

**Appendix D: Highland Valley Centre for Sustainable Waste Management
First Nations Comment Tracking Table**

July 23, 2008

Issue List

1. Safety
2. Water Quality
3. Wildlife Management
4. Landfill Siting
5. Air Quality
6. Miscellaneous

ID #	Issue	First Nation	Comment Received	Proponent Response / Commitments	Government Response
1.1	Safety - Increased safety risks due to traffic and bears	Shackan Indian Band	If Shackan community members are currently using the land in the vicinity of Highland Valley Copper Mine for traditional uses, then there may be increased safety risks due to increased numbers of large trucks using Highway 97C, as well as increased number of bears that may be attracted to the landfill.	<p>Traffic Safety</p> <p>A traffic operations assessment has been conducted to examine these issues, according to the Ministry of Transportation Site Impact Analysis Guidelines. The details of this assessment can be found in Appendix D (Section 5) and is summarized below.</p> <p>All of the route options are provincially-designated highways and generally considered suitable for waste haul traffic. Based on average collision rates it is estimated that up to 3 collisions per year involving waste haul trucks may occur over the entire route. This number is based on average collision rates and is considered to be a high prediction as fleet trucks generally have better controls, and thus better safety records than the general truck population.</p> <p><i>HVC Commitments</i></p> <p><i>HVC has committed to the following measures to address rural-traffic related concerns.</i></p> <ul style="list-style-type: none"> <i>HVC must ensure that adequate fleet insurance is maintained to address third party liability claims associated with traffic collisions.</i> 	Satisfactorily addressed for the purpose of EA.

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				<ul style="list-style-type: none"> • HVC must ensure that measures are in place to remotely monitor the speed of long-haul waste haulers to and from the site. • HVC must develop a Spill Management Plan (Section 7.1.6) that incorporates management actions to address spills associated with waste transportation. <p>Bear Safety HVC Commitments: Electric fencing must be constructed around the active phase of the landfill. The fencing requirements will be reviewed as part of the detailed design to ensure that wildlife is prevented from gaining access to any waste.</p> <p>Additionally, HVC have committed to developing a Bear Encounter Management Plan as part of the Wildlife Management Plan for the Project (see Section 7.1.8 of the Application). The completed Bear Encounter Management Plan must be submitted to the Ministry of Environment through the Operational Certificate application process.</p>	Satisfactorily addressed for the purpose of EA.
2.1	Water Quality	Shackan Indian Band	If calculations used in the report to determine the concentration levels in leachate are correct, then it appears that impacts to ground and surface water will be low.	Agreed	
2.2	Water Quality	Cooks Ferry Indian Band Siska Indian Band	We have reviewed the attached Kala report (http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_263_26167.html) on the water and leachate issues from the	The Kala report identifies seven recommendations to ensure “that the highest level of protection will be provided to the Highland Valley aquifer”. We have carefully reviewed these recommendations and are prepared to	Satisfactorily addressed for the purpose of EA.

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		Coldwater Indian Band	<p>proposed HVC landfill. This was done as a cooperative external review of the submitted EAO documents in co-operation with the district of Logan Lake and three Nlaka'pamux Bands, namely Cooks Ferry Indian Band, Coldwater Indian Band and Siska Indian Band.</p> <p>We are comfortable with the findings of the Kala report and believe that if the HVC landfill proposal, if approved, incorporates the seven recommendations, that the landfill will operate with acceptable environmental impacts with respect to the water and leachate issues.</p> <p>[extracted from letters posted on EAO website: http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_project_doc_list_263_r_abo.html]</p>	<p>incorporate each recommendation into our project. In response to these seven recommendations, we will make the following corresponding commitments:</p> <p><i>HVC Commitment #1:</i> <i>Sufficient funds must be reserved over the operating life of the landfill to provide long-term post-closure care of the final cover system, including full replacement of that cover system, if required.</i></p> <p><i>HVC Commitment #2:</i> <i>An extensive, instrumented, monitoring system must be incorporated into the Phase 1 lining system to ensure the triple liner is functioning according to design specifications and assumptions. The monitoring system will include temperature thermistor monitoring, pore pressure monitoring in the drainage layer on top of the liner, and lysimeter monitoring of any leakage beneath the liner in low spots where leachate is likely to collect. Data collected during Phase 1 operations will be used to modify operational procedures and to modify design details of subsequent landfill phases, as required.</i></p> <p><i>HVC Commitment #3:</i> <i>The application of daily cover material must meet the requirements of BC's Ministry of Environment Landfill Criteria (MOE, 1993). Waste rock will not be used as a source of cover material.</i></p> <p><i>HVC Commitment #4:</i> <i>If sufficient on-site overburden material becomes available through mine development, an additional one to two metres of overburden soils</i></p>	

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				<p><i>must be placed at the base of the landfill liner system. Alternatively, the landfill foundation must be carefully proof rolled and a lightweight separation geotextile must be placed beneath the clay liner to prevent possible piping of the clay liner and collapse into large voids.</i></p> <p><i>Commitment #5: Additional groundwater level and quality monitoring must be undertaken between H-H and J-J dams using at least two monitoring wells installed once the tailings pond is decommissioned and becomes accessible. This monitoring will confirm the groundwater divide location in the long-term and confirm that leachate migration is not occurring.</i></p> <p><i>HVC Commitment #6: Prior to landfill construction, hydraulic conductivity testing must be performed on soils that will be used as the base landfill liner (10A and 10B soils) using leachate from the Vancouver landfill. The testing intervals are expected to range from a few days to a few months. The results will be used to update the HELP model predictions of leachate leakage.</i></p> <p><i>HVC Commitment #7: A post-closure fund must be established over the operating life of the landfill of sufficient magnitude to carry out all post-closure water quality monitoring and other long-term care commitments, well beyond 25 years post-closure.</i></p>	

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2.3	Water quality	Nlaka'pamux Nation Tribal Council	<p>...NNTC's expert consultant has identified additional serious environmental impacts if the landfill proposal proceeds. These include: ...</p> <ul style="list-style-type: none"> additional discharge of treated leachate into the local wetlands which have already been contaminated by the existing mining activities. <p>[extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>In response to this concern and other water quality-related issues, HVC provided funding to the District of Logan Lake and three Nlaka'pamux Bands (Cooks Ferry Indian Band, Coldwater Indian Band and Siska Indian Band) to conduct an independent review of the groundwater aspects of the application. Based on the review conducted by Kala Groundwater Consulting, each of the parties to the review confirmed that the Project would result in "acceptable environmental impacts with respect to water and leachate issues", provided the review recommendations were carried out.</p> <p>http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_project_doc_list_263_r_abo.html</p> <p>HVC has subsequently committed to addressing each of the seven recommendations outlined in the Kala report.</p> <p>http://a100.gov.bc.ca/appsdata/epic/html/deploy/epic_document_263_26191.html</p>	Satisfactorily addressed for the purpose of EA.
3.1	Wildlife Management - Land clearing during bird nesting season.	Shackan Indian Band	Any land clearing must be conducted outside the normal nesting and fledging season for birds as required under the BC Wildlife Act.	<p><i>HVC Commitment</i></p> <p><i>Any land clearing must be done in full compliance with the BC Wildlife Act and Migratory Bird Act.</i></p>	Satisfactorily addressed for the purpose of EA.
3.2	Wildlife Management - Land clearing during bird nesting season	Shackan Indian Band	Land clearing in late fall and early winter will further reduce risks to migratory birds which are protected under the Migratory Birds Convention Act.	<p><i>HVC Commitment</i></p> <p><i>Where practicable, land clearing must be done in late fall or early winter. Compliance with the BC Wildlife Act must be maintained at all times.</i></p>	Satisfactorily addressed for the purpose of EA.
3.3	Wildlife Management -	Shackan Indian Band	At each subsequent phase of mine and/or landfill development, surveys should be	Wildlife surveys are a routine part of development of new mining areas. This will continue at the	Satisfactorily addressed for the purpose of EA.

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	Species at risk surveys prior to new phase of development		conducted for species at risk.	landfill operation, particularly since the development phases could be several decades apart.	
3.4	Wildlife Management - Wildlife crossing structure to reduce wildlife mortality	Shackan Indian Band	With increased truck traffic resulting from landfill operations, road mortality of wildlife is expected to increase. Has anyone considered the feasibility of installing some type of wildlife crossing structure to address this issue. It will increase safety for both people and wildlife.	<p>To our knowledge, wildlife crossing structures are normally used only on extremely busy highways such as the Trans Canada through Banff National Park and the Coquihalla Highway 97C Connector between Merritt and Kelowna. In order to be effective, game fencing is required along both sides of the highway to direct the animals towards the crossing structure.</p> <p>We do not feel that the traffic increases (36 trucks per day) associated with the project warrant such measures.</p> <p><i>HVC Commitment:</i> <i>However all traffic incidents involving the haulage fleet will be fully assessed. The occurrence, location and frequency of wildlife mortalities caused by vehicle traffic on the access routes to the landfill must be monitored to the satisfaction of the Ministry of Environment. Measures must be implemented to reduce these occurrences if necessary and to the satisfaction of the Ministry of Environment. Details of the monitoring and potential mitigation measures must be included in the Wildlife Management Plan</i></p>	Satisfactorily addressed for the purpose of EA.
3.5	Wildlife Management - Destruction of habitat	Shackan Indian Band	The further clearing of land to accommodate landfill development will eliminate habitat (whether it is deemed low value or high value). This will result in the displacement of birds and other	HVC acknowledges that there will be some loss of habitat during the operational phase of the project. However the Application contains extensive commitments related to the closure and reclamation of the site that will result in the area	Satisfactorily addressed for the purpose of EA.

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			wildlife including game species.	<p>being restored to a productive state. A description of the closure and reclamation plans can be found in Section 3.7.4 of the Application and commitments made in this area can be found in Section 6.5.</p> <p><i>HVC Commitment:</i> <i>A denning habitat identification survey must be conducted to the satisfaction of the Ministry of Environment prior to construction.</i></p> <p><i>The landfill must be constructed in phases to the satisfaction of the Ministry of Environment to allow completed portions of the landfill to be progressively closed.</i></p> <p><i>Land reclamation activities must be undertaken to the satisfaction of the Ministry of Environment following the closure of each active landfill cell. These activities shall be outlined in the Closure Plan which must be submitted to the Ministry of Environment as part of the Operational Certificate application process.</i></p>	
4.1	Landfill Siting	Shackan Indian Band	It is never desirable to locate a landfill in areas which have high anthropogenic values. However, in this case, the area where the landfill is to be located has been severely impacted by mining operations. By locating the landfill here, we are avoiding the disruption of Greenfield locations and sites which may be subject to higher anthropogenic values.	Comment noted	
5.1	Air Quality	Nlaka'pamux	...NNTC's expert consultant has identified	The NNTC review identifies a concern with	Satisfactorily addressed

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		Nation Tribal Council	<p>additional serious environmental impacts if the landfill proposal proceeds. These include: ...</p> <ul style="list-style-type: none"> • additional air contaminants (PAHs, PCBs and PBDEs) landing on surrounding vegetation and soil and adding to the existing contamination caused by metal ore dust. <p>[extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>additional air contaminants (PAHs, PCBs and PBDEs) landing on surrounding vegetation and soil. HVC have previously committed to conducting semi-annual landfill gas monitoring as well as dustfall monitoring prior to construction and during operations (both commitments made in response to earlier NNTC concerns). While the air quality assessment included in the Application (Appendix F) did not identify potential sources of PAHs, PCBs, or PBDEs, we have included a new commitment (below) to provide assurance that these contaminants are not being introduced by the Project to the surrounding vegetation and soil.</p> <p><i>HVC Commitment:</i> <i>Site-specific ambient and meteorological data must be collected to the satisfaction of the Ministry of Environment for a minimum of one year prior to construction. Additionally, the Proponent must collect baseline dustfall data and must conduct volatile organic compounds monitoring a minimum of three months prior to construction and to the satisfaction of the Ministry of Environment. This monitoring must provide site-specific baseline data for comparison with observations made during operations. One round of dustfall samples collected prior to construction and one round of dustfall samples collected following the commencement of operations must be analyzed to the satisfaction of the Ministry of Environment for polycyclic aromatic hydrocarbons, polychlorinated biphenyls and polybrominated diphenyl ethers to confirm that there are no statistically significant increases in</i></p>	for the purpose of EA.

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				<i>these contaminant concentrations following the commencement of Project operations.</i>	
5.2	Air Quality	Nlaka'pamux Nation Tribal Council	<p>...NNTC's expert consultant has identified additional serious environmental impacts if the landfill proposal proceeds. These include: ...</p> <ul style="list-style-type: none"> a substantial increase in greenhouse gas production due to methane and CO₂ from the landfill, additional truck traffic and composting activities; <p>[extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>The NNTC review refers to "a substantial increase in greenhouse gas production due to methane and CO₂ from the landfill, additional truck traffic and composting activities". The Application conservatively estimated greenhouse gas emissions and determined that the Project would result in less than one-third of the greenhouse gas emissions compared to a conventional landfill (Appendix F). This assessment (conservatively) did not take into account greenhouse gas offsets associated with beneficial use of the landfill gas, which HVC have committed to (either electricity generation or use as a direct fuel source). Further, the Project will result in substantially less greenhouse gas production than the type of waste to energy facility proposed by the NNTC.</p>	Satisfactorily addressed for the purpose of EA.
6.1	Miscellaneous	Nlaka'pamux Nation Tribal Council	<p>... First, as the executive summary for the application-repeatedly states, the presence of the existing mining activities at the proposed landfill site is a wide-ranging and valuable 'benefit' to the proposed landfill. In other words, the proponent is relying on and benefitting from the existing desecration of Nlaka'pamux title lands caused by the mining activities. As the NNTC has repeatedly stated, the unavoidable nexus between the existing mining activities and the proposed landfill must be addressed as part of any consultation and accommodation</p>	<p>With respect to your comments that "the proponent is relying on and benefitting from the existing desecration of Nlaka'pamux title lands caused by the mining activities" and that "the unavoidable nexus between the existing mining activities and the proposed landfill must be addressed as part of any consultation and accommodation process", we respectfully note that we do not agree with this conclusion nor do we share this view. As we have consistently stated, it is our view that the existing conditions in the area of the proposed landfill facility are ideally suited for the intended purpose of developing and operating a state-of-the-art waste management facility, particularly as compared to any other</p>	Satisfactorily addressed for the purpose of EA.

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			<p>process. The NNTC once again urges the EAO to acknowledge the relevance of this issue and work toward developing a consultation process that allows for this issue to be addressed in a meaningful way.</p> <p>[extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>similar alternatives that may also be under consideration at this time. This is particularly the case given the proposed design of the facility and the various mitigations measures that have been committed to during the project planning and approvals process.</p> <p>As relates to consultation, the existing conditions at the mine site have been included within the scope of the environmental review and consultation processes as they are an integral component of the baseline conditions upon which the project and the related assessment are based. As such, it is our view that these issues have been appropriately taken into consideration and addressed in a meaningful way, and that related commitments are in place to ensure that project-related issues will be appropriately addressed at the site into the future.</p>	
6.2	Miscellaneous	Nlaka'pamux Nation Tribal Council	<p>...NNTC's expert consultant has identified additional serious environmental impacts if the landfill proposal proceeds. These include: ...</p> <ul style="list-style-type: none"> • additional contamination caused by composting activities; <p>[extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>In response to this concern, we have provided a new project commitment, outlined below:</p> <p><i>HVC Commitment:</i> <i>An Environmental Management Plan for Composting Operations must be developed prior to operation of the on-site composting facilities. The EMP will incorporate best management practices to minimize and prevent environmental impacts associated with operations.</i></p>	Satisfactorily addressed for the purpose of EA.
6.3	Miscellaneous	Nlaka'pamux Nation Tribal Council	<p>...NNTC's expert consultant has identified additional serious environmental impacts if the landfill proposal proceeds. These include: ...</p>	Appendix B of the Application was commissioned specifically to address this concern raised earlier by the NNTC. This assessment reviewed biosolids characteristics, environmental impacts	Satisfactorily addressed for the purpose of EA.

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			<ul style="list-style-type: none"> increased use of contaminated sewage sludge as parts of the landfill cover; <p>[extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>from biosolids applications, and biosolids regulations and Best Management Practices (BMPs). As concluded in this review, the use of biosolids in land application and reclamation programs, when applied in compliance with regulations and BMPs, is considered safe and protective of the environment. Further, the use of biosolids in the creation of landfill biocover provides the opportunity to substantially reduce fugitive methane emissions from the landfill.</p>	
6.4	Miscellaneous	Nlaka'pamux Nation Tribal Council	<p>... Third, as the NNTC has previously stated, the effect of the proposed landfill on the planned for reclamation of the mining site is a serious concern and must be considered as part of both the EA process and consultation and accommodation. The mine is scheduled to close soon and that a reclamation plan is in place. Through reclamation, the proposed landfill site has the potential to be returned to a state where it can, at least to a limited extent, support wildlife and traditional plants. Our expert consultant has estimated that if the proposed landfill was to receive garbage from Metro Vancouver, the reclamation plan would be delayed for up to 90 years. Without Metro Vancouver garbage, as currently planned, reclamation would be postponed for up to 275 years. The delay of the reclamation plans is a serious detrimental consequence of the proposed landfill and constitutes a further infringement of Nlaka'pamux title and rights. This issue must be thoroughly</p>	<p>As outlined in the Application the proposed Project represents only a small portion (less than 5% including infrastructure and access roads) of the HVC mine site. For the remainder of the HVC mine site area, reclamation activities will not be affected or delayed in any way by the proposed Project. Within the Project area itself, the landfill will be developed in a series of phases (five anticipated) with progressive closure and reclamation occurring at the completion of each phase. At the completion of each phase, final cover will be placed and reclamation activities initiated. Intensive environmental monitoring, as outlined in the Application, will be maintained throughout the operations, closure and post-closure periods.</p> <p><i>HVC Commitments:</i> <i>The landfill must be constructed in phases to the satisfaction of the Ministry of Environment to allow completed portions of the landfill to be progressively closed.</i></p> <p><i>Land reclamation activities must be undertaken to the satisfaction of the Ministry of Environment</i></p>	Satisfactorily addressed for the purpose of EA.

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			<p>explored through meaningful consultation. [extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p><i>following the closure of each active landfill cell. These activities shall be outlined in the Closure Plan which must be submitted to the Ministry of Environment as part of the Operational Certificate application process.</i></p>	
6.5	Miscellaneous	Nlaka'pamux Nation Tribal Council	<p>... Finally, as the Province is aware, The NNTC has long supported available waste-to-energy technology as a viable and preferred alternative to landfills. NNTC's expert consultant has outlined the benefits of waste-to-energy alternatives local jobs, sale of electricity, use of waste heat for various industries, reprocessing of recovered materials, etc.) as opposed to the many environmental and economic costs of a landfill (e.g. loss of valuable resources, increased greenhouse gas emissions, ineffectual remediation, air and water contamination, etc). If approved, the landfill proposal will stifle and discourage the development of regional waste-to-energy and its related economic benefits for local communities. [extracted from May 28, 2008 letter addressed to EAO from NNTC]</p>	<p>The final comment in the NNTC review indicates a concern that the proposed Project would not provide the same opportunities for local employment or recovery of resources relative to waste to energy technologies. We respectfully disagree and have highlighted the reasons within the Application. With respect to recovery of resources it is our view that recovery at source, prior to disposal is by far the most beneficial and efficient. We have highlighted this fact and strongly support such "zero-waste" initiatives such as Extended Producer Responsibility Programs (EPR) and aggressive diversion programs to keep materials out of the disposal stream. Further, in contrast to waste to energy technologies, in the Highland Valley project there is absolutely no incentive to retain materials like plastics in the waste stream.</p> <p>Regarding opportunities for employment, the Highland Valley project provides a far greater likelihood of local employment opportunities than alternative waste to energy technologies. Jobs created by this project will support local communities and help to offset changing local economic conditions caused by closure of the Cache Creek Landfill and eventual HVC mine closure. There will be employment opportunities associated with resource recovery activities related to beneficial utilization of the captured</p>	Satisfactorily addressed for the purpose of EA.

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				<p>landfill gas. HVC is also committed to supporting potential economic spin-off opportunities that may be created by this project (including opportunities to utilize the waste heat generated during electricity production on the site).</p> <p><i>HVC Commitment:</i> <i>HVC must support the development of an economic development steering committee with community representatives from local First Nations, the District of Logan Lake and the Villages of Ashcroft and Cache Creek. The committee would work with the Proponent on developing a procurement policy for these communities, focusing on local employment and spin-off business opportunities.</i></p>	