
Appendix 4
Standard Mitigation by Project Activity

PROJECT ACTIVITY	MITIGATION
<p>GENERAL (to be incorporated into all activities below)</p>	<ol style="list-style-type: none"> 1. Ensure all personnel involved with activities are adequately trained and utilize appropriate personal protective equipment. 2. Storage of fuels and petroleum products will comply with safe operating procedures, including containment facilities in case of a spill. 3. Waste or any miscellaneous unused materials will be recovered for either disposal in a designated facility or placed in storage. Under no circumstances will materials be deliberately thrown into the marine or terrestrial environment. 4. Onsite crews will have emergency spill equipment available. 5. All activities should be completed in such a way as to minimize stress and disturbance to resident flora and fauna. 6. Operations should only operate where entirely necessary to complete the works to reduce effects to nearby soils, vegetation, and resident species. Respect should be given to the natural environment to minimize the footprint of the project. 7. Aesthetic effects created by activities will be short-term and localized. Sites should be kept in a tidy manner during activities and left in a good condition at the end of the project. 8. Archaeological sites in remote locations are not likely to have been previously identified. Care should be taken to observe archaeological deposits while work is being completed. Work must be stopped if evidence shows a potential archaeological artifact or deposit.
<p>MACHINERY OPERATION</p>	<ol style="list-style-type: none"> 1. All equipment will be maintained in proper running order to prevent leaking or spilling of potentially hazardous or toxic products. This includes hydraulic fluid, diesel, gasoline and other petroleum products. 2. Vehicles should not be operated below the line of Highest High Water in the intertidal zone. 3. Operations should only operate where entirely necessary to complete the works to reduce effects to nearby soils, vegetation, and resident species. Respect should be given to the natural environment to minimize the footprint of the project. 4. Machinery must be operated efficiently, to ensure that noise and air quality issues are short-term and local.
<p>POWER-WASHING</p>	<ol style="list-style-type: none"> 1. Activities should be completed in such a way as to minimise the amount of fines and organic debris that may enter nearby aquatic environments.
<p>EXCAVATION/ROCK DRILLING</p>	<ol style="list-style-type: none"> 1. Rock drilling and excavation activities must be conducted conservatively so that physical changes to rock remain small and localized. 2. Dust and fines entering the water must be avoided. 3. Archeological sites in remote locations are not likely to have been previously identified. Care should be taken to observe archaeological deposits while work is being completed. Work must be stopped if

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<p>EXCAVATION/ROCK DRILLING continued</p>	<p>evidence shows a potential archaeological artifact or deposit. 4. Loose material at excavation sites should be managed to avoid excessive migration of silt and debris to nearby waters, especially during heavy rainfall events. 5. All excavation below Highest High Water should be completed by hand, as no vehicles should be operated in the intertidal zone. 6. Any blasting will follow the Guidelines for the Use of Explosives In or Near Canadian Fisheries Waters.</p>
<p>PILE INSTALLATION</p>	<p>1. All equipment will be maintained in proper running order to prevent leaking or spilling of potentially hazardous or toxic products. This includes hydraulic fluid, diesel, gasoline and other petroleum products. 2. Contractors where possible will position their water borne equipment in a manner that will minimize damage to identified fish habitat (e.g. eel grass). Where possible, alternative methods will be employed (e.g. use of anchors instead of spuds). 3. Proper notice should be given to transportation authorities to warn of potential disruptions to navigability during works. 4. Whenever Contractors are working in areas where spawning is present, appropriate monitoring by a qualified person will be undertaken and activities ceased if spawn disruption is apparent. 5. Where possible, new timber piles will comply with the BMP for the use of treated wood in aquatic environments as developed by the Canadian Institute of Treated Wood and the Western Wood Preservers Institute. 6. Where the BMP pilings are not available, creosote piling will stand for a minimum of 45 days prior to installation. These requirements are for new pilings only and will not restrict the use of re-used timber pilings. Reused pilings will not be subject to any additional treatments. 7. If pile installation activities are causing fish kill, work must cease immediately and contractors will be responsible for introducing effective means of reducing the level of shock waves or introduce measures that will protect fish from entering the potentially harmful shock wave area. For example, appropriate mitigating measures would include the deployment a bubble curtain over the full length of the wetted pile that would defuse the shock waves to an acceptable level. 8. If, after preventive measures are introduced, visual monitoring reveals unacceptable conditions (fish kill), then work will stop immediately and the system reviewed and corrected. 9. Any instances of fish kill must be reported to the appropriate agencies (DFO). 10. When cleaning out pipe piles (i.e. air lifting), if the material that is to be removed inside the pipe is non-toxic, then it shall be redistributed in a manner that will minimize damage to the surrounding aquatic fish habitat.</p>

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CONCRETE WORKS	<ol style="list-style-type: none"> When pouring concrete all spills of fresh concrete must be prevented. If concrete is discharged from the transit mixer directly to the form work or placed by wheelbarrow, proper sealed chutes must be constructed to avoid spillage. If the concrete is being placed with a concrete pump, all hose and pipe connections must be sealed and locked properly to ensure the lines will not leak or uncouple. Crews will ensure that concrete forms are not filled to overflowing. All concrete forms will be constructed and sealed in a manner which will prevent fresh concrete or cement laden water from leaking into the surrounding water. All tools, pumps, pipes, hoses and trucks used for finishing, placing or transporting fresh concrete must be washed off in such a way as to prevent the wash off water from entering the marine environment. The wash water will be contained and disposed of upland in an environmentally acceptable manner.
SITE ACCESS	<ol style="list-style-type: none"> Site access practices must be undertaken with regard to resident flora and fauna, especially during times of the year when they are most sensitive.
AID MAINTENANCE	<ol style="list-style-type: none"> Equipment maintenance activities must be completed in a manner that prevents the deposit of foreign materials to the environment. Power washing activities must follow mitigation provided under "POWER-WASHING" An approach of "contain and recover" should be adopted. Drop sheets or other means should be used to prevent paint chips and other debris from entering the surrounding environment. Refuse should be disposed of properly. Painting activities should be completed in such a way as to minimize the amount of fumes that may enter the environment. The amount of paint used should be minimized and unused containers must be covered.
PILE REMOVAL	<ol style="list-style-type: none"> Contractors will position their water borne equipment in a manner that will minimize damage to identified fish habitat (e.g. eel grass). Where possible, alternative methods will be employed (e.g. use of anchors instead of spuds). When demolition is required on timber pile structures, the contractor will remove the piling by mechanical means and avoid breaking the piling at the mud line or below. All demolition operations should be monitored in order to control and contain the construction debris.
CONCRETE BASE REMOVAL	<ol style="list-style-type: none"> Contractors where possible will position their water borne equipment in a manner that will minimize damage to identified fish habitat (e.g. eel grass). Where possible, alternative methods will be employed (e.g. use of anchors instead of spuds). All debris deposited throughout the life of the aid should be removed from the site.
CONCRETE BASE ABANDONMENT	<ol style="list-style-type: none"> Care should be taken to remove all components of the Fixed Aid that are not incorporated into the concrete base.

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<p>CONCRETE BASE ABANDONMENT continued</p>	<ol style="list-style-type: none"> 2. All debris deposited throughout the life of the aid should be removed from the site. 3. Areas near the base should be protected from excessive disturbance. 4. Concrete base abandonment will be conducted only in remote sites, where aesthetic effects are not a concern.