

CITY OF BURNABY

ENVIRONMENT AND WASTE MANAGEMENT COMMITTEE

HIS WORSHIP, THE MAYOR
AND COUNCILLORS

RE: THE G.V.R.D. PROPOSAL TO USE BIOSOLIDS COMPOST FOR
LANDSCAPING ALONG BARNET HIGHWAY

RECOMMENDATIONS:

1. THAT the G.V.R.D. be authorized to only use thermophilically treated biosolids compost from the Lions Gate Sewage Treatment Facility on a one-time basis for landscaping along Barnet Highway located in Burnaby subject to the conditions noted in Section 4.0 of the attached report.
2. THAT the G.V.R.D. accept full responsibility for the installation, monitoring, and follow-up reporting to the City for the use of biosolids compost for landscaping along the Barnet Highway right-of-way.
3. THAT a copy of this report be forwarded to:
 - a) Mr. David Duthie, Residuals Program Manager, G.V.R.D, 4330 Kingsway, Burnaby, B.C., V5A 4G8.
 - b) Ms. Jan. Guo, Environmental Protection, Lower Mainland Region, B.C. Ministry of Environment, Lands and Parks, 16326-103A Avenue, Surrey, B.C., V3R 7A2.
 - c) Mr. Terry Walton, Project Manager, Barnet Highway Expansion Project, B.C. Ministry of Transportation and Highways, #202-4634 East Hastings Street, Burnaby, B.C., V5C 2K1.
 - d) City Clerk, City of Port Moody, 2425 St. John's Street, Port Moody, B.C., V3H 3E1

: -COPY - CITY MANAGER
- DIRECTOR ENGINEERING
- DIRECTOR PLANNING AND BUILDING
- DIRECTOR RECREATION AND CULTURAL SERVICES
- MEDICAL HEALTH OFFICER
- CHIEF ENVIRONMENTAL HEALTH OFFICER

-2-

REPORT

The Environment and Waste Management Committee received and adopted the attached report providing comments on the G.V.R.D. proposal to use biosolids compost for the landscaping along Barnet Highway.

The Committee therefore places the recommendations before Council for approval.

Respectfully submitted,

Councillor D. Drummond
Chair

Councillor D. Johnston
Member

Councillor D. Lawson
Member

TO: CHAIRPERSON AND MEMBERS
ENVIRONMENT AND WASTE
MANAGEMENT COMMITTEE

1995 MARCH 29

FROM: CHIEF ENVIRONMENTAL HEALTH OFFICER

SUBJECT: G.V.R.D.'S PROPOSAL TO USE BIOSOLIDS COMPOST FOR
LANDSCAPING ALONG BARNET HIGHWAY

PURPOSE: TO PROVIDE THE COMMITTEE WITH STAFF COMMENTS ON
G.V.R.D.'S PROPOSAL TO USE BIOSOLIDS COMPOST FOR
LANDSCAPING ALONG BARNET HIGHWAY

RECOMMENDATIONS:

1. THAT the G.V.R.D. be authorized to use only thermophilically treated biosolids compost from the Lions Gate Sewage Treatment Facility on a one-time basis for landscaping along Barnet Highway in Burnaby subject to the conditions noted in Section 4.0 of this report;
2. THAT the G.V.R.D. accept full responsibility for the installation, monitoring, and follow-up reporting to the City for the use of biosolids compost for landscaping along Barnet Highway right-of-way;
2. THAT a copy of this report be forwarded to:
 - a) Mr. David Duthie, Residuals Program Manager, G.V.R.D., 4330 Kingsway, Burnaby, B.C., V5H 4G8.
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- d) City Clerk, City of Port Moody, 2425 St. Johns Street, Port Moody, B.C.,

REPORT

1.0 INTRODUCTION

The Environment and Waste Management Committee at it's meeting held on 1995 February 14, received a delegation from the G.V.R.D. which presented the Committee with an update on their proposal to use biosolids compost for landscaping along the Barnet Highway.

Arising from the discussion of the delegation's presentation, the Committee adopted a motion requesting staff to prepare a report outlining a possible course of action that the Committee could take on the aforementioned subject.

The following report outlines G.V.R.D.'s proposal to use biosolids compost for landscaping along Barnet Highway right-of way and the public consultation process undertaken by the G.V.R.D. The report also provides an overview of staff's technical review of the proposal and the recommendation to authorize the application of biosolids subject to the specified conditions.

2.0 PROPOSAL BY THE G.V.R.D. TO USE BIOSOLIDS COMPOST FOR LANDSCAPING ALONG BARNET HIGHWAY

The B.C. Ministry of Transportation and Highways (BCMOTH) is currently re-building the Barnet Highway between Burnaby and Port Moody to provide bus and carpool lane during rush hours. This is part of the Barnet/Hastings People Moving Project scheduled for completion in 1996. Landscaping of the side slopes is scheduled to begin in 1995 March.

In 1994 October, the G.V.R.D., acting as agents for the BCMOTH submitted an Application for an Approval under the Waste Management Act to use a biosolids (treated sewage sludge) based compost as a soil amendment for reclaiming disturbed soils along the Barnet Highway right-of-way between Texaco Drive in Burnaby and St. Johns Street in Port Moody (see Attachment #1).

The Landscaping Plans for this project involve the preparation of a growing medium by blending one or more soil amendments with site soils that have been stripped and stockpiled soil on the site at a maximum rate of 4:1, soil to compost by volume. The growing medium will then be spread to a depth of 10 cm and hydroseeded or planted as per the Landscape Specifications already tendered and awarded by the BCMOTH. The slope of the land onto which the growing medium will be deposited will not exceed 1.5:1 horizontal to vertical with minor exceptions at the upper edges of the slopes.

The biosolids for the aforementioned project is intended to be brought from the Lions Gate Sewage Treatment Plant located in West Vancouver. These biosolids were blended with wood chips (at a 1:1 ratio by volume) in 1994 June and have been composting at temperatures exceeding 50 C. The total applied area is approximately 7.95 hectares and the maximum quantity of compost required is 2,020 m3 or approximately 863 dry tones. The average rate of compost application is 109 dry tones per hectare.

The G.V.R.D. anticipate to complete spreading of the growing medium by mid-1996. However, the G.V.R.D. has requested that the term of the permit approval be 24 months so that they can have the flexibility to schedule applications in recognition of contractors construction schedule, weather conditions, and unforeseen operational problems.

3.0 **TECHNICAL REVIEW OF POTENTIAL IMPACTS TO PUBLIC HEALTH AND THE ENVIRONMENT FROM THE PROPOSED PROJECT**

In order to determine the potential impacts to public health and the environment from the proposed project, staff have:

- a) met with the G.V.R.D. officials to ascertain project details;
- b) reviewed reports provided by the G.V.R.D. where Nutrifor was previously used for landscaping purposes in B.C.;
- c) reviewed data noted in the BCMOELP Permit Application relating to the bacteriological, chemical and fertility quality of treated biosolids compost proposed to be used in the aforementioned project against applicable legislations; and,
- d) contacted the Seattle Metro official to obtain additional information on Seattle's biosolids projects.

The findings of the technical review are summarized as follows:

General Comment:

While the application to the BCMOELP states that the source of the waste is Greater Vancouver Regional Districts municipal wastewater plants located in West Vancouver, Richmond and Delta, the application only describes the quantity and quality of biosolids from the Lions Gate Sewage Treatment Plant.

Chemical Characterization:

Review of the metal concentrations in the compost indicate that copper exceeded the draft Canadian Council of Ministers of Environment (CCME) Site Remediation Criteria for Soils.

However, the results of the growing medium which is a mixture of the stripped soil at the site and the compost at a ratio of 4:1 (soil to compost by volume), indicate all metals including copper to be in compliance with the draft CCME Site Remediation Criteria.

Review of several studies on the effect of sludge application and the movement of the metals in soils have revealed that under normal conditions there is a very low movement of metals out of the sludge soil layer. This is due to the reason that most of the metals in biosolids are in organically bound forms and shift to more stable forms over time when the compost is added to the soils.

The uptake of trace metals from the growing medium by plants is not an issue in this case. In addition, while the potential leaching of nitrates from the growing medium into the ground water can be an issue in other cases, it is not an issue in this proposal as there are no domestic wells in the area.

Biological Characterization:

According to the Application filed with the BCMOELP, the biosolids at Lions Gate Sewage Treatment Plant have been anaerobically digested at 55° C for a minimum of 30 days.

The biosolids, which have undergone the aforementioned treatment process, satisfy the USEPA criteria to yield a Class "A" or a "retail high grade sewage sludge". However, the data provided for bacterial content within the compost piles does not consistently meet the "at the time of use" criteria.

4.0 CONDITIONS OF APPROVAL FOR THE USE OF BIOSOLIDS COMPOST FOR
LANDSCAPING ALONG BARNET HIGHWAY

The conditions stipulated in this section are in addition to the conditions that may be set by the BCMOELP to the G.V.R.D. for the use of biosolids compost for landscaping purposes along applicable section of Barnet Highway right-of-way in Burnaby.

General:

- a. The Lions Gate Sewage Treatment Plant biosolids which have been thermophilically treated be the only source considered for this application due to the lack of supporting data for biosolids from the other two sources;
- b. The noise levels from the application of the biosolids along Barnet Highway right-of-way be in compliance with the Burnaby Noise or Sound Abatement Bylaw at all times.
- c. Operation measures are required to ensure that:
 - there is no erosion from the site to nearby ditches, creek and or into the Burrard Inlet;
 - the vehicles transporting the biosolids compost be kept clean to eliminate the possibility of the compost being carried on the tires or the shanks;
 - any potential odours are minimized by effective (stabilization) mixing of the biosolids with the stripped soils on site and efficient application of the growing medium on site;
 - hydroseeding and any other planting is followed up in timely manner after the application of the growing medium.

Chemical Characterization:

- a. Obtain samples of the stripped soils prior to it being mixed with the biosolids compost for fertility and metal analysis. The G.V.R.D. have already obtained 9 soil samples between 1995 February and March. Six of the nine samples taken by the contractor were to be analyzed for fertility and the three soil samples have been taken by the G.V.R.D. for metal analysis;
- b. Obtain five representative composite samples of the blended growing medium for bacteriological, chemical and fertility analysis prior to spreading;
- c. Obtain five discrete samples for bacteriological, chemical and fertility analysis from the highest loading rate areas immediately after spreading and six months after spreading.

Bacteriological Characterization:

In order to ensure that the proposed treatment process is going to be consistently effective in yielding a "retail high grade sewage sludge," we would require:

- a. A detailed audit of the digest temperature records;
- b. Continue bacteriological testing of the composting sludge to ensure that the pathogen levels of the compost at the time of application be such that: the fecal coliform levels are less than 200 most probable numbers per 100 mls. when 200 mg of solids are mixed with 100 mls. of water, and salmonella are less than 3 most probable numbers per 4 grams total solids.

Records of the above information are required to be submitted to the City for their review.

5.0 **PUBLIC CONSULTATION PROCESS UNDERTAKEN BY THE G.V.R.D.**

The following outlines the public consultation process undertaken by the G.V.R.D. as a component of obtaining approval for the proposed project:

A) Affected Cities:

The G.V.R.D. staff made presentations to the City of Port Moody Environment Committee and the Port Moody Council on 1995 February 09 and 1995 February 20 respectively. In addition, a presentation was also made to the City of Burnaby's Environment and Waste Management Committee on 1995 February 14.

The City of Port Moody, in their letter dated 1995 February 28 to the G.V.R.D., in part provides support for the use of this Nutrifor provided that the G.V.R.D. take full responsibility for the installation and monitoring of the product and only after full public consultation has taken place.

B) Government Agencies:

The G.V.R.D., after providing project related technical details, have received approvals from the Federal Department of Fisheries and Oceans, and Environment Canada.

The Administrative Council of the Metropolitan Board of Health was contacted by letter in addition to specific letters sent to the Medical Health Officers of Burnaby and Port Moody.

A presentation was also made to the Metropolitan Chief Environmental Health Officers on 1995 March 15 for their information.

C) Neighbouring Property Owners and Residents:

All property owners, residents, and businesses within 100 meters of the project right-of-way were presented with information packages about the permit application, the project proposal and Nutrifor. According to the G.V.R.D., they have received only two responses, both being positive, from residents.

D) Other Stakeholders:


Various stakeholders were also contacted and provided with the information packages.

E) Media Relations:

Articles of the proposed project appeared in 1995 February 08 issues of Burnaby Now and TriCity News.

6.0 CONCLUSION

Based on the technical review of the proposal submitted by the G.V.R.D., staff support the project subject to the conditions outlined in this report.



T. Shum
CHIEF ENVIRONMENTAL HEALTH OFFICER

DD/TS/gl

Attachment

- cc: () City Manager
() Director Engineering
() Director Planning and Building
() Director Recreation and Cultural Services
() Medical Health Officer



OAK ST.

BROADWAY

ST.

HASTINGS

UPPER LEVELS
HIGHWAY

BOUNDRY RD

BURRARD INLET

NORTH VANCOUVER
DISTRICT

VANCOUVER

BURNABY

BARNET HWY

BELCARRA

MARINE WAY

NEW
WESTMINSTER

NORTH RD

PORT
MOODY

PROJECT
LOCATION

CLARKE RD

ST. JOHN ST.

COQUI

TRANS CANADA HWY.