May 3, 2021

Via Electronic Mail: meg.parish@state.co.us

Meg Parish
Permits Section Manager
Water Quality Control Division
Colorado Department of Public Health and the Environment
4300 Cherry Creek Drive South
Denver, Colorado 80246

RE: Suncor Water Quality Permit Renewal Process (Permit CO0001147)

Dear Ms. Parish:

Clean Water Action, Conservation Colorado, Earthjustice, Healthy Air & Water Colorado, Natural Resources Defense Council, Public Employees for Environmental Responsibility, Sierra Club, and Western Resource Advocates submit these comments on the Water Quality Control Division's (the Division) water permit renewal process for Suncor Energy discharge permit CO0001147.

I. Introduction

All people deserve the same right to clean water and clean air. In light of the Biden Administration's and EPA Administrator Michael Regan's priority to address the generational harms of pollution in disadvantaged communities and communities of color, the Colorado Department of Public Health and the Environment (CDPHE) should put in place the most protective standards possible for Suncor Energy Refinery's (Suncor Refinery) air and water permits, and ask whether it is appropriate for this facility to continue to operate within Commerce City. Our organizations also believe it is vital that the Division hold additional stakeholder meetings prior to publishing the draft water discharge permit for written public comment, so that impacted community members have ample opportunity to provide meaningful feedback early on in the process.

In order to protect human health and the environment from Suncor Refinery's water pollution, we urge the Division to consider the following when revising permit CO0001147 (these recommendations, along with others, are described in more detail in the remaining sections of this letter):

1. Consider the cumulative impact of Suncor Refinery's pollution on North Denver and surrounding communities.

2. Set stringent, technology and water quality based effluent limits for all pollutants of concern, including PFAS. For pollutants like PFAS that have no national numeric standards or effluent guidelines, the Division should use its Best Professional Judgement.
3. Flex its existing authorities to end the use of PFAS-based firefighting foams and push for the use of safer Class B alternatives.
4. Establish new internal outfalls to ensure that pollution in groundwater underneath the facility is contained, does not interfere with downstream wastewater treatment, and does not result in a discharge of pollution to state waters through contaminated groundwater seeps.
5. Require monitoring for all pollutants that is frequent enough to ensure compliance with effluent limits.

II. Cumulative impact of Suncor Refinery's pollution on North Denver

Suncor's Commerce City Refinery is one of the largest sources of pollution in Colorado. Though Suncor claims to take its role as a good neighbor seriously, it repeatedly breaks community trust. It has a well-known and documented history of poor compliance marked with numerous violations and spills.[1]

Water contamination is not the only injustice that communities neighboring the Suncor Refinery face. The communities neighboring the Suncor Refinery, which are predominantly communities of color and low-income residents, are overburdened by many sources of harmful pollution−including other industries, major highway construction, historic contamination sites, and significant vehicle emissions. Several recent air quality violations have forced community members to shelter in place.

Due to redlining and other discriminatory policies, communities in North Denver around the Suncor Refinery have long been forced to bear the brunt of environmental harms. Environmental injustice contributes to disparities in health status across populations of differing ethnicity, race, and socioeconomic status. Infants and children, because of their unique biological vulnerabilities and age-related patterns of exposure, are especially vulnerable to the health impacts of environmental injustice. These impacts are illustrated by sharp disparities across children of different racial and ethnic backgrounds in the prevalence of 3 common diseases caused in part by environmental factors: asthma, lead poisoning, and obesity.[2]

[1] https://echo.epa.gov/detailed-facility-report?fid=110032913024; see also, https://drive.google.com/file/d/1pMlM2tqSBY0rCKgrpWwDp0YWfjMpIb4m/view
[2] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC6042867/

The community must have meaningful opportunities to participate in decision making processes early on. It is imperative that CDPHE provide transparent communication about Suncor Refinery's current and proposed water discharges to ensure that neighboring communities fully understand the health and safety implications of actions. We have concerns that by splitting the water permit and the title V air permit, the cumulative impacts of the refinery's pollution on the community are not being considered.

Further, CDPHE must holistically consider the cumulative impacts of Suncor's operations on communities when making permitting decisions. In fact, there are a wide range of impacts from multiple sources, and the upcoming permitting process must consider the full extent of environmental and health burdens experienced in surrounding communities. To ensure equitable outcomes, the permitting process must take concrete steps towards cumulatively reducing harms that have historically and are today disproportionately and unjustly borne by North Denver communities in particular. As CDPHE has acknowledged, we "need more information on how combinations of pollutants impact human health."[3] In proceeding with the renewal of Suncor's discharge permit, we urge CDPHE to err on the side of protecting human health.

III. Pollutants of Concern

In considering the proposed renewal of the Suncor Refinery's permits, we urge the agency to address and resolve longstanding issues related to contaminants including selenium, benzene, and other hydrocarbons. Also, as described below and in other sections of this letter, we urge the Division to set stringent limits on Suncor's PFAS discharges. Moreover, as a general matter, we suggest that the new permits refer to elemental metals by their full names rather than the abbreviations or symbol used on the periodic table. This will aid the reader's understanding of the permit.

a. *Selenium*

Like many metals, selenium is a nutritionally essential element for animals in small amounts, but is toxic at higher concentrations. Selenium bioaccumulates in the aquatic food chain. Fish and aquatic invertebrates exposed to selenium can sustain reproductive impairment such as larval deformity or mortality. Selenium can also adversely affect juvenile growth and mortality. Selenium is also toxic to waterfowl and other birds that consume aquatic organisms containing excessive levels of selenium.

Our reading of the permit files indicates that Suncor has not been able to meet its effluent limit for selenium and has been granted a variance from this restriction on its discharges. Permit CO0001147 at 12. According to permit files, Suncor has discharged potentially dissolved

[3] Commerce City-North Denver Story Map, available at: https://storymaps.arcgis.com/stories/27b395913166487cb7614df5194e86ce

selenium at a concentration as high as 37 µg/l, as determined by a 30-day average. Importantly, the relevant permit imposes no short-term limit on selenium discharges and bases compliance with the 30-day average limit on monthly samples.[4] Permit CO0001147 at 9. Review of Suncor's compliance history, Regulation 61.8(4), Colorado Clean Water Policy WQP-20 and EPA's NPDES Permit Writers' manual, indicates that the Division should require monitoring for selenium on a more frequent basis.We encourage the Division to require monitoring for selenium that must occur even more frequently than the baseline monitoring requirements set forward in Appendix D of WQP-20.

Further, in 2016, EPA published the final national chronic aquatic life criterion for selenium in freshwater. The 2016 criterion document is the final update of EPA's 1999 recommended national chronic aquatic life criterion for selenium, developed per Clean Water Act section 304(a).[5] These aquatic life criterion include an acute 4 day standard of 5 µg/l and a chronic 30-day lotic standard of 3.1 µg/l.

Finally, adequate controls on and monitoring of selenium takes on added importance because segment 16i of the mainstem of the Sand Creek, which is immediately downstream from Sand Creek and Outfall 020A, is impaired for selenium. This recent listing of Sand Creek warrants a further determination of more stringent, water quality based effluent limitations are necessary to ensure that Sand Creek can meet state water quality standards.

Based on the above, we make the following requests of the Division and CDPHE: 1) require monitoring of seeps and other potential discharge points for, inter alia, selenium; 2) establish limits on the discharge of selenium that reflect and adhere to EPA's final national chronic and acute criteria for selenium and are sufficient to ensure compliance with state water quality standards; 3) impose a short-term limit on selenium discharges; and, 4) require monitoring of sufficient frequency to ensure compliance with 30-day average effluent limits as well as short-term (daily of 7 day average) limits.

b. ***Benzene***

Benzene is carcinogenic and represents a significant threat to public health and aquatic life. Benzene in water and soil breaks down slowly. Benzene is slightly soluble in water and can pass through the soil into underground water. Benzene can also pass into air from water and soil surfaces. Importantly, fugitive emissions from the Suncor refinery emit benzene past the boundary of the facility. Further, as the Division points out, it lacks monitoring data for seeps and other discharges that may be impacting surface water. As a result, benzene in Suncor's discharges may have cumulative, as well as individual adverse impacts on public health and the environment.

[4] Permit CO0001147 at 9.
[5] https://www.epa.gov/sites/production/files/2016-06/documents/se_2016_fact_sheet_final.pdf

Because of its threat to public health and the environment, EPA has set 5 ppb as the maximum permissible level of benzene in drinking water. EPA has set a goal of 0 ppb for benzene in drinking water and in water such as rivers and lakes because benzene can cause leukemia.[6]

The current permit for the Suncor facility does not impose a 30-day average benzene limit on the facility's discharge. Moreover, to assess Suncor's compliance with a daily maximum, Suncor is required to monitor its effluent for benzene on a weekly basis.

Based on EPA's goal of 0 ppb for rivers and lakes and the potential cumulative impacts of benzene on public health the environment, we ask the Division to: 1) require monitoring of seeps and other potential discharge points for benzene; 2) assess and minimize the cumulative consequences of benzene in the air, water and soils on public health and the environment in areas impacted by Suncor's effluent, discharges and emissions; 3) impose an appropriate chronic limit on benzene discharges; and, 4) require monitoring of sufficient frequency to ensure compliance with the daily effluent limit for benzene.

c. *BTEX and MTEB*

Suncor's current permit limits discharges of BTEX and MTEB. We suggest that to make the Suncor permit more understandable and readable, these acronyms be spelled out and explained. Moreover, we would greatly appreciate an elucidation of why the effluent limitations and monitoring regimes are adequate to protect public health and the environment from BTEX and MTEB.

d. *Oil and Grease*

Suncor's stormwater permit includes limits on oil and grease.[7] While there are limits on oil and grease on the internal outfalls at the Suncor facility, Outfall 020A includes no such limit. We note initially that the oil and grease limits on the internal outfalls appear extremely high. For example, there is a 477 lb/day oil and grease limit on Outfall 002A. We suggest that WQCD consider lowering this limit in light of Suncor's past history of failing to control discharges from the site of its facilities.

Moreover, we are concerned that a lack of an oil and grease limit and associated monitoring requirements for Outfall 020A may mean that Suncor is not required to test its effluent on a regular basis for oil and grease and is authorized to discharge these harmful substances into waters of the State. Therefore, we request the Division to impose limits and monitoring requirements for oil and grease on Outfall 020A or explain to the public why no such permit terms and conditions are needed to protect public health and the environment.

---

[6] https://www.atsdr.cdc.gov/ToxProfiles/tp3-c1-b.pdf
[7] Permit COS000009 at 8.

e. ***Ammonia***

As with oil and grease, the current permit establishes effluent limits for total ammonia for two of the internal outfalls. Yet, there is no effluent limit or monitoring requirement for total ammonia imposed on discharge from Outfall 020A. Again, we request the Division to establish limits and monitoring requirements for total ammonia on Outfall 020A or explain to the public why no such permit terms and conditions are needed to protect public health and the environment. Our concerns about ammonia are especially important given that the Division's presentation to the public cites ammonia as "water quality concern" for the waters immediately below Outfall 020A.

f. ***Cadmium and Sulfate***

Segment 15, the mainstem of the South Platte River from the Burlington Ditch to the confluence with Sand Creek is impaired for cadmium and sulfate. It appears that discharges from the Suncor facility, including from seeps, may be adversely impacting water quality in this segment. Yet, the current permit does not include effluent limits on cadmium for internal or external outfalls. Given that surface waters impacted by Suncor's discharges are impaired for cadmium, we ask the Division to impose effluent limits on internal and external outfalls adequate to ensure the South Platte River is meeting state water quality standards or to explain why such limits are not necessary to protect public health, the environment and water quality.

Similarly, segment 15 is impaired for sulfate. While the current permit requires reporting of a thirty-day average and daily maximums for sulfide depending on the outfall at issue, there are no effluent limits imposed on sulfide. Moreover, it is not evident to the public what the relationship is between sulfate and sulfide. Based on these concerns, we ask the Division to impose effluent limits on internal and external outfalls adequate to ensure the South Platte River is meeting state water quality standards or to explain why such limits are not necessary to protect public health, the environment and water quality.

g. Per-and-polyfluoroalkyl substances

Suncor has likely been discharging per-and-polyfluoroalkyl substances (PFAS) into Sand Creek near the confluence of the South Platte River for decades, though the facility has only been required to monitor PFAS in its wastewater effluent since June 2019. PFAS monitoring conducted between June 2019 and December 2020 revealed that Suncor discharged PFOS and PFOA from its Outfall 020A in excess of EPA's Health Advisory Level (HAL) of 70 parts per trillion (ppt) combined PFOA/PFOS in 9 out of 18 months reported. The minimum level of combined PFOA/PFOS detected over these 18 months was 36 ppt in August 2019 and the maximum level detected was 305 ppt in May 2020.[8]

[8] https://drive.google.com/file/d/1F2prJ27xWaUmDpdCJ4Tv7p6qlLccSV_X/view; see also May 20, 2020 Duty to Comply CDPS Permit CO0001147 letter sent to Suncor from the Division.

In 2020, the Division sampled Sand Creek downstream of Suncor and detected 77 ppt PFOA+PFOS. The Division also sampled multiple points downstream of Sand Creek's confluence with the South Platte River and found elevated levels of PFOA+PFOS below Clear Creek (28 ppt), above Clear Creek (27 ppt), and at Henderson (23 ppt). Though none of these lower samples exceeded EPA's HAL for PFOS+PFOA, every sample met or exceeded the state of Michigan's PFOS human health water criteria of 11ppt for surface waters used for drinking water supplies.[9] These elevated levels of PFOS and other PFAS in the South Platte River (a designated drinking water source) is concerning because PFAS don't break down in surface waters, posing a risk to drinking water systems and their customers. As part of this same sampling project, several water systems downstream of Suncor that rely on the South Platte for drinking water sampled raw and/or treated drinking water for 18 PFAS. Aurora, Brighton, and Thornton all detected elevated levels of PFAS in raw and/or treated water drinking water.[10]

Since 2019 Suncor has conducted its own sampling of PFAS in Sand Creek and the South Platte River. Data shows PFOS+PFOA+PFNA and parent compounds concentrations above the Water Quality Control Commission (WQCC) Policy 20-1 translation level of 70 ppt in Sand Creek both next to the refinery and downstream near the confluence with the South Platte in most samples collected since August 2019. The most recent surface water sampling data provided in January 2021 shows all samples taken in Sand Creek have levels of combined PFAS that exceed Policy 20-1 translation level, as do samples taken at the confluence of the South Platte.[11]

Suncor has reported to the press and the Division that the source of PFAS contamination is suspected to be from historical use of PFAS-containing Class B firefighting foam at the refinery. As part of an active groundwater remediation system, Suncor is required to pump and treat contaminated groundwater to remove benzene and other pollutants, excluding PFAS. According to the Division, this pumped and treated groundwater is the primary source of PFAS in Suncor's Outfall 20A effluent. Stormwater stored onsite that is routed to the facility's wastewater treatment system may also be contaminated with PFAS. Additionally there are visible seeps of untreated, contaminated groundwater flowing into Sand Creek, which is likely contributing to the high concentrations of PFAS measured in the creek.

Since 2018 Suncor has conducted semi-annual sampling of its contaminated groundwater plume. In the most recent data provided from samples collected in October 2020, combined PFOS, PFOA, PFNA, and parent compounds concentrations were above the translation level of 70 pppt at 11 of the 12 wells sampled. Samples ranged from a low concentration of 82 ppt to a

[9] https://www.mi-wea.org/docs/Tavalire_Anne-Hot_Topic-Water_Resource_Division_PFAS_Update.pdf at 4
[10] https://cdphe.colorado.gov/PFCs/2020-Sampling-Project
[11] https://drive.google.com/drive/folders/194Ytv2h0G6MTjXngW8FW8nQlDQ3uxWiB

high concentration of 7130 ppt, which is 100 times above the Policy 20-1 translation level. 4 of the 12 wells sampled had concentrations exceeding 1000 ppt.[12]

IV. The Division has the authority to set strict limits on Suncor's PFAS discharges

The Clean Water Act (CWA), Colorado Regulation 31, and Policy 20-1 - Policy for Interpreting the Narrative Water Quality Standard for Per-and Polyfluoroalkyl Substances (Policy 20-1) give the Division the authority it needs to establish stringent effluent limits to eliminate the flow of PFAS discharged by Suncor. According to the U.S. Environmental Protection Agency (EPA), "when developing effluent limitations for an NPDES permit, a permit writer must consider limits based on both the technology available to control the pollutants (i.e., technology-based effluent limits) and limits that are protective of the water quality standards of the receiving water (i.e., water quality-based effluent limits)."[13] Permit writers must consider both numeric and narrative water quality standards when issuing discharge permits to ensure water quality will be protected, "where a State has not established a water quality criterion for a specific chemical or pollutant that is present in an effluent at a concentration that causes, has the reasonable potential to cause, or contributes to an excursion above a narrative criterion within an applicable State water quality standard, the permitting authority must establish effluent limits."[14]

Colorado Regulation 31 states that "state surface waters shall be free from substances attributable to human-caused point source or nonpoint source discharge in amounts, concentrations or combinations which are harmful to the beneficial uses or toxic to humans, animals, plants, or aquatic life." (Section 31.11 (1) (a) (iv). On July 14, 2020 the Colorado Water Quality Control Commission adopted Policy 20-1, which interprets the state's existing narrative water quality standard to regulate discharges of PFAS. Policy 20-1 also established "translation" values for a subset of PFAS that can be used as a basis for effluent limits in discharge permits. Throughout the Policy 20-1 stakeholder process, many of our organizations expressed concern that these translation levels were not protective enough of human health and the environment and did not reflect the latest scientific understanding of PFAS and public health.We continue to have this concern, and urge the Division to follow the lead of other states that have set more protective, health based limits for surface water and drinking water. We also encourage the Division to review the latest scientific literature on PFAS toxicity, as directed by the WQCC in Policy 20-1,"the commission recommends that these translation levels be reviewed on a regular basis and as needed based on evolving science."[15]

---

[12] https://drive.google.com/drive/folders/19q-Gr2vhW0A2lXy2V-WYIZlKQHDxjG71

[13] https://www.epa.gov/npdes/npdes-permit-limits

[14] 40 CFR Section 122.44 (d) (I) (vi).

[15] Water Quality Control Commission Policy 20-1, Policy for Interpreting the Narrative Water Quality Standards for Per-and Polyfluoroalkyl Substances at 9.

In adopting Policy 20-1, the WQCC intended the Division have flexibility "in applying the translation levels in permitting or other regulatory activities,"[16] and recognized "that the division retains the authority to implement more stringent translation values for PFOA, PFOS, PFNA, PFHxS and PFBS or translation levels for other PFAS constituents pursuant to the narrative standard where scientifically supportable (for example where additional toxicological data or site-specific information become available)."[17]

V. Other states are adopting more protective measures to protect communities from PFAS

Due to slow federal action on PFAS uses, numeric standards, and effluent limitation guidelines, states are moving to set their own standards for PFAS in ground and surface waters and like Colorado, addressing PFAS in NPDES permits.

Several states have reduced PFAS releases to the environment by setting PFAS limits in NPDES permits, and/or by banning the use and sale of firefighting foam containing PFAS. These different approaches are discussed below.

a. *NPDES Permit Limits*

Both Pennsylvania and North Carolina have issued a NPDES permit containing PFAS limits. Both permitted facilities rely on granular activated carbon for compliance and these facilities similarly release PFAS via stormwater, dry weather flows, and/or seeps. The permit issued in North Carolina, to the Chemours Company, contains technology-based effluent limits for three PFAS.[18]

The Chemours NPDES permit contains technology-based effluent limits for HFPO-DA ("Gen-X"), PFMOAA, and PMPA. The technology used by Chemours, a three-series granular activated carbon system, was demonstrated to consistently reduce the three measured PFAS to non-detect levels.[19]

b. *NPDES Permit Monitoring and Compliance Schedules*

[16] *Id.* at 6.
[17] *Id*. at 12.
[18] North Carolina Department of Environmental Quality, Permit NC0089915, Chemours Company FC, LLC, (September 30, 2020) ["Chemours Permit"].
[19] Parsons, *Engineering Report: Old Outfall 002 GAC Pilot Study Results, Chemours Fayetteville Plant, Fayetteville, NC,* Appendix C (September 2019).

Pennsylvania has also issued a NPDES permit incorporating limits for PFOA and PFOS.[20] The permit, issued to the Horsham Air Guard Station, requires weekly monitoring of PFOA and PFOS for both outfalls covered by the permit.[21] The permit contains an eight-month compliance deadline and a one year and eight month compliance deadline for the individual outfalls.[22]

The Chemours permit issued by North Carolina requires semi-monthly effluent monitoring, and weekly monitoring of treatment system influent.[23] The compliance schedule, a result of a settlement agreement, is one year and seven months.[24] The consent order was signed February 25, 2019 and the compliance deadline was September 30, 2020. Additionally, Chemours has "committed" to meet the limit for PMPA by January 31, 2021, one year and ten months after the consent order was signed.

VI. The Division Must Set Technology-Based Limits for PFAS

Technology-based effluent limits are a potent tool for reducing water pollution and are the "minimum level of control that must be imposed in a permit."[25] Though EPA has not issued any national effluent limitation guidelines for facilities that discharge PFAS, state permitting authorities must implement technology-based effluent limits on a case-by-case basis using their "best professional judgment."[26]

Technology-based effluent limits must be based on the reductions achievable by available technology. As discussed above, the three-series granular activated carbon system used at the

---

[20] Pennsylvania Department of Environmental Protection, NPDES Permit No. PA0245046, Horsham Air Guard Station, (April 1, 2021) ["Horsham Permit"].
[21] *Id.*
[22] *Id.*
[23] Chemours Permit at 3.
[24] *See Chemours Consent Order*, details available at: https://deq.nc.gov/news/key-issues/genx-investigation/chemours-consent-order.
[25] 40 C.F.R. § 125.3(a).
[26] 40 C.F.R. § 125.3; see also 33 U.S.C. § 1342(a)(1)(B); NRDC v. EPA, 859 F.2d 156, 183 (D.C. Cir. 1988) ("Section 1342(a)(1) requires EPA, in approving permits in the absence of formally promulgated effluent limitations guidelines, to exercise its best professional judgment (BPJ) as to proper effluent limits. . . States issuing permits pursuant to § 1342(b) stand in the shoes of the agency, and thus must similarly pay heed to § 1311(b)'s technology-based standards when exercising their BPJ.Thus, notwithstanding Industry's contrary assertions, States are required to compel adherence to the Act's technology-based standards regardless of whether EPA has specified their content pursuant to § 1314(b)."); Texas Oil & Gas Ass'n v. EPA, 161 F.3d 923 (5th Cir. 1998) ("In situations where the EPA has not yet promulgated any [effluent limitations guidelines] for the point source category or subcategory, NPDES permits must incorporate 'such conditions as the Administrator determines are necessary to carry out the provisions of the Act.' In practice, this means that the EPA must determine on a case-by-case basis what effluent limitations represent the BAT level, using its 'best professional judgment.' Individual judgments thus take the place of uniform national guidelines, but the technology-based standard remains the same.") (citing 33 U.S.C. 1342(a)(1); 40 C.F.R. § 125.3(c)-(d).

Chemours facility in North Carolina was demonstrated to consistently reduce measured PFAS to non-detect levels. We encourage the Division to investigate whether that same or similar technology could be used at the Suncor facility to reduce measured PFAS to non-detect levels. The Division should include technology-based effluent limits in Suncor's permit and set limits at the detection level for all monitored PFAS, or at the very least, for PFOA, PFOA, PFBS, PFNA, and PFHxS and their regulated parent constituents. As described in Section V, the Division retains the authority to implement more stringent translation values, and we believe reducing PFAS to non-detect levels in Suncor's Outfall 020A wastewater discharge is necessary to protect the water quality of Sand Creek and downstream segments of the South Platte River. The Division should require Suncor to comply with the new PFAS effluent limits no later than one year from the revised permit effective date.

Suncor must fully characterize the burden of PFAS chemicals in its wastewater by using the TOP Assay or another method that measures the burden of currently unidentifiable PFAS groundwater and outfall waters.[27] This will allow CDPHE to better understand the full range of PFAS-like chemicals contaminating the refinery site and ground water. It will help gauge whether or not treatment methods are effective in reducing the full range contaminated water. Treatment technologies like activated carbon "break through" or lose their effectiveness quickly for shorter-chain PFAS chemicals. A variety of fluorochemicals used in AFFF that are not captured by traditional LCMS/MS methods yet break down to form these more persistent, and damaging compounds over time. Any system put in place to clean up contaminated water should be effective in removing the entire class of PFAS chemicals, as well as the petrochemicals and heavy metals in water.

CDPHE should require that all used filter materials and any dredged soils with PFAS be safely contained on- or off-site until there are guidelines to ensure safe holding or methods that completely destroy PFAS are in place for those wastes.

VII. Additional Points of Compliance and CDPHE Actions

a. *Bans on AFFF Containing PFAS in firefighting and the refinery sector*

The Division has a unique opportunity to reduce the burden of PFAS in Sand Creek and the South Platte River by setting strong effluent limits for PFAS in Suncor's water permit. We also recommend that it prevent costly future contamination by addressing current and future uses of PFAS in AFFF foams at the refinery site. PFAS foams are being phased out in the refinery industry in California and Washington. Yet use is still legal at Suncor due to weak inadequate government action to prevent further PFAS contamination.

[27] See, https://cfpub.epa.gov/si/si_public_record_Report.cfm?dirEntryId=347617&Lab=CEMM

Petroleum refinery fires pose intense, acute health concerns for nearby residents. Attempts to extinguish tank fires require massive amounts of PFAS-foams. In a notorious case in 2019, the ITC Tank Farm adjacent to the Houston Ship Channel caught fire, which spread to holding tanks.[28] An estimated 130,000 gallons of AFFF were used to fight the fire, and the residue waters quickly exceeded the containment system and flowed into the channel and ultimately the Galveston Bay.[29] Any fires at Suncor would be catastrophic for health, Sand Creek and the South Platte. CDPHE can work to minimize fire danger, but also ensure the fire suppression does not cause multi-generation pollution loading in the refinery soils, groundwater and surface waters surrounding the area.

Suncor has reported to CDPHE that it currently holds 22,000 gallons of PFAS-containing foams on site. If used, those foams could dramatically increase the PFAS footprint of the Suncor Refinery and damage Sand Creek and downstream segments of the South Platte for generations to follow.

Legislatures in both Washington and California have set the petroleum refining sector on a timetable for ending the sale and use of PFAS in fire suppression. Washington will no longer allow refineries to purchase AFFF foams containing PFAS in 2024.[30] California will end PFAS purchase and use in 2028 and require the refinery industry to hold stockpiles of unused foams until the state has determined a safe disposal mechanism for the wastes.[31] This is the type of actions the Division and Suncor should be enacting to protect Colorado communities and waters.

The switch to PFAS-free Class B foams is already underway, as alternatives are becoming more available and validated for high intensity petroleum fires. These include nearly 100 commercially available alternative products[32] that perform similarly in field tests. Alternative chemistries include siloxane- and protein-based active ingredients. Notably, 11 Class B foams[33] have been screened and verified as free of other chemicals of concern by the Green Screen ForSafer Chemicals[34]. The state of Washington is purchasing one PFAS-free alternative (Nova Cool) for use by fire departments along Washington's coal train lines.

We urge the Division to flex power granted to it under Policy 20-1 as well as the Solid and Hazardous Waste Commission rules (6 CCR 1007-3, Part 267, Subpart Q), to end

---

[28] https://www.sciencedirect.com/science/article/abs/pii/S0269749120321254

[29] https://www.houstonchronicle.com/news/texas/article/The-Latest-No-timeline-for-Texas-chemical-fire-13700161.php

[30] https://app.leg.wa.gov/rcw/default.aspx?cite=70A.400.020

[31] https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201920200SB1044

[32] http://theic2.org/article/download-pdf/file_name/Per_and_Polyfluorinated_Substances_in_Firefighting_Foam_040919.pdf

[33] https://www.greenscreenchemicals.org/certified/fff-standard

[34] https://www.greenscreenchemicals.org/certified/fff-standard

PFAS-foams and push the adoption of these safer Class B foams for vapor suppression and fire fighting.

CDPHE should also work with Suncor under the Clean Air Act Risk Management Plan Rule[35] to address fire safety and lower ignition risks.

a. *Seeps*

The Suncor facility has had a long history of discharging pollutants through seeps that discharge pollutants from groundwater to Sand Creek and/or the South Platte River.[36] The facility, which is located within the alluvium, also struggles with the containment of contaminated groundwater. We are particularly concerned that contaminated groundwater could result in contamination to water flowing through the Burlington ditch, especially given the high concentrations of benzene, PFAS, and other pollutants of concern. Based on these factors, we believe extraordinary circumstances exist to require establishing new internal outfalls to ensure that pollution in groundwater underneath the facility is contained, does not interfere with downstream wastewater treatment, and does not result in a discharge of pollution to state waters through contaminated groundwater seeps. Internal outfalls and/or establishment of new points of compliance at seeps should be established after a thorough site inspection by the permit writer and staff from the Division's compliance and enforcement unit.

b. *The Hanging Barrier Wall and Barrier Wall*

In its presentation to the public, the Division described two barrier walls intended to prevent contaminated groundwater from leaving the Suncor site and, for example, entering Sand Creek and the South Platte River. Yet, it appears, based on monitoring of wells in and around these barriers, that they are inadequate to protect nearby surface and groundwater. In addition, as explained elsewhere in these comments, we have grave and reasonable concerns that discharges from Suncor's facility are occurring despite the presence of these walls.

Given these concerns, we request that the Division determine the degree to which – including over the long term – of the barrier walls are protecting surface and groundwater. We ask that if these barriers can be fortified, rebuilt or improved in any way to reduce discharges from the Suncor facility, that the Division consider whether requiring such measures will better protect public health and the environment from the individual and cumulative impacts of the Suncor discharges and impose all appropriate requirements.

c. *Petroleum Spills*

[35] https://www.epa.gov/rmp/risk-management-plan-rmp-rule-overview

[36] *e.g.*, S*ierra Club v. Colo Ref. Co.*, 838 F. Supp. 1428 (Co. Dist. Ct. 1994).

The permit file indicates that many spills, including those attributable to Suncor, have occurred in and around the refinery. These spills, which have included the release of benzene, sludge, oily substances and other contaminants, have threatened public health and the environment and likely resulted in significant damage to ecosystem values and aquatic life. For example, In 2011 and 2012, Suncor spilled over 785,000 gallons of toxic sludge into Sand Creek, resulting in benzene levels 24,000 times the drinking-water standards.[37] We ask, therefore, that the Division add permit provisions and measures to avoid such spills in the future. These provisions could include requirements such as better practices or the construction of physical barriers on the surface of the facility. We would welcome an analysis of possible permit terms and conditions that would substantially decrease the likelihood that spills from Suncor will adversely impact public health and the environment in the future. In addition, should any spills occur at Suncor Refinery in the future, the surrounding communities should be notified as soon as possible.

d. ***WET Testing***

Under the current permits, Suncor is required to conduct WET testing on a quarterly basis. Permit CO0001147 at 10 & 13. As you are aware, WET – or whole effluent toxicity – testing is intended to ensure that Suncor's effluent is not toxic and will not impair organisms' ability to survive, grow and reproduce.

As the permit file indicates, Suncor's discharge of selenium is of grave concern. At the same time, WET tests only account for exposure via the water column. Food chain effects, which are a separate but extremely important exposure route in the case of contaminants such as selenium and methylmercury, are not accounted for in WET testing.

In addition, as the Division admits in its presentation materials, there are seeps and other discharges from Suncor that have not been adequately monitored.Therefore, it is possible that Suncor's effluent could be toxic to aquatic life – both because the impacts of selenium are not reflected in the WET testing.

Based on these considerations, therefore, we request that the Division require Suncor to undertake reasonably frequent testing to ensure that its effluent – including any discharges from seeps – is not toxic and will not impair organisms' ability to survive, grow and reproduce.

e. ***Monitoring Frequency***

As discussed above regarding selenium, discharge limits on several metals for which there are effluent limits are expressed in terms of a thirty-day average.Yet, at the same time, monitoring for these contaminants -- including As, Fe, Mg, Ag and Zn -- is slated to occur only

[37] https://www.denverpost.com/2012/05/25/suncor-spill-clean-up-at-sand-creek-near-denver-is-months-years-away/

once a month.[38] As a result, it appears that only one monitoring sample is used to determine the "average" concentration of the contaminant over the course of thirty days. It is unclear how once-a-month monitoring is adequate to ensure compliance with an effluent limit expressed in terms of a thirty-day average. Further, in the case of Hg, monitoring to determine compliance with a thirty-day average is required to occur only quarterly. Finally, with respect to these metals, such infrequent monitoring appears to be inconsistent with WQP-20.

Similarly, repeated monitoring is required to guarantee compliance with effluent limits expressed as daily maximums. Yet, the current permit often fails to require monitoring of sufficient frequency. For example, to determine compliance with a daily maximum effluent limit on Mn, monitoring is mandated only once a month.[39] Likewise, the effluent limits for BTEX and benzene -- also established based on a daily maximum -- are monitored only weekly.[40] Given that short term limits protect public health and the environment from spikes in concentrations of pollutants, it is critical that they be met.

The Division should also, at a minimum, require weekly monitoring for all PFAS and parent constituents listed in Table-1 and Table-2 of Policy 20-1.[41] This is necessary because of the spikes and variability in PFAS concentrations that Suncor has reported in its monthly PFAS monitoring data. In order to get a better handle of the discharge concentrations, it is essential to conduct frequent monitoring. Weekly monitoring for PFAS is also consistent with what the Division recently required at a landfill in Glenwood Springs.[42]

Therefore, we ask the Division, as a general matter, to establish monitoring requirements of sufficient frequency to establish that Suncor is indeed complying with its effluent limits.We further encourage the Division to adopt provisions that require monitoring that is even more frequent than the baseline monitoring requirements set forward in Appendix D of WQP-20.[43]

f. ***Chronic and Acute Limitations***

For various contaminants, the existing discharge permit establishes either acute, short-term effluent limits or chronic, long-term effluent limits – but often not both. It is our understanding that public health and aquatic life must be protected from both acute and chronic exposure to contaminants. Therefore, we request that the Division establish both short **and** long term for the contaminants addressed in the permit or explain to the public why no such limits are needed to protect public health and the environment.

---

[38] Permit CO0001147 at 9 (for Outfall 020A)**.**
[39] Permit CO0001147 at 9.
[40] *Id.* at 10.
[41] Policy 20-1 at 8 and 10.
[42] Permit CO0048815 at 6.
[43] As selenium is not a metal, it is not clear that Appendix D covers the frequency of monitoring for selenium. In any case, we urge that the Division require more frequent monitoring of selenium based on the factors previously mentioned.

g. *Absent Effluent Limitations*

For several heavy metals and other contaminants, Suncor is required to monitor its effluent, but is not required to comply with any effluent limit.[44] This approach is confusing and fails to convey to the public assurances that their health and the environment are being protected. Essentially, the public has no easy way of interpreting monitoring data without an associated permit limit. Therefore, citizens who are impacted by Suncor's discharges have no ready means of understanding whether monitored values are within accepted ranges. Similarly, without effluent limits – or at a minimum, an explanation of why limits are not necessary – the public is not in a position to benefit from the Division's expertise as manifest in a protective effluent limit or a reasonable justification as to why the agency chose not to impose a limit.

h. *Fish Consumption*

The State acknowledges that fish from Colorado's waters could contain toxic substances such as mercury that warrant the issuance of site specific safe eating guidelines. It appears that CDPHE has not tested fish potentially affected by Suncor's discharge.[45] While it is not clear whether people fish the waters cumulatively impacted by the discharge, it seems that the state has not provided sufficient information so that nearby communities can understand whether the fish in the waters that flow through their neighborhoods are safe to eat.

We urge CDPHE to: 1) determine if any waters impacted by Suncor's discharges are fished; 2) test fish in these waters for mercury and other toxic substances such as PFOS, including those that may impact birds that consume the fish; 3) make the results of this analysis readily available to the public and should any tested fish have unsafe levels of any contaminants, post "do not eat fish" signs in English and Spanish along relevant stretches of impacted stream segments; and 5) restrict Suncor's discharges as needed to safeguard the public and birds.

VII. Conclusion

As outlined above**,** the Division should flex its authority to require stringent effluent limits and/or frequent monitoring for all pollutants of concern, as well as other permitting actions necessary to ensure that human health and water quality are protected from Suncor's water pollution. It is also vital that the Division consider the cumulative impact that Suncor Refinery's pollution has had on the North Denver community for decades. Our organizations look forward to providing additional feedback on the revised permit throughout the remainder of the stakeholder process.

---

[44] E.g. CO0001147 at 9-10.

[45] https://www.google.com/maps/d/viewer?mid=1cs4vZHk6jGNkfcmWiFk3DYfPSeo&ll=39.755546977235774%2C-104.95107925682656&z=10

Respectfully submitted,

Jennifer Peters
National Water Programs Director, Clean Water Action

Josh Kuhn
Water Advocate, Conservation Colorado

Rebecca Curry
Colorado Policy Advocate, Earthjustice

Michael Ruddock
Policy Manager, Healthy Air & Water Colorado

Corinne Bell
Healthy and Affordable Water Advocate, Natural Resources Defense Council

Chandra Rosenthal
Rocky Mountain Director, Public Employees for Environmental Responsibility

Sonya Lunder, MPH
Senior Toxics Policy Advisor Gender, Equity & Environment Program, Sierra Club

Joro Walker, Esq.
General Counsel, Western Resource Advocates