APPENDIX H

*Fisheries Act Section 35(2)*
Authorization No.: HPAC-PA1-000-000144-2
AUTHORIZATION FOR WORKS OR UNDERTAKINGS AFFECTING FISH HABITAT

Authorization issued to:

Company Name: The Vancouver Fraser Port Authority ("VFPA")
Contact: Darrell Desjardin
Title: Director, Environmental Programs
Address: 100 The Pointe
999 Canada Place
Vancouver, B.C. V6C 3T4
Telephone: 604-665-9000
Fax: 1-866-284-4271

Location of Project:
The VFPA is proposing to construct a temporary barge facility within the newly constructed tug basin at Deltaport's Third Berth. Deltaport is located 35 km south of Vancouver in Delta, British Columbia at the existing Roberts Bank port facility situated north of the BC Ferries Tsawwassen ferry terminal. The existing VFPA facilities at Roberts Bank include Deltaport, a container terminal, and Westshore Terminals, a bulk handling coal port facility. These terminals are connected to the mainland by a 4.1 km causeway, which supports road and rail infrastructure.

The GPS coordinates of the Deltaport Third Berth are: 123:08:24degE, 49:01:12N

Valid Authorization Period:
The valid authorization period for the harmful alteration, disruption and/or destruction of fish habitat associated with the work or undertaking is:

From: December 4, 2008
To: December 4, 2012

The valid authorization periods for the other conditions of this authorization are as set out below.

Description of Works or Undertakings:
The VFPA is proposing to construct a temporary barge facility at its new tug basin located north west of the Deltaport Third Berth, which is currently under construction. The barge facility is being proposed to reduce the truck traffic required to complete construction of the Third Berth and to facilitate the construction of fish habitat compensation on the east side of the causeway. The operation of the barge facility will be limited to an "as needed" basis for delivery and/or exportation of aggregate materials, as tide levels allow.

The construction of the temporary barge facility will involve the following:

- Construction of a fill area of approximately 1400 m²;
- Installation of a 15.24 m barge ramp, including piles to support the pivot ramp;
- Relocation of a small craft float, and installation of access ramp and landing float, to south of Seaspan Barge 912;
- The relocation of approximately 35 metres of the crest protection/rip rap slope to facilitate barge access to the facility;
- Placing imported dyke core rock;
- Installation of rip rap for slope protection;
- Installation of a tied-back retaining wall/abutment, including four foundation piles (barge berth);
- Installation of two mooring piles for the barge berth;
- Installation of piles for small craft float and landing float;
- Placement of granular sub-base on top surface of barge berth surface; and,
- Dredging and disposal off site of up to 1500 m³ of native seabed material.

The proposed works, hereafter referred to as “the Project” are more specifically described in the following documents:


2. The letter report from Patrick Craig of the VFPA to Jennifer Simpson of the Department of Fisheries and Oceans Canada (DFO) regarding “Authorization No./PATH#: 02-HPAC-PA1-000-000144 Port Metro Vancouver Deltaport Third Berth Barge Berth Facility”, dated August 25, 2008, including its attachments.


4. The email and its attachments from Patrick Craig of the VFPA to Jennifer Simpson of the DFO, dated September 29, 2008 4:10PM, regarding, “DP3 barge berth – KC drawings”.

5. The email and its attachments from Patrick Craig of the VFPA to Jennifer Simpson of DFO dated October 7, 2008 at 5:22 pm regarding, “DP3 Barge Berth – revised Habitat Inventory and Figures”.

6. The email and its attachment from Patrick Craig of the VFPA to Jennifer Simpson of DFO, dated October 8, 2008 at 9:34 am regarding, “DP3 Barge Berth – revised Habitat Inventory and Figures”.

7. The email and its attachments from Patrick Craig of the VFPA to Jennifer Simpson of DFO, dated November 3, 2008 at 1:00 PM regarding, “RE: DFO draft Authorization #02-HPAC-PA2-000-000144-2 DP3 Barge Berth – comments/corrections”, including the addition to the drawing added by DFO.

8. The email and attachments from Patrick Craig of the VFPA to Jennifer Simpson of DFO, dated November 24, 2008 at 10:00 AM regarding, “draft Authorization #02-HPAC-PA1-000-000144-2 DP3 proposed Barge Berth”.

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The harmful alteration, disruption and/or destruction of fish habitat hereby authorized, in association with the Project, is limited to the following:

- The harmful alteration and/or destruction of no more than 894 square metres of intertidal eel grass habitat from the placement of fill to construct the barge facility;
- The harmful alteration and/or destruction of no more than 311 square metres of intertidal mudflat from the placement of fill to construct the barge facility;
- The harmful alteration, disruption and/or destruction of no more than 727 square metres of rocky intertidal habitat from the placement of fill to construct the barge facility;
- The harmful alteration, disruption and/or destruction of no more than 535 square metres of rocky sub-tidal habitat from the placement of fill to construct the barge facility;
- The harmful alteration, disruption and/or destruction of a total of no more than 450 square metres of intertidal eelgrass and/or mudflat, from erosion and/or the implementation of mitigation measures to prevent erosion, resulting from the construction of the barge facility and/or recent changes to the crest protection; and,
- The harmful alteration, disruption and/or destruction of a total of no more than 2000 square metres of intertidal and sub-tidal rocky habitat resulting from the removal of the barge facility; and,
- The harmful alteration, disruption and/or destruction of no more than 450 square metres of intertidal cobble and/or gravel habitat resulting from the removal of any mitigation measures implemented to arrest erosion resulting from the barge facility. The extent of harmful alteration authorized in this situation is limited to that equal to the area covered by the mitigation measures.

Conditions of Authorization:

1. The conditions of this Authorization notwithstanding, should the above works or undertaking, due to weather conditions, different soil or other natural conditions, or for any other reason, appear, in the opinion of the Department of Fisheries and Oceans ("DFO") likely to cause greater impacts than the parties previously contemplated, then DFO may direct the Proponent, and its agents, and contractors, to suspend or alter works and activities associated with the project, to avoid or mitigate adverse impacts to fisheries resources. DFO may also direct the Proponent and its agents, and contractors, to carry out at the Proponent’s expense any works or activities deemed necessary by DFO to avoid or mitigate further adverse impacts to fisheries resources. In circumstances where DFO is of the view that greater impacts may occur than were contemplated by the parties DFO may also modify or rescind this authorization. If the authorization is to be changed the Proponent will be given an opportunity to discuss any proposed modifications or rescission.
Responsibility for Plans and Works

2. The VFPA confirms that all plans and specifications relating to this Authorization have been duly prepared and reviewed by appropriate professionals working on behalf of the VFPA. The VFPA acknowledges that it is solely responsible for all design, safety, and workmanship aspects of the works associated with this Authorization.

3. The construction of the Project must comply with the terms and conditions of this Authorization. Harmful alteration, disruption or destruction of fish habitat other than that specifically identified within this Authorization is not permitted.

4. The VFPA confirms that the location and design of the works are to be consistent with the information attached as schedules to this authorization and that any deviations from such designs, that may impact fish habitat, must be reviewed and approved by DFO and other agencies having jurisdiction in this matter. For any such design deviations VFPA shall submit a detailed written proposal to DFO well in advance of the date proposed for implementation of changes in order to allow DFO to conduct a proper review.

Conditions that Relate to the Construction of the Project and Compensation Works

Notifications:

5. For the purposes of this Authorization, the Chief of Environmental Assessment Major Projects (EAMP), Oceans, Habitat and Enhancement Branch, ("DFO"), or their designate, shall be the formal contact and representative of DFO. In the absence of an EAMP Chief, the DFO Regional Director General, Pacific Region, or their designate; or the Minister of Fisheries and Oceans, or their designate, shall be the DFO contact and representative.

6. Please ensure that our File Number (02-HPAC-PA1-000-000144-2) appears on all correspondence, documents and plans.

7. The following personnel must be contacted and advised of the schedule of all marine works a minimum of five (5) days in advance of the works commencing:
   a. Fisheries and Oceans Canada, Conservation and Protection Field Supervisor in Steveston (telephone 604-664-9250, Fax 604-664-9255)
   b. DFO Environmental Assessment Analyst, Jennifer Simpson (telephone 604-666-4609, Fax 604-666-0417 and email Jennifer.Simpson@dfo-mpo.gc.ca)

8. VFPA shall complete the construction of the Project and associated works in the manner described in the documents included in Schedule A, unless modifications are required to ensure compliance with this Authorization.

Environmental Windows and Isolation of Works

9. Every effort should be made to schedule construction works to avoid the fisheries sensitive period for juvenile salmonids (i.e., March 1st to August 15th, inclusive).

10. If works are conducted during the fisheries sensitive period for juvenile salmonids (i.e., March 1st to August 15th, inclusive) they shall be conducted in the dry, as tides permit, or in isolation of fish bearing waters.
Environmental Management Plans and Attached Schedules

11. The VFPA, and/or their agents, and/or contractors will adhere to all Schedules and appropriate Environmental Management Plans (EMP) attached as Schedules to the Authorization for DP3 (i.e., DFO Authorization 02-HPAC-PA1-000-000144) to mitigate potential negative impacts to fish, and fish habitat during the construction of the Project. The schedules and elements of the EMPs, which relate to the protection of fish and fish habitat are hereby incorporated and form part of this authorization and must be complied with by VFPA.

Machine Use

12. Land-based machinery is to work from above the HHW mark or from within the footprint of the proposed works.

13. To ensure machinery operators are fully aware of the limits of the area authorized for impact (i.e., the area of fish habitat authorized for harmful alteration, disruption and/or destruction), the area should be surveyed and clearly marked. All individuals involved in the construction of the project should be advised of the need to ensure impacts beyond the surveyed area are prevented.

14. All power equipment used on or adjacent to the foreshore should be inspected daily by a competent individual prior to entry into the work area to ensure there are no visible leaks of fuel, hydraulic fluids, lubricants, etc. Any necessary repairs must be made before the equipment enters the work area.

No Release of Deleterious Substances

15. The VFPA shall ensure that deleterious substances (i.e., substances harmful to fish), are prevented from entering the marine environment during the construction, operation and removal of the facility and during the restoration of the site.

Sediment and Turbidity of Marine Waters

16. Sediment or sediment-laden waters or other deleterious substances shall not be permitted to enter the aquatic environment during the work. All works and activities, including in-water works and works over or adjacent to the water will be carried out in compliance with the following water criteria:

- When background is less than or equal to 50 nephelometric turbidity units (NTU) induced turbidity should not exceed 5 NTU above the background value;
- When background is greater than 50 NTU, induced turbidity should not exceed the background values by more than 10% of the background value;
- When background is less than or equal to 100 milligrams per litre (mg/L) non-filterable residue (NFR) induced NFR should not exceed 10 mg/L above the background value; or
- When background is greater than 100 mg/L NFR, induced NFR should not exceed 10% of the background value.

For the purposes of this Authorization, background shall be defined as the level at an appropriate adjacent reference site that is affected neither by works at the site, nor sediment-laden or turbid waters resulting from works at the site.

17. Silt curtains shall be used when necessary to ensure compliance with the terms of this Authorization and the Fisheries Act.

18. Should work on the Project result in NTU or NFR in excess of the criteria outside an area contained within a silt curtain, then those works and activities that might be contributing to the turbidity shall be halted until
measures are put in place to ensure compliance with the criteria to the satisfaction of DFO OHEB. Any such events shall be included in the Environmental Monitoring Report.

Concrete

19. All work associated with the Project involving the use of concrete, mortars, and other Portland cement or lime-containing construction materials shall be conducted so as to ensure that sediments, debris, concrete, and concrete fines are not deposited, either directly or indirectly, into the marine environment outside of the forms of cast in place structures.

20. Prior to pouring of concrete, all concrete forms shall be thoroughly inspected to ensure that form work is fully secured and sealed to prevent the release of concrete or concrete contaminated water into the marine environment. Where necessary, following placement of concrete it shall be covered with an appropriate material (e.g., plastic sheeting), as required, to seal the concrete from the marine environment until the concrete is significantly cured.

21. Any water contacting uncured or partly cured concrete or Portland cement or lime-containing construction materials, such as the water that may be used for exposed aggregate wash-off, wet curing, equipment washing, etc., shall be prevented from entering, directly or indirectly, the marine environment unless this water has been tested (to an accuracy of within +/- 0.2 pH units) and found to have a pH of between 6.5 and 9.0 pH units and a turbidity of less than 25 NTU (to an accuracy of within +/- 2 NTU). Containment facilities shall be provided at the project site for the wash down water from concrete delivery trucks, concrete pumping equipment, and other tools and equipment, as required.

Fuel

22. Fuelling of equipment and storage of petroleum products (e.g., fuel, oil, lubricants) over or adjacent to the marine environment in association with the Project shall be appropriately contained and handled in compliance with all applicable guidelines, legislation, and best management practices.

Spill Contingency and Clean Up

23. An appropriate up-to-date spill prevention, containment and cleanup contingency plan for hydrocarbon products (e.g., fuel, oil, hydraulic fluid, lubricants), and all other deleterious substances that may be used in association with the Project, shall be put in place prior to work commencing. Appropriate containment and clean up materials shall be available at the Project site throughout the construction and operation of the facility and during the restoration of the site to its pre-barge facility condition.

24. All individuals working at the Project site shall be familiar with the spill response plan and the proper use and deployment of the spill response materials.

25. The VFPA, and/or their agents, and/or contractors will conduct spill and emergency clean-up following all appropriate best management practices, and the most suitable methods and equipment, to minimise adverse environmental effects (as described in the Spill Contingency and Clean-up Plan EMP in Schedule B of DFO authorization 02-HPAC-PA1-000-000144).

Clean Materials

26. All materials used in the construction of the project, including filter rock, rip rap, ground improvement material, and shore armouring or surfacing, shall be clean material, free of fines (except as allowed by terminal specifications), organic material, and deleterious substances (i.e., substances harmful to fish).

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Pile Driving

27. The *Fisheries Act* prohibits the destruction of fish (i.e., killing of fish) by means other than fishing. Without the implementation of appropriate mitigation measures certain pile driving activities can kill fish; therefore, it is the VFPA, and/or their agents, and/or contractor's responsibility to ensure that appropriate mitigation measures are employed when and where necessary to ensure that the Project does not kill fish.

28. If methods of pile placement other than vibration are deemed necessary the VFPA will ensure a sound signature for the method of placement is developed and a potential zone of disturbance for killer whales is identified.

Wastes

29. Debris and waste materials generated during these works shall be appropriately contained, collected, and disposed of at appropriate upland locations in accordance with all applicable legislation, guidelines, and best management practices. In this regard, it should be noted that burning of a wide range of materials, including creosote treated wood is restricted or prohibited. Wherever possible, re-use or re-cycling of recovered materials is encouraged.

Dredging

30. VFPA is proposing this facility with full knowledge that it will only be accessible during certain tide levels.

31. Dredging at the site shall be limited to the 1500 m³ required to facilitate the construction of the facility.

32. Dredging to improve access for barges over a larger tidal range is not authorized.

Spillage

33. Loading and unloading of barges at this facility will be conducted in a manner that prevents spillage of material into the marine environment.

Preservatives and Other Coatings

34. All applicable legislation, guidelines, and best management practices shall be employed with respect to the application of wood preservatives and other coatings. Wherever practicable wood preservatives are to be applied at an appropriate upland location in the dry, sufficiently in advance of the installation of the treated timber to allow the preservative to completely absorb and prevent leaching into the marine environment. This condition applies to initial construction and to subsequent maintenance. The applicant may wish to refer to the Fisheries and Oceans Canada “Guidelines to Protect Fish and Fish Habitat From Treated Wood Used In Aquatic Environments in the Pacific Region” (Hutton, K.E. and S.C. Samis. 2000. Can. Tech. Rep. Fish. Aquat. Sci. 2314: vi + 34 p).

35. Alternatives to creosote treated wood should be utilized whenever possible.

36. Any barges or other vessels used during construction or removal of the facility shall not be permitted to ground on the foreshore or seabed or otherwise disturb the foreshore or seabed habitat or sediments (e.g., disturbance as a result of vessel propeller wash).

Operational Limitation on the Barge Facility

37. The operation of the facility will be restricted, as needed, to ensure marine equipment (i.e., barges, vessels, etc.) is prevented from grounding on the intertidal foreshore or seabed or otherwise disturbing the foreshore or seabed habitat or sediment (e.g., disturbance as a result of vessel propeller wash).
Removal of the Barge Facility

38. The barge facility is proposed as a temporary facility. The VFPA shall remove and restore the site to the conditions, which existed prior to the construction of the barge facility to ensure no net loss in the productive capacity of fish habitat results from the Project.

39. If possible, measures should be put in place during the construction of the facility to aid in its removal and the restoration of the site.

40. The methodology for removal and reconstruction of the site to its pre-barge facility condition shall be submitted to DFO as an environmental management plan.

41. The VFPA anticipates the barge facility shall remain in place for 24 months. In order to accommodate any unanticipated delays, which may cause the facility to remain in place longer than anticipated this Authorization shall accommodate the facility for 36 months. However, the structure shall be removed and the site restored by no later than 36 months following the signing of this Authorization.

Environmental Monitoring During Project Construction, Facility Removal and Restoration of the Site

42. All works associated with the Project that have, in the opinion of DFO, the potential for adverse impacts to fisheries resources, shall be monitored by an appropriately qualified individual(s), (the “environmental monitor”) deemed to be satisfactory by DFO. The acceptability of nominees for environmental monitor shall be confirmed with DFO prior to the nominee(s) working as an environmental monitor on the Project.

43. The environmental monitor shall, in consultation with, and at the discretion of DFO, monitor and direct all works on the Project to ensure compliance with the Fisheries Act, the Species at Risk Act, and all other applicable legislation, guidelines, and best management practices; and compliance with the terms and conditions of this Authorization. The foregoing notwithstanding, the authority of the environmental monitor is subject always to the discretion of DFO. DFO does not delegate any authority under the Fisheries Act or the Species at Risk Act to the environmental monitor. The environmental monitor does not have the authority to change, modify, or revise, either the Project or the terms and conditions of the Authorization.

*A qualified monitor is defined as a biologist or other professional who has previous training and/or experience in the required activities and whom is acceptable to DFO EAMP. To determine acceptability, DFO EAMP may request a resume and/or interview, and/or require that specific training has been completed by the professional to ensure that the environmental monitor is qualified. DFO EAMP reserves the right to refuse an environmental monitor should they not possess qualifications suitable for the works being undertaken.

Monitor’s Authorization

44. The environmental monitor shall be empowered, in writing, to direct or stop works and apply mitigation as necessary for the Project to ensure compliance with the Fisheries Act, the Species at Risk Act, and compliance with the terms and conditions of the Authorization.

Scheduling of Environmental Monitoring During Construction

45. The environmental monitor(s) accepted by DFO shall be at the project site at all times when there is, in the opinion of DFO, the potential for adverse impacts to fisheries resources resulting from work on the Project, and particularly during works, over, within or adjacent to the marine environment.

46. At a minimum, the monitor shall be on site daily while work is occurring seaward of the current higher high water mark (i.e., during the construction and removal of the barge facility, and during the restoration of the site). The environmental monitor should be scheduled to be on site when new activities seaward of the existing higher high water mark are scheduled to begin (e.g., placement or removal of fill, etc.).
47. The acceptability of alternate scheduling for environmental monitoring shall be determined in consultation with DFO.

48. Monitoring for potential erosion of the intertidal mudflat around the barge facility and the recent modifications to the crest protection shall be reported weekly, during construction, operation and removal of the facility, and during restoration of the site and for two years following site restoration.

Monitor's reporting

49. Whenever there is the potential for adverse impacts to fisheries resources resulting from work on the project, and particularly during works on the foreshore, intertidal or sub-tidal areas, or adjacent upland areas, DFO shall be provided with written weekly reports from the environmental monitor. The weekly reports will be provided for the duration of the construction and removal of the facility and during the restoration of the site. The weekly reports shall include, but shall not be limited to, the following:

a. A concise summary of the works carried out or undertaken that week (i.e., point form is preferred).
b. Commentary on the works and the work area from an environmental perspective (e.g., whether or not fish are present along the shore at the site, the turbidity of the water, marine mammal activity).
c. Water quality measurement of marine waters at the site and in the vicinity of works such as fill and rock placement. Measurements shall include reference and sample sites as approved by DFO.
d. A summary of marine mammal monitoring activities and results;
e. A summary of any erosion or deposition which may be occurring in or around the barge facility or recently altered crest protection. (In addition to the general construction environmental monitoring, potential issues associated with erosion of the intertidal mudflat and/or eel grass in the area of the barge facility or recently altered crest protection shall be monitored and reported to DFO weekly during operation of the facility and for two years following restoration of the site.); and,
f. Identification of any environmental issues or impacts that arose or occurred and details of specific mitigation measures put in place to address environmental issues and impacts.

These weekly reports shall be provided to DFO the same week as the work they cover. Facsimile transmissions may be sent to DFO Environment Assessment Major Projects (EAMP) at [604] 666-7907 to the attention of the Chief or to an e-mail address as may be specified.

In addition, the monitor must notify DFO, immediately, of any event that has caused, or may cause, an unauthorized HADD or the release of a deleterious substance into the aquatic environment.

50. The monitoring reports for this Project may be combined/added to the monitoring reports submitted to DFO for the expansion of Deltaport Third Berth, as a requirement under DFO Authorization (02-HPAC-PA1-000-000144).

51. In addition to the weekly reports from the on site environmental monitor, following construction of the barge facility, the removal of the barge facility and restoration of the site, DFO shall be provided with summary reports, specific to this Project, which shall include the following:

a. A summary of works carried out or undertaken in association with the project.
b. Comments on the works from an environmental perspective.
c. Identification of any environmental issues and impacts that arose or occurred and details of specific mitigation measures put in place to address environmental issues and impacts.
d. Detailed engineering drawings, stamped and sealed by an appropriately qualified professional, showing the works associated with the Project as they have been built (i.e., 'as-built' drawings) and survey drawings showing the site after restoration.

These reports shall be provided to DFO to the attention of the EAMP Chief within 60 days of the completion of the aforementioned stages of the Project.

**Marine Mammals**

52. In accordance with the *Species at Risk Act*, no person shall kill, harm, or harass killer whales. As such, no work or activity associated with this Project is allowed to kill, harm or harass killer whales.

53. If construction activities may result in the harassment of marine mammals via noise effects (e.g., pile driving of large diameter steel piles via impact hammer) a report must be submitted to DFO for review and approval prior to initiation of the proposed works. The report must outline the proposed works, the likely acoustic zone of potential disturbance, the mitigation measures proposed to prevent any impact to killer whales and any monitoring recommended for the proposed construction activity of concern. Any such report shall be prepared by professionals with appropriate expertise in acoustic effects on marine mammals.

**Erosion**

54. The area around the proposed barge facility may experience some erosion, as a result of the construction of the barge facility or the recent changes to the crest protection structure. As such, the area of mudflat and/or eel grass located around the barge facility and the recently modified section of the crest protection shall be monitored during construction of the barge facility, while the barge facility is in place, during site restoration and for two years following restoration.

55. If localized erosion occurs, the erosion shall be assessed and mitigation measures proposed by professionals with appropriate experience in coastal engineering. Any mitigation measures to arrest erosion shall be designed to minimise impacts to fish habitat and they should be designed, if possible, so they can be easily removed when the site is restored.

56. For the purpose of comparison, pre-construction conditions shall be well documented (i.e., existing conditions shall be surveyed).

57. The results of the monitoring to assess erosion on the intertidal mud flat and eelgrass around the barge facility and the tug basin shall be reported in the weekly environmental monitoring reports.

58. Prior to implementing any erosion mitigation measures, plans should be submitted to DFO for review and approval, unless time is of the essence and the measure would comply with this Authorization.

**Compensation Fish Habitat**

59. The VFPA confirms that all appropriate agreements and permissions have been obtained to construct the fish habitat compensation works and that all appropriate permits and licences will be obtained from other regulatory agencies prior to initiating construction.

60. The VFPA shall ensure the following measures are constructed as fish habitat compensation:

a) The rock substrate of the compensatory reef overbuild, which totals 1800 square metres. It is located at an elevation of -4 to -4.5 m chart datum and extends up to 2.5 m outside of the original design boundary for the rip rap and is comprised of rock that has a diameter of 20 inch minus quarry run stone, with a nominal size of 8 inch;

b) The 225 square metres of additional intertidal fish habitat compensation being created by replacing the originally proposed lock block retaining wall with a sheet pile retaining wall at the...
east causeway habitat compensation site. The area will be located within the intertidal zone, at approximately +3.7m chart datum. The substrate for this new habitat will consist of gravel, cobble or sand;

c) For the time the barge facility remains in place, the habitat value provided by the slopes of the barge facility shall function as fish habitat compensation; and,

d) The removal of the barge facility and the restoration of the site to the condition which existed prior to the construction of the barge facility. The site shall be restored with the materials and in a manner that will allow the site to support the habitat features which existed prior to the construction of the barge facility (e.g., the site shall be restored and prepared with appropriate material and eelgrass shall be transplanted to the area).

61. Conditions 60. a), b), and c) are intended to offset the temporal loss of fish habitat productive capacity from the Project.

62. The removal of the barge facility and restoration of the site to its pre-barge facility condition, combined with the increase in productivity achieved in perpetuity from Condition 60 a) and b) are intended to ensure the Project achieves no net loss in the productive capacity of fish habitat over the long term.

Fish Habitat Compensation Monitoring

63. The VFPA shall carry out, to the satisfaction of DFO, a fish habitat compensation monitoring program to assess the form and function of the fish habitat compensation associated with the Project and its success and productivity as fish habitat. As such, the VFPA will implement the following “Fish Habitat Compensation Monitoring Program” (i.e., the Compensation Monitoring Program).

a. The Compensation Monitoring Program shall be divided into two phases:

1) The first phase being the monitoring of the reef over build and the habitat provided by converting the lock block retaining wall to a sheet pile wall. Monitoring for Phase 1 will occur during the 1, 3 and 5 year following the construction of these features.

2) The second phase being the monitoring of the restoration of the site to the conditions which existed prior to the construction of the barge facility. This monitoring shall be reported in the 1, 3 and 5 year following restoration of the site.

b. Both phases of the Compensation Monitoring Program shall include the following measures:

1) An annual assessment of the physical stability of the compensation fish habitat using suitable methods such as site inspection, photography and ground elevation surveys, as required.

2) An annual inventory and assessment of the presence, establishment, growth and development of flora and fauna making use of the fish habitat compensation. Methods of assessment may include ground cover measurements, growth parameters and comparison to similar adjacent habitat. The assessments shall include quantitative and qualitative surveys and assessments.

3) Identification of remedial works which could be implemented to enable the fish habitat compensation to function as intended (i.e., similar to a reference site, acceptable to DFO).

4) The VFPA shall identify appropriate reference sites (the “reference sites”), which are satisfactory to DFO. The reference sites shall be areas exhibiting similar habitat types to those being proposed as fish habitat compensation and are located in areas un-impacted by recent development.

5) A written annual report describing the findings of the compensation monitoring program, including as-built drawings (i.e., surveyed draws showing the works after construction), and any relevant documents and photographs. For the barge facility site, surveyed drawings showing the site prior to construction shall be submitted for the purpose of comparison to as built drawings of the restored site. The VFPA shall provide DFO, to the attention of the Chief of Environmental Canada
Assessment and Major Projects, with an annual report by December 31st of each year habitat monitoring is required by the Compensation Monitoring Program.

6) The Compensation Monitoring Program will be conducted by a qualified biologist or other professional, and each year of monitoring shall strive to use the same method of assessment to ensure easy comparison between different years of the monitoring program.

64. The Compensation Monitoring Program can be combined with the annual comprehensive habitat compensation effectiveness monitoring reports, which are being submitted for the Deltaport Third Berth Expansion Project (i.e., DFO Authorization 02-HPAC-PA1-000-000144).

Contingency Plan for Failure of the Fish Habitat Compensation

65. If ongoing monitoring identifies any elements of the fish habitat compensation that are not functioning as intended, the VFPA is responsible for completing any appropriate remedial works to ensure the fish habitat compensation is stable and functioning as intended.

Determining Success of the Fish Habitat Compensation

66. The fish habitat compensation will be deemed to be functioning as intended if, in the opinion of DFO, the habitats are physically stable and the productivity and growth of marine organisms associated with these habitats are similar in nature to, and exhibit the same or better growth characteristics and the same or greater abundance as, the marine organisms at the reference sites.

67. Following the initial monitoring periods identified for each phase of the project above, and any extensions thereof, DFO will assess the success of the fish habitat compensation and determine whether or not they are functioning as intended, and choose the appropriate course of action as outlined below:

   a) the fish habitat compensation is functioning as intended and will be self-sustaining without further remedial work. The Fish Habitat Compensation Monitoring Program will be terminated;

   b) the fish habitat compensation is not functioning as intended. The VFPA shall extend the Fish Habitat Compensation Monitoring Program, including remedial work, for an additional two years to allow more time for the habitat to become adequately established; or

   c) the fish habitat compensation is not functioning as intended and further remedial work is not likely to rectify the situation. The VFPA shall work with DFO to identify and then carry out alternative compensation works to ensure no net loss in the productive capacity of fish habitat is achieved for the Project.

Protection of the Compensation Fish Habitat

68. All fish habitat compensation associated with the Project shall be considered to be fish habitat pursuant to section 35 of the Fisheries Act. The VFPA shall not carry on any work or undertaking that will adversely disturb or impact this habitat, and will take all reasonable steps to ensure that the habitats are not disturbed by others. The only exception to this condition shall be those specifically stated in this Authorization (i.e., the habitat losses associated with the removal of the barge facility).

Remedial Works

69. If at any time the VFPA becomes aware that any portion of the fish habitat compensation is not functioning as intended, for example due to erosion, debris accumulation, etc., the VFPA shall, in consultation with DFO, carry out any works which are deemed necessary to enable the fish habitat compensation to function, as intended.
Conditions that Relate to Financial Security

70. The VFPA provided DFO with a Letter of Credit in the sum of $1.4 million dollars to act as a performance bond for the obligations of the VFPA with respect to the habitat compensation monitoring requirements described in DFO Authorization (02-HPAC-PA1-000-000144). By signing this authorization the VFPA hereby agrees that the aforementioned Letter of Credit may be drawn on by DFO and the proceeds applied towards ensuring this Project achieves no net loss in the productive capacity of fish habitat, should the VFPA fail to meet its obligations agreed to in this Authorization.

71. DFO retains sole discretion as to whether or not it shall draw from the Letter of Credit.

72. All other conditions pertaining to the Letter of Credit shall remain as described in DFO Authorization 02-HPAC-PA1-000-000144.

Independent Monitoring and Auditing of the Authorization

73. Compliance with the conditions of this authorization shall be audited as part of or in addition to the auditing which is occurring as a requirement under DFO authorization (02-HPAC-PA1-000-000144).
Authorization:

The holder of this Authorization is hereby authorized under the authority of Section 35(2) of the *Fisheries Act*, R.S.C., 1985, c.F.14, to carry out the work or undertaking described herein.

This Authorization is valid only with respect to fish habitat and for no other purposes. It does not purport to release the applicant from any obligation to obtain permission from or to comply with the requirements of any other regulatory agencies.

Failure to comply with any condition of this Authorization may result in charges under the *Fisheries Act*.

*This Authorization form should be held on site and work crews should be made familiar with its conditions.*

Date of issuance: **Dec 8/03**

Approved by: [Signature]

Title: Chief, Environmental Assessment Major Projects

Oceans, Habitat and Enhancement Branch

Fisheries and Oceans Canada

VFPA acknowledges that Fisheries and Oceans Canada has consulted with it regarding the terms of this Authorization, and confirms that it has reviewed and understands the terms of this Authorization, and agrees to the terms contained therein.

Executed by an authorized signatory of the VFPA on the **4th** day of **Dec.**, **2003**, in the presence of:

Witness (signature): [Signature]

Name (print): [Name]

Title: Manager, Env. Programs

Per: [Signature]

Authorized signatory

Per: [Signature]

Name (print): [Name]

Title: Director, Environmental Programs

**Canada**