

William J. Andrews

Barrister & Solicitor

1958 Parkside Lane, North Vancouver, BC, Canada, V7G 1X5
Phone: 604-924-0921, Fax: 604-924-0918, Email: wjandrews@shaw.ca

February 6, 2017

The George Hotel Ltd.
c/o Keystone Environmental Ltd.
340 – 4400 Dominion Street
Burnaby, BC V5G 4G3
Attention: Michael Geraghty

Dear Mr. Geraghty:

**Re: Site Profile Submission – Site Decommissioning
377 to 407 Gower Point Road and 689 Winn Road, Gibsons
PIDs: 007-359-870, 007-359-829, 011-118-202, 011-118-211 and 011-117-524**

I represent the Gibsons Alliance of Business and Community Society¹ (GABC) regarding their concerns about TBT contamination of sediment at the Hyak Marine site in Gibsons Harbour, within the site of the proposed George project.

Ms. Suzanne Senger is my main contact at GABC. I understand that she has had some communication with you regarding this topic in recent months. I also understand that she has been in frequent communication with Mr. Vincent Hanemayer, of the B.C. Ministry of Environment, in his role as Director, *Environmental Management Act*.

The purpose of this letter is to initiate a dialogue. Under the heading “Background,” the bulk of the letter sets out key points in GABC’s understanding of the situation. The intention is to explain the basis for GABC’s concerns and also to invite you to clarify or correct where necessary. Next, I have set out some questions to which GABC would very much appreciate your response.

Background

The subject site includes the site of the former Hyak Marine Services boat maintenance and repair facility, which operated since at least the nineteen-fifties until roughly 2008. Due to the historic use of anti-fouling paint containing tributyl-tin (TBT) on boats, boatyards have often been found to have TBT contamination in sediments.

TBT is a family of organotin compounds known for their toxicity to some marine species and for their persistence and bioaccumulation in the marine environment. Reproductive and growth effects of TBT have been observed. TBT is considered a regional contaminant, found throughout the Georgia Basin.²

¹ GABC is an inclusive coalition of community members and business people working together for the long-term social, environmental, economic, and cultural vitality of Gibsons.

² Development of a Sediment Remedial Action Objective for Tributyltin, Golder Associates, June 11, 2012, Presentation to Public Works and Government Services Canada (PWGSC)

TBT is less suited to standard toxicity tests than other contaminants because of TBT's lengthy duration of uptake potential and transfer through the foodchain. No Canadian sediment quality guideline for TBT is available.³ Instead, it is recommended that a risk assessment be conducted if TBT concentration in sediment exceeds a specified threshold level. A commonly referenced screening level for TBT in sediment is the Puget Sound Dredge Disposal Analysis (PSDDA) sediment screening level for TBT of 73 µg/kg dw (0.073 µg/g dw).⁴

A December 31, 2012 Environmental Assessment report for the George Project⁵ discusses the Hyak Marine Services operation on the subject site.⁶ However, the report is silent regarding TBT contamination.

In 2013, Dr. André Sobolewski, an Impact Assessment and Water Treatment Specialist, and local resident, took sediment samples at the Hyak Marine site and had them analyzed for TBT. Two of five samples contained TBT at 1.49 and 2.74 µg/g dw. A copy of the lab report is attached. These concentrations significantly exceed the PSDDA sediment TBT screening level of 1.73 µg/g dw, indicating that a risk assessment is required. In addition, Dr. Sobolewski noted there is (or was then) no information on the tissue levels of TBT in resident epifauna or benthic invertebrate, though they constitute significant members of the food chain. He indicates that several sensitive ecosystems are found near the contaminated sediments, including a salmon-bearing stream (Goosebird Creek) and eelgrass beds outside the harbour breakwaters.

Risk based criteria for TBT in sediment were developed for the Esquimalt Graving Dock Site Remediation Project. In that case, the low risk threshold was 0.75 µg/g dw and the medium risk threshold was 2.5 µg/g dw, for TBT sediment concentrations.⁷ Sediment TBT criteria are site-specific, based on relevant biological endpoints.⁸

The 2.74 µg/g dw sample from the Hyak Marine site is at the 2.5 µg/g dw medium risk threshold used in the Esquimalt remediation project.

Dr. Sobolewski provided his findings regarding TBT in sediments at the Hyak Marine site to the Ministry of Environment and the Town of Gibsons.

In a May 9, 2014 letter to the Ministry of Environment (copy attached), Dr Sobolewski also noted several deficiencies in the December 2012 site assessment for this site, referred to above. He notes that the measures proposed to mitigate impacts from sediment removal included:

1. Implementation of generic Best Management Practices,
2. Implementation of a Sediment and Erosion Control Plan, and
3. Implementation of a Spill Response Plan.

regarding Esquimalt Graving Dock Site, Esquimalt Harbour, Victoria BC, page 3. (Golder 2012) <https://www.tpsgc-pwgsc.gc.ca/biens-property/cse-egd/env/papecse-egdwrp-eng.html>

³ Golder 2012, p.3.

⁴ Golder 2012, p.4.

⁵ Environmental Assessment, The George, Gibsons Oceanfront Marine Hotel, Town Of Gibsons, British Columbia, December 31, 2012, Balanced Project No.: 5363-R-02.8, Issued For Municipal Review, Prepared by Balanced Environmental Services Inc., Commissioned by Klaus Fuerniss Enterprises Inc.

⁶ *Ibid.*, Appendix 3.

⁷ <https://www.tpsgc-pwgsc.gc.ca/biens-property/cse-egd/env/papecse-egdwrp-eng.html>

⁸ Golder 2012, p.5.

Dr. Sobolewski considered these measures inadequate because they did not account for the unique characteristics of this site or contamination by TBT.

In April 2016, the owner had the Hyak Marine boat repair and maintenance facilities dismantled and decommissioned. Under the Contaminated Sites Regulation a site profile was required to be filed at least ten days beforehand,⁹ but this did not occur.

During this time period Ms. Senger was in communication with the Ministry of Environment and Keystone Environmental, conveying GABC's concerns about TBT contamination at the Hyak Marine site and attempting to learn about how the TBT situation would be dealt with.

A May 11, 2016 email note-to-file by Vince Hanemayer states that Mike Geraghty had "called back to update me on some of the findings at the site," including that "Tri-butyl tin (marine paint additive) was found in foreshore sediments but not considered high risk."

In the May to June 2016 time period it was understood that the owner intended to complete remediation of the site and apply for a certificate of compliance in July 2016. However, that timetable apparently slipped.

A July 7, 2016 letter from Keystone Environmental to the Town of Gibsons set out the work required to complete a detailed site investigation regarding the subject site. Keystone states that analysis of sediment for TBT will be required. Keystone states on page 3:

"Therefore, sediment in the intertidal and subtidal areas of the boathouse will need to be additionally assessed. Tributyltin (TBT) analysis of the sediment is also required. ...

An additional four surface sediment samples (ponar or surface grab at low tide) will be collected, at locations to be determined, for TBT analysis."

In early December 2016, the Site Profile and Site Risk Classification were filed. Neither mentions TBT, although the Site Risk Classification identifies "high risk" copper and lead contamination.

On December 14, 2016, Mr. Hanemayer, as the Director, *Environmental Management Act*, wrote to The George Hotel Ltd, c/o Keystone Environmental Ltd. and to the Town of Gibsons informing that the Director requires a detailed site investigation for the subject site.¹⁰ Mr. Hanemayer states that "Investigation of all environmental media must be conducted until the full extent of any contamination is determined at the site and which has migrated from the site."

⁹ Contaminated Sites Regulation, Schedule 2, G, item 4 includes "dry docks, ship building or boat repair and maintenance, including paint removal from hulls." Section 3(3) requires an owner to provide a site profile not less than ten days before dismantling a building or structure, or otherwise decommissioning a site which was used for an industrial or commercial purpose or activity listed in Schedule 2.

¹⁰ December 14, 2016 letter from Vincent Hanemayer, for Director, *Environmental Management Act*, to The George Hotel Ltd., c/o Keystone Environmental Ltd, and to the Town of Gibsons.

Questions

GABC has the following questions:

1. Does Keystone have any comments or corrections regarding the background set out above?
2. Please clarify the May 2016 note indicating that “Tri-butyl tin (marine paint additive) was found in foreshore sediments but not considered high risk.” Is this a reference to the samples provided by Dr. Sobolewski? Or did Keystone have additional TBT sediment results for the Hyak Marine area? Was the reported ‘not considered high risk’ comment made in relation to a particular reference document? If so, which one?
3. Keystone’s July 7, 2016 letter refers to additional TBT samples and assessment. Were these conducted? What were the results? Was a risk assessment framework applied? If so, what was the conclusion? What were the valued ecosystem components used to evaluate risk?
4. Please explain why the December 2016 Site Profile and Site Risk Classification do not mention TBT in foreshore sediments. That is, does this reflect an *absence* of assessment, or the *results* of an assessment?
5. Looking forward, will the detailed site investigation include new examination of TBT contamination, or will it rely on work conducted already?
6. Can you confirm that independent site remediation, for example for the copper and lead contamination, will not occur until after the detailed site investigation is completed? Has the type of remediation been determined? If removal of material is contemplated, will Keystone take into account the potential disturbance and release of TBT presently located within sediments?

Conclusion

I look forward to your response to this letter. I am available to discuss it by email or by phone.

Yours truly,



William J. Andrews
Barrister & Solicitor

Encl.

cc. Vincent Hanemayer, Ministry of Environment
Suzanne Senger, GABC
Dr. André Sobolewski, Clear Coast Consulting

May 9, 2014

Mr Avtar Sundher
Section Head, Coast Authorizations
BC Ministry of Environment
Surrey, BC
Avtar.Sundher@gov.bc.ca

Re: Improper Contamination Assessment, Hyak Marine property, Gibsons, BC

Sir,

I am an environmental consultant with 25 years of professional experience assessing and treating pollutants. I live in Gibsons, where a developer (Klaus Fuerniss Entreprises) proposes to redevelop waterfront properties into a hotel/marina complex. This development, the George Hotel, is controversial because of its scale, land contamination, and proximity to the aquifer that supplies our drinking water.

One of the properties to be redeveloped, the Hyak Marine property, is known to have been contaminated from more than 50 years of boat repair and maintenance activity. Its close proximity to our drinking water source causes apprehension among town folks, and many people have asked me to reassure them that there is no risk to our aquifer. After reviewing the Environmental Assessment for the George Hotel, I am unable to provide them with this assurance. On the contrary, I am writing to formally complain about the inadequacies of this assessment and to request the intervention of BC MoE to ensure that a proper assessment and remediation of this property be undertaken.

BC MoE must understand that the Town of Gibsons opted out of the provincial Site Profile Administration and is responsible for appraising contamination at this site. The contamination profile at the Hyak property is complex, and includes simple hydrocarbon, PAHs, metals/metalloids (including lead and mercury) and tributyltin, in upland soils, foreshore sediments, and deep sediments slated to be dredged. I can confidently assert that town staff does not have the technical expertise required to evaluate this site assessment.

In their EA, the developer's consultant, Balanced Environmental, identified three areas of concern:

1. An upland tank farm
2. Soils around the marine shop and foreshore sediments around the boat way
3. Deeper sediments slated to be dredged in Gibsons Harbour and Crown-owned sea floor

These areas are shown in the satellite photograph in Figure 1 (below) and will be discussed separately.

Upland Area

Both underground and aboveground tanks in the upland area have for decades stored fuel that is pumped to a fueling dock. This area has been the subject of numerous investigations since the 1990's. Leaky underground fuel storage tanks and contaminated soil were removed; and in their place, two aboveground tanks were built on a concrete pad with spill containment berms. More recent investigations show that there is no significant contamination from petroleum hydrocarbons in soils that were sampled in this area and along the pipe conveying fuel to the fueling dock. Therefore, this upland area does not raise any concern with me, so long as the fuel tanks are removed competently.

Marine shop and boat way

Below the tank farm is a marine shop and remnants of boat ramps. Boat repair and maintenance activities in this area from the past 50 years have contaminated soils and foreshore sediments. Balanced Environmental (and others) sampled these soils and sediments, and reported high levels of petroleum hydrocarbon (including excessive PAH levels) and metals/metalloids (primarily arsenic, copper, chromium, lead, mercury and zinc). Some sediment samples contained copper concentrations exceeding 6,000 mg/kg (Marine PEL is 108 mg/kg), mercury exceeding 5.9 mg/kg (PEL is 0.70 mg/kg), and zinc exceeding 1,000 mg/kg (PEL is 271 mg/kg). Balanced indicated that they will develop suitable, as yet unspecified, mitigation plans to remediate these contaminated soils and sediments.

By far, the most potent toxicant at the site is tributyltin (TBT), an anti-fouling agent that was banned nearly 20 years ago. Inexplicably, Balanced omitted to analyze foreshore sediments for TBT, though they cite an earlier report indicating that TBT was detected in these sediments. I collected five sediment samples (using methods that preserve sample integrity) that are geo-referenced in Figure 1, and **found high TBT levels in two out of five samples** (reporting at 1.49 and 2.73 µg/dry g). Given the high toxicity of TBT, this omission by Balanced begs disbelief.

Balanced Environmental states that contaminated soils and sediments will be removed during construction of the hotel complex. In the EA, Balanced states that prevention of aquifer contamination will be ensured by: “(developing) a *Storm Water Management Plan* and (completing) a *Screening Level Risk Assessment*”. **These ill-defined plans do not inspire confidence, given that TBT was never analyzed, and considering that current plans are to excavate the hotel foundations within the aquifer.**

Deep sediments

The plans to build new docks and other facilities on the foreshore mean that sediments in these areas will have to be dredged. Apparently, Balanced never sampled or otherwise documented the contamination of these sediments, which belong to the Crown. Given the presence of a fueling station and upgradient activities, there is little doubt that the harbour sediments are contaminated. Balanced estimate that 7,150 m²/16,000 m³ of sediments will be dredged; though these numbers are outdated because the latest development proposal increases significantly the area to be dredged.

Balanced Environmental's prescriptions for mitigating potential impact from dredging are vague, and include:

1. Implementation of generic Best Management Practices
2. Implementation of a Sediment and Erosion Control Plan
3. Implementation of a Spill Response Plan

I am not confident that the proposed measures will mitigate the possible release of a toxic plume of hydrogen sulphide or will prevent contamination of the eel grass beds outside the harbour breakwaters. Since these contaminated sediments are on Squamish territorial lands, the Squamish Nation will also likely be very concerned that these planned activities could impact the herring, salmon and other marine life present in these waters.

Lack of Confidence in Process

Since the town is responsible for administering the site profile, I felt it was important to help town staff understand the risks associated with contamination at this site. I met with the town planner and presented my concerns in May 2013. I also offered to present my review of the EA as a delegation before Town Council, given that the question of site contamination has been raised several times in council meetings. All my requests have been declined.

Although the project EA was prepared by Balanced for an earlier version of the George Hotel development, it appears to still be accepted as the standing document for this project. Despite continuous communications with town staff and Council, including providing a detailed summary of deficiencies in the existing EA (January 3, 2014), there has been no amendment of the standing EA, nor any possibility of discussing the deficiencies publically with Town Council.

There appears to be a move to hold Public Hearings on the project imminently, reflecting a desire of the Town of Gibsons to "fast-track" this project. This would mean that town folks could be asked to assess this proposal and provide input at the Public Hearing – upon which the fate of the George Hotel will be decided – without knowing the full facts and the risks that toxic contaminants pose, both on land and in the marine environment. **For people like me, who are concerned about potential contamination of the aquifer, such an expedited process gives no confidence that due process will be followed and risks will be avoided.**

Summary and Conclusions

Balanced has characterized some of the contamination in soils and sediments on the Hyak property, but it is evident they neglected to look for the most toxic contaminant – TBT – or sample sediments to be dredged in the harbour. **The test results from my own investigations indicate that TBT is present on this site at concentrations that pose a high risk (>2.5 µg/dry g).**



This contamination threatens the interests of the Federal and Provincial Crown, as well as those of the Squamish Nation. As such, its management and mitigation ought to draw their scrutiny. While Balanced described measures to deal with the site contamination, their plans are generic, and essentially ask that we trust them. Given the above interests, as well as the proximity of the site to our aquifer, there is too much at risk to accept such blind assurances.

On this basis, I wish to formally complain to BC MoE that contamination at the Hyak Marine property has not been properly assessed and that the proposed George Hotel development presents an unknown, and potentially significant, risk to the environment. I request that BC MoE oversee proper characterization of this site and review proposed measures to mitigate all risks, in order to reassure all concerned parties that the site will be remediated diligently and competently.

Respectfully,

A handwritten signature in blue ink that reads "André Sobolewski".

André Sobolewski, Ph.D.
President
Clear Coast Consulting, Inc.



Figure 1. General layout of Hyak property and sediment sample location (labelled yellow pins) for TBT analysis.

SAMPLE RECEIPT FORM / CHEMICAL ANALYSIS FORM

FILE #: PR140717

CLIENT: Clear Coast Consulting
668 Harmony Lane
Gibsons, BC
V0N 1V8

Phone: (604) 240-8845

RECEIVED BY: M. Wright
CONDITION: good, 2°C

DATE/TIME: March 27, 2014 (9:00 a.m.)

<u># of Containers</u>	<u>Sample Type</u>	<u>Sample (Client Codes)</u>	<u>Lab Codes</u>	<u>Test Requested</u>
1	Sediment	HYAK-1	PR140717	HOLD
1	Sediment	HYAK-2	PR140718	TBT
1	Sediment	HYAK-3	PR140719	TBT
1	Sediment	HYAK-4	PR140720	TBT
1	Sediment	HYAK-5	PR140721	TBT
1	Sediment	HYAK-6	PR140722	TBT

STORAGE: Stored at <-10°C.

ANALYTES: HRGC/HRMS analysis for tributyltin (TBT).

SPECIAL INSTRUCTIONS: Hold PR140717 until further notice.

METHODOLOGY

Reference Method: TBT: SOP LAB04; in house

Data summarized in Data Report Attached

Report sent to: Andre Sobolewski Date: April 9, 2014

Comments: Results relate only to items tested.

 David Hope PChem, CEO


DATA REPORT

Client: Clear Coast Consulting
 Contact: Andre Sobolewski

Date Extracted: 31-Mar-14
 Date Analysed: 7-Apr-14

Compound	Client ID:	HYAK-2	HYAK-3	HYAK-4	HYAK-5	HYAK-6	BLANK
	PRL ID:	PR140718	PR140719	PR140720	PR140721	PR140722	TB140212B
	DL µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
Tributyltin Chloride	0.001	1.49	0.078	2.74	0.074	0.033	ND
Dibutyltin dichloride	0.001	0.115	0.091	0.356	0.020	0.009	ND
Monobutyltin trichloride	0.001	0.017	0.006	0.036	ND	ND	ND

Compound	DL µg/g	µg/g	µg/g	µg/g	µg/g	µg/g	µg/g
TBT ⁺	0.001	1.33	0.070	2.44	0.066	0.029	ND
DBT ⁺⁺	0.001	0.088	0.070	0.273	0.015	0.007	ND
MBT ⁺⁺⁺	0.001	0.010	0.004	0.022	ND	ND	ND
Surrogate Recoveries (%)							
Tributyltin - d27		30	32	78	114	28	90

ND - none detected

Patrick Pond, CTO

Form Name: DOC14 Data Report TBT 11-Dec-09 DGH



Acronyms used in reporting organotins:

TBT = Tributyltin

DBT = Dibutyltin

MBT = Monobutyltin

TBTCI = Tributyltin chloride

DBTCI = Dibutyltin dichloride

MBTCI = Monobutyltin trichloride

This method analyzes organotin derivatives in water, sediment and biota. The method cannot determine which organotin salt is present in the sample, therefore all data is quantified in terms of organotin chlorides and expressed as cation equivalents (TBT⁺, DBT⁺⁺, MBT⁺⁺⁺).

In sea water and under normal conditions, TBT exists as three species (hydroxide, chloride, and carbonate), which remain in equilibrium. At pH values less than 7.0, the predominate forms are Bu₃SnOH₂⁺ and Bu₃SnCl, at pH 8, they are Bu₃SnCl, Bu₃SnOH, and Bu₃SnCO₃⁻, and at pH values above 10, Bu₃SnOH and Bu₃SnCO₃⁻ predominate.

Source: <http://www.inchem.org/documents/ehc/ehc/ehc116.htm#SectionNumber:1.1>

TBT data has been reported in many conventions over the years. To convert to other units, use the multipliers below.

To convert	To:	Multiply by:
Tributyltin chloride	As Sn	0.3647
Tributyltin chloride	As TBTO	0.9760
Tributyltin chloride	As TBT ⁺	0.8911
Dibutyltin dichloride	As Sn	0.3907
Dibutyltin dichloride	As TBTO	0.9110
Dibutyltin dichloride	As DBT ⁺⁺	0.7666
Dibutyltin dichloride	As TBT ⁺	0.9546
Monobutyltin trichloride	As Sn	0.4207
Monobutyltin trichloride	As TBTO	0.8461
Monobutyltin trichloride	As MBT ⁺⁺⁺	0.6231
Monobutyltin trichloride	As TBT ⁺	1.0279
As Sn	As TBTO	2.8097

Acceptable recoveries for Tributyltin surrogate standards

Sediment/biota	TBT d ₂₇	20-150%
Water	TBT d ₂₇	10-130%

