unexplained discrepancy between reported controlled and actual emissions of 138.46 tpy of VOC and 27.2 tpy of NOx is concerning, to say the least. Before approving Suncor's proposed permit modifications the Division must modify Suncor's Title V permit so that it authorizes Suncor to emit no more than 421.6 tons of VOCs and 526.9 tons of NOx each year. This is particularly true if the 2016 SIP, which is now state law, was ratified based on the lower emission figures that Suncor reported. In addition, the Title V permit must include monitoring, recordkeeping, and reporting requirements sufficient to ensure compliance with the SIP and the emissions calculations on which it was based.

The magnitude of Suncor's emissions aside, under the Clean Air Act, nonattainment area SIPs must "provide for the implementation of all reasonably available control measures ["RACT"] as expeditiously as practicable (including such reductions in emissions from existing sources in the area as may be obtained through the adoption, at a minimum, of reasonably available control technology ["RACT"])." 42 U.S.C. § 7502(c)(1); *see also id.* § 7511a(b)(2)(C) (requiring states to submit SIPs for moderate ozone nonattainment areas requiring the implementation of RACT for all "[a]ll other major stationary sources of VOCs that are located in the area."). EPA defines RACT as "the lowest emission limitation that a particular source is capable of meeting by application of control technology that is reasonably available considering technological and economic feasibility."⁸⁵ As the Division recognizes, because RACT determinations must take into account site-specific factors, RACT "may range from nothing more to work practices to add-on controls."⁸⁶ However, RACT analysis requires the Division to "consider all typical control technologies for the emission unit or point," by listing and describing the control technologies, discussing technological feasibility, evaluating control effectiveness, and determining actual emissions reductions.⁸⁷ In other words, although the

⁸³ Letter from Dr. Larry Wolk, Exec. Dir. and Chief Med. Officer, CDPHE, to Deb Thomas, Reg'l Adm'r, EPA Region 8 (May 16, 2017).

⁸⁴ SIP at 6-33.

⁸⁵ EPA, *Implementing Reasonably Available Control Technology Requirements for Sources Covered by the 2016 Control Techniques Guidelines for the Oil and Natural Gas Industry* at 2 (Oct. 20, 2016), https://www.epa.gov/sites/production/files/2016-10/documents/implementing_reasonably_available_control_technology_requirements_for_sources_covered_by_the_2016_control_techniques_guidelines_for_the_oil_and_natural_gas_industry.pdf.

⁸⁶ APCD, *Reasonably Available Control Technology Analysis* at 5 (Jan. 19, 2017), https://www.colorado.gov/pacific/sites/default/files/AP_RACTSlidesJan19-2017Meeting.pdf.

⁸⁷ *Id.* at 6, 8.

technology identified as RACT may not necessarily require an emissions source to adopt new pollution control, the Division must at least consider what new emissions controls are technologically and economically feasible.

Colorado's SIP identifies RACT for major stationary sources like Suncor. To assist the Division in identifying RACT, on May 2, 2016, "the Division requested major sources of VOC and/or NO_x in Colorado's ozone nonattainment area provide the Division with a letter identifying potential emission control options for their sources."⁸⁸ Suncor was notably reticent to provide the Division with any proposals for technologies it could adopt to meet RACT. Unlike many other major stationary sources, which provided lengthy and detailed technical analyses, Suncor responded with a curt one page letter (which only addressed NO_x emissions and not VOCs), stating that it could not complete its analysis of RACT by the end of 2016.⁸⁹

As a result, the Division conducted its own analysis of RACT for the Suncor refinery.⁹⁰ It later asked Suncor to submit its own RACT analysis by December 2017.⁹¹ Unfortunately, the Division's analysis seems to have fallen well short of the process for identifying RACT that the Division itself outlined in January 2017. The analysis simply recites a laundry list of technologies and regulations that the Division reviewed, without any analysis of whether these technologies are cost-effective or technologically-effective to implement at Suncor.⁹² The only conclusions that the Division reached was that for NO_x from boilers:

The use of existing ultra low or low NO_x burners for boilers other than Boiler 4, compliance with MACT DDDDD, and compliance with the combustion adjustment requirements established in Regulation Number 7, Section XVI.D. for Suncor's boilers is consistent with control measures described in EPA's RBLC, EPA's Menu of Control Measures, and EPA's ACT for boilers. Therefore, the Division concluded that compliance with the combustion process adjustment requirements in Regulation Number 7, Section XVI.D. represents RACT for Suncor's boilers. In addition, Colorado is requiring Suncor to submit RACT analyses to the Division for the boilers by December 31, 2017, to inform potential, additional emission reduction measures.⁹³

Similarly, for engines, the Division concluded that:

Compliance with NSPS IIII, MACT ZZZZ, and the combustion adjustment requirements established in Regulation Number 7, Section XVI.D. for Suncor's

⁸⁸ CDPHE & RAQC, *Technical Support Document for Reasonably Available Control Technology for Major Sources* at 97 (2016) ("SIP TSD"), https://raqc.egnyte.com/dl/fVijYEOMyp/TSD_RACT_Final.pdf.

⁸⁹ SIP TSD at 271.

⁹⁰ *Id.* at 59–62.

⁹¹ Letter from Curtis Taipale, CDPHE, to Shelley Powell, Suncor (Dec. 20, 2016).

⁹² *Id.*

⁹³ *Id.* at 61.

engines is consistent with control measures described in EPA’s RBLC, EPA’s Menu of Control Measures, and EPA’s ACT for engines. Therefore, the Division concluded that compliance with the applicable requirements of NSPS III and/or MACT ZZZ as incorporated in Regulation Number 7, Section XIX.D. and the combustion process adjustment requirements in Regulation Number 7, Section XVI.D. represents RACT for Suncor’s engines.⁹⁴

The SIP itself simply includes this laundry list of requirements as RACT for Suncor; identifying various federal MACT, NSPS, and NESHAP regulations as RACT, for both VOCs and NOx.⁹⁵ In essence, Division concluded that the regulations that already applied to Suncor constituted RACT. Its only analysis requiring increased pollution controls was a vague statement that Suncor would be asked to submit RACT analyses for its boilers by December 2017.

But, Suncor is requesting modifications to its permit now, not in December. The Division cannot issue a permit modification until it determines that the permit conditions “provide for compliance with all applicable requirements,” 5 Colo. Code Regs. § 1001-5:3C.V.B.4, including any “requirement provided for in the [SIP],” 5 Colo. Code Regs. § 1001-5:3A.I.B.9.b. Thus, the Division should not approve the permit modifications at issue until it has made a formal determination, adequately supported by the record and subject to public notice and comment, whether Suncor’s pollution controls represent RACT. The Division first asked Suncor to identify RACT in May 2016. Giving it until December 2017 to do so is unreasonable. Colorado’s citizens cannot wait for Suncor to identify further emission reductions that constitute RACT. The Division should do its duty and identify RACT now, while Suncor’s permit is awaiting modification, rather than continuing to defer this analysis and the implementation of RACT.

III. The Division should combine the operating permits for the Suncor Refinery.

The Suncor Refinery currently has two permits – one for plants 1 and 3 (the permit which the Division now proposes to modify), and one for plant 2 (as discussed in the Technical Review Document). This appears to be because the plants were previously under different ownership.⁹⁶ Now that the plants are combined under Suncor’s control, the Division would best effectuate the spirit and purpose of the Clean Air Act and the Colorado regulations implementing the Title V permit program, by combining these permits into one single permit.

The Clean Air Act envisions that a single facility will receive a single permit as “a source-specific bible for Clean Air Act compliance.” *Virginia v. Browner*, 80 F.3d at 873; *see also* 42 U.S.C. § 7661(2) (defining “major source” as “any stationary source (or any group of stationary sources located within a contiguous area and under common control)”); 40 C.F.R. § 70.2 (defining “major source” as “any stationary source (or any group of stationary sources that

⁹⁴ *Id.* at 62.

⁹⁵ SIP at 6-33.

⁹⁶ *See supra* nn.4–5.

are located on one or more continuous or adjacent properties, and are under common control of the same person (or persons under common control)) belonging to a single major industrial grouping”). The reason for this is to give clarity to the permittee, to assist the permitting and enforcement authorities, and to assist the public in reviewing, understanding, and helping to assure compliance with clean air requirements.

The need for a single unified permit for all plants is shown plainly by this permit modification process. The dozen modifications currently before the Commission are difficult to evaluate out of the context of the full refinery operation and planning process. As discussed in the Sahu Report, there have been many more than a dozen modifications to the Suncor facilities in recent years, some of which Suncor and the Division recognized were close to the PSD and nonattainment NSR significance thresholds. Sahu Report at 9, 11, 16. Commenters understand from a meeting with the Division that there are also other modifications that Suncor has requested that the Division has not yet reviewed or released for public comment. There is also at least one renewal application for one or more of the permits before the Division that it has not yet reviewed or released.⁹⁷ Combining these permits would advance the interest of efficiency for all involved, including Suncor.

The plants are integrated into and part of the same facility, as shown, for example, by the process flow diagram contained in a file of correspondence between the Division and Suncor.⁹⁸ Plant 2 is connected to the other plants in at least two ways, and the proposed permit modification (East-West) will add another connection. Considering the East-West modification in isolation as only part of the Plant 1,3 permit is arbitrary and likely to lead to an inappropriate piecemeal approach to the permitting of the facility. This modification should be evaluated in context, including in connection to Plant 2, through consideration of all parts of the refinery in the same permit.

Although Commenters were unable to find planning process and other documents describing Suncor’s plans for production in the file review, it seems clear that the company has a planning process that covers Plants 1, 2, and 3, as a unitary facility. Some past modifications

⁹⁷ See 2017 Correspondence File at 379–80 (“Although the renewal application was submitted on September 16, 2016, due to other priorities the Division is not processing the renewal application at this time . . . It is anticipated that work on the Plants 1 and 3 renewal application may begin in early 2018.”). The full correspondence file associated with the permit modifications at issue in this 2017 proceeding was sent from Margaret Knox-Kruschke, CDPHE, to Joel Minor, Earthjustice on May 30, 2017. The 2017 Correspondence File is attached in the Appendix to these comments as an unnumbered PDF, as it was sent to Earthjustice. All citations to the 2017 Correspondence File reference page numbers in that PDF.

⁹⁸ 2015 Correspondence File at 189. The full correspondence file associated with the permit modifications approved in 2015 (and a few earlier permit modifications and renewals) was provided by Terah Smith, CDPHE to Ava Farouche, Earthjustice, on June 5, 2017. The 2015 Correspondence File is attached in the Appendix to these comments as an unnumbered PDF, as it was sent to Earthjustice. All citations to the 2015 Correspondence File reference page numbers in that PDF.

demonstrate that Suncor simultaneously plans modifications for all three plants.⁹⁹ For example, Suncor appears to have one linear programming model for the entire facility, indicating once again that the company itself considers the three plants as a single facility.

Although the permit modifications subject to this hearing do not cover Plant 2, the Division's own TRD references Plant 2 changes, modifications, and circumstances multiple times.¹⁰⁰ It would assist the Division in its review and consideration of such modifications, as well as the public, for these permits to be combined into one. Doing so would ensure that the Division can effectively evaluate modifications, potential significance of emission changes, and avoid piecemeal review of modifications that may cross plants but are artificially separated because the permits are separated. The more the plants are separated, making it harder for the Division and the public to view and understand the big picture, the more likely it is that potential concerns could fall through the cracks.

Combining permits would also ensure more prompt updates, as needed, to the permits, such as from the February 10, 2017 modification described here. Because the permits are separated, the Division is proposing to bring only Plants 1 and 3 up to date with the 2015 NESHAP, while delaying similar action on Plant 2. Combining these permits would ensure that the public receives the benefit of updates like this to standards, regulations, and other requirements that the permit must incorporate in a more timely manner, rather than issuing an updated permit to only one part of the facility. It would also mean that the Division, the public, and Suncor itself would not have to duplicate the permit process required to perform this kind of update or other similar modifications; it could all be done through a single, unified process that would be more holistic and understandable to the public. The lack of a unified permit has made it harder for Commenters to fully understand and evaluate the modifications proposed now, their relationship to prior modifications, or future modifications. Thus, not having a combined permit undermines public participation and increases confusion regarding what the refinery is doing and the implications of many different public processes relating to the Suncor facility.

IV. Provide Information and Analysis Needed to Assure Meaningful Opportunity for Public Notice & Comment.

Public notice and participation provisions are central requirements to the Title V permit program. *See, e.g.*, 42 U.S.C. § 7661a(b)(6); Colo. Rev. Stat. § 25-7-102 (“the prevention, abatement, and control of air pollution ... are affected with a public interest”); *id.* § 25-7-114.4(1)(o) (requiring the Commission to adopt procedures to “make available to the public any permit application”); *id.* § 25-7-114.5(5) (establishing comment procedures for permits); 5 Colo. Code Regs. § 1001-1:VII.D.1 (“A public comment hearing is intended to encourage citizen participation and provide a forum for information gathering by the agency.”); *id.* § 1001-5:3D.IV (public comment requirements for Title V permit); *id.* § 1001-5:3C.VI.B.6 (public participation requirements).

⁹⁹ *See id.* at 492 (noting that emission sources at Plants 1, 2, and 3 could all be impacted by a proposed modification).

¹⁰⁰ *See, e.g.*, TRD at 3, 5, 8, 9, 20, 21, 22, 24, 27, 43, 44.

Commenters appreciate the Commission's determination to hold a public comment hearing on the pending permit modifications. In advance of this hearing, Earthjustice, on behalf of Commenters, attempted to seek additional information which the Division's Technical Review Document cites, on which it appears to rely, and/or which is needed to evaluate that document and the proposed permit modifications. Earthjustice appreciates that Division staff made time for a July 17, 2017 meeting, and allowed us to ask questions about the technical information supporting the proposed permit modifications. Unfortunately, we have been unable to receive some of the information needed to evaluate the permit modifications. Therefore on July 26, 2017, Earthjustice submitted a request for certain documents and information to the Division.¹⁰¹ The Division responded on Friday, July 27, 2017, after 5:00 p.m., with a letter stating that the request would take more than 10 hours of staff time to fulfill, and an invoice requesting a payment to perform an initial review of these records.¹⁰² The response did not provide a list of which documents would be provided, or the full cost of providing them. Although Earthjustice promptly sent the requested payment for staff time on Monday, July 31, 2017, the amount of time, and cost, of obtaining these documents rendered it impossible to obtain them prior to when these comments were submitted.

Lack of access to these documents has denied the public an opportunity to meaningfully review and comment on the proposed permit modifications, and to evaluate the potential relatedness of one or more of these modifications with prior modifications, with other pending modifications (that Suncor has requested but which the Division has not yet released for public comment), and with its pending renewal application (which was filed in September 2016, but the status currently remains unclear).¹⁰³ Accordingly, without the requested documents, members of the public lack the information needed to determine whether Suncor's Title V permit assures compliance with all applicable requirements, including whether the proposed permit modifications constitute major modifications subject to the Clean Air Act's PSD and nonattainment NSR requirements.

Therefore, Commenters respectfully request that the Division provide this information and allow a renewed opportunity for public review and comment on the draft permit based on this information prior to acting on Suncor's requested modifications. *See, e.g., In re Cash Creek Generation, LLC*, Order on Petition No. IV-2010-4 at 10 (June 22, 2012) (providing that an EPA objection to a Title V permit "is warranted on the basis that the unavailability of the omitted information during the public comment period contravened 40 C.F.R. § 70.7(h) because the absence of that information deprived the public of the opportunity to meaningfully participate in the permitting process, especially where the missing information resulted in, or may have resulted in, a deficiency in the content of the permit.").

¹⁰¹ *See* Letter from Joel Minor, Earthjustice, to Jackie Joyce et al., CDPHE (July 26, 2017) (listing documents and information requested, relevance to permit modifications and need to review to evaluate those modifications).

¹⁰² Letter from Terah Smith, CDPHE, to Joel Minor, Earthjustice (July 27, 2017).

¹⁰³ *See* 2017 Correspondence File at 379–80 (noting renewal application being filed); *see also* Sahu Report at 9, 10, 11, 17, 18, 23.

V. Perform A Cumulative Health and Safety Impact and Risk Assessment.

A. Suncor's Emissions Can Cause Serious Health Threats.

Health research shows emissions and related health threats from refinery pollution, which includes chemicals that can cause or contribute to breathing problems, such as asthma, as well as cancer and other chronic health threats. Spikes in air pollution like the recent releases in March 2017 and October 2016 can lead to additional acute health threats. Air pollution can also fall on playgrounds, homes, and backyards and be taken into the body through pathways like ingestion (such as through children playing in soil, or people eating home-grown vegetables or fish), as well as inhalation. Health threats to children, in early life, and *in utero* can be especially harmful.¹⁰⁴ These issues are of particular concern here because Suncor is a major source of criteria and hazardous air pollutants, located very close to community residents who are vulnerable to health threats from a range of air pollution sources, and this is a nonattainment area for ozone.

These health effects are of particular concern because Suncor has been increasing the amount of tar sands and other dirty crudes that it processes in recent years. *See* Sahu Report at 4–6. These crudes have more dangerous health impacts than the conventional crudes that have historically been (and continue to be) processed at Suncor. *See* Sahu Report at 6–7.

Given these changes and the overall amount of emissions of various harmful pollutants from Suncor, now is the time for CDPHE to perform a comprehensive assessment of the health impacts of Suncor's changing air toxic emission profile.¹⁰⁵

¹⁰⁴ *See, e.g.*, Cal. Env'tl. Prot. Agency, Office of Env'tl. Health Hazard Assessment Reproductive and Cancer Hazard Assessment Branch, *In Utero and Early Life Susceptibility to Carcinogens: The Derivation of Age-at-Exposure Sensitivity Measures* (May 2009),

http://oehha.ca.gov/air/hot_spots/2009/AppendixJEarly.pdf. Other sources attached in the Appendix, and others cited below, also provide evidence about early-life exposure and impacts.

¹⁰⁵ *See, e.g.*, Cal. Env'tl. Prot. Agency, Office of Env'tl. Health Hazard Assessment, *Air Toxics Hot Spots Program Risk Assessment Guidelines*, <https://oehha.ca.gov/air/crnrr/notice-adoption-air-toxics-hot-spots-program-guidance-manual-preparation-health-risk-0>; Cal. Env'tl. Prot. Agency, Office of Env'tl. Health Hazard Assessment, *Cumulative Impacts: Building a Scientific Foundation* (2010); Cal. Env'tl. Prot. Agency, Office of Env'tl. Health Hazard Assessment, *California Communities Environmental Health Screening Tool* (Jan. 30, 2017), <https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-30> (“CalEnviroScreen 3.0”); George Alexeef et al., *A Screening Method for Assessing Cumulative Impacts*, 9 Int. J. Environ. Res. Public Health 648 (2012); James L. Sadd et al., *Playing It Safe: Assessing Cumulative Impact and Social Vulnerability through an Environmental Justice Screening Method in the South Coast Air Basin, California*, 8 Int. J. Environ. Res. Public Health 1441 (2011); Jason Su et al., *An Index for Assessing Demographic Inequalities in Cumulative Environmental Hazards with Application to Los Angeles, California*, 43(20) Env'tl. Sci. Tech. 7626 (2009).

1. Criteria and Hazardous Air Pollutants That Suncor Emits Can Cause Serious Short and Long-Term Threats to Human Health.

The following is a summary of the health impacts of some of the air pollutants emitted by refineries. Many of these compounds present significant hazards to human health at varying levels of exposure; some are persistent in the environment. Toxic air pollutants emitted by refineries contribute to a wide range of serious health impacts including asthma and other respiratory diseases; developmental impacts including IQ loss; cancer; heart disease; reproductive system impacts including birth defects; damage to a range of organs including the kidneys and liver; and even premature death.

- Of grave concern are the studies that have documented a wide range of adverse health impacts from exposure to **fine particulate matter (PM_{2.5})**, including increased rates of cardiovascular disease, such as atherosclerosis, heart attacks, respiratory illness, emergency room visits, and premature death.¹⁰⁶ Exposure to particulate matter has also been linked to birth defects, low birth weights, and premature births.¹⁰⁷

¹⁰⁶ Kuenzli N, Jerrett M, Mack WJ, Beckerman B, LaBree L, Gilliland F, Thomas D, Hodis HN. *Ambient Air Pollution and Atherosclerosis in Los Angeles*, *Envtl. Health Perspective* 113 (Feb. 2005):201-6. Miller KA, Siscovick DS, Sheppard L, Shepherd K, Sullivan JH, Anderson GL, Kaufman JD. *Long-term Exposure to Air Pollution and Incidence of Cardiovascular Events in Women*, *New England Journal of Medicine* 1:356 (Feb. 2007):447-58; Hoffman B, Moebus S, Mohlenkamp S, Stang A, Lehman N, Dragano D, Schmermund A, Memmesheimer M, Mann K, Erbel R, Jockel K-H. *Residential Exposure to Traffic Is Associated With Coronary Atherosclerosis*, *Circulation* (July 16, 2007), DOI:10.1161 / CIRCULATIONAHA.107693622; Pope CA, Muhlestein JB, May HT, Renlund DG, Anderson JL, Horne BD. *Ischemic Heart Disease Events Triggered by Short-term Exposure to Fine Particulate Air Pollution*, *Circulation* 114 (December 5): 20062443-8; Schwartz J, Slater D, Larson TV, Person WE, Koenig JQ. *Particulate Air Pollution and Hospital Emergency Room Visits for Asthma in Seattle*, *American Review of Respiratory Disease* 147 (Apr. 1993):826-31; Jerrett M, Burnett RT, Ma R, Pope CA, Krewski D, Newbold KB, Thurston G, Shi Y, Finkelstein N, Calle EE, Thun MJ. *Spatial Analysis of Air Pollution and Mortality in Los Angeles*, *Epidemiology* 16 (Nov. 2005):727-36.

¹⁰¹ Ritz B, Wilhelm M, Zhao Y. *Air Pollution and Infant Death in Southern California, 1989–2000*, *Pediatrics* 118 (Aug. 2000):493-502; Wilhelm M, Ritz B. *Residential Proximity to Traffic and Adverse Birth Outcomes in Los Angeles County, California, 1994–1996*, *Envtl. Health Perspective* 111 (February 2003):207-16; Wilhelm M, Ritz B. *Local Variations in CO and Particulate Air Pollution and Adverse Birth outcomes in Los Angeles County, California, USA*, *Envtl. Health Perspective* 113 (Sept. 2005):1212-21.

- **Nitrogen oxides** can have a toxic effect on the airways, leading to inflammation, asthmatic reactions, and worsening of allergies and asthma symptoms.¹⁰⁸ In addition, nitrogen oxides react with VOCs in the sunlight to form ozone – also known as smog. This layer of brown haze contributes to decreased lung function, increased respiratory symptoms, asthma, emergency room visits, hospital admissions, and premature deaths.¹⁰⁹ Ozone can also cause irreversible changes in lung structure, eventually leading to chronic respiratory illnesses, such as emphysema and chronic bronchitis.¹¹⁰
- **Sulfur dioxide (SO₂)** emissions are another criteria pollutant of concern from refineries. These react in the air to create acids that irritate the airways, often causing severe respiratory symptoms in asthmatics.¹¹¹
- **Hydrogen Sulfide (H₂S)** is a flammable and colorless gas that smells like rotten eggs. It is a broad spectrum poison that can be lethal at high concentrations. At low concentrations, hydrogen sulfide can cause irritation to the eyes, nose, and throat. Additionally, exposure may result in lack of coordination, memory loss, hallucinations, personality changes, loss of sense of smell, coughing, and shortness of breath; people with asthma may experience difficulty breathing. In occupational settings, workers have died from exposure to high levels of hydrogen sulfide.¹¹²

¹⁰⁸ Davies, RJ, Rusznak, C, Calderon, MA, Wang, JH, Abdelaziz, MM, Devalia, JL: *Allergen-irritant interaction and the role of corticosteroids*, *Allergy* 52, (Suppl 38) (1997):59–65; Davies, RJ, Rusznak, C, Devalia, JL: *Why is allergy increasing?—environmental factors*, *Clinical & Experimental Allergy* 28, (Suppl 6) (1998):8–14.

¹⁰⁹ EPA, *Provisional Assessment of Recent Studies on Health and Ecological Effects of Ozone Exposure* (2009); Letter from Dr. H. Christopher Frey, Chair, Clean Air Scientific Advisory Committee, to Gina McCarthy, Adm’r, EPA, at ii (June 26, 2014), [https://yosemite.epa.gov/sab/sabproduct.nsf/5EFA320CCAD326E885257D030071531C/\\$File/EPA-CASAC-14-004+unsigned.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/5EFA320CCAD326E885257D030071531C/$File/EPA-CASAC-14-004+unsigned.pdf); Am. Lung Ass’n et al., *Comments on EPA’s Proposed Revisions to the National Ambient Air Quality Standards for Ozone*, Dkt. No. EPA-HQ-OAR-2008-0699 at 20–49, 51–116, 189–93, 204–09 (Mar. 17, 2015).

¹¹⁰ Hodgkin, JE, Abbey, DE, Euler, GL, Magie, AR *COPD prevalence in nonsmokers in high and low photochemical air pollution areas*, *Chest* 86 (1984):830-838; Abbey DE, Petersen F, Mills PK, Beeson WL. *Long-term ambient concentrations of total suspended particulates, ozone, and sulfur dioxide and respiratory symptoms in a nonsmoking population*, *Archives of Envtl. Health* 48 (1993):33–46.

¹¹¹ Nicolai, T. *Environmental air pollution and lung disease in children*, *Monaldi Archives of Chest Disease* 54 (1999):475–478; *see also generally* EPA, *Integrated Science Assessment for Sulfur Oxides—Health Criteria (Second External Review Draft)* (Dec. 2016), [https://yosemite.epa.gov/sab/sabproduct.nsf/264cb1227d55e02c85257402007446a4/74B71633B217E26D852580370067E005/\\$File/SOX_ISA-2016_ERD_SECOND.pdf](https://yosemite.epa.gov/sab/sabproduct.nsf/264cb1227d55e02c85257402007446a4/74B71633B217E26D852580370067E005/$File/SOX_ISA-2016_ERD_SECOND.pdf).

¹¹² U.S. Department of Health and Human Services (“DHHS”), Agency for Toxic Substances and Disease Registry (“ATSDR”), *Toxicological Profile for Hydrogen Sulfide* (July 2006).

- **Benzene** is a common component of crude oil and gasoline, and a widespread environmental pollutant resulting from refinery activity.¹¹³ Human exposure to benzene has been associated with a range of acute and long-term adverse health effects and diseases, including cancer and adverse hematological, reproductive and developmental effects.¹¹⁴ Benzene is a known carcinogen; long term exposure can cause leukemia.¹¹⁵ Inhalation of high doses of benzene may impact the central nervous system leading to drowsiness, dizziness, irregular heartbeat, nausea, headaches, and depression.¹¹⁶ Female workers experiencing high exposure levels over the course of many months experienced reproductive impacts, such as a decrease in the size of their ovaries. In animal studies, breathing benzene was associated with developmental effects such as low birth weight, delayed bone formation, and bone marrow damage.¹¹⁷
- **Toluene** is a VOC emitted in large quantities by petroleum refineries. California's list of chemicals known to cause cancer or reproductive toxicity includes toluene as a developmental toxicant.¹¹⁸ Similar to many organic solvents, toluene acts as a respiratory tract irritant, particularly at high air concentrations.¹¹⁹ For this reason, it can be especially harmful to people with asthma. A ubiquitous air pollutant, exposure to toluene constitutes a serious health concern as it has negative impacts on the central nervous system. Exposure to toluene can cause headaches, impaired reasoning, memory loss, nausea, impaired speech, hearing, and vision, amongst other health effects.¹²⁰ Long-term exposure may damage the liver and kidneys.¹²¹
- **Xylene**¹²² is a VOC in petroleum. Short term exposure to xylene may result in a number of adverse human health effects including irritation of the skin, eyes, nose and throat; difficulty breathing; damage to the lungs; impaired memory; and possible damage to the liver and kidneys. Long-term exposure may affect the nervous system presenting

¹¹³ DHHS, ATSDR, *Toxicological Profile for Benzene* (Aug. 2007); see CalEPA, OEHHA, Air Toxicology and Epidemiology, *Notice of Adoption of Reference Exposure Levels for Benzene* (June 27, 2014) http://oehha.ca.gov/air/chronic_rels/BenzeneJune2014.html.

¹¹⁴ California Air Resources Board, *Report to the Scientific Review Panel on Benzene* (Nov. 27, 1984), <http://www.arb.ca.gov/toxics/id/summary/benzene.pdf>.

¹¹⁵ CalEPA, OEHHA, *Chronic Toxicity Summary: Benzene*, http://www.oehha.org/air/chronic_rels/pdf/71432.pdf.

¹¹⁶ World Health Organization, *Exposure to Benzene: A Major Public Health Concern* (2010), <http://www.who.int/ipcs/features/benzene.pdf>.

¹¹⁷ DHHS, ATSDR, *Toxicological Profile for Benzene*, (Aug. 2007).

¹¹⁸ CalEPA, OEHHA, *The Proposition 65 List* (last visited Aug. 1, 2017), <https://oehha.ca.gov/proposition-65/proposition-65-list>.

¹¹⁹ DHHS, Division of Toxicology and Environmental Medicine, ATSDR, *Toluene Toxicity: Case Studies in Environmental Medicine* (Feb. 2001), <http://www.atsdr.cdc.gov/hec/csem/toluene/docs/toluene.pdf>.

¹²⁰ *Id.*

¹²¹ National Institute for Occupational Safety and Health, *NIOSH Pocket Guide to Chemical Hazards: Toluene* (last updated Apr. 11, 2016), <http://www.cdc.gov/niosh/npg/npgd0619.html>.

¹²² Also known as dimethyl benzene.

symptoms such as headaches, lack of muscle coordination, dizziness, confusion, and loss of balance.¹²³ More serious long-term health effects 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.¹²⁴

- **Hydrogen Cyanide** exposure at high levels swiftly harms the brain and heart, beginning with rapid breathing, followed by convulsions, and loss of consciousness, and can even cause coma and death.¹²⁵ More commonly, even low level exposure to hydrogen cyanide is associated with breathing difficulties, chest pain, vomiting, headaches, and enlargement of the thyroid gland.¹²⁶
- **Formaldehyde** is a known carcinogen that can cause asthma or asthma-like symptoms, neurological effects, increased risk of allergies, eczema, and changes in lung function at exposure levels from 0.6 to 1.9 ppm.¹²⁷

2. Research has shown higher rates of cancer, respiratory, reproductive, and other health impacts for nearby communities.

Community health impacts of pollution from petroleum refineries have been analyzed in studies around the world,¹²⁸ finding increased rates of several types of cancer, pre-term deliveries, asthma related hospitalizations, and increased mortality in communities around refineries. Community health surveys have long indicated significantly increased illness rates and health impacts among residents living near refineries and petrochemical complexes.¹²⁹

Some studies have found elevated rates of leukemia in residents living close to petrochemical plants, confirming concerns that known carcinogens associated with leukemia, such as benzene that is emitted in significant quantities from refineries, can greatly harm the health of nearby residents. One study from Taiwan found leukemia rates that were almost two

¹²³DHHS, ATSDR, *Toxicological Profile for Xylene*, (Aug. 2007).

¹²⁴Zoveidavianpoor, M, A Samsuri, and SR Shadzadeh, *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>.

¹²⁵ATSDR, *ToxFaqs for Cyanide* (last updated Oct. 24, 2011), <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=71&tid=19>.

¹²⁶*Id.*

¹²⁷ATSDR *ToxFaqs for Formaldehyde* (last updated May 12, 2015), <http://www.atsdr.cdc.gov/toxfaqs/tf.asp?id=219&tid=39>.

¹²⁸Of the studies evaluated here, four were conducted in the United States, six in Taiwan, one in Sweden, three in the UK, three in Canada, and one in Argentina.

¹²⁹See for example, health surveys reported by the Louisiana Bucket Brigade, *News and Surveys*, <http://www.labucketbrigade.org/blog/st-bernard-residents-sick-oil-industry-pollution-new-door-door-survey-released-today?page=1>.

times higher than expected in highly exposed communities surrounding petrochemical plants.¹³⁰ Another study in Southeast Texas also found greatly elevated leukemia rates in refinery impacted communities.¹³¹ A Swedish study of small communities of approximately 5000 residents found that leukemia rates were 1.5 times higher in those communities where most of the residents live within 2 to 5 kilometers of a refinery.¹³²

In the industrial heartland of Alberta, Canada (which includes several major refineries), a recent major study that measured greatly elevated pollutant levels in the area, reviewed over a decade of cancer incidence data and found that leukemia and non-Hodgkin's lymphoma were higher in the most industrial areas than in neighboring counties.¹³³ Another study also found greater than expected rates of leukemia and lymphoma in residents within 3 kilometers of a petrochemical plant in Balgan Bay, Wales.¹³⁴

In Canada, Brand et al. reported associations between modeled exposures to PM_{2.5} (which can include HAPs (as well as SO₂, and NO₂) from oil refineries and hospital admissions for wheezing diseases in children aged 2-4, although the associations were not statistically significant.¹³⁵ A study in Spain reported statistically significant associations between the proximity of a town to "refineries and coke ovens" and ovarian cancer mortality in the town.¹³⁶

A childhood brain cancer study conducted on the United States' Atlantic Coast found increased risk of brain cancer among babies born to mothers who lived within one mile of a

¹³⁰ H Weng, *Association of childhood leukemia with residential exposure to petrochemical air pollution in Taiwan*, Inhalation Toxicology (2008), <http://www.ncbi.nlm.nih.gov/pubmed/18236219> (study found an Odds Ratio of 1.75 for increased incidences of leukemia).

¹³¹ K Whitworth, *Childhood lymphohematopoietic cancer incidence and hazardous air pollutants in southeast Texas, 1995-2004*, *Envtl. Health Perspectives* (2008), <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2592281&tool=pmcentrez&rendertype=abstract> (study found a Rate Ratio of 1.37 for increased incidences of leukemia).

¹³² L Barregard, 'Leukaemia incidence in people living close to an oil refinery,' *Environmental research* (2009) <http://www.ncbi.nlm.nih.gov/pubmed/19781695>

¹³³ I Simpson, 'Air quality in the Industrial Heartland of Alberta, Canada and potential impacts on human health' *Atmospheric environment*, (2013) <http://linkinghub.elsevier.com/retrieve/pii/S135223101300705X>.

¹³⁴ R Lyons, 'Incidence of leukaemia and lymphoma in young people in the vicinity of the petrochemical plant at Baglan Bay, South Wales, 1974 to 1991' *Occupational and environmental medicine* (1995) <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1128199&tool=pmcentrez&rendertype=abstract>.

¹³⁵ Brand A, McLean KE, Henderson SB, et al. Respiratory hospital admissions in young children living near metal smelters, pulp mills, and oil refineries in two Canadian provinces. *Environmental International* 2016;94:24-32.

¹³⁶ Garcia-Perez J, Lope V, Lopez-Abente G, Gonzalez-Sanchez M, Fernandez-Navarro P. Ovarian cancer mortality and industrial pollution. *Environmental Pollution* 2015;205:103-110.

major source of carcinogenic air pollution like a refinery, compared to those mothers living greater than one mile away.¹³⁷ The potential for increased rates of brain cancer in refinery-impacted areas is confirmed by a Taiwanese study which evaluated over 200 communities and found a statistically significant higher risk of developing brain cancer among residents living in the municipalities with greater exposure to petrochemical emissions.¹³⁸

In 2006, the Texas Department of State Health Services found that Corpus Christi, in Nueces County, home of “Refinery Row,” had a birth defect rate that was 84 percent higher than the rest of Texas. A follow-up study explored the relationship between the rate of birth defects and several industrial sites in the county. Researchers found that mothers living near refineries and chemical plants had babies with high rates of life-threatening birth defects of the abdominal wall and diaphragm.¹³⁹

Another Taiwanese study reviewed national mortality data, finding elevated rates of lung cancer mortality in women who lived in communities surrounding a petroleum refinery.¹⁴⁰ Increased rates of lung cancer mortality have also been found among residents who lived closer to petrochemical industry sites in Teesside, England, compared to people in Sunderland, a similar English city that does not have industry.¹⁴¹ Additional studies have found increased incidences or rates of other types of cancers in refinery-impacted areas, including increased mortality due to liver cancer,¹⁴² increased bone cancer in girls and bladder cancer in boys,¹⁴³

¹³⁷ H Choi, ‘Potential residential exposure to toxics release inventory chemicals during pregnancy and childhood brain cancer’ Environmental health perspectives (2006) <http://www.jstor.org/stable/3651785>. The study was based on Toxics Release Inventory (TRI) emitting facilities, the largest emitters of which are refineries; it found an Odd Ratio of up to 1.72 for mothers living near facilities that release carcinogens.

¹³⁸ C Liu, ‘Association of brain cancer with residential exposure to petrochemical air pollution in Taiwan’ Journal of toxicology and environmental health, part A (2008). <http://www.ncbi.nlm.nih.gov/pubmed/18214804>; The odds ratio was 1.65.

¹³⁹ Dan Kelley, “Birth Defects 84 Percent Higher in Nueces Co.,” Corpus Christi Caller Times, Jan. 25, 2008 <http://www.caller.com/news/2008/jan/25/birth-defects-84-percent-higher-nueces-co>; Langlois, Peter, Texas Department of State Health Services, “A Case-Control Study of the Association Between Birth Defects Elevated in Nueces County and Sites of Concern to Citizens for Environmental Justice”; ATSDR, January 2010 Progress Report on Agency Activities in Corpus Christi, http://www.atsdr.cdc.gov/sites/corpuschristi/final_report.html.

¹⁴⁰ C Yang, ‘Female lung cancer mortality and sex ratios at birth near a petroleum refinery plant’ Environmental research (2000) <http://www.ncbi.nlm.nih.gov/pubmed/10845779>.

¹⁴¹ R Bhopal, ‘Does living near a constellation of petrochemical, steel, and other industries impair health?’ Occupational and environmental medicine (1998). <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1757538&tool=pmcentrez&rendertype=abstract>

¹⁴² C Yang, ‘Cancer Mortality and Residence Near Petrochemical Industries in Taiwan’ Journal of toxicology and environmental health (1997) <http://www.tandfonline.com/doi/abs/10.1080/009841097160474>.

increased incidence of buccal cavity, pharyngeal, stomach, and male combined kidney and urinary cancers,¹⁴⁴ and increased incidence of larynx cancer and all cancers.¹⁴⁵

Several studies show increased asthma prevalence and emergency room visits among children and residents living close to refineries. In Puerto Rico, one study showed that proximity to certain major air pollution sources, including refineries specifically, is associated with increased risk of asthma attacks.¹⁴⁶ A 2009 Canadian study assessed children's hospitalization and Emergency Department visits, and found that asthma-related visits were associated with short-term exposure to refinery emissions of SO₂.¹⁴⁷ A similar study found a correlation between refinery stack SO₂ emissions and the prevalence of active asthma in children who live and attend school in proximity to refineries.¹⁴⁸ In Argentina, children living near a petrochemical plant were found to have twice the asthma prevalence, respiratory symptoms, and significantly lower lung function than those living in other regions.¹⁴⁹

¹⁴³ B Pan, 'Excess cancer mortality among children and adolescents in residential districts polluted by petrochemical manufacturing plants in Taiwan' *Journal of toxicology and environmental health* (1994) <http://www.ncbi.nlm.nih.gov/pubmed/8078088>.

¹⁴⁴ J Kaldor, 'Statistical association between cancer incidence and major-cause mortality, and estimated residential exposure to air emissions from petroleum and chemical plants' *Environmental health perspectives* (1984) <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1568163&tool=pmcentrez&rendertype=abstract>

¹⁴⁵ S Sans, 'Cancer incidence and mortality near the Baglan Bay petrochemical works, South Wales' *Occupational and environmental medicine* (1995), <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=1128198&tool=pmcentrez&rendertype=abstract>

¹⁴⁶ Loyo-Berriós, Nilsa I., Rafael Irizarry, Joseph G. Hennessey, Xuguang Grant Tao and Genevieve Matanoski. *Air Pollution Sources and Childhood Asthma Attacks in Cataño, Puerto Rico*. *Am. J. Epidemiol.* (2007) 165 (8):927-935. <http://aje.oxfordjournals.org/content/165/8/927.short>

¹⁴⁷ A Smargiassi, 'Risk of asthmatic episodes in children exposed to sulfur dioxide stack emissions from a refinery point source in Montreal, Canada' *Environmental health perspectives* (2009) <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=2679612&tool=pmcentrez&rendertype=abstract>

¹⁴⁸ Deger L, Plante C, Jacques L, Goudreau S, Perron S, Hicks J, Kosatsky T, Smargiassi A. Active and uncontrolled asthma among children exposed to air stack emissions of sulphur dioxide from petroleum refineries in Montreal, Quebec: a cross-sectional study. *Can Respir J*. 2012 Mar-Apr;19(2):97-102.

¹⁴⁹ Fernando A. Wichmann, MDa, Andrea Müllerc, Luciano E. Busia, Natalia Ciannib, Laura Massolob, Uwe Schlinkc, Andres Porta, PhD, Peter David Sly, MBBS, MD, DSc, FRACPd. Increased asthma and respiratory symptoms in children exposed to petrochemical pollution. *Journal of Allergy and Clinical Immunology* Volume 123, Issue 3, March 2009, Pages 632–638. <http://www.sciencedirect.com/science/article/pii/S0091674908018794>

One study in Taiwan collected pregnancy outcome data from a federal registry and found that preterm deliveries were occurring at a significantly higher rate in petroleum-refining areas as compared to other areas.¹⁵⁰ A recent major study of sector-specific air pollution-related mortalities in the U.S. found that out of 5,695 cities evaluated, Donaldsonville, Louisiana has the highest mortality rate from fine particulate matter (“PM”) pollution.¹⁵¹ Nine refineries processing a total of 2.2 million barrels per day in the 70-kilometer radius contribute to the roughly 81 deaths from cardiovascular disease and lung cancer per 100,000 people.¹⁵²

In communities that host refineries, not only are the outdoor ambient pollutant levels significantly higher, but the indoor concentrations of pollutants can be elevated as well. For example, PM_{2.5} concentrations (which can show the presence of various metallic HAPs) were found to be much higher in the air inside people’s homes in one refinery community compared to those in a non-refinery community—and even in exceedance of California’s annual ambient air quality standard.¹⁵³

Research on emissions from flaring at refineries is of particular concern and shows the need for serious consideration of the health impacts at issue for Suncor. For example, D’Andrea and Reddy studied individuals exposed to benzene during a “flaring incident” at an oil refinery in Texas City, Texas, in 2010. The incident included the release of > 500,000 pounds of “toxic chemicals,” including > 17,000 pounds of benzene, over 40 days. The authors reported that children exposed to benzene had “significant hematologic and hepatic toxicity” compared to children not exposed during the incident.¹⁵⁴ The authors concluded that “children exposed to toxic chemicals specifically benzene have significantly elevated health risks, specifically, alterations in their blood cells and liver enzymes, indicating that these children are at a high risk of developing hepatic or blood related disorders.”

In an additional 2014 study, D’Andrea and Reddy reported that non-smoking adults who were exposed to benzene from flaring at the same refinery had blood and liver alterations,

¹⁵⁰ M Lin, ‘Increased risk of preterm delivery in areas with air pollution from a petroleum refinery plant in Taiwan’ *Journal of toxicology and environmental health, Part A* (2001) <http://www.ncbi.nlm.nih.gov/pubmed/11766170>

¹⁵¹ F Caiazzo, ‘Air pollution and early deaths in the United States. Part I: Quantifying the impact of major sectors in 2005’ *Atmospheric Environment* (2013), <http://linkinghub.elsevier.com/retrieve/pii/S1352231013004548>. The study also found that the most impacted region from air pollution is California, with 21,000 early deaths each year, of which 5,000 are attributable to industry, refineries being the major contributor.

¹⁵² *Id.*

¹⁵³ Brody, J. G.; Morello-Frosch, R. A.; Zota, A. R.; Brown, P.; Perez, C.; Rudel, R. Linking exposure assessment science with policy objectives for environmental justice and breast cancer advocacy: The Northern California Household Exposure Study, *Am. J. Public Health* 2009, 99 (3) S600– 609.

¹⁵⁴ D’Andrea MA, Reddy GK. Adverse health effects of benzene exposure among children following a flaring incident at the British Petroleum refinery in Texas City. *Pediatric Hematology and Oncology* 2014;31:1.

compared to non-smoking adults who were not exposed.¹⁵⁵ The authors noted that because “there is significant scientific evidence that links benzene exposure with an increased risk of carcinogenesis,” “health care providers need to monitor these benzene exposed individuals with frequent periodic checkups and laboratory blood work” to detect the subsequent occurrence of cancers.

B. The Division Should Perform a Cumulative Health and Safety Impact and Risk Assessment.

In view of the serious health threats posed by pollutants emitted by Suncor, and the negative health impacts demonstrated by research at other refineries, the Division should perform a cumulative health and safety impact and risk assessment for Suncor.

The Suncor Refinery’s operations are unified, but are still currently separated into two permits. The company has repeatedly failed to comply with its air quality permits and, in recent years, the facility has released emissions posing a significant danger to nearby communities. Since October 2016 alone, emissions associated with multiple accidents have caused community members to shelter in place, and fear for their health and safety and the well-being and security of their families. Suncor is operating, and seeks to modify its operating permit, in an ozone nonattainment area where there are significant public health and environmental justice concerns. It has requested and received dozens of permit modifications, is requesting another dozen now, and is apparently proposing to make even more modifications to its refinery in the future. It also has at least one, and possibly two, renewal applications before the Division. Yet, all of these actions are being treated separately in a piecemeal fashion.

These circumstances compel the Division now, and in concert with the upcoming modifications and renewal applications of both of the Suncor permits, to engage in a cumulative health and safety impact and risk assessment. This would assist the Division and Suncor in fully understanding and evaluating these impacts and risks. An assessment would also allow the public to consider the big picture of the refinery’s effect on the community. It would allow so community members to review and effectively comment on these and other permit modifications, and renewals by providing context about the refinery’s overall impact.

A cumulative impact and risk assessment is particularly warranted because of Suncor’s increases in production and emissions in recent years,¹⁵⁶ its shift to refining tar sands, which increases certain air impacts,¹⁵⁷ and the fact that at least some of the permit modifications before

¹⁵⁵ D’Andrea MA, Reddy GK. Hematological and hepatic alterations in nonsmoking residents exposed to benzene following a flaring incident at the British Petroleum plant in Texas City. *Environmental Health* 2014;13:115.

¹⁵⁶ See Table A, showing large increases in Toluene, N-hexane, xylene, benzene, NOx, SO₂, and VOC emissions between 2014 and 2016.

¹⁵⁷ See Sahu Report at 4–7; see also generally Nat. Res. Def. Council, *Impacts of Unconventional Crude Oil on Refinery Emissions* (2016); Greg Karras, *Combustion Emissions from Refining Lower Quality Oils* (2016); Nat. Res. Def. Council, *Tar Sands Crude Oil: Health Effects of a Dirty and Destructive Fuel* (2014).

the Division have the effect of supporting increased throughput. *See, e.g.*, TRD at 6 (“The purpose of the December 16, 2015 submittal is to change the method of operation of the No. 3 Hydrodesulfurizer (HDS) to increase the unit’s design throughput.”). Yet the Division has not considered or evaluated the impacts of this increased throughput, production, and emissions. Sahu Report at 2–4

The Division did recognize that some of the modifications will cause increases above the significance threshold for VOCs. VOCs contribute to the formation of ozone and Suncor is located in and affects an ozone nonattainment area, where ozone concentrations are at levels unsafe for human health. Under applicable requirements, including its own Guidelines, the emissions increase requires modeling before the permit can be modified.¹⁵⁸ Yet Suncor provided no modeling for the impact that an increase in VOC emissions would have in this ozone nonattainment area. Nor is there any reason given by Suncor for not doing so. The Division states that it determined not to require any modeling or evaluation of the air quality or health impacts of those increases. TRD at 10, 13, 22. Its basis for not requiring that modeling—*i.e.*, that modeling methods “are not available”—is not supported by the record, and is therefore arbitrary and unlawful. *Id.* (“Although VOC is a precursor for ozone, in general accurate and cost effective methods for modeling ozone impacts from stationary sources are not available. Therefore, individual source ozone modeling is not routinely requested for permit modifications.”).

Actually, EPA has determined that modeling of single-sources to assess ozone impacts in a nonattainment area is necessary to satisfy nonattainment NSR requirements. *See* 40 C.F.R. pt.51 App’x W § 5.3.2; 82 Fed. Reg. 5182, 5192, 5213 (Jan. 17, 2017) (discussing models for single-source air quality assessments for ozone)); 82 Fed. Reg. 14,324, 14,325 (Mar. 20, 2017) (setting May 22, 2017, as effective date for revised Appendix W). The Division therefore must either require this modeling to be done as part of a health and risk impact assessment, or perform this modeling itself before authorizing additional permit modifications. Indeed, as part of updating the ozone SIP, the Division and RAQC recently conducted extensive modeling.¹⁵⁹ Detailed photochemical grid modeling data and tools are already readily available.¹⁶⁰

To fulfill the letter and spirit of the federal and state requirements, *see* Colo. Rev. Stat. § 25-4-2201, and in keeping with environmental justice principles and the public interest,¹⁶¹ the Division should perform a health and safety impact and risk assessment of the Suncor Refinery’s air pollution. This assessment will inform the Division’s evaluation of these and all other permit modifications and renewal applications before it, while ensuring the Division is doing what is

¹⁵⁸ *See generally* CDPHE, *Colorado Modeling Guideline for Air Quality Permits* (May 20, 2011), <https://www.colorado.gov/airquality/permits/guide.pdf>.

¹⁵⁹ SIP at 5-2 to 5-5.

¹⁶⁰ *See* RAQC, *Technical Support Documents for the Moderate Area 2008 8-Hour Ozone Standard State Implementation Plan* (Dec. 1, 2016), <http://raqc.org/technical-support-documents-for-the-moderate-area-2008-8-hour-ozone-standard-state-implementation-plan/>.

¹⁶¹ *See supra* p. 10 & n.26 (“CDPHE is committed to eliminating health disparities and promoting health equity and environmental justice.”).

needed to work toward attainment of the ozone NAAQS, and to prevent significant deterioration of other types of local air quality.

VI. Modification for FCCU (Nov. 8, 2016): Set a Stronger Hydrogen Cyanide Limit.

Suncor seeks a permit limit on hydrogen cyanide (“HCN”) emissions so that it can avoid emergency release notification requirements under section 304 of the Emergency Planning and Community Right-to-Know Act (“EPCRA”), 42 U.S.C. § 11004, and section 103 of the Comprehensive Environmental Response, Compensation and Liability Act (“CERCLA”), 42 U.S.C. § 9603. TRD at 17. Under EPCRA section 304, and CERCLA section 103, a facility must immediately report unpermitted releases of extremely hazardous substances that equal or exceed their reportable quantity to the State Emergency Planning Commission and Local Emergency Planning Committee. EPCRA regulations identify hydrogen cyanide as a hazardous substance and establish the reportable quantity as a release of 10 pounds or more. 40 C.F.R. §§ 302.3, 302.4.

Suncor releases quantities of HCN that substantially exceed 10 pounds, as “HCN is generated during regeneration of the catalyst,” and Suncor seeks to avoid the resulting requirements to report its release. TRD at 17-18. Under EPCRA and CERCLA regulations, a facility that continuously releases a hazardous pollutant may file an annual report rather than a report on each release. According to the National Response Center’s database, the first time Suncor filed an annual report on its hydrogen cyanide release was by telephone on September 2, 2015.¹⁶² On that call, Suncor reported that it was filing an “initial report of a continuous release of hydrogen cyanide ... due to EPA changing their emission factors.”¹⁶³ At that time, Suncor reported that “[t]he upper bounds limit has not been determined.”¹⁶⁴ On that date, Suncor performed a single emission test to determine its hydrogen cyanide emissions rate, which it stated is based on a requested annual coke burn-off rate of lb/1000 lb coke. TRD at 18.

Even though there is no Clean Air Act “applicable requirement” that establishes a federally enforceable limit on Suncor’s hydrogen cyanide emissions (as opposed to just regulating this hazardous air pollutant through carbon monoxide as a claimed surrogate), Suncor asks the Division to include a hydrogen cyanide limit in Suncor’s Title V permit so that Suncor may take advantage of an exemption from EPCRA and CERCLA reporting for a “federally permitted release” under 40 C.F.R. § 302.6(a). In response to Suncor’s request, the Division proposes to include a hydrogen cyanide limit in Suncor’s permit of 12.8 tons/yr (25,600 lbs), which reflects Suncor’s full, uncontrolled annual hydrogen cyanide emissions level as determined by a 2015 stack test. TRD at 18. As explained below, we do not believe that the Division has authority to establish a federally enforceable hydrogen cyanide limit in a Title V permit solely for the purpose of enabling Suncor to avoid EPCRA and CERCLA release reporting.

¹⁶² See U.S. Coast Guard, *National Response Center 2015 Report*, available at <http://nrc.uscg.mil/>. On the 2015 Report spreadsheet, see line 18995 (SEQNOS 1127398) on tabs 1 (Calls) and 2 (Incident Commons) (describing Suncor’s call).

¹⁶³ *Id.*

¹⁶⁴ *Id.*

First, there is no federal law basis for the HCN limit that the Division proposes to include in Suncor's permit. CERCLA section 101(10)(H) defines "federally permitted release" under the Clean Air Act as:

Any emissions into the air subject to a permit or control regulation under section 111, section 112, title I part C, title I part D, or State implementation plans submitted in accordance with section 110 of the Clean Air Act (and not disapproved by the Administrator of the Environmental Protection Agency), including any schedule or waiver granted, promulgated, or approved under these sections.

42 U.S.C. § 9601(10)(H).

While the above definition refers to emissions "subject to a permit or control regulation," that phrase is modified by "under section 111, section 112, title I part C, title I part D, or State implementation plans submitted in accordance with section 110 of the Clean Air Act." *Id.* In other words, a release cannot become "federally permitted" simply because a state permitting authority decides to put a nominal limit in the facility's Title V permit that is not enforcing any actual federal air pollution control requirement. As the Division admits, there is no underlying federally enforceable Clean Air Act requirement specifically limiting HCN emissions from this facility. TRD at 17. Nor is Suncor accepting this limit on HCN emissions in order to attempt to become a minor source for purposes of Clean Air Act section 112 regulations. If it were, the limit would need to be less than 10 tons per year. 42 U.S.C. § 7412(a)(1). Thus, there is simply no federal basis for the HCN limit in Suncor's permit. Rather, Suncor is requesting this limit purely to avoid otherwise applicable EPCRA and CERCLA reporting requirements.

Not only would the proposed HCN limit not serve to make Suncor's HCN releases "federally permitted" in accordance with the above definition, but it also appears that the Division lacks legal authority to include a limit in a Title V permit designed only to exempt a source from EPCRA and CERCLA reporting requirements. Though the proposed permit cites to "Colorado Regulation No. 3, Part C, Section 1.A.7" as the legal basis for the proposed HCN limit, this regulation says nothing to authorize inclusion of this type of a limit in a Title V permit. Rather, this regulatory provision identifies what constitutes a "significant permit modification" for Title V purposes. Presumably, the Division is citing to this regulation because it identifies as a significant permit modification "[e]very change...for which there is no corresponding underlying applicable requirement and that the source has assumed to avoid an applicable requirement to which the source would otherwise be subject." 5 Colo. Code Regs. § 1001-5:3C.I.A.7. However, the term "applicable requirement" as used in this provision is expressly defined in EPA's Part 70 regulations, and only includes requirements that arise under the Clean Air Act. *See* 40 C.F.R. § 70.2 (defining "applicable requirement"); *see also* 5 Colo. Code Regs. § 1001-5:3A.I.B.9; *id.* § 1001-5:3A.I.B.9.a ("state-only permit terms or conditions shall remain enforceable solely pursuant to state law").

Even if federal law does not set HCN-specific control limits, regulating this chemical to reduce harmful community exposure to this chemical would be consistent with the General

Assembly's policy of fostering "health" through achieving the "maximum practical degree of air purity in every portion of the state." Colo. Rev. Stat. § 25-7-102.

Thus, any authority that the Division has to incorporate an HCN limit into Suncor's Title V permit does not derive from any rule authorizing the Division to place a limit on a facility to enable that facility to avoid EPCRA and CERCLA requirements, but instead from its general authority to regulate air pollution that is harmful to public health. *Id.* Insofar as the Division seeks to rely on that authority, however, the HCN emission limit that the Division proposes would not suffice. If the Division intended for the HCN limit to serve to protect public health, it would have performed an analysis to determine what HCN emissions level over what period of time would be safe for impacted communities. The permit record provides no indication that such an analysis was performed. To the contrary, Suncor performed a stack test and determined how much HCN it releases without making any effort to control HCN emissions. The Division then accepted this level and placed it in the draft permit without any examination of whether HCN releases at this level are safe for the community, or whether Suncor could reduce these emissions utilizing available control technologies. Thus, this limit is not reflective of any federal determination that emissions at this level should be permitted. Moreover, the Division also made no attempt to actually regulate the facility's emissions of this pollutant in a way that would protect public health.

Exposure to HCN can harm the nervous system, the endocrine system, and the cardiovascular system, and may particularly harm the developing fetus.¹⁶⁵ Available reference exposure levels show ambient exposure that should be avoided to prevent chronic and acute health threats from inhalation. For example, EPA's IRIS program has set a reference concentration (RfC) of 0.0008 mg/m³ for inhalation exposure.¹⁶⁶ The Division must perform an analysis of the available health information and of the public health risks posed by Suncor's HCN releases before establishing a permit limit. Furthermore, commenters urge the Division to ensure that HCN is not emitted at a level that would exceed the most protective known reference exposure level for chronic inhalation-based risk, acute risk, and any other potential health or environmental threats.

Insofar as the Division and Suncor wish to include an HCN limit in Suncor's permit to enable Suncor to avoid EPCRA and CERCLA reporting requirements, the limit must be set at a level that the Division has reasonably determined is protective of public health. Given the nature of hydrogen cyanide, an annual HCN limit is very unlikely to serve that purpose. Rather, a legitimate, health-based HCN limit must be set on a much shorter time-frame, such as an hourly limit. Any such limit must be accompanied by adequate monitoring & testing to assure

¹⁶⁵ See summary of hydrogen cyanide effects, *supra* p. 40; see also Cal. EPA Ofc. Of Envtl Health Hazard Assessment, Hydrogen Cyanide, <https://oehha.ca.gov/chemicals/hydrogen-cyanide>; U.S. EPA IRIS, Hydrogen Cyanide and Cyanide Salts, https://cfpub.epa.gov/ncea/iris2/chemicalLanding.cfm?substance_nmbr=60 (EPA IRIS inhalation value is based on the need to to prevent chronic harm to the endocrine system of exposed people).

¹⁶⁶ *Id.*

compliance with this new limit. 42 U.S.C. §§ 7661a(b)(5)(A), 7661c(a), 7661c(c), 40 C.F.R. §§ 70.6(a)(1), 70.6(a)(3), 70.6(c)(1); *see also Sierra Club v. EPA*, 551 F.3d 1019 (D.C. Cir. 2008) (explaining that “the 1990 Amendments . . . added Title V, which establishes a permit program to better monitor compliance with emissions standards” and citing requirement in § 7661c(a) for permitting authority to add “such other conditions as are necessary to assure compliance with applicable requirements of this chapter”). Thus, among other things, the final permit must require Suncor to perform regular stack tests to confirm the facility’s actual HCN emission rate, rather than relying on a single emission test. *See Sahu Report* at 20

VII. CDPHE Has Not Shown That the Following Permit Modifications Are Minor, Such that No NSR/PSD Review is Required.

In addition to the above concern, the Division’s analysis of certain permit modifications requires further evaluation and disclosure of the evidence on which the agency is relying to make its conclusions about emission calculations. As discussed further in the Sahu Report and summarized below, the Division has not adequately supported its conclusion that the emission increases of VOCs, NO_x, and SO₂ from these modifications fall under the PSD/nonattainment NSR significance threshold and therefore that the modification is a minor modification. *See* 5 Colo. Code Regs. §§ 1001-5:3D.II.A.25.b (nonattainment areas), 1001-5:3C.X (defining minor modification), 1001-5:3C.XI.A.2 (thresholds for minor modifications). Because this area is in nonattainment for ozone, if ozone-forming pollutant increases are significant, the Division must ensure nonattainment NSR requirements (including LAER) are met. *See, e.g.*, 42 U.S.C. § 7503; 40 C.F.R. § 51.165; 5 Colo. Code Regs. § 1001-5:3D.V.A.1. For the other criteria pollutants, the Division must ensure the PSD requirements (including the implementation of BACT) are met. *See, e.g.*, 42 U.S.C. § 7475; 40 C.F.R. § 51.166; 5 Colo. Code Regs. § 1001-5:3D.VI.A.1.b.

A. Miscellaneous Process Vent Modification (Feb. 10, 2017)

One example of a modification without adequate support to show that it does not fall above the significance threshold is the Miscellaneous Process Vent (“MPV”) Modification. As discussed below, and on pages 21 to 23 of the Sahu Report, Suncor’s methodology for showing that the MPV modification falls below the significance threshold rests on the illegal claims that unpermitted emissions from malfunctions should be included in the baseline, that maximum potential emissions can be subtracted from projected actual emissions, and that potential upset emissions could be reasonably achieved on a continuous basis. The Division should require a recalculation of the baseline and of the “capable of accommodating” emissions that does not include past unlawful emissions. Including such emissions in the calculations violates the Clean Air Act, which requires that emission standards apply at all times. 42 U.S.C. § 7602(k) (defining emission standard as “a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis”); *see also Sierra Club v. EPA*, 551 F.3d at 1028 (holding past exemption malfunction emissions unlawful).

1. Suncor Improperly Calculated the Emissions Increase Resulting from the Miscellaneous Process Vent Modification.

a. Suncor Improperly Included Unlawful Malfunction Emissions in the Baseline Emissions Calculation.

Both Federal and Colorado regulations define “baseline actual emissions” for existing emissions units (other than power plants) as “the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator.” 40 C.F.R. § 51.166(b)(47)(ii); 5 Colo. Code Regs. § 1001-5:3D.II.A.4.b.¹⁶⁷ “The average rate shall be adjusted downward to exclude any non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.” 40 C.F.R. § 51.166(b)(47)(ii)(b); 5 Colo. Code Regs. § 1001-5:3D.II.A.4.b.ii. Excluding non-compliant emissions from the baseline stands to reason—facilities should not be allowed to include illegal emissions in their baseline.

However, Suncor has done just the opposite in its calculations for the proposed modifications. Consider, for example, SO₂ emissions from the Plant 1 flare. On tab 6 of the “RSR MPV Compliance Project Emissions spreadsheet,” Suncor states that:

Baseline SO₂ emissions are adjusted to resolve differences between historical E!CEMS calculation methods and the calculation of incident emissions included in RCFA reports. During the baseline time period, completion of emission estimates as a part of a detailed RCFA analysis, based on engineering assessments of the upset conditions at the refinery during the time of the flaring event, yielded a more accurate result than the emission calculation methodology employed in the E!CEMS system for a flaring event. Daily SO₂ data from the E!CEMS system were manually reviewed and replaced with data from RCFA reports.¹⁶⁸

Suncor then lists the data from RCFA reports that it incorporated into its baseline emissions calculation methodology.

Two illegal emissions events in particular highlight the problem with Suncor’s methodology. Line 140 of Tab 6 lists “2.96 tons on September 13, 2013 in hydrocarbon flaring RCFA report dated October 10, 2013.” According to a malfunction report that Suncor submitted on September 13, 2013, Suncor released 2.96 tons of SO₂ during a malfunction, 2.71 tons of

¹⁶⁷ Throughout this section of the comments, regulations applicable to modifications of major source permits in attainment areas are cited. However, the same definitions apply to such modifications in nonattainment areas, and these comments rely on both regulations applicable to both attainment and nonattainment areas as the Division must ensure it meets each such requirement for the relevant pollutants.

¹⁶⁸ RSR MPV Compliance Project Emissions Spreadsheet Tab 6 note I. This spreadsheet, along with several other emissions calculations spreadsheets, were sent from Margaret Knox-Kruschke, CDPHE, to Joel Minor, Earthjustice, on July 13, 2017.

which were “excess emissions” above the 500 lbs/24 hour “Permitted/Authorized Emissions Rate.”¹⁶⁹ Similarly, Line 142 of Tab 6 lists “1.32 tons for October 31 through November 2, 2013 (distributed 0.57 tons in October and 0.75 tons in November) in hydrocarbon flaring RCFA report dated December 17, 2013.” According to a malfunction report that Suncor submitted on November 1, 2013, Suncor released 1.32 tons of SO₂ during a malfunction, 0.82 tons of which were “excess emissions” above the 500 lbs/24 hour “Permitted/Authorized Emissions Rate.”¹⁷⁰

Accordingly, Suncor has incorporated emissions that, by its own admission, are “excess emissions” above the “Permitted . . . Emissions Rate” into its baseline. This expressly violates the regulatory requirement that Suncor adjust the average emissions rate in its baseline downward to exclude “non-compliant emissions that occurred while the source was operating above an emission limitation that was legally enforceable during the consecutive 24-month period.” 40 C.F.R. § 51.166(b)(47)(ii)(b); 5 Colo. Code Regs. § 1001-5:3D.II.A.4.b.ii.

b. Suncor Improperly Subtracted Its Maximum Potential Upset Emissions From its Projected Actual Emissions Calculation.

The most significant error in Suncor’s emissions increase for the Miscellaneous Process Vent Modification is its subtraction of maximum potential upset emissions from its post-change projected actual emissions (PAE) calculation. Specifically, after Suncor calculated baseline emissions taking into consideration malfunction emissions (as described above), and calculated PAE in a way that apparently assumes approximately the same level of malfunction emissions, it appeared that the modification would increase emissions above the PSD/NSR applicability thresholds. TRD at 24–26. However, Suncor then *subtracted from the PAE the highest amount of malfunction emissions it believed that the flare was reasonably capable of handling prior to the change*, contending that the flare was “capable of accommodating” these malfunction emissions prior to the change. 2017 Correspondence File at 386–88. Though the Division questioned Suncor’s calculation, *id.* at 386, Suncor apparently persuaded the Division that subtracting these hypothetical malfunction emissions from the PAE is authorized under the “projected actual emissions” definition at 40 C.F.R. § 51.166(b)(40)(i); 5 Colo. Code Regs. § 1001-5:3D.II.A.38.b.iii. Suncor and the Division’s interpretation of this definition is incorrect.

First, the regulatory “capable of accommodating” exclusion is not intended to encompass malfunction emissions at all. Rather, the plain language of the regulations expressly authorizes

¹⁶⁹ Suncor, Quarterly Excess Emissions Report, Q32013 at 55 (Oct. 30, 2013). Although the October 10, 2013 Root Cause Failure Analysis (“RCFA”) referenced on the spreadsheet does not appear in CDPHE’s web drawer system of publicly available information, a malfunction report that Suncor submitted on September 13, 2013 is attached to its October 30, 2013 Quarterly Excess Emissions Report for the third quarter of 2013, which is available through the Web Drawer system.

¹⁷⁰ Suncor, Quarterly Excess Emissions Report, Q42013 at 44 (Jan. 30, 2014). Again, the December 17, 2013 RCFA report does not appear in CDPHE’s web drawer system. However, a malfunction report dated November 1, 2013 is attached to Suncor’s January 30, 2014 Quarterly Excess Emissions Report for the fourth quarter of 2014, which is available through the Web Drawer system.

any *lawful* malfunction emissions to be accounted for in the baseline and projected actual calculations, but does not include malfunction emissions as part of the “capable of accommodating” exclusion. 40 C.F.R. § 51.166(b)(40)(ii)(c); 5 Colo. Code Regs. § 1001-5:3D.II.A.38.b.iii. In promulgating this exclusion, the EPA sought to distinguish emission increases that would result from a planned change from emissions increases resulting from the use of unused pre-change operational capacity, e.g., emissions that would have resulted if the facility had been producing its product (widgets, electricity, etc.) up to its full pre-change capability. Certainly, the EPA did not intend for the exclusion to instead protect a facility’s pre-change maximum ability to malfunction and emit pollution at levels well above what would be expected to result from normal operations. If CDPHE allows this interpretation, hundreds of facilities across the state would be able to avoid PSD/NSR by multiplying their highest pre-change monthly accident rate by 12 and discounting emission increases resulting from a change with those hypothetical malfunction emissions.

Second, Suncor errs in assuming that if the facility “could” have had malfunction emissions up to the assumed maximum level, this amount can be excluded from the PAE. To the contrary, emissions can be “excluded” from the PAE pursuant to the “capable of accommodating” exclusion only if they are *included* in the calculation of projected actual emissions in the first place. This is because the purpose of the “capable of accommodating” exclusion is to identify “*that portion of the unit’s emissions following the project*” that are unrelated to the planned change. 40 C.F.R. § 51.166(b)(40)(ii)(c) (emphasis added); 5 Colo. Code Regs. § 1001-5:3D.II.A.38.b.iii. Here, Suncor did not include maximum potential malfunction emissions in its initial PAE calculation, presumably because Suncor does not project that the facility actually will experience the maximum possible number of malfunction events (and associated large amount of emissions).

As EPA explained to the Kansas Department of Health in 2015, under the “capable of accommodating” exclusion, “only those increases in emissions that a unit could have accommodated *and that it would have emitted* even without the benefit of the planned change can be excluded” from the PAE.¹⁷¹ Likewise, in a 2010 letter to the Pennsylvania Department of Environmental Protection, EPA explained: “EPA has observed that a common mistake is to assume that a unit ‘could’ have emitted up to its permitted amount during the baseline period and this is the amount that can be excluded from the PAE. This notion and any variation of this notion is incorrect.”¹⁷²

¹⁷¹ Letter from Mark A. Smith, Chief, Air Permitting and Compliance Branch, U.S. EPA Region 7, to Kate Gleeson, Kan. Dep’t of Health and Env’t at 3 (Dec. 17, 2015) (emphasis added), https://www.epa.gov/sites/production/files/2016-01/documents/columbian2015_0.pdf.

¹⁷² Letter from Dianne McNally, U.S. EPA Region 3, to Mark Wejkszner, Penn. Dep’t of Env’tl. Prot. at 4 (Apr. 20, 2010), <https://www.epa.gov/sites/production/files/2015-07/documents/psdanalysis.pdf>.

EPA further explained:

[A] facility can only subtract *that portion of the projected actual emissions* that the unit(s) could have already physically and legally emitted during the baseline year. For instance, a facility is permitted to burn coal with a sulfur content up to two percent but actually burns coal with one percent sulfur during the baseline period. *The company bases the projected actual emissions on continuing to burn one percent sulfur coal. Emissions that can be excluded would be limited to emissions associated with burning one percent coal, regardless of the limit that would allow them to burn a higher sulfur coal.*¹⁷³

The Pennsylvania facility at issue in the EPA letter quoted above was not allowed to subtract maximum pre-change emissions burning 2% sulfur coal from its PAE because it based its projected actual emissions on burning 1% sulfur coal. In the same way, Suncor cannot here subtract maximum pre-change emissions from potential malfunctions (or “upsets”) from its PAE because it did not base its projected actual emissions on that frequency of malfunction events. Allowing Suncor to apply the calculation methodology in this manner would unlawfully mask the emissions resulting from the planned change with hypothetical potential pre-change upset emissions, effectively converting the applicability test from an “actual-to-projected actual” test to a “potential-to-projected-actual” test. Such an approach contravenes the plain language and purpose of the PSD regulations and must not be allowed.¹⁷⁴

Finally, just as Suncor erred in including flare upset emissions in its baseline calculation because such emissions unlawfully exceed an enforceable emission limitation, *see supra* pp. 50–51, Suncor likewise erred by including such unlawful emissions in its “capable of accommodating” analysis.

c. Suncor Inflated Its Calculation of Potential Upset Emissions Well Beyond the Emissions Level It Could Reasonably “Achieve” on a Continuous Basis.

Even if the PSD regulations allowed Suncor to subtract maximum potential pre-change malfunction emissions from its projected actual emissions calculation (which they do not), Suncor substantially overestimated these potential emissions by assuming that what a particular flare emitted during a short time period (such as a month) during the baseline period can be extrapolated to a whole year (such as by multiplying the monthly emissions by 12). One cannot simply annualize large flows (and their resultant emissions) which may have occurred in a particular malfunction episode lasting a few hours or days to determine maximum potential annual emissions from malfunction events. Doing so, without consideration of what led to the flaring episode in the baseline period (which may have been a massive accident or malfunction),

¹⁷³ *Id.* (emphasis added).

¹⁷⁴ As discussed above in connection with Suncor’s baseline calculation, Suncor’s inclusion of “malfunction” emissions in all parts of the PSD emissions increase calculation, including in the “capable of accommodating” determination, is in error because these malfunction emissions were (and are) unlawful.

means that one accepts that the same types of large releases can and will occur in the future as part of the facility's normal operations. This assumption that dangerous, and potentially deadly, accidents and malfunctions should be considered business as usual for the purposes of calculating projecting a facility's emissions defies common sense. The whole purpose of Suncor conducting root cause analyses for large flare releases is to prevent them in the future—not to accept that they are just part of doing business at the refinery.

2. Because the Actual Emissions Increase Resulting From the Miscellaneous Process Vent Modification Will Exceed the PSD Significance Threshold, This Project Must Undergo PSD Review and Comply with BACT and LAER.

If CDPHE requires Suncor to calculate the actual emissions increase resulting from the Miscellaneous Process Vent Modification in accordance with legal requirements, Suncor will not be able to mask the actual emissions increase resulting from this modification with hypothetical upset emissions, and will be required to undergo PSD and apply BACT or the LAER. *See, e.g.*, 42 U.S.C. § 7503 (LAER); 40 C.F.R. § 51.165 (LAER); 5 Colo. Code Regs. § 1001-5:3D.V.A.1 (LAER); 42 U.S.C. § 7475 (BACT); 40 C.F.R. § 51.166 (BACT); 5 Colo. Code Regs. § 1001-5:3D:VI.A.1.b (BACT).

An appropriate analysis for BACT and/or LAER likely would require, among other things, that Suncor increase the capacity of its gas recovery system so that it is able to accept the large releases from the process units that are now being flared. *See Sahu Report at 23.* In addition to reducing or perhaps even eliminating flaring, increasing the size of the gas recovery system may eliminate the need for Suncor to purchase supplemental natural gas for fuel. *Id.* The required analysis would also likely ensure that Suncor must adhere to a Flare Minimization Plan. *Id.*

B. HDS Rerate (Dec. 16, 2015)

1. The Division Has Not Shown This Is Below the PSD Significance Threshold.

The Division has not shown that the No. 3 Hydrodesulfurizer (HDS) rerate modification is minor. As the Sahu Report discusses, there are a number of questions raised by the Division's analysis of this modification and the lack of information on the scope of this project. Sahu Report at 13–16. Although there appears to be no physical changes except for valves, that is not made clear. It is also unclear why, even though the Division recognizes that this proposed change will allow certain emission increases to occur, TRD at 7, the Division has determined that these increases need not be included in the permit. The Division must provide additional information regarding how it reached the determination that this modification is minor.

For this permit modification, the Division has also accepted emissions calculations using an outdated software program, the U.S. EPA's former TANKS program. But EPA has

determined that program is no longer reliable on certain systems.¹⁷⁵ The emissions calculations using that program should not be accepted here without independent verification and supporting information showing how these numbers were actually calculated and verified. Sahu Report at 12–13.

2. The Division Should Reopen Certain Prior Modifications Because They Appear to Be Related to This Newly Proposed Modification and Would Exceed the Significance Threshold.

In addition, as discussed in the Sahu Report in more detail, the HDS Rerate Project appears to be related to prior modifications that occurred in 2015, listed as number 53. Sahu Report at 13–14. CDPHE recognized this and raised it with Suncor. *Id.* at 13 n.32 (citing 2017 Correspondence File at 120). Suncor responded with a conclusory statement about why the modifications were not related, citing the relevant factors for determining whether projects are related but providing no evidence to back up its assertion. *Id.* at 14 (citing 2015 Correspondence File at 159). The Division must ensure that the HDS rerate project is not treated as minor if indeed it is related to an earlier modification that the Division recently approved. Absent evidence showing the two projects are not related, the prior modification must be reopened and the emission increases from both projects must be considered together for the purpose of determining whether they meet the PSD significance threshold.

An evaluation of the 2015 modification, initially described as number 53, shows that Suncor originally estimated the project would result in an increase of approximately 39.26 tpy of NO_x, 31.96 tpy of SO₂, 12.83 tpy of VOC, and 10.9 tpy of PM (including 8.64 of PM_{2.5}). *See* 2015 Correspondence File at 489, 499 tbl.1. (Summary of Project Emission Increases showing these increases were just under the minor modification threshold). If that modification was recognized as related to the HDS Rerate project, emission increases from the two projects would be combined, and they would exceed the PSD significant threshold. As the TRD shows, the Division anticipates that the HDS Rerate project will cause an increase of 2.68 tpy of NO_x. TRD at 7. Combined with NO_x increases from the 2015 Modification number 53, there would be a total of 41.94 tpy of increased NO_x emissions, which is *above* the 40 tpy threshold.

After initially indicating that Modification number 53 was a single project, Suncor revisited that issue and proposed, instead, to separate it into three separate modifications. *See* 2015 Correspondence File at 159 (discussing modification 59).¹⁷⁶ But to Commenters' knowledge, neither the 2015 Correspondence File nor the 2017 Correspondence File provides

¹⁷⁵ *See* EPA, *TANKS Emissions Estimation Software, Version 4.09D*, <https://www3.epa.gov/ttn/chief/software/tanks/index.html> (Oct. 5, 2006) (“The TANKS model was developed using a software that is now outdated.”).

¹⁷⁶ Confusingly, although when Suncor analyzed these modifications as a single modification, it concluded that NO_x emissions fell just below the 40 tpy significance threshold. But when Suncor analyzed the modifications separately, although each individually fell below the 40 tpy NO_x significance threshold, collectively, they would have increased NO_x emissions by more than 40 tpy.

evidence that: (1) the separation of those projects was appropriate; or (2) that the HDS Rerate project now under consideration should not be considered as related to those modifications.

There is no evidence in the record explaining Suncor's planning process. *See Sahu Report* at 9–10, 14.¹⁷⁷ Absent such evidence showing that the HDS Rerate project is indeed not related to the prior modifications, CDPHE cannot accept this conclusion. To ensure that no related projects fail to be aggregated and reviewed together for purposes of PSD and NSR requirements, the Division must reopen its consideration of the prior modifications and consider them together with the pending permit modifications (particularly the HDS Rerate project, but also any others that may also be related depending on what the planning documents show).

Under EPA's Title V regulations at 40 CFR § 70.7(a)(5), each draft Title V permit must be accompanied by "a statement that sets forth the legal and factual basis for the draft permit conditions." Given the relationship between these three modifications, it is incumbent upon the Division to provide an explanation in the materials supporting this permit as to why it is legally and factually appropriate to consider these modifications individually for purposes of determining NSR applicability.

C. Tank Degassing Thermal Oxidizer (Nov. 2, 2015)

The Division has not shown that the tank degassing thermal oxidizer modification (Nov. 2, 2015) has been appropriately treated under applicable regulations. This was submitted as significant, and the emission calculations for this modification appear to include various assumptions that are not adequately explained or demonstrated. *See Sahu Report* at 11–13. Commenters seek to ensure that the Division includes proper controls for emission increases from this change, and respectfully request that the Division respond to the comments in the Sahu Report and demonstrate that it is not allowing significant additional emissions without ensuring they are properly controlled.

D. AU Flare (May 31, 2016)

The modification of the AU Flare (May 31, 2016) raises similar concerns. *Sahu Report* at 18–19. Assumptions about the flare gas are not adequately explained or supported. Accurate assumptions are essential both for the Division to properly assess the impact of this modification and for the public to be able to meaningfully review and understand this change. Flaring events can result in huge releases of emissions.¹⁷⁸ The communities around the Suncor refinery are regularly subject to high flaring, and some recent events have forced community members to shelter in place. These emissions and resulting health and safety threats are especially concerning to community members. As the Sahu Report discusses, any single flaring event

¹⁷⁷ *See also* Letter from Minor to Joyce, *supra* n.101 (requesting "[p]lanning Documents, including project justification, project budgeting, approved AFEs, project execution, project schedule, project staffing, and related documents").

¹⁷⁸ *See generally, e.g.,* Bruce Finley, *Suncor refinery accident released 75,600 pounds of sulfur dioxide, 150 times daily limit*, *Denver Post* (Oct. 28, 2016), <http://www.denverpost.com/2016/10/28/suncor-sulfur-dioxide-release/>.

could cause serious impacts to air quality and public health. The emissions calculations are not adequately supported, and even still show an emissions increase as high as 16.66 of SO₂. TRD at 12. The proposed modification is being made due to the flare's numerous pressure exceedances, and therefore more careful review is required to assure compliance with the permit limits and prevent future exceedances.

E. East-West Transfer Modification (Feb. 17, 2016)

The Division similarly assumes the emission increases from the East-West Transfer Line, Tank T80, will be insignificant, but does not show that the East-West Transfer Modification is not related to prior modifications. It is unclear how the modification is not related to prior modifications when the purpose of the project is to connect Plant 2 to Plants 1 and 3. Because Suncor failed to provide CDPHE and the public with any information about its planning process, Sahu Report at 9–10, it is impossible to discern what other modifications this project is connected with. The Division must review planning process documents, flow diagrams, and other information and show that this modification is not related to recent prior modifications at these plants, before it can conclude that this modification is indeed minor. The Sahu Report also provides additional concerns regarding the calculations of the emissions increases for this modification, that the Division must consider and address before finalizing this modification. Sahu Report at 16–17.

For example, for this permit modification, the Division also has accepted emissions calculations using an outdated software program, the U.S. EPA's former TANKS program. EPA has determined that program is no longer reliable on certain systems.¹⁷⁹ The emissions calculations using that program should not be accepted here, without independent verification, and supporting information showing how these numbers were actually calculated and verified. Sahu Report at 12–13.

F. Other Modifications.

The Division has neither adequately explained its conclusions regarding the other permit modifications, as discussed in the Sahu Report at 17, 19, nor demonstrated that each of those is minor. Commenters respectfully request that the Division respond to each of the Sahu Report's questions by providing information that can give the community confidence that the additional modifications under review are indeed minor as the Division has concluded.

VIII. To Ensure Any Modifications That Are Indeed Minor Do Not Inadvertently Result In Significant Emissions, the Division Must Add Compliance, Testing, and Monitoring Requirements.

For each of the permit modifications that the Division shows indeed to be minor, the Division should include a limit, term, or condition in the permit to guarantee that the emission

¹⁷⁹ See EPA, TANKS Emissions Estimation Software, Version 4.09D, <https://www3.epa.gov/ttn/chief/software/tanks/index.html> (“The TANKS model was developed using a software that is now outdated.”).

increase is below the PSD or NSR significance threshold. As discussed on page 22 of the Sahu Report, Commenters are especially concerned about the lack of a limit on the Plant 1 flare, and respectfully request that the Division address this and ensure that the permit includes terms and conditions that do not allow this flare to continue increasing emissions indefinitely.

The permit must include enforceable requirements assuring that any such modifications, if minor, indeed stay minor. Otherwise, in the event that emission estimates are incorrect or they operate differently than the Division anticipates, the modification could evade PSD and NSR requirements while still causing harm to air quality and public health. 42 U.S.C. §§ 7661a(b)(5)(A), (C); 7661c(a); 40 C.F.R. § 70.7(a)(1)(iv); 5 Colo. Code Regs. § 1001-5:3C.V.C.1.

Therefore, as discussed in the Sahu Report, the following terms and conditions should be added to the permit (in the event that the Division adequately responds to this comment by showing the following modifications are indeed minor):

1. Tank Degassing Thermal Oxidizer: Add parameters ensuring that the 100% control or capture efficiency assumed will indeed apply.

2. HDS Rerate project: Unless Suncor provides, subject to public notice and comment, conclusive evidence (including verifiable quantified calculations and/or refinery planning documents) that this project is not related to the project initially referred to as “Modification 57,” the Division should consider this modification to be related to those prior modifications, and modify Suncor’s permit to address the project’s increased emissions, which are above the PSD significance threshold.

3. East-West Transfer Line:

To the extent the Division determines that this is minor, it must at least include the limit on tanks T80 and T75 to avoid those emission increases from continuing to increase.

4. AU Flare: The Division should only approve this modification if Suncor adequately supports its emissions calculations, subject to public notice and comment, and if appropriate parameters are added into the permit to ensure this flare’s emissions are properly controlled.

5. HCN limit: The Division should deny Suncor’s request to set a permit limit for HCN emissions. This request is a blatant end run around EPCRA and CERCLA and should not be countenanced. If the Division chooses to enable Suncor’s attempt to evade its EPCRA and CERCLA reporting requirements by approving the modification, at the very minimum the Division should set the permitted emissions limit at a level that is sufficiently protective of public health, supported by adequate monitoring and testing to ensure compliance.

6. MPV: The Division should require Suncor to properly calculate its PAE and what emissions it is capable of accommodating. Suncor improperly included unlawful malfunction emissions in its baseline emissions calculations, subtracted its maximum upset emissions potential from its PAE calculation, and inflated its calculations of potential upset emissions beyond what it could reasonably achieve on a continuous basis. Because the actual emissions

resulting from this modification will exceed the significance threshold, the Division should require Suncor to undergo NSR and comply with BACT and/or LAER, as described above, depending on the result of this analysis.

CONCLUSION

Commenters appreciate the Commission's and the Division's time and consideration of these comments and of any and all public comments offered at the public comment hearing, as well as CDPHE's careful review of Suncor's proposed permit modifications.

To the extent that the Commission and Division determine that any comments offered here are outside the scope of the pending permit modifications but are relevant to additional future permit renewal applications and modifications under consideration by the Division, we respectfully request that you provide public information regarding those additional actions, including on the timing and appropriate means to provide input regarding those other actions.

We would welcome a chance to discuss these comments and other pending modifications and renewal actions under consideration as helpful to the Division.

For additional information or to discuss these comments, please contact Joel Minor (jminor@earthjustice.org) or Emma Cheuse (echeuse@earthjustice.org).

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