Minutes of the Chevron Burnaby Refinery
Community Advisory Panel Meeting
Thursday, February 5, 2015
7:00 – 9:00pm
Refinery Office (Boardroom) 355 North Willingdon Avenue

PRESENT

Maziar Kazemi, Al Mytkowicz, Art Quan, Pat Connell, Rich Baerg, Robert Bowes, Joanne Smith, Helen Ward, Rob MacLean, Cathy Argue, Kathy Mezei, Michael Coyle

Chevron representatives:
Jill Donnelly, Health Environment & Safety Manager; Dave Schick, Policy, Government and Public Affairs Manager; Chris Haswell, Operations Manager

Metro Vancouver Representative:
Larry Avanthay, Regulatory Representative, Metro Vancouver

Facilitator:
Catherine Rockandel, Rockandel & Associates

Regrets:
Steve Parker, Chevron, Refinery Manager; Eileen Luongo

Guests:
Laurie Bates-Frymel, Air Quality Planner, Air Quality and Climate Change; Ali Ergudenler, Senior Engineer, Air Quality and Climate Change; Maari Hirvi Mayne, Senior Project Engineer, Environmental Regulation and Enforcement

CAP BUSINESS

1. Opening Remarks

- Catherine Rockandel welcomed CAP members and guests. She provided an overview of the agenda and invited CAP and guests to introduce themselves.

2. Chevron Updates

a. General Refinery Operations – Chris Haswell & Dave Schick

- Chris reported that 2014 was a positive year for Chevron in terms of safety
- The facility is two weeks away from maintenance turnaround. During this time community may see increased flare activity in the first few days as units are shutting down and then when they start up again. The community may also see some increased traffic during the several weeks of the turnaround. Chevron has parking plans in place to mitigate impacts to the community.

- During the last meeting we discussed the event that had caused odor issues for the community. Shortly after the last meeting the cleanup was completed. We would like to apologize again for the odors.
- Chevron is continuing to work on the park where a layer of fill that covers the pipes was washed away due to overflowing culverts further up the hill. This happened a few days before the previous meeting. The pipes that were exposed carry Chevron products. The integrity of the pipes was not impacted and there were no products released. We continue to monitor the situation, and once dry weather is here Chevron will begin repairs to the area, including the stairs that were damaged from the rain event.
- Chevron is looking at implications from the recent National Energy Board (NEB) ruling that affects how crude is allocated via pipeline. The allocations are based on historical average over eighteen months versus a capacity based system.
- Chevron anticipates that crude by rail activity is going to continue in the future
- Dave reported that Chevron had a meeting with City of Burnaby about emergency notification. The big issue is liability considerations in terms of a private entity versus the City of Burnaby delivering the public service. There is no simple solution
- CAP had asked Chevron to keep them up to date on news from other Chevron operations in BC. The Kitimat Liquefied Natural Gas (KLNG) project, which includes pipelines, reached some major milestones with agreements signed with sixteen First Nations Bands. KLNG's new partner is Woodside Petroleum from Australia. The current commodity markets and the drop in oil prices present a challenge to the pace with which the project moves forward.

Comments and questions about the update:

Q1: Is that pipeline you mentioned in the park existing or new?

A1: It is an existing pipeline

Q2: Is allocation reviewed by month or yearly?

A2: It is reviewed monthly

Q3: Is the change a result of a new hearing or the NEB previous decision?

A3It was the result of an additional process.

Q4: Does Chevron think that this might be a good compromise?

A5: Chevron isn't aware of other firm's historical needs, but we are confident that we can work within the system

Q5: What did city say about Emergency notification?

A5: Chevron spoke to the Burnaby Fire Department. The issue was related to consistency around emergency communications to the public about all industry operating in Burnaby not just Chevron. Chevron will continue to communicate to CAP members during incidents.

b. Area 2 Seep Update – Jill Donnelly

- Jill reported that the seep is approximately the same as November. The technical team led by Chris Boys continues to collect data at the foreshore. Anticipating 2016 installation of final remedy but details are not available yet
- In terms the railway trench, sheen has not been observed since at least summer and the pumps continue to bring up water only
- There are forty-four perimeter wells pumping ground water. The plan is to upgrade the well system. The pumps will continue to run into the foreseeable future. We are also looking at a permanent compressor.

Comments and questions about the update:

Q6: I am concerned about smell at the beach at low tide. There are small pipes with taps and wire mesh around them in groups of three located up in rocks in that area. There is also some black plastic in that area. I have smelled this odor more than once. It is at the foot of Penzance.

A6: What you are seeing in that area is the containment boom, which is the big black boom in the water, and the white pipes are monitoring wells. There have not been any reports of smells from the team. They are down there frequently.

C7: Metro Vancouver does not have history of complaints in that area. Larry suggested that he could join Chris Boys when he goes to area to investigate.

Q8: Are the perimeter wells at the foreshore part of final remedy? Are the pipes protected from freezing?

A8: Because the pipe is below ground they generally do not freeze. Above ground pipe is insulated to protect from freezing.

3. <u>Presentation</u> (See Attachment One)

Metro Vancouver Interim Sulphur Dioxide Objectives

- Laurie Bates-Frymel, Air Quality Planner, Air Quality and Climate Change

CAP questions and responses about the presentation:

Q9: The presentation says the BC interim objectives apply to new and significantly modified sources, what are these?

A9: This refers to any new proposed or significantly modified emission sources. The provincial government primarily established the interim objectives to be included in the assessment processes for new Liquefied Natural Gas (LNG) projects.

Q10: Why are ships such a huge source of SO2?

A10: They generate sulphur dioxide (SO2) when they burn fuel with sulphur in it. Ships used to burn “bunker fuel” which contained 3% sulphur.

Q11: Why is BC as an interim step adopting such stringent policies ahead of the federal policies being developed?

A11: BC needed to adopt interim policies because of new LNG industry development

Q12: What did you use to establish baseline SO2? What air did you measure? What background monitoring stations are nearby?

A12: In this process Metro Vancouver looked at ambient air quality reports from twenty-eight monitoring stations within Metro Vancouver and the Fraser Valley. A station on Vancouver Island near Ucluelet was used to determine the background levels. Background SO2 levels at this station range from 0.1 and 0.5 ppb. When a ship passes by it can reach up to 10 ppb for a short time.

Q13: Were infants and lactating women considered?

A13: Health Canada has identified asthmatics as the most vulnerable population. Health Canada has suggested 67 pbb for a 10-minute average as protective for asthmatics. It is my understanding that this level would also protect pregnant and lactating women and the elderly.

Additional Information provided to CAP immediately following the meeting is as follows:

Health Canada has compiled a thorough summary of the human health risks associated with exposure to SO2 for various subpopulations, but unfortunately I cannot share that document with you because it is still in draft form. However, I can provide a summary:

- Some studies suggest a weak causal relationship between preterm birth and congenital heart malformation in babies exposed to SO2 in utero. However, these studies also suggest SO2 may be acting as a surrogate for other pollutants like particulate matter.
- The available information is suggestive of a causal relationship between short-term SO2 exposures and all-cause and cardiopulmonary mortality at current ambient exposure levels, particularly in people over 40 years of age (most strongly associated with the over 65 age group). Again, researchers suspect that SO2 may be reflecting effects after conversion to particulate matter and other confounding factors.
- The evidence is inadequate to infer a causal relationship between SO2 exposure and mortality and respiratory symptoms with long-term exposures, cardiovascular symptoms with short- or long-term exposures, carcinogenicity and low birth weights.
- The strongest evidence supports a causal relationship between exposure to ambient levels of SO2 and respiratory symptoms in adults, particularly in the asthmatic subpopulation. This evidence is based on controlled human exposure studies where asthmatics were exposed only to SO2. Similarly, the literature supports a positive association between exposure to SO2 and respiratory symptoms in children.
- The evidence is inadequate to infer a causal relationship between long-term exposures of SO2 and health effects.

Q14: Why does monitoring station T23 on Capitol Hill have more emissions and more spikes?

A14: T23 registers higher SO2 levels primarily due to the proximity of this station to the refinery. T23 is located roughly 700 meters from the largest point source of SO2 at the facility, the fluid catalytic cracker. It would also be influenced by the port/marine traffic.

Q15: Why are 2009 and 2013 emissions higher?

A15: A lot of it has to do with meteorology such as inversions because operations were normal at refinery. T23 is in close proximity to refinery, which means it picks up exceedances quickly. The exceedances of the proposed interim SO2 objective in 2009 and 2013 occurred during inversions. There were no exceedances of permit limits at the refinery linked to these particular events.

Q16: What is an inversion? What causes it?

A16: Inversions happen when warm air aloft traps colder air at the surface. An inversion can suppress convection (air movement) by acting as a "cap" and leading to air contaminants being trapped close to the ground. Inversions usually occur in winter and if there is sufficient humidity, fog can be present.

Q17: How does an inversion affect health management?

A17: Chevron operators can access the data at the neighboring ambient stations (T4/T6/T23/T24) as well as Metro Vancouver. The permit includes a restriction regarding actions Chevron must employ when elevated levels of SO2 are confirmed at the stations. The refinery is able to respond in very short order to elevated levels of SO2 to avoid an exceedance of the one-hour SO2 objective. Exceedances are not sustained events. They can occur over a number of minutes. In both 2009 and 2013 there also appeared to be issues related to the ready access or reliability of the station data, which may have affected the ability of Chevron to respond.

Q18: If Environment Canada is predicting inversions does Chevron make changes in advance?

A18: We keep in touch with Metro Vancouver to determine estimation of length of inversion and we agree on how long mitigations go on. It is sometimes difficult to determine how long weather conditions will persist. Chevron has been proactive in the past during these inversion episodes by lowering their emission control set-points.

Q19: If you were a family with asthma living on Capitol Hill what would you notice?

A19: As previously noted, there have been only a couple excceedances of the current 1 Hour SO2 objective in recent history. The good news is that SO2 levels are expected to reduce further because of the reduction of sulphur in marine fuel. The first phase came into effect in 2012, which reduced sulphur content from 3%

to 1%. In 2015, the biggest reduction in sulphur content will come into effect. The new shipping industry requirements are 0.1 % sulphur levels.

Q20: By marine vessels what do you mean? Does this include tugboats?

A20: Marine vessels are ocean going ships (cruise ships, etc). Tugboats use low sulphur diesel and are not considered as marine vessels.

Q21: If the proposed Kinder Morgan pipeline goes through will that increase the number of ships and amount of SO2?

A21: Even if there are more ships, the reduction in sulphur levels for marine fuel are so great that SO2 would increase very little from increased marine traffic. That may not be the case for other pollutants such as particulate matter and nitrogen dioxide.

Q22: What changes happened in the refinery to create 24% drop in SO2 between 2005 and 2015?

A22: Metro Vancouver to investigate the reported reductions identified in presentation slide and provide a response on the contribution to the SO2 reduction at a subsequent CAP meeting.

Q23: What are the next steps in the consultation process?

A23: Metro Vancouver has established a website which has a feedback form. The Metro Vancouver website was shared with CAP before this meeting. After the consultation Metro Vancouver will review the feedback, summarize comments and put comments into a staff report that will go to the Metro Vancouver Climate Action Committee on March 26. If the staff recommendation is approved then, it would go to the Metro Vancouver board on April 17.

Q24: Are the Canadian standards the guidelines Metro Vancouver would use?

A24: Once the Canadian standards have been adopted, Metro Vancouver will revisit the SO2 objective. If the Canadian standard's statistical form stays as proposed (1-hour daily max 99th percentile, averaged over 3 years), we would propose a statistical form that is more relevant to the Metro Vancouver context and as stringent, if not more stringent.

Q25: When are the new SO2 objectives going to be implemented?

A25: The current intention is that the objective would become effective once adopted by the Metro Vancouver Board. Implementation details are expected to be presented to the Board as part of the consultation report.

Q26: Are the California guidelines more strict that EPA?

A26: The California 1-hour standard is 250 ppb (1-hour max).However, the US EPA standards also apply in California.

Q27: If we get more fuel by rail is the quality of the fuel less?

A27: The railways now required to use ultra-low sulphur diesel (ULSD), which is 15 ppm. This changed from 500 ppm on Sept 30, 2010.

Q28: What would a showstopper be?

A28: Metro Vancouver has been seeking public comment from various groups. The committees and board may say that we should have considered a comment or proposed something different than what staff proposed.

Q29: What are the impacts of the change in guidelines for the refinery?

A29: Chevron is still evaluating what the proposed interim objective means to their facility.

Q30: Once this comes to effect will permits be amended?

A30: The most immediate impact would be our evaluation of any permit applications for new facilities or existing facilities requiring an amendment to reflect changes of their operations. There is currently no outstanding amendments related to the Chevron facility.

4. Metro Vancouver Update: Larry Avanthay

a) Overview of MV Update

- Monthly summaries provided by Chevron indicates a total of 52 complaints for 2014 versus a total of 70 in 2013. The summary from November 2014 is still being reviewed with Chevron and the totals may be amended and may be slightly higher or lower by one or two complaints.
- During next CAP would expect to have annual report from Chevron with the analysis of the previous year's complaints. Review typically identifies patterns as well as response to episodes to identify opportunities to reduce and better manage odour episodes.
- An odor survey was conducted on January 14, 2015 in response to an odour complaint from resident at McGill Park. Odour was no longer apparent at the park at time of survey but a slight petroleum odour was identified on the Height's Trail. Chevron staff had also identified the odour and was believed to have been associated with gasoline transfer between tanks located near the fence line. Chevron Area One Superintendent had directed remedial actions to address the odours, minimize or halt transfer and was conducting observations on trail at time of Metro Vancouver's

5. 2015 Agenda Topic Review: Catherine Rockandel

The public suggested that CAP consider the following topics for review in 2015:

- New construction and capital project updates and review. Share what is going on in the plant with the neighbourhood
- Crude by Rail updates: Are there any changes planned?
- Fugitive smells and noise
- Taxation – community benefit from property tax, etc
- Marine facility operations, carrier frequency
- Chevron company operations beyond refinery

CAP agreed that the focus of the May meeting would be on the BC Fuel market and marine facility operations.

A separate visit to the seep site at the beach would be discussed for outside of regular CAP meeting hours because of the need to schedule it during the day and when the tide was low.

The presentation for the September meeting would be identified at the May meeting. The focus of the November public meeting would be taxation and the community economic benefit of the refinery.

6. Review of 2015 Agenda Schedule

The dates for the 2015 meetings are May 20, September 16 and the public meeting on November 17th.

ADJOURNMENT: Meeting adjourned at 8:50 pm