

ITEM 1
MANAGER'S REPORT NO. 43
COUNCIL MEETING 88/06/20

RE: CONSULTANT'S REPORT ON POTENTIAL HEALTH SIGNIFICANCE OF CRUDE OIL STORAGE ODOURS

MUNICIPAL MANAGER'S RECOMMENDATION:

1. THAT the recommendations of the Chief Public Health Inspector be adopted.

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TO: MUNICIPAL MANAGER 1988 JUNE 16
FROM: CHIEF PUBLIC HEALTH INSPECTOR
SUBJECT: CONSULTANT'S REPORT ON POTENTIAL HEALTH SIGNIFICANCE OF CRUDE OIL STORAGE ODOURS

RECOMMENDATIONS:

1. THAT Council concur with the need for further examination of air quality in those residential areas that are in close proximity to the Burnaby Mountain Petroleum Product Tank Farms and Lake City Fuel Dispensing Operations.
2. THAT the Greater Vancouver Regional District be requested to provide the required monitoring as outlined in Dr. C. Hertzman's report.
3. THAT staff arrange an information meeting between Dr. C. Hertzman and interested citizens of the residential areas in close proximity to the Burnaby Mountain Petroleum Tank Farms and Lake City Fuel Dispensing Operations.
4. THAT copies of this report and the Consultant's study be forwarded to:
 - a) The National Energy Board, 473 Albert Street, Ottawa, Ontario, K1A 0E5.
 - b) Trans Mountain Pipe Line Co. Ltd., Suite 800, Broadway Plaza, 601 West Broadway, Vancouver, B.C.; V5Z 4C5.
 - c) Greater Vancouver Regional District, 4330 Kingsway, Burnaby, B.C.; V5H 4G8.
 - d) Shell Canada Products Limited, Shellburn Refinery, 201 Kensington Ave., Burnaby, B.C.; V5B 4B2.

REPORT

SUMMARY:

In the study of possible health concerns associated with air quality in the residential communities adjacent to the Burnaby Mountain Petroleum Product Tank Farms, the Consultant to the Environmental Health Division has recommended further air quality testing. The Consultant has advised that the data provided could not be used to draw definitive conclusions regarding air quality or sources of pollutants of health significance. Using the available data, the Consultant has projected benzene levels that fall partway between those found in urban air and those expected near petrochemical facilities. The Environmental Health Division agrees with the Consultant that further testing is required to establish the level of benzene in the residential community adjacent to the Burnaby Mountain Tank Farms and determine the sources for the benzene levels.

1.0 BACKGROUND:

During the summer of 1986 a Committee including the Burnaby Environmental Health Division, G.V.R.D. Pollution Control, Trans Mountain Pipe Line Co. Ltd. and Shell Canada Ltd., was formed in order to assess the impact of petroleum storage tank emissions from the Shell Canada and Trans Mountain Pipe Line Co. Ltd., Burnaby Mountain Tank Farms. 102

The Burnaby Environmental Health Division requested that this Committee be formed in order that residents of the Forest Hills Subdivision could be given an answer to their concerns of possible health effects associated with crude oil product odour episodes.

Monitoring of the community ambient air quality within the Forest Hills Subdivision was conducted by the G.V.R.D. Pollution Control during the late summer and fall of 1987 and the data was finalized this spring. The Environmental Health Division contracted with Dr. C. Hertzman, Occupational Health, University of British Columbia, for an analysis of the possible health effects evidenced by the monitoring data. Dr. Hertzman has now submitted his report to the Chief Public Health Inspector. Copies of this report have been distributed to members of Council, additional copies are available in the Environmental Health Division's office.

2.0 HEALTH SIGNIFICANCE OF PETROLEUM STORAGE TANK ODOURS:

Dr. C. Hertzman's objectives were to answer the following questions:

1. Is the airborne concentrations of chemicals associated with petroleum odours within the residential sampling area elevated above other neighbourhoods in the G.V.R.D. with similar traffic flows (a principal source of urban benzene)?
2. If elevations in the airborne concentrations of chemical associated with petroleum odours exist, how are they related to emissions from the Burnaby Mountain petroleum product tank farms?

Dr. Hertzman's review of the sampling data determined that the available data was limited and prevented definitive answers to the above questions. However, Dr. Hertzman has focused on the projected levels of benzene within the residential sampling area. Through statistical analysis, Dr. Hertzman has projected benzene levels that "fall partway between those found in urban air and those expected near petrochemical facilities". Dr. Hertzman has concluded that "trends found in the existing data underscore the need to evaluate benzene exposure in the Forest Hills Community more carefully. Such further analysis will likely allow us to determine whether or not the current results can be explained away simply by difficulties in sampling. Furthermore, it should be possible to tell whether or not the tank farms might be the point of periodic excursions in ambient benzene concentrations, if they exist".

For the information of Council, Trans Mountain Pipe Line Co. Ltd. have also engaged a Consultant to examine the Forest Hills Subdivision air sampling data and provide comments on health concerns. Trans Mountain Pipe Line Co. Ltd. will be forwarding their Consultant's findings to Environmental Health Division.

3.0 ENVIRONMENTAL HEALTH DIVISION COMMENTS ON DR. HERTZMAN'S REPORT:

The Environmental Health Division has discussed Dr. Hertzman's concerns of possible benzene exposure with Environment Canada. Information provided by Environment Canada reveal that benzene is recognized as a human carcinogen and is listed as a toxic air pollutant by both the United States E.P.A. and the California Air Resources Board. It is

important to note that light duty gasoline vehicles are the largest sources of benzene and account for the majority of population exposure. Benzene exposure will be higher for commuters, for drivers who routinely use self-serve gas stations and for populations dwelling near point sources.

The possible point sources (non-traffic) identified by the Environmental Health Division for the Forest Hills Subdivision are the Burnaby Mountain Tank Farms and the two bulk petroleum product loading operations in Lake City.

The Environmental Health Division concurs with Dr. Hertzman's recommendation that further analysis should be conducted to determine if the point sources are contributing higher levels of benzene to the Forest Hills Subdivision than would be expected in typical urban air subjected to equal traffic flows, i.e. the Loughheed Highway, 401 Freeway. Should point sources be found as a concern for emissions of benzene, the Environmental Health Division would then investigate the capability of improving emission controls.

The information learned by further study will be of assistance in assessing whether other areas in our Municipality could be exposed to elevated levels of benzene due to close proximity to point sources.

The Environmental Health Division is recommending that the G.V.R.D. be requested to provide air monitoring data which will enable Dr. Hertzman to conclusively answer whether the levels of benzene within the Forest Hills Subdivision are of public health concern and if the levels of benzene exceed normal urban air quality, determine the point sources.

4.0 RESIDENT REVIEW:

The Environmental health Division has been advising the residents of Forest Hills Subdivision of the progress of Dr. Hertzman's Study. Staff are recommending that a meeting between Dr. Hertzman and the residents of Forest Hills or other interested citizens be arranged in order that Dr. Hertzman can present his findings and answer questions directly.

5.0 NATIONAL ENERGY BOARD:

During the Public Hearing regarding Trans Mountain Pipe Line Co. Ltd.'s application to the National Energy Board, the subject of Dr. Hertzman's report was raised. As the National Energy Board expressed interest in receiving Dr. Hertzman's finding, staff are recommending that the National Energy Board be sent a copy of this Council Report and Dr. Hertzman's findings.

GVH/g1

cc: Medical Health Officer
Director Administrative &
Community Services
Dr. C. Hertzman

George V. Harvie

G.V. Harvie, C.P.H.I.(C)
CHIEF PUBLIC HEALTH INSPECTOR

