Memorandum

MINISTRY OF ENVIRONMENT
Environmental Protection Division
Regional Operations Branch
Omineca & Peace Regions

Date: November 23, 2007 **File: 44500-30 Hermann**

To: Bob Hart, EAO

Re: EPD Supplemental Aquatic Issue Comments on Western Canadian Coal Hermann Issue Tracking Document of June 2007

I have reviewed the Hermann Mine Project Issue Tracking Document provided by Western Canadian Coal on June 19, 2007 and have the following responses to items 1 to 89. The company is recognized for their efforts in addressing our original comments.

#5 - 3-26 – We accept that neither the possibility of density gradients establishing in or pulsed contaminant discharges occurring from a de-stratified pit lake water column has been considered in this assessment. We agree that the seasonal sulphate pulse at Little Windy (Figure 3.1-1) may indicate a lake overturn. We also agree that pulsed discharges may have been implicitly considered through examination of the QOC data. However, the low sampling frequency (2 to 3 samples per year) shown in Figure 3.1-4, may have missed seasonal pulses that could have implications to downstream water quality. This issue should be addressed at permitting by requiring a suitable frequency of pit lake discharge water quality monitoring (monthly). No further information is required at this time.

#7 - 3-125 – If being splashed with "road mud" was indeed the source of Na, Al and Cr in the field bin leachate data presented in Table 3.3-20 and if those data are reported as dissolved (EPD understanding, but not indicated on pages 3-121 to 3-125), the water quality modeling, at least related to Al and Cr, should be reassessed. One of the main assumptions used in this modeling is that "non-contact" waters (including road runoff) will not carry notable concentrations of dissolved metals. Only "contact" waters (dissolved metals from waste rock, coarse coal refuse, etc) are considered. The statement in the Issue Tracking Document indicates otherwise, and that substantial metal concentrations are related to "non-contact" flows. Was the source of Na, Al and Cr indeed "road mud" or drilling fluid additives and/or road salt dust (as per 3-121)? Have the drilling fluid additives and road salt been analyzed for Al and Cr? Regardless, unless drilling fluid additives and road salt will no longer be used or are to be better contained during mine operations, "non-contact" road runoff appears to be an issue that should be included in modeling. As a first step and at this time, this issue requires better explanation by WCCC.

#12 - 4-55 – We take "During operations, diversions will be designed and maintained as required, to address any erosion issues" to mean that sediment pond treatment will be installed if necessary to effectively manage sediment. The WCCC response has not addressed the visual aspects of the high side hill cuts. Can WCCC provide an indication at this time of just how large some of these side hill cuts may be?

#18 – (4-144/145) and # 43 (9-47) – EPD sees our request for baseline fish tissue work on M20 Creek and Murray Rivers as parallel to past baseline development on Blind Creek and the Sukunka River. Juvenile bull trout (seasonal to Blind Creek) were collected in Blind Creek and rainbow trout (the surrogate) were collected in both Blind Creek and the Sukunka River. EPD's position is that these fish tissues should be collected as part of baseline or at least early in the mine operational phase. We accept that, given historical mine development in the area, Murray River tissues (and sediment) collections can be achieved as part of a joint cumulative effects assessment. This still leaves the requirement for the collection of bull trout tissues in M20 Creek. Our position as per comments # 63 and # 67 (10-6) remains.

#19 - 4-152 – The issues of increasing lotic periphyton biomass, and possible related increases in organic selenide production were not specifically discussed in the referenced papers. This issue can be addressed through the regular periphyton monitoring programs (for density and Se) that will be undertaken during operations at Hermann. No further comment is requested of WCCC.

#20 - 4-158 – As per our recent comments on the Wolverine 3.0 permit application, WCCC is requested to provide EPD with information it may have with regard to its Hermann related statement "Slimy sculpin toxicity tests beginning with fertilized eggs have been conducted successfully by USEPA (Duluth, MN)". We have discussed the development of sculpin egg toxicity methodology with Dr. Monique Dube of U. Sask and accept that proven sculpin egg toxicity methods should be available in a few years to test the effects of significant increases in whole body selenium concentrations. Dr. Dube, however, has not been able to locate the Duluth information you refer to. WCCC is requested to provide this information to EPD during certification.

#21 – 4-158 - **Commitment requested** - WCCC's Oct 17, 2007 response to the second part of this question appears to have missed the intent. We agree that "recruitment assessment" will be one of the options used to assess impacts, as necessary. However, we question whether the current baseline inventory (simple presence/absence) is sufficient for any future comparative assessment of recruitment. We have discussed this issue with Environmental Stewardship fisheries staff in Fort St. John who share our concerns. We believe that the commitment to assess recruitment if a fish tissue selenium trigger concentration is reached should be supported by a similar level of assessment during the pre-impact period. EPD recommends that as a condition of mine certification, Western Canadian Coal be requested to propose for MOE approval a suitable method of population or stock assessment of watersheds associated with the Hermann Coal project. This stock assessment would be required for a minimum three year period in order to establish population age structure and natural levels of recruitment and mortality. It should include a control stream to help differentiate the effects of annual climatic versus mine related influences. MOE would be pleased to further discuss this issue with Western.

#24 – (8-8) and #26 – If, following August 2006, the "next suite of groundwater samples was collected in mid July 2007", WCCC's commitment to sample quarterly for one year of baseline

development (8-49) appears not to have been met. EPD requests that WCCC provide an update of the groundwater sampling history at this time.

#39 - 9-15 – EPD has discussed the issue of total versus dissolved Cd guidelines with Lorax, but no agreement on the use of the USEPA guideline has been reached. Those discussions are ongoing and should be resolved by project certification.

51 – 9-59 – EPD believes that the Dillon Mine was not in operation for enough years prior to the Brule EA review to allow the effective ground truthing of water quality modeling. Again, ground truthing of the current modeling process used at suitable operating (or post closure) mine will be requested as part of future mine applications. No further information is required at this time.

#52 - 9-78 – EPD acknowledges WCCC's agreement to develop water quality objectives prior to Hermann certification. EPD requests information at this time on an intended completion date for the objectives development work.

#60 - 9-123 and 9-148 – EPD suggests that to remove the effect of skewing caused by the freshet total metal concentrations, future cumulative effects assessments should make use of the winter low flow concentrations rather than annual averages. Each mine is required to predict and collect water quality over the various low flow periods. It seems logical that this be extended to cumulative effects assessment. No additional comment is requested of Western at this time.

ITD # 64 and #86 (10-67) – With regard to the recent locating of *Didymosphenia geminata* in watersheds near Tumbler Ridge and to EPD's original comments, we have now reviewed older periphyton data (early 1980s) and can state that *Didymosphenia geminata* did exist in watersheds of the Tumbler Ridge area during the early 1980s under the name *Gomphonema geminatum.* With this recent understanding that the attached algae was not introduced by WCCC, we agree that any periphyton monitoring done by the company should not be justified solely on a need to further define this species' local distribution.

65 – 10-2 – EPD acknowledges both the MOFR permitting process for road development and the detailed sediment prevention information provided in Appendix 4.3-1. Our position remains, however, that road sedimentation can impact periphyton and benthic invertebrate communities and that these monitoring tools may need to be used on a site specific basis to assess sediment related impact. No further information is required here.

#69 - 10-10 – The difficulty of determining the relative coverage of each periphyton community under turbid or high velocity conditions is acknowledged. Nonetheless, EPD plans to continue to request this relative abundance information for future periphyton assessments.

74 - 10-16 – Given the limited number of periphyton and benthic invertebrate tissue samples collected for chemical analysis (we acknowledge the low biomass density in the M20 drainage), an

appreciation of the degree of confidence in the numbers we do have available is important. Of course the lab's internal batch QA may report data from a project unrelated to Hermann. Regardless of which project was assessed in the batch process, both the consultant and the agencies should be provided the opportunity to review that batch QA data for how it may reflect on the site specific data reported for Hermann. EPD again requests that the internal batch specific data for Hermann periphyton and benthos chemical analysis be provided.

I look forward to discussing these issues with the EAO and Western Canadian Coal Corp in the near future. I can be reached at 250-565-6455.

Yours truly,

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