STATE OF WASHINGTON
DEPARTMENT OF ECOLOGY
Northwest Regional Office • 3190 160th Ave SE • Bellevue, WA 98008-5452 • 425-649-7000
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June 1, 2015

Mr. David Selig
Brunswick Corporation
1 N Field Ct
Lake Forest, IL 60045-4810

Re: Opinion Pursuant to WAC 173-340-515(5) on Proposed Closure Strategy for the Following Hazardous Waste Site:

- **Name:** US Marine Bayliner Marine
- **Address:** 17825 59th Ave NE, Arlington, WA 98223
- **Facility/Site No.:** 51332889
- **VCP No.:** NW2270
- **Cleanup Site No.:** 4208

Dear Mr. Selig:

Thank you for submitting documents regarding your proposed closure strategy for the US Marine Bayliner Marine (Site) for review by the Washington State Department of Ecology (Ecology) under the Voluntary Cleanup Program (VCP). Ecology appreciates your initiative in pursuing this administrative option for cleaning up hazardous waste sites under the Model Toxics Control Act (MTCA), Chapter 70.105D RCW.

This letter constitutes an advisory opinion regarding a review of submitted documents/reports pursuant to requirements of MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release at the Site:

- Tetrachloroethylene (PCE) in ground water.

Ecology is providing this advisory opinion under the specific authority of RCW 70.105D.030(1)(i) and WAC 173-340-515(5).

This opinion does not resolve a person's liability to the state under MTCA or protect a person from contribution claims by third parties for matters addressed by the opinion. The state does not have the authority to settle with any person potentially liable under MTCA except in accordance with RCW 70.105D.040(4). The opinion is advisory only and not binding on Ecology.

Ecology's Toxics Cleanup Program has reviewed the following information regarding your proposed closure strategy:

1. *Remedial Investigation and Feasibility Study Former US Marine / Bayliner Marine*, dated April 12, 2011, prepared by Stantec Consulting Services Inc.

2. *Work-Plan for In-Situ Chemical Oxidation Former US Marine / Bayliner Marine*, dated September 24, 2012, prepared by Stantec Consulting Corporation.

3. *In Situ Chemical Oxidation and Ground Water Monitoring Report US Marine / Bayliner Marine*, dated February 10, 2015, prepared by Stantec Consulting Corporation.

4. *Technical Memorandum – Proposed Closure Strategy US Marine / Bayliner Marine,* dated March 12, 2015, prepared by Stantec Consulting Corporation.

The reports listed above will be kept in the Central Files of the Northwest Regional Office of Ecology (NWRO) for review by appointment only. Appointments can be made by calling the NWRO resource contact at (425) 649-7239 or sending an email to: nwro_public_request@ecy.wa.gov.

The Site is defined by the extent of contamination caused by the following release:

- PCE in ground water.

Based on a review of supporting documentation listed above, pursuant to **requirements contained in MTCA and its implementing regulations, Chapter 70.105D RCW and Chapter 173-340 WAC, for characterizing and addressing the following release(s) at the Site, Ecology has determined:**

- Ecology has received and reviewed your Technical Memorandum – Proposed Closure Strategy.

- The proposed closure strategy includes monitored natural attenuation (MNA) and institutional controls in the form of an Environmental Covenant.

- Ecology notes that the normally expected degradation products of PCE including trichloroethene (TCE), cis/trans isomers of dichloroethene (DCE) and vinyl chloride (VC) have not been observed at concentrations above laboratory reporting limits at any time with the exception of 16 µg/L of TCE in monitoring well MW-4 in 2009. This suggests that conditions for reductive dechlorination of PCE in ground water may not be optimal on the Site.

- Ecology also notes that post in-situ chemical oxidation (ISCO) injections, concentrations of PCE in monitoring well MW-8 steadily increased from 34 µg/L to 42 µg/L and concentrations of PCE in MW-1 appears to have stabilized at 31 to 36 µg/L. Additional ground water monitoring and evaluation will be necessary to demonstrate natural attenuation is occurring.

- Conditional points of compliance will be established with monitoring wells MW-2, MW-3, MW-4, and MW-6. Monitoring wells MW-1 and MW-8 within the PCE plume will be performance wells.

- Please develop a *detailed* work plan for MNA which will include use of EPA's BIOCHLOR natural attenuation screening model *and* Ecology's Guidance on Remediation of Petroleum-Contaminated Ground Water by Natural Attenuation (July 2005 Publication No. 05-09-091).

- Ecology requires a stand-alone comprehensive Final Cleanup Report for Sites requiring Institutional Controls.

- For all Sites where an Institutional Control is necessary, Ecology's Northwest Regional Office requires an additional document: Environmental Covenant Checklist. An outline for this document is included as Enclosure A.

This opinion does not represent a determination by Ecology that a proposed remedial action will be sufficient to characterize and address the specified contamination at the Site or that no further remedial action will be required at the Site upon completion of the proposed remedial action. To obtain either of these opinions, you must submit appropriate documentation to Ecology and request such an opinion under the VCP. **This letter also does not provide an opinion regarding the sufficiency of any other remedial action proposed for or conducted at the Site.**

Please note that this opinion is based solely on the information contained in the documents listed above. Therefore, if any of the information contained in those documents is materially false or misleading, then this opinion will automatically be rendered null and void.

The state, Ecology, and its officers and employees make no guarantees or assurances by providing this opinion, and no cause of action against the state, Ecology, its officers or employees may arise from any act or omission in providing this opinion.

Again, Ecology appreciates your initiative in conducting independent remedial action and requesting technical consultation under the VCP. As the cleanup of the Site progresses, you may request additional consultative services under the VCP, including assistance in identifying applicable regulatory requirements and opinions regarding whether remedial actions proposed for or conducted at the Site meet those requirements.

If you have any questions regarding this opinion, please contact me at (425) 649-4446 or by email damy461@ecy.wa.gov.

Sincerely,

Dale Myers
Site Manager
Toxics Cleanup Program

Enclosure: A – Environmental Covenant Checklist

cc: Greg McCormick, Stantec Consulting Corporation

Enclosure A

Environmental Covenant Checklist

Environmental Covenant Checklist

Include following elements:

- Site discovery and regulatory status (**fully describe sites cleanup history and provide a description of previous interim actions and identify if they were approved by Ecology**)
- Site and property location/definition (*define actual MTCA site location relative to property or study area*)
- Physiographic setting/topography
- Provide copies of:
  Vicinity Map (*preferably with topography*)
  Property/Site Map (*preferably with topography*)
  Legal description of property, present owner and operator
- Past site uses and facilities
- Current site use and facilities
- Proposed or potential future site uses
- Zoning
- Utilities, water supply (describe how they do or do not impact the site)
- Contaminants of Concern
- Identify Potential sources of site contamination
- Potential sources of contamination from neighboring properties (*discuss nearby sources if known)*
- Figure – Soil investigation data points
- Figure – Surface water/groundwater investigation data points/depths
- Figure – Cross section with ground water information
- Figure- Boring/ Well logs
- Figure- Ground water elevation data
- Describe Natural Resources and Ecological Receptors
- Provide description of the contaminations proximity to surface water and groundwater based upon the investigation
- Figures – Cross sections showing soil contamination with depth
- Figures – Plan views showing soil contamination across site (*relative to releases if known*)
- Figures – Cross section showing ground water contamination with depth (*if appropriate*)
- Figures – Plan views showing ground water contamination in each aquifer
- Tables – All of the analytical data against final cleanup levels (*exceedances highlighted)*
- Figures – Plan view and vertical sections of areas meeting MTCA cleanup levels

SELECTION AND DESCRIPTION OF CLEANUP ALTERNATIVES (Outline)
(Here is where distinct alternatives are established and described only – no comparison. Some text is useful, but the bulk of the description is best put into a table with accompanying figures.)

MTCA requires:

- *A reasonable number and type of alternatives*
- *Alternatives that protect human health and the environment by eliminating, reducing, or otherwise controlling risks*
- *Alternatives that have the standard point of compliance for all affected media, unless they are not technically possible or are disproportionately costly for the benefit obtained.*
- *At least one permanent cleanup action alternative, unless it is not technically possible or is disproportionately costly for the benefit obtained.)*

(Ecology expectations for cleanup (WAC 173-340-370) should also be considered in formulating the alternatives, even though these expectations are not explicit evaluation criterion.)

DETAILED EVALUATION OF ALTERNATIVES (Outline)
(Best put into tabular format with numerical values for weighting criteria, important to have figure showing cost versus environment benefit for disproportionate cost analysis.)

A cleanup action must meet these minimum requirements [WAC 173-340-360(2)(a)]:

Threshold requirements

- *Protect human health and the environment*
- *Comply with cleanup standards*
- *Comply with applicable state and federal laws*
- *Provide for compliance monitoring*

Other requirements

- *Use permanent solutions to the maximum extent practicable*
- *Provide for a reasonable restoration time frame*
- *Consider public concerns*

Project-specific requirements

- *Engineering criteria established for the specific project, as appropriate)*

- **Describe Comparison with Threshold Criteria** (*Determine if alternatives meet threshold requirements. Only alternatives that meet these requirements advance to the next stage of comparison)*

- **Comparison with "Use Permanent Solutions to the Maximum Extent Practicable" (PMEP) Criterion** *(Ecology prefers permanent solutions, which are essentially those in which cleanup standards can be met without further action at the site.)*

  Procedure

  A. *The alternatives are compared with the evaluation criteria listed below. The comparison may be quantitative or qualitative and require the use of best professional judgment.* ***However, at this time Ecology's northwest regional office favors a quantitative analysis. Quantitative factors should be applied to both weighting of the evaluation criteria and to the ranking of alternatives for each criterion. The basis for the criteria weighting and the alternative rankings should be clearly explained and supported.***

  B. *The most practicable permanent alternative is the baseline against which other alternatives are compared. The results of the comparison are best displayed in a graph which shows relative environmental benefit on one axis and cost on another.*

  Evaluation Criteria
  (*Following are the required comparison criteria for the DCA. Cost is not listed since it is an obvious criterion)*

  Protectiveness
  Permanence
  Effectiveness over the long term
  Management of short-term risks
  Technical and administrative implementability

- **Comparison with "Reasonable Restoration Time Frame" Criterion**

Potential Risk *(How risky is the existing situation based on type, extent and toxicity of contamination, and sensitivity of surrounding land uses now and in the future.)*
Practicality of Achieving Shorter Time Frame
Availability of Alternate Water Supplies
Likely Effectiveness and Reliability of Institutional Controls
Ability to Control and Monitor Contaminant Migration
Potential for Contaminant Degradation Over time
Provide copy of monitoring plan
Consultant Signature and LHG stamp