

Sincerely,

A handwritten signature in black ink that reads "Ryan Barry". The signature is written in a cursive style and ends with a long horizontal flourish.

Ryan Barry
Director, Technical Services
Nunavut Impact Review Board

cc: High Lake Distribution List
Martin McFarlane, MMG

Attachments: Appendix A: *Draft* List of Commitments as of September 12, 2008

APPENDIX A:
Draft List of Commitments as of September 12, 2008

NOTES IN REGARD TO COMMITMENTS LISTED BELOW:

- 1) Please note that any commitments requiring submission of materials prior to the final environmental impact statement (FEIS) are to be included within the FEIS where applicable.
- 2) Where it is requested that data be provided, it is expected a related discussion will also be included within the FEIS.
- 3) Where no timelines are indicated, Zinifex is to provide.

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
General						
1	Provide updated Schedule 4.1-1 to clarify issue surrounding project timeline schedule (INAC Information Request #79 & EC)	Zinifex	FEIS	Schedule to include plans for monitoring at closure and post closure stages.		
2	Provide errata list to all parties (NIRB)	Zinifex	01-Dec-07			
3	Develop a harmonized monitoring and management master plan	Zinifex	FEIS	The master plan is to be a stand alone document containing all monitoring plans, and will include further information on how the monitoring data are to be utilized to determine the need for mitigation measures.		
4	Continue operation of the meteorological station at the mine site with the addition of instrumentation to measure evaporation. Data collected will be provided during the water licensing stage (INAC Information Request #23, NRCAN Issues #A1 and #B6).	Zinifex	Potentially regulatory phase/water licensing	As outlined in Climate, Air Quality and Noise presentation. In addition, the station will be operated through the life of the mine.		
5	Zinifex will address in its FEIS each of the 185 issues that were identified in the "Technical Review of the Draft Environmental Impact Statements of the High Lake Project" prepared by Rescan for the KIA and NTL.	Zinifex	FEIS			
6	Include updated results of all the sensitivity analyses that were conducted prior to the FEIS within the FEIS document. This associated documentation should also include the rationale for the scenarios utilized in the sensitivity analysis.	Zinifex	FEIS	This refers to both the climate change sensitivity analysis and water quality and quantity sensitivity analysis.		
7	Update Volume 1 of the FEIS to reflect the final understanding of the project, the impact assessment and associated commitments to monitoring and mitigation.	Zinifex	FEIS			
Atmosphere (Climate, Air Quality, Noise)						
8	Undertake monitoring of dust fall along the all-season road (EC Issue #13)	Zinifex	AQEMP (FEIS)	Zinifex to use mitigation measures to monitor heavy metals and PM ₁₀ along the all-season road and mine access roads (EC). Zinifex to provide a framework to monitor heavy metal dust fall along all-season and mine access roads.		
9	Undertake monitoring of PM10 in areas of predicted exceedence	Zinifex	AQEMP (FEIS)			
10	Investigate the use of a sampling gradient to inform position/selection of control and test sites related to dust fall/air quality monitoring.	Zinifex	FEIS	To be completed based on conversations held by GN and Zinifex on February 22, 2008		
11	Provide a map showing the monitoring locations for the dust fall/air quality monitoring program, and provide details related to the monitoring program for the dock, the mine site, the all weather road, and the air strip. Details should include but are not limited to location, methodology and rationale for site selection. (GN Issue #17)	Zinifex	FEIS	Zinifex to consolidate and provide a more detailed comprehensive plan, locations and mitigation for the FEIS		
12	Provide a comprehensive draft Air Quality Emissions Management Plan (AQEMP) (as outlined in EC Issue #13, GN Issue #17, #18, #19, KIA/NTI Issue #31)	Zinifex	FEIS	Management Plan should include mitigation measures to limit the frequency and duration of exposures of airborne dust and particulate matter to workers. (HC)		
13	Provide additional report on stack test emission of the proposed incinerator (EC Issue #12)	Zinifex	FEIS			
14	Develop an Incineration Management Plan (GN Issue #20, EC Issue #12)	Zinifex	FEIS	Zinifex to provide as part of "master" plan		
15	Provide results and analysis from the most current CALPUFF model output	Zinifex	FEIS	Results already provided in errata; however full document will be included in FEIS		
16	Include an expanded discussion of the analysis of heavy metal uptake in the cumulative effects assessment (GN Issue #4).	Zinifex	FEIS			
17	Provide and expanded terrestrial bio-monitoring program for metal accumulation. Include additional sites near the roadway and the dock area (GN Issue #4)	Zinifex	FEIS	Program to include any berries, herbs, traditional plant species within the 20-30 km area from the roadway. Lichen samples should also be part of the program. Samples also to be collected from a control/reference site. If biomonitoring program identify any elevated levels of contaminants in vegetation, a full assessment of any associated risks to human health and ecological health should be undertaken (HC).		
18	Submit a code of practice for monitoring of air emissions at Grays Bay and the all-season road during construction, including mitigative measures (GN Issue #18)	Zinifex	FEIS	Zinifex to add the data to air quality Emission management plan		
19	Implement technically and economically feasible mitigation measures for sound levels in sleeping quarters, to reduce noise levels to a level as close as is reasonable to WHO Community Noise Guidelines (HC, GN Issue #23)	Zinifex	FEIS			

Draft List of Commitments for the High Lake Project (06MN082)
(as of September 12, 2008)

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
Climate Change						
20	Conduct a sensitivity analysis with respect to the climate data and climate change scenarios (including changes in precipitation and evaporation), as part of the analyses associated with the project design and potential implications on water quality, balance and permafrost, including the possible requirement for design refinements (NRCAN Issue #A1, #A3, #A5, #A6, #B6, #B7 and INAC Information Request #24, Recommendation #9 & #12).	Zinifex	Before workshop prior to FEIS/FEIS	To be initiated and incorporated into the FEIS with details to be confirmed in final design. Zinifex committed to holding a workshop to discuss climate variability in early 2008 prior to the FEIS.	Formal report required from workshop. Results from the sensitivity analysis should be completed, documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
21	Re-examine hydraulic conductivities in light of thermal analysis sensitivities (INAC)	Zinifex	FEIS		COMMENT FROM ZINIFEX: Clarification required to better understand the relevance of this commitment.	
22	Apply a failure mode analyses to determine those aspects of the design most sensitive to climate change. The failure mode analyses will address the climate change sensitivity analyses results and include the impacts at closure.	Zinifex	Before workshop prior to FEIS	FMEA of the selected waste storage facilities, specifically during the closure period of the mine.	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
23	Collect additional hydrogeology baseline data as outlined in response to INAC Information Request #50 including A1: drilling program beneath permafrost ; A2: Baseline sampling and testing in the High Lake talik (3 boreholes) prior to mining; A3: Baseline permeability testing will be conducted within the shallow active zone (6 boreholes) around the perimeter of High Lake; A4: Measure baseline groundwater leakage rates through High Lake for model calibration (INAC Recommendation #33, NRCAN Issues #B4)	Zinifex	A1: year 5, A2: prior to mining; A3: next field season; A4: ongoing	An update on the field work completed is to be provided in the FEIS.		
24	Update and recalibrate MODFLOW model as data becomes available (INAC Information Request #48, INAC Recommendation #33)	Zinifex	As data is available	The update of the groundwater model is not expected before completion of the FEIS. Baseline data acquired from boreholes drilled beneath the permafrost in the West Zone will be used to recalibrate flow and quality groundwater model before mining below the permafrost.		
25	Provide mechanism whereby the monitoring results will be used to update and verify/calibrate the groundwater model (related to previous commitment)	Zinifex	FEIS			
26	Revise the assessment of mine inflow quality after obtaining groundwater samples from beneath permafrost (INAC Information Request # 51, Recommendation #33, NRCAN Issues B & E)	Zinifex	Year 5 of Project Activities	Baseline data acquired from boreholes drilled beneath the permafrost in the West Zone will be used to recalibrate flow and quality groundwater model before mining below the permafrost.		
27	Improve assessment of shallow (active zone) groundwater flow from High Lake tailings containment facility to L15/L4 after collecting active zone baseline data as outline in response to INAC information request #58 and NRCAN Information Request #6 (NRCAN Issue #A3 and #B3)	Zinifex	As data is available	Zinifex to collect field data in 2008 to address this commitment	COMMENT FROM ZINIFEX: Depending on funding and whether or not these will be established during construction phase. COMMENTS FROM PARTIES: Requires clarification from the proponent based on comment received. Zinifex outlined during the technical meetings their plans for 6 shallow groundwater monitoring wells and other means to address the issues that NRCAN and INAC had raised.	
28	Provide a long-term permafrost monitoring plan. The additional information gathered will be included in the periodic updates to the groundwater model. (INAC Recommendation #34, NRCAN Issues #A3)	Zinifex	FEIS	Boreholes associated with the long-term permafrost monitoring program will be implemented during construction period.		
29	Reassess transport of contaminants from tailings containment facility to receiving environment after collection of additional baseline water quality data (NRCAN Issues #B4, #E2)	Zinifex	As data is available	Requires baseline water quality data, and hydraulic conductivity data from Kennarctic River talik and High Lake talik.		
30	Install a groundwater well in the vicinity of Kennarctic river (in the talik zone) to provide further evaluation of the deep groundwater flow pathway from High Lake to the Kennarctic River. (NRCAN Issue #B4 and #E2)	Zinifex	2008/FEIS	Attempts will be made this spring to install a thermistor, sample groundwater from the Kennarctic River talik, and test conductivity. The FEIS will provide an update on the progress of this fieldwork and outline future plans for fieldwork and analysis.		
31	Baseline data acquired from boreholes drilled beneath the permafrost in the West Zone will be used to recalibrate flow and quality groundwater model before mining below the permafrost. (INAC Recommendation #33)	Zinifex	Year 5 of Project Activities			
32	Provide a discussion on the assessment of groundwater impacts resulting from potential contaminant released to the environment (INAC Recommendation #35, INAC Recommendation #36)	Zinifex	FEIS			
33	Provide further details on the groundwater monitoring plan, mitigation measures and indicate the mechanism whereby the monitoring results will be used to update and verify/calibrate the groundwater model. (INAC Recommendation #37, NRCAN Issue #B8)	Zinifex	FEIS	Zinifex will include groundwater quality and quantity issues associated with the whole site		
34	Provide a summary of the potential treatment of deep groundwater including: 1) details of the advance drilling and monitoring; 2) thresholds for treatment; 3) range of potential water quality; 4) range of treatment options based on water quality; and, 5) fate of the rejects from the treatment. (INAC Information Request #51)	Zinifex	FEIS			
35	Provide a discussion on proposed mitigation options that can be applied if the operational measures are not sufficient to maintain permafrost beneath lakes L12/L14/L22. (INAC Information Request #57, NRCAN Issues #A4 and #B1)	Zinifex	FEIS			
36	Provide a schematic on the water management strategy for pre-development, operations, and closure (INAC Recommendation # 18, #58)	Zinifex	FEIS	Note linkage to water balance commitment below.		

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
37	Provide more detail on design geometry, modelling, monitoring plan details, and mitigation options for permafrost aggradation beneath embankment to restrict shallow groundwater flow between High Lake and lakes L15 and L4. (NRCan Issues #A3 & #B3)	Zinifex	FEIS			
38	Develop a new threshold for groundwater impacts to lakes based on natural variation of lake levels (DFO Issue #5.17; INAC Information Request #32, INAC Recommendation #19)	Zinifex	FEIS			
Hydrology						
39	Include sensitivity analysis within the hydrological model for over/under estimates of Mean Annual Precipitation and evaporation for input to Water Quality Model (INAC Recommendation #29, INAC Information Request #41, NRCan Issues #B6 and #B7)	Zinifex	prior to FEIS	The +/-5% sensitivity used in DEIS is inappropriate. Water Quality and Quantity workshop to be held with interested Parties prior to FEIS. Zinifex has committed that the values to be used will be provided to all parties in advance to ensure that all parties are aware of these values.	Formal report required from workshop. Results from the sensitivity analysis should be completed, documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
40	Include sensitivity analysis to the inputs to the model for runoff coefficient. This will be updated with site-specific information from existing 2006 data, to verify its accuracy (INAC Recommendation #31)	Zinifex	prior to FEIS	Water Quality and Quantity workshop to be held with interested Parties prior to FEIS	Formal report required from workshop. Results from the sensitivity analysis should be completed, documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
41	Provide updated discussion on current project water sources and water withdrawal plans, including explanations of how various water supply components and derivatives are calculated. To be provided after consultation with Environment Canada (EC Issue #18)	Zinifex	FEIS	Discussions with EC specialist to confirm some calculations and discrepancies		
Freshwater Aquatic Environment						
Groundwater, Surface Water and Sediment						
42	Provide detailed contingency measures on impacts of tailings containment facility discharge to receiving environment. (INAC Recommendation #21, #31, #32)	Zinifex	FEIS	Zinifex will include items such as modeling framework, sensitivity analysis, etc.		
43	Include the results of the sensitivity analysis in the discussion of design impacts and risk assessment during closure (water quality model). (NRCan Issues #B6 and #B7)	Zinifex	FEIS	This would include the thermal design of waste containment facilities. Workshop to be held with interested Parties prior to FEIS.	Formal report required from workshop. Results from the sensitivity analysis should be completed, documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
44	Conduct a plume delineation study which includes modelling of the High Lake discharge and an appropriate field monitoring program. The results from the field monitoring will be used to calibrate the model, validate model results, and develop appropriate mitigation measures to minimize the mixing zone. (INAC recommendation #17).	Zinifex	prior to FEIS	Water Quality and Quantity workshops to be held prior to FEIS. Preliminary modeling to be submitted prior to the FEIS; plume delineation will not be available at this time	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
45	Conduct appropriate field monitoring programs (including detailed cross-sections of the Kennarctic River downstream of discharge from High Lake). Field results to be used to calibrate the model (model inputs), validate model results and develop appropriate mitigation measures to minimize the mixing zone (INAC recommendation #17).	Zinifex	FEIS			
46	Provide a plume delineation study plan based on modelling of High Lake discharge and appropriate field monitoring results (related to previous commitment).	Zinifex	FEIS			
47	Provide an updated summary and re-evaluation of the baseline water quality data set including: evaluation of the temporal and spatial variability, additional data collected in 2006 and 2007, and discussion of linkages to the future site Aquatics Effects Monitoring Program/Plan (AEMP). (EC Issue #24)	Zinifex	prior to FEIS	As outlined in the Hydrology and Surface Water Quality Presentation. Updated results to be reflected in revised water quality modelling for the water quality workshop. Monthly road runoff model has been developed.	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
48	Re-evaluate the impacts of metals associated with particulate matter including an assessment of the contribution of particulate fraction to overall loading and associated impacts in the road runoff model and annual load model, and a sensitivity analysis of total suspended solids loading in the road runoff model. Include a discussion on the re-evaluation within the FEIS. (INAC Recommendation #20)	Zinifex	prior to FEIS/FEIS	As outlined in the Hydrology and Surface Water Quality Presentation. Updated results to be reflected in revised water quality modelling for the water quality workshop. Monthly road runoff model has been developed.	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
49	Complete an Aquatic Risk Assessment and include results in the FEIS. (INAC Recommendation #17, Information Request #28)	Zinifex	prior to FEIS/FEIS	As outlined in the Hydrology and Surface Water Quality Presentation. The Aquatic Risk Assessment is recognized as a critical component of the impact assessment to be discussed in conjunction with updated modelling results at the water quality workshop.	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
50	Provide updated water quality model results (Goldsim Model) and incorporate updated results into effects assessment. (INAC Recommendation #17, NRCan Issues #B6 and #B7)	Zinifex	prior to FEIS/FEIS	Water Quality and Quantity workshops to be held prior to FEIS. Information to be incorporated in the FEIS.	Formal report required from workshop. Results of analysis utilizing various scenarios should be documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
51	Provide an updated comprehensive water management plan with detailed supporting documentation (INAC Recommendation #24)	Zinifex	FEIS	Some of this information will be provided in the updated modeling and therefore addressed in the workshop.		
52	Re-evaluate the potential influence of air quality and contaminant deposition on surface water quality (INAC Information Request #33, INAC Recommendation #17)	Zinifex	FEIS	Results to be incorporated into water quality model and effects assessment as appropriate.		
53	Provide rationale for using a monthly average flow assumption versus low flow hydrologic analyses for the Kennarctic River and adjust the models if appropriate (INAC Information Request #41, INAC Recommendation #17 & #32).	Zinifex	prior to FEIS/FEIS	Rationale needed due to yearly variations of monthly flows. Workshop to be held with interested Parties prior to FEIS.	Formal report required from workshop. Results should be documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
54	Include a more detailed discussion on the potential treatment options for elevated selenium levels in the tailings effluent (INAC Recommendation #22)	Zinifex	FEIS			

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(as of September 12, 2008)

Commitments						
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55	Clearly demonstrate that all sources of ammonia have been accounted for in the modelling of final effluent quality and nitrogenous oxygen demand. Provide further information on the fate of cyanide. (EC Issue #26)	Zinifex	FEIS	The updated model will include nitrogen species (EC Issue #28). Workshop to be held with interested Parties prior to FEIS.	Formal report required from workshop. Results should be documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
56	Identify thresholds used to assess parameters for which there are no guidelines, or for which natural levels exceed guidelines. This will be rationalized on the basis of predicted effects; specifically for maintaining ambient conditions within a reasonable degree of variation (EC Issue #27 and #31)	Zinifex	FEIS	Specific parameters requested were TDS, sulphate, and chloride		
57	Provide additional detail on the proposed monitoring and follow-up programs for surface water and sediment quality consistent with the requirements specified in the Project's terms of reference. (INAC Recommendation #24)	Zinifex	FEIS			
58	Provide sewage treatment details including a discussion of the fate and effects of nutrients. (EC Issue #29)	Zinifex	FEIS	Zinifex indicated that chlorination will not be used.		
59	Provide further rationale to validate the use of the dissolved metals for mine rock source inputs, or identify other approaches and use to account for particulate-associated elements. (EC Issue #30 and INAC Recommendation #20)	Zinifex	prior to FEIS	Workshop to be held with interested Parties prior to FEIS.	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
60	Provide an updated Adaptive Management Plan (NRCAN #E3)	Zinifex	FEIS			
61	Update the source loading terms to the water quality model and conduct related sensitivity analysis (INAC Information Request # 86, INAC Recommendation #41, NRCAN Issue E). Results to be included in the FEIS.	Zinifex	prior to FEIS/FEIS	Water Quality and Quantity workshop to be held with interested Parties prior to FEIS.	Formal report required from workshop. Results of the sensitivity analysis should be documented and incorporated into the FEIS.	Partially completed as workshop held in May 2008.
62	Provide further details on pit closure in connection with the water quality and management including treatment information and water quality predictions. (EC Issue #33)	Zinifex	FEIS			
63	Confirm that run-off from all disturbed areas will be directed to the High Lake tailings containment facility, and specify, if possible, the proportions that will be naturally versus artificially directed to High Lake. (NRCAN #B5)	Zinifex	FEIS			
64	Revise presentation of the water quality modelling results for the Kennarctic River to better illustrate distance and duration of exceedence relative to appropriate guidelines, where available.	Zinifex	FEIS			
65	Provide a discussion on how the discharge strategy for the High Lake Tailings Facilities will adapt to the natural flow variability of the system within the receiving environment (i.e., Kennarctic River).	Zinifex	FEIS			
Acid Rock Drainage (ARD)						
66	Clearly state the method and rationale for available neutralization potential (NP). Discuss what acid rock drainage test method will be used and how acid rock drainage screening will occur, during operation for the mine, the road and the airstrip (GN Issue #11)	Zinifex	FEIS	Test methods will be updated as the technology is updated.		
67	Include potential monitoring locations along the all-weather road for acid rock drainage and water quality. Include a discussion of related explosives use, management, potential impacts and mitigation measures (GN Issue #15)	Zinifex	FEIS			
68	Clarify metal leaching and alkaline potential from tailings in the prediction model (GN Issue #12)	Zinifex	FEIS			
69	Provide leachate quality data for select waste rock materials, including kinetic test samples and load predictions (INAC Recommendation #45)	Zinifex	prior to FEIS	Workshop to be held with interested Parties prior to FEIS. Acid rock drainage issues and sensitivity analyses requirements to be addressed at workshop if not address separately by teleconference discussions.	Formal report required from workshop and results included in the FEIS.	Partially completed as workshop held in May 2008.
70	Conduct additional characterization work for all potential sources of quarry rock to address potential acid rock drainage and metal leaching concerns and submit further results. (GN Issue #11, #15 and INAC Recommendation #59)	Zinifex	FEIS/water licence stage	As outlined in the Geochemical Characterization and Source Loading Predictions presentation		
71	Include a draft closure plan for management and mitigation of potentially acid generating and metal leaching rock along the road and at quarry sites (GN Issue #11, #15 and INAC Recommendation #59)	Zinifex	FEIS	As outlined in the Geochemical Characterization and Source Loading Predictions presentation		
72	Include an assessment of heat generation resulting from oxidation of the potentially acid generating material (NRCAN #E1)	Zinifex	FEIS	This would be incorporated in assessments of long-term thermal condition of waste rock piles, as appropriate.		
73	Incorporate continuous rock characterization information into water quality predictions and adaptive management needs, to address acid rock drainage and metal leaching concerns during operation and closure planning (GN Issue #16)	Zinifex	FEIS			
74	Incorporate all available leachate chemistry data (including 2007 and 2008) from field waste rock bins and update the water quality model source loading terms and conduct appropriate sensitivity analysis. (NRCAN Recommendation #E2)	Zinifex	FEIS	Include artificial irrigation of field bins with deionized water, as appropriate. Sensitivity analysis is for source terms and should be supported by leachate chemistry data from the field waste rock bins. If insufficient data, incorporate artificial irrigation.		
75	Provide a materials balance for NAG and PAG materials at the West Zone. Include the timing and sequencing of the NAG and PAG material mining. (INAC Information Request #61)	Zinifex	FEIS			
76	Provide information on the water body adjacent to the ammonium nitrate storage facility and include sensitivity to ammonium nitrate. (NRCAN Issue #F1)	Zinifex	FEIS			

Commitments						
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Freshwater Aquatic Organisms and Habitat						
77	Provide an update evaluation of predicted impacts of the discharge into the Kennarctic River through an Aquatic Risk Assessment	Zinifex	prior to FEIS	Aquatic Risk Assessment is recognized as a critical component of the impact assessment to be discussed in conjunction with updated model results at the water quality workshop.	COMMENTS FROM EC: WQ will have to be revisited as the results provided during the May workshops were not comprehensive.	Partially completed as workshop held in May 2008.
78	Provide proposed mitigation measures to avoid impacts to unnamed lake 30 metres from quarry 3 (Q3) and L800. (DFO Issue #5.1-3)	Zinifex	FEIS	Specific to quarrying of fill - not the building of the road itself	Formal report required from workshop and results included in the FEIS.	
79	Confirm presence or absence of fish in unnamed lake 30 metres from quarry 3 (Q3) and discuss potential impacts. Update no net loss plan (NNLP) if necessary.	Zinifex	FEIS			
80	Provide rationale for fish sampling methods used in baseline data collection (DFO Issue #5.14)	Zinifex	FEIS			
81	Provide mitigation and/or compensation measures for impacts to fish and fish habitat from water withdrawal of lakes L4 & L5 (DFO Issue #5.2)	Zinifex	prior to FEIS			
82	Provide details on discussions with Kugluktuk HTO and DFO regarding alternative fish habitat enhancement opportunities (DFO Issue #5.4)	Zinifex	FEIS	Discussions to be held prior to FEIS		
83	Provide details of a reference/control lake to be used as part of the aquatics effects monitoring program (AEMP) which is comparable to L4 and L5 (DFO Issue #5.15 and INAC Recommendation #19)	Zinifex	FEIS	Reference lake to contain both lake trout and Arctic char.		
84	Provide details of the baseline studies conducted for Lake L800 (DFO Issue #5.16)	Zinifex	FEIS			
85	Provide information on predicted habitat loss and a proposed habitat compensation plan (Related to DFO Issue #5.4)	Zinifex	FEIS			
86	Provide the bathymetric data for the small lakes along the proposed winter road to support the regression analysis and improve confidence in the lake volume predictions.	Zinifex	FEIS	Part of DFO Issue #5.1		
87	Provide a comprehensive summary of the quantitative aquatic biology. (KIA Issue #85)	Zinifex	prior to FEIS	Requested by KIA in order for an aquatic biologist to make a preliminary assessment of the data. Raw data is not required.		
88	Provide conceptual drawings for stream S38, to ensure proper channel design features are incorporated and designed to enhance the channel. (DFO Issue # 5.12)	Zinifex	FEIS			
89	Include a draft Aquatics Effect Monitoring Program/Plan (AEMP) as part of the overall management plans (EC Issue #25, KIA/NTI Issue #89 & #102, DFO Issue #6.3)	Zinifex	FEIS	AEMP required for the FEIS to determine if Zinifex has collected enough baseline data to monitor, manage and mitigate potential changes to the environment.		
90	Provide more details on the culvert design for fish passage (DFO Issue #5.5)	Zinifex	FEIS	Using five year recurrence flow events as a threshold to design the culverts.		
91	Provide a profile view of rockfill channel between lakes L15 and L4 (DFO Issue #5.6)	Zinifex	FEIS	Flood design criteria used should be noted in the plan drawings.		
92	Submit site plans for the construction and operation phases for explosives at the dock site (NRCan Issue #F1)	Zinifex	FEIS			
93	Include a detailed discussion on the waterbodies adjacent to the mine access roads and mine infrastructure within the South Sub-Drainage catchment area (including Sulphide Lake).	Zinifex	FEIS			
94	Collect fish population data (presence/absence) for all streams and water bodies within the High Lake Local Study Area (LSA), including water bodies and streams within the South Sub-Drainage catchment area prior to regulatory phase/water licensing (EC and DFO).	Zinifex	FEIS	Zinifex should update the local study area to include the area south of the Upper High Lake Sub Drainage where explosives will be stored. This should be included in the FEIS.		
95	Include further details on proposed mitigation measures for potential impacts from the ammonium nitrate storage and related mine access roads on adjacent waterbodies within the South Sub-Drainage catchment area (including Sulphide Lake).	Zinifex	FEIS			
96	Provide a discussion of habitat compensation measures including any in-stream works with any design changes (TC)	Zinifex	Prior to FEIS	Preference is for submission prior to FEIS, but inclusion within FEIS may be acceptable as noted by TC.		
97	Provide additional detail on the No Net Loss Monitoring Plan. (DFO Issue #6.4)	Zinifex	FEIS			
Marine Aquatic Environment						
98	Provide physical substrate mapping of the local study area based on the current proposed local study area (LSA) and any available or existing information (EC Issue #22, NRCan Issue #D3)	Zinifex	FEIS			
99	Incorporate the following clarifications noted by Transport Canada: a) Bilge water/oil separator commitment – no oils allowed therefore N/A b) "Environmental sailing instructions followed" – should read "Environmental Sailing Directions" c) Arctic Waters Certificate Required – not mandatory but recommended	Zinifex	FEIS			
100	Ensure that shipping companies contracted for the project obtain an Arctic Waters Certificate.	Zinifex	FEIS			
101	Acknowledge misrepresentations within the draft EIS that pertain to sections of ballast water, Arctic Waters Pollution Prevention Act (AWPPA) and the Arctic Shipping Pollution Prevention Regulations (ASPPR). Provide a corrected interpretation/requirements of the legislation within the final EIS.	Zinifex	FEIS	Ballast Water misrepresentations provided by Transport Canada in correspondence to NIRB on February 26, 2008.		

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(as of September 12, 2008)

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
102	Provide maps (and map shape files) illustrating known polynas and sensitive polar bear areas along the proposed shipping routes to the contracted shipping companies (for identification and subsequent avoidance of these areas). (KIA/NTI Issue #117 & #120)	Zinifex		Add on to map that already exists for sensitive areas. KIA and Kugluktuk HTO to provide TK to further this commitment.		
103	Provide updated maps of proposed shipping routes which clearly identify known areas of polar bear concentrations, International Biological Program sites, Migratory Bird Habitat Sites and wildlife areas of special interest. (GN Issue #7, EC Issue #9)	Zinifex	FEIS	Zinifex to make use of existing GN databases		
104	Include a direct effects analyses of mobilization and shipping tracks including the eastern and western routes with all key areas relating to VEC's and VSEC's clearly identified. This includes sensitive species concentrations, migratory bird areas and other areas of recognized biological importance as outlined in NIRB's final scoping list (August 30, 2007). (INAC Recommendation #54)	Zinifex	FEIS			
105	Provide a copy of the Lancaster Sound Oil Spill Atlas to any contracted shipping companies (GN Issue #7)	Zinifex		The Atlas reference is: Dickins, D., Bjerkelund, I., Vonk, P., Potter, S., Finley, K., Stephen, R., Holdsworth, C., Reimer, D., Godon, A., Duval, W., Buist, I. & Sekerak, A. 1990. Lancaster Sound region. A coastal atlas for environmental protection. DF. Dickins Associates Ltd., Vancouver.		
106	Provide a detailed characterization of the coastal environment including at the mouth of the Kennarctic River and at Grays Dock (i.e. discussion of sediment loading, coastal geological processes, sea rise related to climate change, etc.) (INAC Recommendation #25, NRCAN Issue #D2 and #D4).	Zinifex	FEIS			
107	Provide the sediment grain size distribution data to assist in data interpretation of marine sediment quality and to support long-term monitoring objectives. (INAC Recommendation #26, NRCAN Issue #D2)	Zinifex	FEIS	Volume 9, Sect. 4.3 Attachment B, L1		
108	As part of the marine impact analyses, provide a more detailed discussion on operational activities including docking and shipping, and proposed mitigation measures. (INAC Recommendation #27)	Zinifex	FEIS			
109	Provide additional detail and clarify objectives for the proposed marine water and sediment quality monitoring program (INAC Recommendation #28)	Zinifex	FEIS	To be included in the AEMP		
110	Provide a map identifying navigational hazards for approaches to the dock from the shipping channel (INAC Recommendation #3 and NRCAN Issue #D3)	Zinifex	2008	Will be provided in 2008, after completion of hydrographic surveys planned for summer 2008.		
111	Provide final design details and drawings of the proposed new dock design for Grays Bay and include a discussion on all operations and activities associated with the stages of construction, operation and decommissioning of the dock, as well as the potential impacts and associated mitigation measures. (TC, DFO)	Zinifex	Prior to FEIS and inclusion in FEIS	Drawings to be reviewed by Navigable Water Protection Program and Transport Canada-Marine Safety.		
112	Provide further discussion on reasons for delineation of the local study area (LSA) for marine water and sediment quality (EC Issue #20 and INAC Recommendation #25)	Zinifex	FEIS			
113	Provide details of a monitoring program related to the construction of the dock at Grays Bay and include a discussion of potential impacts from potential dredging activities (DFO Issue #4.4)	Zinifex	FEIS			
114	Conduct an assessment of the impacts of the proposed works at Grays Bay on existing coastal processes (DFO Issue #4.6)	Zinifex	Prior to FEIS	DFO would like to see all dock design information prior to the submission of the FEIS		
115	Provide a more detailed discussion of the decommissioning of the dock and associated structures at Grays Bay (DFO Issue #4.8)	Zinifex	FEIS			
116	Clarify discrepancies between 2004 and 2005 bathymetry data where reasonable (NRCAN Issue #D1)	Zinifex	FEIS	More information required for 2005 study		
117	Discuss the consideration of negative storm surges including references to relevant literature with respect to the design of marine structures and activities (e.g., navigation) (NRCAN Issue #D3)	Zinifex	FEIS			
118	Provide further justification regarding conclusions on sea level rise (NRCAN Issue #D3)	Zinifex	FEIS			
Marine Mammals						
119	Provide additional discussion to clarify what the threshold values for changes in marine mammal groups are being used for (KIA/NTI Issue #118)	Zinifex	FEIS	Statistical power derived from prior data collection attempts could be provided to assess the likelihood of observing such levels of decline and samples sizes that would be required in order to do so. Levels of decline that would be culturally significant to the Inuit should also be considered	COMMENTS FROM ZINIFEX: Moulton et al. (2005) used a power analysis regarding effects of the NorthStar drilling platform on ringed seals; they needed large sample size, good information on densities (many years of survey data) and, perhaps most importantly, data on covariates (habitat features, etc.) to have any power whatsoever to detect impacts of NorthStar on ringed seals.	
120	Include a more detailed discussion of the assessment of ice, shipping, and polar bears from Volume 11, Appendix D3 into the wildlife/marine mammals section of the FEIS. (KIA/NTI Issue #117, #120, #172)	Zinifex	FEIS			
121	Provide two Marine Mammal Observers on ships used for Project activities. Provide necessary training for Observers. (KIA/NTI Issue #122 & #123)	Zinifex		Observers will be recruited in consultation with local communities and HTOs. Zinifex employees may also be selected for these positions		
122	Provide a detailed description of the Marine Mammal Observers' roles and responsibilities which are to include logging of marine mammal & other wildlife sightings, recording ice conditions and wildlife behaviour during ice-breaking by ships, and alerting of the Officer of the Watch for avoidance purposes. (KIA/NTI Issue #122 & #123, GN Issue #10)	Zinifex	FEIS			

Draft List of Commitments for the High Lake Project (06MN082)
(as of September 12, 2008)

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
123	Provide additional means for predicting the number of seals when the ice is largely absent in Grays Bay in consultation with the local HTOs.	Zinifex	FEIS	It is important to further evaluate the number of seals present in the dock site LSA during the ice-free period. Request agreed upon to be undertaken by Zinifex through the collection of local TK information.	COMMENTS FROM ZINIFEX: Zinifex does not agree with this commitment. This is not possible, and there are few estimates based on open water surveys in the literature. Seals are visible during aerial surveys over open water only in sea states 0, 1, or 2 with no forward glare. Densities estimated under such conditions are lower than those in spring, and variable. Harwood and Stirling (1992) estimated densities in the Beaufort Sea of 0.42, 0.15, 0.08, and 0.19 in 1982, 1984, 1985, and 1986, respectively.	
124	Provide a discussion on potential impacts to bearded seals from shipping and dock operations, including details on abundance and preferred habitat. (Kugluktuk HTO Issue #4.2.1 and #4.2.2)	Zinifex	FEIS	Bearded seals were identified by the HTO as being more sensitive to disturbance and were included in the scoping list. Further discussion is warranted in the FEIS and can be based on the collection of local TK information.	COMMENTS FROM ZINIFEX: Zinifex does not agree with this commitment. Bearded seals were not chosen as a VEC because they're so much less abundant than ringed seals. For example, in our spring surveys of seals in Grays Bay, there were 1567 ringed seal sightings and 33 bearded seals; average annual catch during 1996-2001 was 280 ringed seals and 2 bearded seals; population estimates for the Canadian Beaufort Sea are at least 90,000 ringed seals and 1200-3100 bearded seals. Please refer to Volume 5 Section 7 of the Draft EIS.	
125	Update Volume 10, Appendix E and develop the preliminary marine management plan. (DFO Issue #4.1)	Zinifex	FEIS			
126	Incorporate the mitigation measures provided in the Marine Environmental Handbook. (DFO Issue #4.2)	Zinifex	FEIS			
127	Clarify the timing periods of proposed shipping activities. (DFO Issue #4.2)	Zinifex	FEIS			
Wildlife and Wildlife Habitat						
128	Provide additional discussions on the suitability of habitats for Bathurst caribou calving in the mine site's zone of influence. (Kugluktuk HTO Issue #3.2)	Zinifex	FEIS			
129	Provide a discussion on the appropriateness of the analysis used to determine the Dolphin-Union caribou migration patterns and rational for not using friction model approach used by Diavik (Kugluktuk HTO Issue #3.1.1)	Zinifex	FEIS	Impacts on caribou are of particular interest to the Kugluktuk HTO and all efforts and approaches to predicting impacts should be explored.	COMMENTS FROM ZINIFEX: Zinifex does not support this commitment. Zinifex suggests that Impact Statement WL1 adequately captures movement and abundance impacts for Dolphin and Union Caribou, and subsequent analysis (specifically 'friction modelling') is unlikely to result in any meaningful change in the impact assessment to caribou. In regards to HTO Issue 3.1.1, Zinifex further argues that no clear technical deficiencies have been identified by Nunami-Jacques Whitford in the area of HTO knowledge, climate variability, timing and senescence of vegetation and snow pack characteristics, and thus additional - and undefined - movement analysis is therefore unwarranted.	
130	Acknowledge Zinifex Canada Inc.'s willingness for potential participation in the GN's caribou strategy when developed. Discuss options for participation including participation in caribou collaring plans. (Kugluktuk HTO)	Zinifex	FEIS	Commitment in principle, but the actual potential participation will be over the longer term.		
131	Incorporate additional winter environmental components such as snow pack characteristics, temperature, land attributes, and land cover classification into habitat suitability models for Dolphin-Union caribou (Kugluktuk HTO Issue #3.2.1)	Zinifex	FEIS		COMMENTS FROM ZINIFEX: Zinifex does not support this commitment. Zinifex suggests that the requested commitment is unreasonable, and no valid technical deficiencies have been identified that would alter the conclusions drawn as a result of the habitat modeling for Dolphin and Union caribou. The request is unreasonable, as digital coverage for the variables identified do not exist. For further clarity, habitat selection was assigned to land cover classes based on a Resource Selection Function model developed from satellite telemetry data for caribou, in which the location of caribou within a land cover type is assumed to be in response to such factors as forage availability, snow pack, thermal cover, susceptibility to predation, etc. Digital mapping of forage availability, snow pack, thermal cover, and predation risk are not available for the RSA, could not be readily developed without significant guess-work, and therefore cannot be incorporated into Habitat Suitability modelling.	
132	Include impact assessment analysis for moose and wolves including but not limited to assessment, specific mitigation measures, residual impact prediction and monitoring where relevant (Kugluktuk HTO Issue #3.5 and #3.7)	Zinifex	FEIS	Information on Ekati wolf observations to be provided.		
133	Incorporate impact assessment analysis for muskoxen in response to an IR in Volume 11 into the FEIS (Kugluktuk HTO Issue #3.5 and #3.7)	Zinifex	FEIS			
134	Begin DNA-based pre-construction monitoring program for wolverine in Spring 2008. Zinifex will help with existing Kitikmeot project in 2008 to help refine the methodology in order to investigate implementation of a similar program for grizzly bear as soon as possible in consultation with the GN and HTO (HTO Issue #3.6.1, 3.6.2, GN Issue #5)	Zinifex, GN and Kugluktuk HTO	Monitoring/FEIS	Zinifex will help with existing Kitikmeot project in 2008 to help refine that methodology, which will then be implemented at High Lake in subsequent years. Discussion to be provided in the FEIS.		
135	Reconsider the appropriateness of monitoring of small mammals for contaminants over the life of the mine. If appropriate the program will be implemented and if not an appropriate alternative is to be proposed (Kugluktuk HTO Issue #3.8)	Zinifex	FEIS	This study to be tied to the vegetation contaminants study, where baseline data will be collected for small mammals but no additional monitoring or analysis work will be completed unless increases in contaminants are observed in vegetation.		
136	Provide threshold contaminant levels in vegetation that would trigger next level in investigation. (Kugluktuk HTO Issue #3.8)	Zinifex	FEIS			

Draft List of Commitments for the High Lake Project (06MN082)
(as of September 12, 2008)

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
137	Acknowledge potential risks to Peary Caribou and Dolphin-Union Caribou in general and with respect to ice-breaking, the lack of information on Peary Caribou, and the potential for Zinifex to participate in partnerships with the GN and other stakeholders in the future to address information needs for Peary Caribou (i.e., collaring programs). (GN Issue #10).	Zinifex	FEIS	Acknowledgement only, commitment in principle but contingent upon financial considerations. Long term commitment.		
138	Collect ice condition data prior to shipping to minimize the chance of ice-breaking and interference with caribou movements (GN Issue #10).	Zinifex	FEIS			
139	Study caribou movements across tracks left by ice-breaking carriers. (GN Issue #10).	Zinifex	FEIS	Acknowledgement only, commitment in principle but contingent upon financial considerations.		
140	Acknowledge the issue of ice breaking during the traditional open water season is a possibility because ice formation is getting less predictable and the issue may have to be dealt with on a case-by-case basis in consultation with stakeholders. (GN Issue #10)	Zinifex	FEIS			
141	Acknowledge the need to partner with the GN (HEROs project) and the Nunavut Wildlife Management Board (NWMB) in the Nunavut Wildlife Harvest Study to quantify hunter activity in the Regional Study Area (RSA) rather than undertaking an annual study. (GN Issue #1)	Zinifex	FEIS	Acknowledgement only, commitment in principle but contingent upon financial considerations and further development of program. Zinifex agrees to work on methodology to understand effect of project on harvest in coordination with existing GN & NWMB efforts.		
142	Initiate further baseline and pre-construction monitoring studies of common eiders, upland birds and inland waterfowl/loons as detailed in the Environment Canada Issue #s 1, 2 and 4, and KIA/NTI Issues #154 and #155.	Zinifex	summer 2008	Data to be included in annual wildlife reports.		
143	Update monitoring of upland birds with new baseline study data collected pre-construction (EC Issue #3), planned in 2008	Zinifex	summer 2008	Data to be included in annual wildlife reports.		
144	Provide additional discussion of aircraft disturbances and mitigation measures related to migratory birds. (EC Issue #5)	Zinifex	FEIS			
145	Clearly identify relevant Species at Risk and critical habitat(s) potentially affected by project activities. Outline proposed mitigation measures and monitoring plans, and include a cumulative effects assessment for these species and habitats. (EC Issue #7)	Zinifex	FEIS	A concise summary will be provided in the FEIS within the section that will serve as Comprehensive Study Report for CEAA		
146	Conduct a flight survey to document moulting distribution within 4-5 km of the proposed dock site in order to establish whether or not dredging will effect moulting sea ducks. (EC Issue #11)	Zinifex	summer 2008	Survey to be conducted prior to construction to collect pre-construction monitoring data which will aid in confirming impact predictions. Data to be included in annual wildlife reports.		
147	Incorporate the recommendations on predator control measures contained in Environment Canada's technical review comment submission. (EC Issue #6)	Zinifex	FEIS			
148	Provide a discussion on proposed mitigation measures for accommodating the passage of wildlife with regard to the crush size and grade of materials to be used in construction of the all-weather road (GN Issue #9).	Zinifex	FEIS			
149	Remove the reference to caribou as a proxy for Muskoxen and consider Muskoxen and caribou separately.	Zinifex	FEIS	Zinifex agrees to recognize inherent differences between muskox & caribou and interpret survey results for each species.	<p>COMMENTS FROM ZINIFEX: Zinifex does not support this commitment. Zinifex suggests that the requested commitment is not warranted, as Zinifex has previously described the rationale for VEC selection in Volume 10 and Volume 6, Section 3. Additionally, mitigation measures have been extensively developed and documented in Volume 8, Section 2.1 for caribou and other large mammals (such as muskoxen); removing the reference to caribou as a proxy serves no purpose in assessing or mitigating impacts. Zinifex will however, better acknowledge that the species differ in any subsequent documents.</p> <p>COMMENTS FROM GN: During a teleconference between DOE and Zinifex on Feb. 22, 2008, Zinifex has agreed to consider muskox & caribou separately in future documents for FEIS and WMMP. Zinifex agreed as indicated in Column E that there are inherent differences between the two species; therefore, it is logical not to use caribou as a proxy for muskox. Zinifex also agreed to put in a paragraph acknowledging how the species differ in any subsequent documents. Finally, Zinifex should also describe why Muskoxen were not chosen as a VEC in the FEIS as committed by Zinifex previously. The rationale for VEC selection in the DEIS does not justify why muskox was not chosen as a VEC.</p>	
150	Revise the proposed caribou survey methodology to include recommendations from Government of Nunavut recommendation #6, to include a 0 to 200 metre distance marker for distance sampling.	Zinifex	FEIS	Zinifex agrees to use markers on aircraft struts to define bins in aerial surveys.		
151	Increase survey flight height to a minimum of 610 m to avoid disturbance to wildlife. (GN Issue #8)	Zinifex	FEIS	To be included in the Wildlife Mitigation and Monitoring Plan. Zinifex will request, where practical and deferring to Transportation Canada regulation, that pilots maintain a 610 m flight height to reduce disturbance to wildlife. Zinifex notes that this recommendation does not pertain to wildlife survey flight heights.		
152	Design waste rock piles with suitable materials to allow for wildlife passage. (GN Issue #9)	Zinifex	FEIS			

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
153	Hold a meeting with the Kugluktuk HTO, KIA, and GN to revise the Wildlife Mitigation and Monitoring Plan. (GN Issue #3)	Zinifex	prior to FEIS	In combination with other meetings agreed upon (i.e. partnerships with GN, Kugluktuk HTO, and potentially KIA) This meeting was held the week of January 28, 2008. Unresolved commitments were addressed (including the need to clarify the rationale and justification of thresholds identified within the WMMP), and there are no outstanding issues.		
154	Zinifex biologists (Terrestrial, Marine, Fisheries) will meet with the Kugluktuk HTO to exchange information and discuss mitigation and monitoring of wildlife for the High Lake Project. (HTO)	Zinifex	Prior to FEIS	Meetings topics may be combined or separate.		
155	Clarify the use of total allowable harvest as summarized as follows (GN Issue #2): "Zinifex suggests that the levels of harvest (TAH) identified by DOE biologists as sustainable were used primarily to define thresholds, and will provide a reasonable (if not approved), measure of the upper limit of sustainable wildlife harvest level. Zinifex wishes to clarify that it was never stated that Inuit harvest would be restricted in the RSA, only that the road was a private access road. For grizzly bear, most harvest is sport hunting that is currently quota regulated, and that quota is not expected to change. Patterns of subsistence harvest of grizzly bear indicate that non-regulated Inuit harvests do not occur in the area, and because the road development will be maintained as private, with restricted public access, a change in this pattern is not anticipated. However, if Inuit subsistence harvest were to occur in the area, it would likely be compensatory to harvest elsewhere in the population. Given these factors, a revision of the impact assessment is unnecessary as requested, as no change in impact predictions or conclusions will result due to the inclusion of increased non-regulated Inuit harvest. For wolverine, the current harvest within the W/01-KT population is approximately 120 wolverines per year, and Zinifex predicts an addition of up to 1.25 mortalities per year to the total harvest as a result of the project. This level of impact is below the criteria of a high magnitude and significant effect, and well below that of the 160 per year identified in the draft TAH documents as a level of sustainable harvest. Indeed, the Draft EIS considers the current state in which there are no enforcement or regulation of wolverine harvest by Inuit (~120 wolverine harvested per year)."	Zinifex	FEIS	Include a statement in the FEIS to indicate that if any problem bear is killed at the site, this would be an additive mortality, not a compensatory mortality, because problem kills are not taken off the quota.		
156	Include a discussion of mitigation measures to protect wildlife in case of a marine spill. (EC Issue #9)	Zinifex	FEIS	Zinifex commits to a revision of the Emergency Response Plan, such that a Marine Spill Response Plan is included. Zinifex will provide this to barge operators so that operators can include those procedures with their own plans.		
157	Discuss fully the issues, mitigation measures and risks associated with the introduction of invasive species due to ballast water exchange. (EC Issue #11)	Zinifex	FEIS		COMMENTS FROM ZINIFEX: Zinifex does not support this commitment. Zinifex has previously addressed this concern in Volume 10, Section 3.7.2.5. Zinifex will insist that the vessel operator comply with all codes and regulated practices, and that the operator will make use of the best available technology to prevent the introduction of aquatic invasive species from ballast water.	
158	Provide a clear discussion and rationale for selection of threshold values selected for various species. (KIA Issue #159)	Zinifex	FEIS	Consider increasing beta values for determining a change from baseline conditions, rather than increasing threshold values for species with greater variability.	COMMENTS FROM ZINIFEX: Zinifex does not support this commitment. Zinifex provided discussion and rationale for selection of threshold values in Volume 6 Section 3.6.3 of the Draft EIS. Uncertainty surrounding data for species with greater variability in distribution and abundance will diminish as more baseline/monitoring data becomes available. Adaptive management plans will be in place to adjust mitigation as required and if warranted.	
Landforms, Soils and Vegetation						
159	Implement mitigation measures for landforms and soils, including but not limited to: providing a clearance over the underlying tundra of between 15 cm and 30 cm, to be determined based on-site conditions as well as monitoring the road and ensuring proper interruption of its use. (INAC Recommendation #16)	Zinifex	FEIS			
160	Update impact predictions and include the results of the additional vegetation surveys that will be conducted in the summer of 2008. Include a discussion of rare species in the context of the study area. (INAC Recommendation #49)	Zinifex	FEIS			
161	Identify any adverse impacts to the vegetation from the winter roads including the addition of sand to the roads and insufficient snow pack. Include mitigation measures and a plan to minimize these impacts. (INAC Recommendation #50)	Zinifex	FEIS			
162	Use only northern seed sources free of aggressive non-indigenous species for reclamation and revegetation purposes. (INAC Recommendation #51)	Zinifex	FEIS			
163	Implement techniques to avoid the introduction of aggressive/invasive species for revegetation and reclamation.	Zinifex	FEIS			
164	Identify the seed sources used for reclamation and revegetation purposes prior to the implementation of the closure plan. Include certificates indicating that the northern seeds are free of aggressive species.	Zinifex	Prior to implementation of closure plan			

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
165	Include new standards and/or procedures for snow packs and snow heights over vegetation for winter roads when available.	Zinifex	When available			
Human and Ecological Health						
166	Provide additional information in the Emergency Response Plan to take into account the lack of secondary or tertiary care facilities in the Kitikmeot region (GN Issue #40)	Zinifex	FEIS			
167	Include a Summer Student Program in the Human Resources Plan	Zinifex	FEIS			
Socio-Economics						
168	Include a discussion on opportunities and options available to start incentives for adult basic education (ABE) programs	Zinifex	FEIS			
169	Provide a criterion to recognize equivalency testing.	Zinifex	FEIS	It was noted in the socio-economic presentation given at the technical meetings that equivalency testing/criteria would be employed to consider hiring of people with experience but who lack formal training.		
170	Include a discussion on preferential hiring (i.e. other aboriginal groups within Nunavut and long time northern residents.)	Zinifex	FEIS			
171	Include a discussion on the overlap of multi-party training programs (i.e. IIBA, governments, KEDC, etc) and include a discussion on how the company could get involved in existing multi-party mine-specific training plans, with reference to the recent MOU between the GN, Nunavut Arctic College, Miramar Mining, KIA and KEDC.	Zinifex	FEIS	It was noted in the socio-economic presentation given at the technical meetings that Zinifex would partner with the GN on training programs similar to those being developed with Miramar.		
172	Provide further discussion on anticipated labour competition and include mitigation measures if expectations for labour hire are not met. Analysis should include point of hire alternatives (e.g. other regions in Nunavut). (GN)	Zinifex	FEIS			
173	Clarify information related to opportunities available to Kitikmeot businesses for all phases of project development (GN Issue #29).	Zinifex	FEIS			
174	Review the most recent versions of community economic development plans for affected Kitikmeot communities and provide results (GN Issue #36).	Zinifex	FEIS			
175	Update the data in the baseline sections of the <i>draft EIS</i> (Volume 3, Section 1) that won't change the impact assessment	Zinifex	FEIS			
176	Provide a better description of the data sources used and the statistical methodology of primary data collected by Zinifex or on their behalf (Volume 3, Section 1).	Zinifex	FEIS			
177	Revise the presentation and referencing of the socio-economic data in the FEIS and monitoring documents	Zinifex	FEIS			
178	Provide a draft socio-economic (human development type) monitoring program that includes a means of tracking community perceptions of the project, a discussion of impacts resulting from increased prosperity, and a vulnerable group analysis. (INAC Recommendation 2.17.3)	Zinifex	FEIS	The final plan will be developed with collaboration with appropriate agencies (KIA, GN, INAC)		
179	Clean-up of baseline sections within the <i>draft EIS</i> for incorrect data, information, terminology and data interpretation	Zinifex	FEIS			
180	Provide current, reliable and appropriate baseline data to measure the socio-economic indicators that will be chosen for the monitoring plan	Zinifex	Monitoring plan			
181	Select socio-economic indicators in an interactive process with the different interested parties (GN, INAC, KIA), in order to add additional indicators beyond those presented and to monitor all the indicators chosen independent of the impact assessment.	Zinifex	Monitoring plan			
182	Include further discussion of the effects of the project on municipal services including community resupply. (GN Issue #28)	Zinifex	FEIS			
183	Discuss the significance of the impacts of the project on municipal services with the Department of Community and Government Services (GN Issue #28)	Zinifex	?			
184	Initiate partnership with Department of Community and Government Services for training and capacity building of highly skilled positions	Zinifex	?			
Archaeological Resources						
185	Provide information on the archaeological assessment of the all-season road or associated infrastructure, and update the AIS if necessary (GN Issue #42)	Zinifex	FEIS			
186	Enhance the employee awareness strategy by providing employees with information conveying Inuit perspectives on the cultural significance of archaeological resources and the role that personnel can play in protecting these resources (GN Issue #43)	Zinifex	FEIS	Zinifex will verify if information within DEIS		
187	Provide further clarification regarding the impact of the project on archaeological resources and include an explanation to why the potential loss of 20 of the 45 sites was considered "small" within the EIS (KIA/NTI Issue #18.1)	Zinifex	FEIS			
Traditional Knowledge (TK)						
188	Integrate data from the Naonaiyaotit Traditional Knowledge Project into the FEIS	Zinifex	FEIS			
Cumulative Effects						

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
189	Provide a written recognition of potential cumulative impacts to the Peary caribou herd owing to a current lack of available information. (GN recommendation)	Zinifex	FEIS	If data collection regarding the Peary caribou undertaken by others, Zinifex will collaborate with them and consider any resultant mitigation requirements		
190	Provide maps which clearly show other projects in the Cumulative Effects Study Area and their associated zones of influence with further clarification on methodology used in the cumulative effects assessment for heavy metal dust dispersion on vegetation. (GN Issue #4)	Zinifex	FEIS	To include possible routing between High Lake and Ulu. Zinifex agrees to sample in gradient for dust dispersion instead of using potentially confounded control and affected sampling sites, provides more detailed methodology in this section, and provides a map of cumulative effects overlap 40 km radius. To be completed if routing between High Lake and Ulu is anything other than a winter road		
191	Provide an updated map and cumulative effects analysis of mobilization and shipping tracks including the eastern and western routes with all key areas relating to VEC's and VSEC's clearly identified. This includes sensitive species concentrations, migratory bird areas and other areas of recognized biological importance as outlined in NIRB's final scoping list (August 30, 2007). (INAC Recommendation #54)	Zinifex	FEIS	This is required to address the full range of potential cumulative effects, particularly in regard to overland and shipping transportation.		
192	Provide an updated analysis and discussion of potential cumulative effects (including those related to mobilization and shipping), with soon-to-be released information from the Bathurst Inlet Port and Road project. (INAC Recommendation #54)	Zinifex	FEIS			
193	Provide an expanded discussion on potential impacts to community re-supply in the Regional Study Area (RSA) from project mobilization and re-supply. Include more detail on the number of required freight movements and the expected class of vessels to be used for project re-supply. (GN Issue #28)	Zinifex	FEIS			
194	Revise the discussion of shipping and mobilization in the cumulative effects assessment with information provided by Transport Canada on the yearly ship movements through the Northwest Passage and tracks used for navigation.	Zinifex	FEIS			
195	Provide a discussion and update the cumulative effects assessment to address potential impacts to vegetation, flora as well as species at risk. (INAC Information Request #88 and #91)	Zinifex	FEIS	The discussion was to "include more rationale as to why vegetation VECs were not included in the cumulative effects assessment".		
Transboundary Effects						
Accidents and Malfunctions						
196	Provide an outline Oil Pollution Emergency Plan for the Oil Handling Facilities (OHF) in accordance with the Response Organizations and Oil Handling Facilities Regulations, for inclusion within the Accidents and Malfunctions section.	Zinifex	Prior to FEIS	This outline will document on how the OHF Regulations will be complied with, components of the plan, details as to what the plan will provide and a linkage/explanation as to how this plan fits into the "Accidents and Malfunctions Section".		
197	Reference the Response Organizations and Oil-Handling Facilities Regulations in Appendix I03	Zinifex	FEIS	This act is not enforced but regulations still apply		
198	Provide discussions that will occur with the Canadian Coast Guard regarding Accidents and Malfunctions.	Zinifex	FEIS	TC is requesting that Zinifex provide a detailed summary of the discussions that will occur with the Canadian Coast Guard concerning responsibilities associated with "Accidents and Malfunctions".		
199	Provide an updated Preliminary Emergency Response Plan (DFO Issue #2)	Zinifex	FEIS			
200	Provide information on the SOPEP (Ship) and OPEP (OHF) and the Canadian Coast Guard responsibilities in the unlikely event of a spill in the Arctic Waters that is not covered by the Zinifex Spill Response Plan.	Zinifex	FEIS	TC is requesting that Zinifex articulate an understanding of how a SOPEP and OPEP would fit with Coast Guard's area plans in the arctic.		
Monitoring and Management Plans						
201	Include contingencies to prevent convective heating post closure within the closure plan for the West Zone Underground (INAC Information Request #57).	Zinifex	FEIS	From Hydrology/Hydrogeology breakout session discussions around using a 'plug'		
202	Provide a mitigation plan for overland pipeline protection and environmental protection from potential leaks during the final design and regulatory phases (NRCan Issue C1 (item i & ii))	Zinifex	FEIS	Design memo to be included in FEIS and more detailed design brief to be provided at water licence stage.		
203	Provide additional details in the <i>draft</i> Waste Management Plan as described in GN Issue #24 and in Section 2.4.2 of INAC's Technical Review Comments (INAC Recommendation #11), including more details on the management of hazardous waste and treatment of hydrocarbon contaminated soils and runoff from those facilities.	Zinifex	FEIS			
204	Incorporate the Incineration Management Plan developed under Commitment #14 within the <i>draft</i> Waste Management Plan. (INAC Recommendation #11)	Zinifex	FEIS			
205	Develop monitoring plans with sufficient detail to conform to the requirements of the Project Terms of Reference (TOR) and be reflective of the current state of the project. (INAC Recommendation #55)	Zinifex	FEIS with details finalized at water licensing	Plans should be comprehensive to enable the identification of potential environmental risks and impacts as well as include details including extended duration of monitoring at closure.		
206	Prepare the following <i>preliminary</i> management plans in addition to the plans presented in the DEIS: Environmental Management System, Environmental Protection Plan (procedures for general works during different project phases), Occupational Health and Safety Plan, and Erosion and Sediment Control Plan. (INAC Recommendation #55)	Zinifex	FEIS	Plans should be developed in support of the environmental impact assessment.		

Draft List of Commitments for the High Lake Project (06MN082)
(as of September 12, 2008)

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
207	Provide further detail on the way the management plans will be implemented during the different phases of the mine .	Zinifex	FEIS			
208	Zinifex and INAC will develop a communications plan that meets all of INAC's issues. (INAC Recommendation #56)	Zinifex and INAC	FEIS			
209	Provide an updated comprehensive preliminary access and traffic management plan that encompasses all modes of traffic including air, road and shipping. The plan should also include roles and responsibilities, and monitoring of the plan. (INAC Recommendation #57)	Zinifex	FEIS			
Other Factors						
210	Provide estimate of security using RECLAIM or similar model. The model will also use KIA's model for calculating financial security for the High Lake Project, which involves incorporating Inuit values and reclamation end-points or objectives into the estimate.	Zinifex	FEIS	INAC has provided RECLAIM version 5 to Zinifex. Commitment addresses some of NRCan's concerns regarding long-term monitoring and maintenance (NRCan Issue #A and #B)		
212	Submit final designs, drawings and plans for all structures related to navigable water crossings as soon as they become available (TC)	Zinifex	Prior to FEIS	This is required for NWPP		
214	Clarify inconsistencies in maps illustrating Inuit Owned Lands and Crown Lands for mine site location (INAC Supplemental Information Request #1)	Zinifex	FEIS			
216	Apply for all project-related Land Use Permits and Crown Land Authorizations (INAC general comment)	Zinifex	Prior to FEIS			
218	Draft the wording for the capacity of the renewable resource in consultation with the Federal Authorities.	Zinifex and Federal Parties	Prior to FEIS			
220	Undertake additional geological investigations to confirm the competency of the rock in the West Zone decline (INAC Recommendation #2).	Zinifex	FEIS	Actual geophysical investigation to be done prior to ramp development.		
222	Provide more detail on how the kinematic analysis was performed for the open pit design and consider incorporating NRCan's recommendation #C3 in the analysis while developing the open pit.	Zinifex	FEIS/prior to final design	More detailed kinematic analysis will be performed while developing the open pit. The analyses recommended may not need to be conducted for the FEIS but will need to be conducted prior to the final design.		
224	Incorporate seals for mine vents/openings at the West Zone at the closure stage into the final design.	Zinifex	FEIS/final design	To address issues related to permafrost maintenance/thaw		
226	Provide a more detailed discussion on the effect of the environment on the proposed dock structures at Grays Bay (i.e. climate change, precipitation, etc.).	Zinifex	FEIS			
228	Provide more detailed diagrams and include a description clarifying the proximity of Lake L22 to the West Zone underground mine workings. (NRCan Issue #B1)	Zinifex	FEIS			
230	Provide a detailed description of the underground mine and incorporate the updated information into the Project Description. The overall more detailed and updated Project Description will be used as the basis for the impact assessment. (INAC Recommendation #2)	Zinifex	FEIS	A design based memorandum for the underground mine will be prepared after discussions with engineers from Zinifex and INAC prior to the FEIS.		
232	Clarify inconsistencies in the overall project disturbance footprint. (INAC Information Request #2)	Zinifex	FEIS			
234	Include all project facilities and components within the site plans (INAC Information Request #1)	Zinifex	FEIS			
236	Include a discussion on the appropriate mitigation measures concerning the Transportation of Dangerous Goods with respect to shipping activities.	Zinifex	FEIS	Identify the types of dangerous goods and quantities expected to be shipped into/out of the project.		
Tailings Containment Facility (TCF)						
237	Provide a discussion that consider further contingencies in the dam design including the upstream beach tails followed by a re-evaluation based on climate sensitivity analyses (INAC Information Request# 80, #84, & INAC Recommendation #8, NRCan Issues #A6 and #C2)	Zinifex	FEIS	To be conducted under the FMEA work.	COMMENTS FROM NRCan: Note that during May 2008 workshop the Proponent and some workshop participants worked through FMEA which included the tailing containment facility. Included in this analysis was the identification of contingencies and mitigation measures. A formal report on the FMEA has not been provided.	Partially completed during workshop held in May 2008.
238	Provide more detail on the contingency plans for tailings dam seepage control as a result of possible future foundation and abutment thawing and loss of thermosyphon effectiveness. (KIA)	Zinifex	FEIS	To be conducted under the FMEA work.	COMMENTS FROM NRCan: Note that during May 2008 workshop the Proponent and some workshop participants worked through FMEA which included the tailing containment facility. Included in this analysis was the identification of contingencies and mitigation measures. A formal report on the FMEA has not been provided.	Partially completed during workshop held in May 2008.
239	Provide details on monitoring plan and mitigation measures for the tailings containment facility. (INAC Recommendation #60, NRCan #A6 and #C2)	Zinifex	FEIS	To be conducted under the FMEA work.	COMMENTS FROM NRCan: Note that during May 2008 workshop the Proponent and some workshop participants worked through FMEA which included the tailing containment facility. Included in this analysis was the identification of contingencies and mitigation measures. A formal report on the FMEA has not been provided.	Partially completed during workshop held in May 2008.
240	Include a discussion on the concept of long term monitoring of all mine waste facilities maintenance and provide a comprehensive Failure Modes and Effects Analysis, including failure mode for the TCF and the waste rock dumps at closure. (INAC Recommendation #60 and NRCan Issues #A5, #A6, #B2, #C2)	Zinifex	FEIS	Conduct a risk analysis, including consideration of: risk of catastrophic failure of the dam; implications of permafrost thawing on the designs for closure, including environmental impacts (INAC Recommendation #60).		

Draft List of Commitments for the High Lake Project (06MN082)
(as of September 12, 2008)

Commitments						
No	Pre-Hearing Commitment	To be provided by:	Timeline	Additional Comment	Comments from reviewers	Completion Date
241	Provide a summary of the operational measures to prevent ice entrapment within the AB pit and ensure encapsulation of the tailings (EC Issue #33)	Zinifex	FEIS			
242	Provide a more detailed discussion of the in-lake tailings discharge methodology and contingency plans if the tailings surfaces are too high (NRCAN Issue #C1 (item iii) & #C2 and INAC Recommendation #5 & #6)	Zinifex	FEIS			
Alternatives						
243	Update the alternative assessment for water supply sources and include the rationale for the selection of the preferred alternative (DFO Issue #3.1).	Zinifex	FEIS			
244	Provide an updated alternative assessment of the dock structure. (DFO Issue #3.2)	Zinifex	Prior to FEIS			
245	Provide further discussion to clarify the preferred alternative for the tailings containment facility. Include a schedule of the sequence of mining operations. (INAC Recommendation #60 and NRCAN Issue #C2 and #C4)	Zinifex	FEIS	This commitment refers to alternative sites for tailing disposal in addition to High Lake, i.e. D pit and dry/frozen tailings placed above.		
246	Provide an alternatives assessment for the design plans for water crossings AS02, AS05, AS08, and AS10. Include proposed mitigation measures to avoid the harmful alteration, disruption or destruction (HADD) of fish habitat (DFO Issue #3.3)	Zinifex	FEIS			
247	Provide a detailed discussion of up to date alternatives, including quantified data, the assumptions made and the rationale for the selection of the preferred alternatives. Information to be presented in a more organized and traceable manner within the FEIS. (INAC Information Request #15)	Zinifex	FEIS			
248	Include an analysis of transportation alternatives for both on-site transportation and off-site transportation (shipping). (INAC Information Request #15)	Zinifex	FEIS			
249	Address all concerns regarding alternatives analyses in consultation with interested parties (NRCAN Issue #C4)	Zinifex	FEIS	Meeting to be held with interested parties to make sure all section for the alternatives analyses are included in the FEIS.		
Borrow Sources						
250	Provide further discussion on the characterization of the waste rock and include the information into the closure plan. (INAC Recommendation #14 and NRCAN Issue #E)	Zinifex	FEIS			
251	Clarify that borrow sources, roads leading to borrow sources, and pullouts along roads are included in the calculation of the disturbance footprint. (INAC Information Request #2)	Zinifex	FEIS			
252	Clarify the inconsistency regarding the use of esker material as gravel source (INAC Information Request #6)	Zinifex	FEIS			
253	Conduct additional field investigations including geophysical investigations to supplement information on granular material characteristics, including ice contents.	Zinifex	FEIS/regulatory phase	Detailed borrow management plans will be required for the regulatory phase (NRCAN)		

Notes:

AIS = Archaeological Impact Statement
 AQEMP = Air Quality Effects Monitoring Program
 DEIS = Draft Environmental Impact Statement
 DFO = Fisheries and Oceans Canada
 EC = Environment Canada
 FEIS = Final Environmental Impact Statement
 GN = Government of Nunavut
 HC = Health Canada
 HTO = Hunters' and Trappers' Organization
 INAC = Indian and Northern Affairs Canada
 KEDC = Kitikmeot Economic Development Corporation
 KIA = Kitikmeot Inuit Association
 MOU = memorandum of understanding
 NAG = non acid generating

NIRB = Nunavut Impact Review Board
 NRCAN = Natural Resources Canada
 NTI = Nunavut Tunngavik Inc.
 NWMB = Nunavut Wildlife Management Board
 NWPP = navigable waters protection program
 PAG = potentially acid generating
 TC = Transport Canada
 VEC = valued ecosystem component
 VSEC = valued socio-economic component
 WHO = World Health Organization
 Zinifex = Zinifex Canada Inc.