Target Marine

Target Marine Products
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targetmarine.com

Linda Vanderhoek
Environmental Protection Officer
Ministry of Environment
2nd fl, 10470 152nd St
Surrey BC, V3R 0Y3
CANADA

January 23rd, 2009

Re: Land Based Finfish Waste Control Regulation

Dear Ms. Vanderhoek,

Please accept this request for exemption from section 6 (2) and (3) of the *Environmental Management Act* for Target Marine Hatcheries Ltd. and thus be regulated by the Land-based Finfish Waste Control Regulation with an amendment allowable under section 6 (2). This land based facility has been in continuous operation since 1986. Following is the requested information from the Regulation.

It should be noted that the Regulation has been developed and written for a freshwater site discharging into a freshwater stream.

Water Quality Report

3 (3)

Water supply consists of varying ratios of well water and Gray Creek water throughout the year, resulting in highly variable water quality parameters. Water pH ranges from 6.4 – 7.2. Hardness is very low. Turbidity varies widely with the season and weather. Water discharge

comes from fish culture tanks and has water quality parameters that promote good health and performance of the culture fish.

The receiving marine water is the Sechelt Inlet watershed, with the discharge near the middle of the inlet, approximately 8 km North of Porpoise Bay. Discharge is approximately 20 m deep and 130 m from the shore at high tide.

Some uses of the receiving water include recreational boating, sightseeing, angling, salmon aquaculture, shellfish aquaculture, recreational shellfish harvesting, commercial shellfish harvesting, commercial fishing, log storage, log sorting, log handling, log transportation, fuel transportation, marinas, crew transportation to logging camps and power generation stations, sand and gravel extraction, float plane runways, hunting, and trapping. Note that shellfish harvesting is limited in areas due to sewage contamination.

Arber (1993) states the following about Sechelt Inlet:

> "Inlet volume is estimated as 14 billion m^3 at average tides"
>
> "Average annual freshwater discharge into the system from all sources is estimated to be 110m^3/s" (or 9.5 million m^3/day)
>
> "This freshwater inflow has little effect on overall flushing from the system"

The maximum daily flow from this hatchery is approximately 0.5% of the total flow into the inlet.

3 (3) a

The relatively small flow should have no significant hydraulic effects on Sechelt Inlet.

3 (3) b

"The middle of Sechelt Inlet has the deepest water and is the least affected by inputs (nutrients, freshwater, etc.) to the system" (Haigh *et al.*, 1992). The hatchery is located in the "middle" portion of Sechelt Inlet. Considering the dilution ratio and inputs from other users of the inlet, Sechelt Inlet should not be significantly impacted by the nitrogen in the hatchery effluent.

The majority of phosphorus inputs to aquatic ecosystems come from the weathering of primary minerals in marine sediments, not in freshwater systems, thus, phosphorus is not usually

limiting in salt water. Phosphorus in the effluent water should have no significant impact on Sechelt Inlet.

3 (3) c

Discharge temperatures are within the natural range of Gray Creek and should have no significant impact on the temperature of Sechelt Inlet. Oxygen concentrations in the discharge are at levels used for fish culture and should have no significant impact on the oxygen levels of Sechelt Inlet.

As summarized by Arber (1993), "there is no evidence of significant long-term trends toward declining water quality, such as excessive accumulations of nutrients, which can be linked to human activities. This assessment identifies the primary water quality concern as localized bacteriological contamination from failed residential septic systems, sewage wastes from vessels and other diffuse sources".

Registration for Exemption

4 (2)

(a) Target Marine Hatcheries Ltd.
7333 Sechelt Inlet Road
Sechelt, BC
V0N 3A5
phone: 604 885 4688

(d) Attached

(e) Annual production: ~ 350,000 kg

(f) Maximum daily effluent: 48,000 m^3

3

(g) Dilution ratio assuming continual maximum effluent flow

Dilution Ratio*	Units
7,000,000 : 1	Per hour
291,667 : 1	Per day
799 : 1	Per year
17,500 : 1	Assuming 6% daily Inlet water exchange

* According to data from Arber (1993).

* Discharging into the ocean does not allow a calculation of dilution ratio since there is a flow entering a volume. In order to estimate dilution, effluent discharge over a period of time is considered.

(h) BC MAL aquaculture license: 000585

Effluent Standards

6 (2)

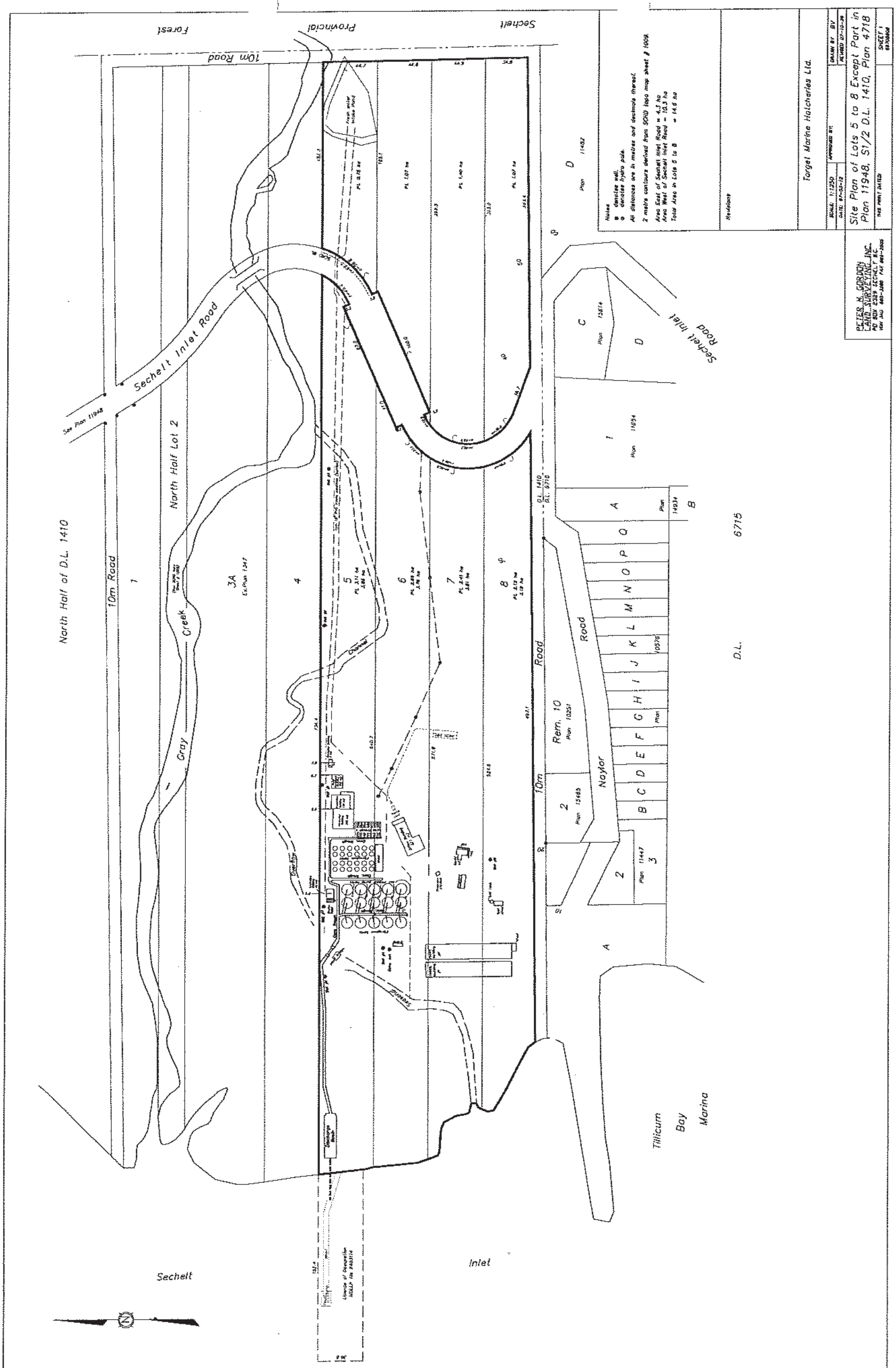
Based on the significant dilution and discharge to salt water, a less stringent phosphorus P concentration of 2 mg/L is requested.

References Cited

Arber, J.C. "Ambient Water Quality Objectives for Sechelt Inlet – Overview Report." BC Ministry of Environment – Water Management Division. 1993.

Haigh, R., F.J.R. Taylor, T.F. Sutherland. "Phytoplankton Ecology of Sechelt Inlet, a Fjord System on the British Columbia Coast. I. General Features of the Nano- and Microplankton." Marine Ecology Progress Series. Vol. 89: 117-134, 1992.

Submitted by: Justin Henry
General Manager
Target Marine Hatcheries Ltd.


Site Plan of Lots 5 to 8 Except Part in Plan 11948, S1/2 D.L. 1410, Plan 4718
Target Marine Hatcheries Ltd.
PETER M. GORDON LAND SURVEYING INC.
Notes
denotes well.
denotes hydro pole.
All distances are in metres and decimals thereof.
2 metre contours derived from SCRD topo map sheet # 100A
Area East of Sechelt Inlet Road = 4.3 ha
Area West of Sechelt Inlet Road = 10.3 ha
Total Area in Lots 5 to 8 = 14.6 ha
Revisions
SCALE: 1:1250
Sechelt Inlet Road
North Half of D.L. 1410
North Half Lot 2
10m Road
Gray Creek
Naylor Road
Rem. 10
Plan 10251
D.L. 6715
Tillicum Bay Marina
Sechelt
Inlet
Forest
Provincial