Summary of Public Comments on Air Permit Amendment Application

PARKLAND

Overview

Parkland's Burnaby Refinery (hereafter the Refinery) currently operates under the authorization of an air quality permit issued by Metro Vancouver, which is set to expire on July 31, 2022. With the expiration quickly approaching, Parkland is well underway in the application process to renew and amend the permit to align with Parkland's commitment to reducing air emissions through investment in new technologies and infrastructure. Further details of Parkland's permit amendment request are available on our website here.

As part of Metro Vancouver's permit amendment process, on February 10, 2022, Metro Vancouver posted an Environmental Protection Notice (EPN) detailing the changes in permitted air emissions associated with our requested amendment. The EPN was also published in local newspapers and circulated to stakeholders including local municipalities and health authorities, and the Parkland Community Advisory Panel (CAP). Parkland conducted a public information meeting outlining the details of the permit amendment on March 10 and presented these details to the CAP on March 30.

During the consultation period from February 10 to April 9, Metro Vancouver collected comments received on Parkland's proposed permit amendment from the public and stakeholder groups and forwarded these comments to Parkland. This document summarizes the comments received and Parkland's response(s) to those comments.

Summary of Responses

Recurring themes were identified in the comments submitted, and as such, responses were categorized into those themes. Table 1 following presents a summary of the comment themes that came up during the public consultation process, along with Parkland responses by theme.

For more information

If you have any questions or concerns, please email **CommunityBC@parkland.ca** or **604-257-4040**

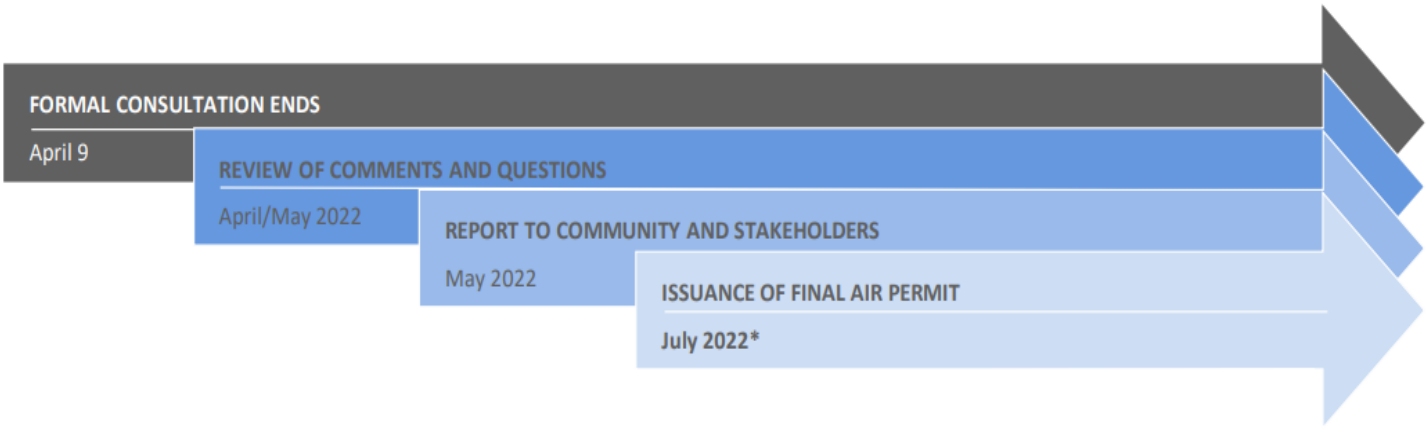

TABLE 1. SUMMARY OF COMMENTS RECEIVED DURING PUBLIC CONSULTATION AND PARKLAND REFINERY RESPONSES

COMMENT SUMMARY	PARKLAND REFINERY RESPONSE
Emergency Release	
Respondents expressed concern regarding isolated emergency events such as pipeline ruptures, and their potential to cause evacuations of neighborhoods surrounding the facility due to the release of air contaminant emissions.	Parkland takes emergency response very seriously and has extensive resources and procedures dedicated to responding to unexpected events. There have been no pipeline ruptures or other emergency events associated with the Parkland facility that has resulted in evacuations. The 2007 Westridge pipeline rupture which resulted in evacuations in Burnaby was not associated with the refinery (now Parkland, but at that time owned by Chevron) or any of our assets and was therefore outside of our control to prevent.
Monitoring	
Respondents indicated a strong interest in seeing enhanced air contaminant monitoring coverage in local areas surrounding the refinery to provide the public with a greater understanding of how the refinery operations affect the local air quality.	Monitoring of air quality levels in the community around the refinery is carried out by Metro Vancouver, with Parkland funding the operation of Metro Vancouver's Burnaby Harbourview Park and McGill Park monitoring stations. A map of Metro Vancouver monitoring stations, along with Realtime monitoring data from these stations is located at airmap.ca. Metro Vancouver makes all decisions regarding station location and monitoring instruments at each station. Parkland is funding the addition of nitrogen dioxide and fine particulate matter at Capitol Hill and McGill Park, as well as sulfur dioxide at Burnaby Mountain. In addition, Parkland is also funding the installation of a new monitoring station on the north shore of Burrard Inlet across from the refinery. Closer to the refinery, volatile organic compound monitoring has recently been augmented. As part of the federal government's recently adopted "Reduction in the Release of Volatile Organic Compounds Regulations", beginning in 2022 Parkland is now required to measure levels of VOC including benzene, xylene, ethylbenzene, toluene, and 1,3-butadiene at 24 locations around the refinery and tank farm fence line.
Permit Limits	
Respondents expressed an interest in ensuring that the air contaminant emissions limits included in Parkland's Metro Vancouver permit reflect single-day or hourly emissions maximums to ensure that short term increases in emissions are effectively limited.	The emissions limits in Parkland's current permit (http://www.metrovancouver.org/services/Permits-regulations-enforcement/air-quality/apply-permit/AirQualityPermitsSigned/0117%20-%20Parkland%20Refining%20(B.C.)%20Ltd.%20Permit%20Amendment%20-%20Issued%20January%2027%202021.pdf), as well as the new limits requested in our permit application are all based on maximum hourly or daily emissions (mg/m3 hourly average concentration, or kg/day mass emission), rather than annual emissions limits. As such, these limits are specifically designed to target short term maximum emissions conditions from the facility.

COMMENT SUMMARY	PARKLAND REFINERY RESPONSE
Fugitive emissions of volatile organic compounds, including known carcinogens	
Respondents expressed concerns regarding the release, containment, and level of risk by Volatile Organic Compounds (VOC's), especially known carcinogens such as benzene, from sources within the refinery.	Parkland is committed to reducing fugitive emissions from its operations to the greatest extent possible. All of Parkland's tanks meet the guidelines in the Canadian Council of Ministers of the Environment "Code of practice for storage tank systems containing petroleum and allied products", and meet Environment and Climate Change Canada's proposed regulation to control volatile organic compounds (VOC) emissions from the storage and loading of petroleum liquids. Parkland's proposed Metro Vancouver permit includes new throughput limits for all petroleum storage tanks, which effectively places a limit on VOC emissions from these tanks. Additionally, Parkland has recently enhanced its leak detection and repair program to comply with the federal government's recently adopted "Reduction in the Release of Volatile Organic Compounds Regulations". As part of the permit application process, Parkland contracted WSP Canada Inc to perform a human health risk assessment (HHRA) for air emissions from the Burnaby Refinery. VOCs benzene and 1,3-butadiene were two of the contaminants of potential concern included in the HHRA, which provides a detailed survey of the current health literature pertaining to these contaminants, as well as an assessment of the current level of risk posed by measured benzene and 1,3-butadiene levels near the refinery. You can view a summary of the HHRA, as well as the full technical report here: Human Health Risk Assessment - Burnaby Refinery The HHRA was based on the measurement of benzene and 1,3-butadiene levels at Metro Vancouver's North Burnaby air monitoring station located in McGill Park near the refinery tank farm. As part of the federal government's recently adopted "Reduction in the Release of Volatile Organic Compounds Regulations", beginning in 2022 Parkland is now required to measure levels of VOC including benzene, xylene, ethylbenzene and toluene at a number of locations around refinery fence line. Using this data, Parkland will be able to refine the results of the recently completed HHRA, as well as target emissions reduction efforts to areas of the refinery with high measured levels of VOC, whether these areas be near storage tanks, the water treatment plant, or other refinery operations.

COMMENT SUMMARY	PARKLAND REFINERY RESPONSE
Odour	
Respondents expressed concerns regarding fugitive emissions crossing the refinery fence line, resulting in unwanted odours outside of the refinery boundaries.	As a requirement of Parkland's existing Metro Vancouver permit, as well as our new permit application, Parkland is required to have a robust odour management plan for tracking and mitigating the odour impacts of the facility. The permit prohibits odours to cross the plant boundary, meaning that the goal is to have no odour impacts outside the facility boundaries. All complaints are investigated by our operations and environmental staff, and any confirmed sources of odour immediately mitigated. An in-depth analysis of complaints is also done each year, to identify trends and assess opportunities for improvement. For more information on the most recent assessment, please see the following presentation discussed in the most recent public CAP meeting: OPENING (ctfassets.net)
Wastewater	
Respondents expressed concerns regarding the treatment of wastewater from the refinery and the potential for this wastewater to result in impacts outside refinery boundaries.	Parkland operates under a liquid waste discharge permit from Metro Vancouver, which specifies strict limitations on the levels of contaminants in water discharged to the sewer system. In addition, the air permit prohibits odours to cross the plant boundary and requires Parkland to maintain a comprehensive odour management plan, striving for continuous improvement including potential odours from wastewater. Parkland is continually assessing how to reduce the potential for odours from the treatment area and the treated water discharged to the sewer lines. As part of the discharge permit, Parkland is required to operate a bleach injection system for sewer odour control which has been very effective.
Light Pollution	
Respondents expressed concerns about the impact of light from flaring on the surrounding community.	Parkland endeavors to reduce flaring to the greatest extent possible. It is not always possible to plan the times when flaring occurs, such as during unplanned upset events. Should planned flaring be required (i.e., during a refinery maintenance shutdown or subsequent start-up), Parkland endeavors to avoid periods that could exacerbate light or air quality impacts of the flare.

COMMENT SUMMARY	PARKLAND REFINERY RESPONSE
Engagement	
Respondents sought further information about Parkland's Indigenous and community engagement. There were also questions regarding the ways in which public comments would be incorporated into the permitting process.	Parkland is strongly committed to Indigenous and community engagement. An example of this is our Community Advisory Panel; we regularly meet with citizens of the neighborhoods surrounding the refinery to engage on a wide range of issues, including air quality. As part of the permit consultation process, all comments received and responses from Parkland are shared with Metro Vancouver, who then take it into consideration as the final outcome of the permit is considered. Please see the public information session presentation and supporting materials for further information, including Metro Vancouver's process, at the following link: Human Health Risk Assessment - Burnaby Refinery
Tanks	
Respondents expressed concerns about the potential addition of new refinery tanks under the proposed amendment.	The permit amendment/renewal application currently before Metro Vancouver does not include the addition of new tanks. All of the tanks included in the amendment application have already been authorized by previous Metro Vancouver permitting decisions. Our current application does reorganize the groupings of tanks to better reflect their use, location (i.e., refinery vs tank farm), and emissions controls employed (i.e., floating roof vs fixed roof).
Permit Term	
Respondents expressed concerns with the 10-year permit term proposed by Parkland, primarily due to concerns that this term would preclude further emission reductions or adherence to evolving regulatory standards during the term.	Obtaining an air permit for an operational facility like the refinery is a complex multi-year process, involving long-term studies and the involvement of multiple government agencies, organizations, and external stakeholders. Some of the emissions reduction upgrades outlined in the existing permit application will take a number of years to implement (i.e., Tail Gas Treatment Unit installation is expected to be complete in 2025), as will further initiatives to reduce greenhouse gas (GHG) emissions, and a permit term of 10 years will provide regulatory certainty, allowing Parkland to focus on the implementation of these measures. It is important to note that a 10-year permit term does not prevent either Metro Vancouver or Parkland from pursuing additional emissions reduction opportunities. Continuous improvement is built into Parkland's Metro Vancouver permitting process, and Parkland is legally bound to meet new regulatory requirements as they come into force at the federal, provincial, regional, or municipal levels, regardless of air permit term limits. For example, despite it not being a requirement in Parkland's current Metro Vancouver permit, Parkland is now operating a fenceline volatile organic compound (VOC) monitoring program and significantly enhanced leak detection and repair program in compliance with the federal government's recently adopted "Reduction in the Release of Volatile Organic Compounds Regulations". Similarly, Parkland also complies with the provincial "Renewable & Low Carbon Fuel Requirements Regulation", despite such requirements not appearing in our current Metro Vancouver permit.

COMMENT SUMMARY	PARKLAND REFINERY RESPONSE
Climate Change/Greenhouse Gases	
Respondents expressed concerns that the aggressive greenhouse gas emission reductions targets at the federal and provincial levels may not be compatible with proposed permit amendment over the requested 10-year term period.	Parkland supports the governments' goal to achieve net-zero greenhouse gas emissions by 2050. This support is reflected in our commitment to reduce our Scope 1 and 2 GHG emissions intensity, and to help our customers reduce their own emissions. In November 2021, Parkland released its latest Sustainability Report, which includes GHG emissions reductions targets. For our Refining business, Parkland is targeting a 15% reduction in GHG emissions per barrel processed by 2030, based on a 2019 emissions baseline. In addition, building on our success of co-processing, Parkland plans to increase our production of low-carbon fuels which will reduce our customers' GHG emissions by 1 million tonnes per year by 2026. This is the equivalent of taking over 350,000 cars off the road—nearly 12% of BC's passenger vehicles. For more information on Parkland's low-carbon leadership and sustainability efforts, please visit our website: https://www.parkland.ca/en/sustainability/sustainability-report Further, Metro Vancouver's recently adopted Bylaw 1330 (Air Quality Management Fees Regulation) has resulted in a significant change to emissions fees which Parkland must pay both for its permit application, and for each year of facility operation. Over the coming years, fees for GHG such as methane will increase sharply, as will fees for hazardous air pollutants such as benzene and odorous emissions such as hydrogen sulphide. These increasing fees provide additional motivation for Parkland to pursue reductions of emissions of these compounds, irrespective of Parkland's permit term length.
Production Rates	
Respondents expressed concern that the limits being applied for would not be restrictive enough should Parkland increase production rates. Additionally, respondents thought the limits being applied for are outdated and based on historical production rates.	The permit limits being applied for would be applicable regardless of production levels. The reductions in permitted concentrations proposed in the permit will result in significant net reductions in emissions (45% for sulphur dioxide, 18% for nitrogen dioxide, 23% for particulate matter).
Weather Based Refinery Operations Adjustments	
Respondents issued concerns regarding specific weather patterns posing unique challenges to the ambient air quality in the local areas around the refinery and identified a desire for the refinery to adjust refinery operations, particularly flaring, in response to weather conditions.	Parkland's current permit as well as our new permit application both contain a SO_2 Curtailment Event (SCE) procedure requiring that Parkland reduce SO_2 emissions should SO_2 levels measured at Metro Vancouver monitoring stations in the surrounding community exceed a trigger threshold, based on ambient air quality objectives. In addition, Parkland also has an internal operating procedure by which it reduces SO_2 emissions were possible when the atmospheric inversion conditions occur. Parkland endeavors to reduce flaring to the greatest extent possible. It is not always possible to plan the times when flaring occurs, such as during unplanned upset events. Should planned flaring be required (i.e., during a refinery maintenance shutdown or subsequent start-up), Parkland endeavors to avoid periods that could exacerbate light or air quality impacts of the flare.

ACRONYMS	
AQ	Air Quality
CAP	Community Advisory Panel
EPN	Environmental Protection Notice
HHRA	Human Health Risk Assessment
GHG	Greenhouse Gases
kg	kilogram
m^3	cubic metre
mg	milligram
MV	Metro Vancouver
SCE	SO_2 Curtailment Event
SO_2	Sulphur Dioxide
VOC	Volatile Organic Compound
AQ	Air Quality
CAP	Community Advisory Panel
EPN	Environmental Protection Notice
HHRA	Human Health Risk Assessment
GHG	Greenhouse Gases
kg	kilogram
m^3	cubic metre
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SCE	SO_2 Curtailment Event
SO_2	Sulphur Dioxide
VOC	Volatile Organic Compound