Supplemental Information Responses

Part II – Mining

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II.1 GENERAL

II.1. Volume I, Section A.1, Page A-1

CVRI states "The proposed mining areas of MW and YT are west of Highway 40 and 47. There will be new road crossings, transportation and utility corridors required to join the mine extension to existing mining areas." Provide technical details including schematic maps depicting the plan and cross-sections of these features.

Response:

In order to join Mercoal West to the existing mine area, a haulroad and powerline must be extended to the new area. The haulroad will involve crossing of Highway 40, CN railway and a tributary to Mercoal Creek. Figures II.1-1A and II.1-1B illustrate the general layout of this infrastructure. CVM has contracted UMA to undertake detailed design of the highway and rail crossings (Appendix II.1-1). This design report will be utilized by CVM in Application submissions to Alberta Transportation for the highway crossing. The design report will also be utilized in discussions and planning with CN for a rail crossing agreement. Detailed design of the Mercoal Creek tributary crossing is illustrated in Figure II.1-2.

In order to join Yellowhead Tower to the existing mine area, a haulroad must be extended to the new area. The haulroad will involve crossing of Embarras River, Chance Creek, Highway 47, and two crossings of CN railway lines. Figure II.1-3 illustrates the general layout of this infrastructure and Figures II.1-4 and II.1-5 show detailed design of the Chance Creek crossing and Embarras River crossings, respectively.

Design specifications proposed for the Mercoal West Haulroad will be utilised in Application submissions to Alberta Transportation for the Highway 47 crossing in Yellowhead Tower. Similarly, Mercoal West rail crossing plans will be utilized in development of rail crossing agreements with CN in Yellowhead Tower.

II.2. Volume I, Section A.4.3.1, Page A-7

CVRI refers to Table A.4.3-1 and Figures A.1.0-2 and A.1.0-3.

a. Provide revised figures that clearly show the section, township, range and meridian demarcations and place hatch marks for the existing Permit No. C 2005-6.

Response:

The full mine permit boundary for Mercoal West is shown on Figure II.2-1, which illustrates both lands that are already included in Permit C2005-6 in the Mercoal West area and the new

land areas that CVRI is proposing to add to the existing permit. The entire mine Permit No. C2005-6 is not shown on the figures as it extends east into the existing active mine area.

Figure II.2-2 illustrates new land areas proposed for addition to the permit in the Yellowhead Tower area.

b. Provide a revised table which corrects the errors that are in 32-48-21 W5M and 24-48-22 W5M and separate the table into divisions of new and existing with the corresponding associated areas in hectares.

Response:

Table A.4.3-1 of the Application has been updated to account for the new mine plan for Mercoal West and is included as Table II.2-1, which lists both existing areas within the mine permit as well as lands that are to be added to Permit No. C2005-6 in the Mine Permit Amendment submitted in March 2008.

Table II.2-1 Proposed and Existing Mine Permit Areas for Mercoal West and Yellowhead Tower Areas

TWP-RGE	Sec	LSD/QTR	Existing Area (ha)	New Area (ha)
Mercoal West				
49-23-W5M	1	LSD 1, 5, 6, 7, 8; NE, NW	215	
	2	LSD 13, 14; NE	99	
	3	LSD 16	17	
	9	LSD 8, 11, 13, 14; NE	136	
	10	LSD 3, 5, 6; SE; NE; NW	246	
	11	LSD 9, 10; SE; SW; NW	228	
	12	LSD 1, 2; SW	99	
	15	LSD 1, 2; SW	99	
	16	LSD 9, 10; SE; SW; NW	230	
49-22-W5M	3	SW	66	
	4	SE; SW	133	
	5	LSD12; SE; SW	151	
	6	LSD 9, 10, 15; SE; SW; NW	247	
	7	LSD 4	17	
48-22-W5M	24	Portion of LSD 11, NE, SE, SW	204	
	25	LSD 1,2,5,6,7,8,10; NW		178
	26	LSD 5,6,7,8; NE; NW		198
	27	LSD 13,14; NE		98
	31	LSD 14; NE	83	
	32	LSD 6; SE; NE; NW	214	
	33	NE; NW; SE; SW	260	

Table II.2-1 Proposed and Existing Mine Permit Areas for Mercoal West and Yellowhead Tower Areas				
TWP-RGE	**Sec**	**LSD/QTR**	**Existing Area (ha)**	**New Area (ha)**
	34	LSD 4, 5, 6; NW	115	
	34	LSD 3,9,10; SE		115
	35	LSD 1,2,7,12; SW		130
	36	LSD 4		16
48-21-W5M	30	LSD 4		17
49-22-W5M	5	LSD 11		16
	6	LSD 16		17
Total			**2859**	**758**
Yellowhead Tower				
48-21-W5M	28	LSD 13,14,15		49
	32	LSD 1,7,8,11,13,14; NE		162
	33	LSD 9,10,15; NW; SW		178
49-21-W5M	4	LSD 4		16
	5	LSD 11,12,13; SE; SW		178
	6	LSD 6; NE; NW; SE		210
	7	LSD 2,12; SW		98
48-22-W5M	35	LSD 11,13,14		49
49-22-W5M	1	LSD 13,16		33
	2	LSD 2,3,4,6,7, 11, 14; NE		178
	11	LSD 1,8, 13,14; NE		130
	12	Entire Section		260
	13	LSD 1,2; SW		98
	14	LSD 9,10,11,12; S		178
Total			**0**	**1817**

II.3. Volume I, Section A.6, Page A-12

CVRI refers to the Forest Management Area (FMA), the Integrated Resource Plan (IRP) and the Coal Policy zones. Provide a map or a combination of maps that clearly show the proposed MW and YT developments with the above mentioned area plans that cover:

- *Plant Site Area and Regional Infrastructure*
- *Surface Dispositions*
  - *o Trapping Areas*
  - *o Oil & Gas Leases*
  - *o Pipelines, etc.*
- *Coal Dispositions*
- *Metallic and Industrial Minerals Permit*
- *Forest Management Agreement Areas*
- *Recreational Land Use.*

Response:

The land use study area was determined based on the extent of potential impacts to other land users in the area. The plant site, although not part of this Application, is located 20 km away from the proposed Mercoal West and Yellowhead Tower mining areas in NE24-47-20-W5M outside of the land use study area and is shown in Figure II.3-1. Regional infrastructure is also shown in Figure II.3-1.

The Mercoal West and Yellowhead Tower mine areas are located entirely within Forest Management Agreement Area 8800025, which is held by West Fraser. This FMA is 995,781 ha in size therefore not shown on a map.

The IRP and Coal Policy Zones are shown in the Application on Figures E.16.1-1 to E.16.1-3.

Trapping areas are shown in the Application in Figure E.16.4-1 and potential impacts discussed in Section E.16.4. Oil and gas leases, coal dispositions and metallic and industrial mineral leases are shown in the Application on Figure E.16.2-1 and surface dispositions, including pipelines, are on Figure E.16.2-2. Potential impacts to these land users are included in Section E.16.5.1 of the Application.

Recreational land use is shown in the Application on Figure E.16.3-1 with potential impacts discussed in Section E.16.5.2.

II.4. Volume I, Section C.3.2.2, Page C-23

CVRI states "Stage 1 development is scheduled to occur from May 2009 until April 2010." and "Prior to any surface disturbance CVRI will discuss the relocation of this line with Petro-Canada.". Also figure C.3.2-1 depicts the pipeline positioned approximately centreline in the east – west direction through the disturbance area.

Provide a chart depicting the timelines for the associated operations of the pit licencing, development and pipeline relocation operations.

Response:

A number of gas wells and pipelines are located within proximity of the proposed mining areas. CVM hopes to be able to operate the proposed mine activity in conjunction with continued operation of these gas production systems. The company's objective will be to co-operate with gas operators in developing mutually agreeable plans for simultaneous development of these resources.

Previous agreements have already been established covering some of the gas facilities currently in place. In other instances, agreements are yet to be established. Communication, discussions and planning is ongoing between the companies involved to develop and schedule various plans and activities to accommodate ongoing and proposed operations.

Only one gas line is located in the Mercoal West project area. This Conoco pipeline (PLA 991978) is located at the west end of the mining area. Based on the new mine footprint, mining does not extend to the pipeline, therefore there is no conflict with operation of the line. Figure II.4-1 shows the location of the pipeline relative to the mine plan. The line is approximately 330 m from the proposed mining limit.

There are four 'gas facilities' in the Yellowhead Tower project area which could be significantly impacted by proposed mining plans. These include:

- a Talisman pipeline (PLA 010346 and 010347) that traverses across the mining area in a north/south direction. The line crosses perpendicular to the coal structures. Pit 161 is impacted by the line. The current mine plan assumes that mining would take out the pipeline. Presumably, the line would be temporarily disconnected so that mining could progress through the pipeline. A new section of line would be built afterward. CVM will undertake discussion with the pipeline owner to determine an acceptable plan for accommodation of mining and operation of the pipeline. Mining in this area is scheduled for Q1, 2011. This provides sufficient time to accommodate planning and approval for a final plan;
- a Petro-Canada pipeline (PLA 032047) that traverses across the mining area perpendicular to the coal structures. Pit 151 is impacted by the line. The current mine plan assumes that mining would take out the pipeline. Presumably, the line would be temporarily disconnected so that mining could progress through the pipeline. A new section of line would be built afterward. CVM will undertake discussion with the

pipeline owner to determine an acceptable plan for accommodation of mining and operation of the pipeline. Mining in this area is scheduled for Q1, 2011. This provides sufficient time to accommodate planning and approval for a final plan;

- a Petro-Canada pipeline (PLA 810569) follows the Val d'Or Seam subcrop along the southern rim of Pit 165. This route includes two pipelines, a gathering line and a fuel gas line. The mining plan is based on removal of these two lines. Petro-Canada has already made steps to accommodate mining in this area. A second, larger pipeline was constructed to the south thus bypassing the proposed pit. CVM understands that this line is available to handle regional gas collection. A plan for replacing the fuel gas line remains to be developed. CVM and Petro-Canada are in communication regarding the lines in question. A plan is being developed to replace the remaining line. Mining in Pit 165 is scheduled to start in late 2009; and
- a Petro-Canada well (MSL 771174, 12-49-22-W5M) is located very close to the proposed Pit 163 rim. CVM is of the opinion that this well will likely have to be taken out of service while mining is undertaken in such proximity. A second well, at the western end of Pit 165 is likely far enough away to be able to continue production. CVM and Petro-Canada are in communication regarding the well in question. A plan is being developed to accommodate mining in Pit 163. Mining in Pit 163 is scheduled to start in late Q3, 2010.

There are several additional pipelines and wells in the Yellowhead Tower area which will be within the '400 m buffer' defined by ERCB. Any mine activity within 400 m of these facilities must be approved by ERCB.

CVM notes that other industrial activity such as coal exploration, timber harvesting, excavation of gravel, other pipeline and well installations and access by the public is allowed without restriction. Therefore, CVM requests approval for 'ancillary mining activities' to be permitted within the '400 m buffer' and that a reduced restriction of a 50 m buffer be applied to these activities. These activities would include:

- timber harvesting;
- soil salvage and stockpiles;
- construction of water management facilities such as ponds and ditches;
- construction of haulroads and powerlines;
- placement of waste dumps; and
- reclamation.

CVM proposes that a 50 m buffer is more appropriate for these activities since risk of impact on the gas facilities is low. Similar activities by other industry are allowed without restriction. Provision of a 50 m buffer would establish a safety margin so that equipment would not work immediately in hazard areas. This would then leave the restriction of the 400 m applying only for mine excavation (blasting) where increased level of scrutiny is warranted.

CVM believes that this procedure would provide improved flexibility to mine development while maintaining appropriate 'screening' of mine excavation and blasting proposed in vicinity of sensitive facilities.

Figure II.4-2 illustrates gas facilities that would fall within the 400 m buffer zone in the Yellowhead Tower area. Table II.4-1 indicates the timelines for mine excavations, which would be within 400 m of a gas pipeline or gas well.

Table II.4-1 Timing of Mine Excavations near Oil and Gas Infrastructure

Pit	Facility	Scheduled Timber Harvest	Scheduled Haulroad Construction	Scheduled Mine Excavation	Scheduled Mine (400M) Application
150	N/A				
151	Pipeline	Q1. 2010	Q4, 2010	Q1, 2011	Q2. 2010
152	N/A				
153	N/A				
154	N/A				
160	Pipeline	Q3, 2010	Q1, 2011	Q2, 2011	Q4, 2010
161	Pipeline and well	Q3, 2010	Q4, 2010	Q1, 2011	Q3, 2010
162	Pipeline	Q3, 2009	Q2, 2010	Q3, 2010	Q1, 2010
163	Pipeline and Well	Q3, 2009	Q2, 2010	Q3, 2010	Q1, 2010
164	Pipeline	Q3, 2009	Q1, 2010	Q2, 2010	Q3, 2009
165	Pipeline and well	Q3, 2009	Q4, 2009	Q1, 2010	Q2, 2009

CVM believes that licence conditions could adequately define permissible and non-permissible activities within more appropriate buffer zones. The advantage of this concept would be to permit 'phased' development in which timber harvest, haulroad construction and water management facilities could be established in advance of the actual 'mining'.

II.5. Volume I, Figures D.2.3-1, E.16.2-1 and E.16.2-2

These figures show a haulroad linkage across Highway 40 from the MW site to the YT region. The ERCB is presently processing CVRI Application No. 1515269 for an alternative haul road. Confirm if both of these haulroads are required. If Application No. 1515269 is no longer required, CVRI must submit a letter withdrawing this Application.

Response:

CVM has deemed the alternate haulroad in question no longer necessary and will formally withdraw Application No. 1515269.

CVM would also like to identify resulting modifications to ongoing reclamation plans as a result of longer-term usage of the existing haulroad. Reclamation and lake development in Pits 120 and 122 will be delayed as a result.

II.6. Volume I, Section C.1.2, Page C-4,

CVRI discusses the haulroad layout and construction.

a. Provide a detailed haulroad map layout with design and showing cut and fill areas run off lanes as well as grades and all crossings and water fill stations. Based on the requirements of Section 539(2) of the OHS Code which states, "An employer must ensure that a haul road with a gradient of more than 5 percent has emergency escape routes that:

- *are spaced throughout the length of the haul road, and*
- *allow a runaway vehicle to be stopped safely.*

Response:

Haulroads are constructed to accommodate the Cat 789 truck fleet. Running surfaces are built with 25 to 30 m width. Additional width is provided for safety berms where required. Berms are 5 m in height. A maximum gradient of 5 % is utilized throughout the mine site for long-term haulroads. Appropriate ditching is provided with typical depth of 1.5 to 2.0 m depth and use 2:1 side slopes. Layout normally utilizes a cut and fill sectional profile on hillsides, which is then rock-filled to provide a stable road base. On more level terrain, a simple rock-fill of 1.5 to 2.5 m thickness is dumped on common fill to provide a stable road base. Gravel or plant reject is used for road surfacing. Figures II.1-1A and II.1-1B provided in response to SIR Question II.1

provide details on the main haulroad, and the haulroad alignment connecting Pit 123 to Mercoal West area in shown in Figure II.6-1. Features of this route include:

- crossing Highway 40;
- crossing CN railway;
- crossing Mercoal Creek tributary;
- connections to various portions of the main mining area; and
- provision for dragline walking between portions of the main pit.

Figure II.1-3 provided in response to SIR Question II.1 illustrates the main haulroad and the haulroad connecting Pit 29 to the Yellowhead Tower mining area. Features of this route include:

- crossing CN railway;
- crossing Embarrass River;
- crossing Highway 47;
- crossing powerlines;
- crossing Chance Creek;
- crossing CN railway;
- following the Chance Creek drainage;
- crossing pipeline; and
- connecting to pits and dumps.

Appendix II.1-1 also provides schematic diagrams of the Mercoal West haulroad.

The maximum grade of all major haulroads is 5 %. As a result, no escape routes are required. Short-term ramps within pits may be developed at higher gradients of up to 10%. These ramps are limited to access between benches, hence are short-lived and of limited height and length. Maximum height is limited to 28 m. Escape routes are inherent in these layouts as trucks can 'run out' on the bench floor.

b. Provide details of CVRI's discussions with Alberta Transportation and the County concerning the crossings of CVRI's coal haul route.

Response:

CVRI has commenced individual discussions with Alberta Transportation (AT) regarding an Approval in Principle of the proposed highway crossings for the coal haulroads. At a March 24,

2009 meeting between AT and CVRI, requirements for haulroad highway crossings were discussed. CVRI will submit a proposal to AT detailing the design and timing of haulroad construction and provide a discussion of potential areas of concern for at-grade crossings.

CVRI has reviewed overall project description with Yellowhead County Council, their Development Officer and local councillors. No concerns have been raised in any of these discussions. CVRI is preparing additional project details in anticipation of continued steps in the approval process, including submissions to Yellowhead County. The company anticipates detailed discussion with the County regarding requirements for development permits, road allowance closure, use of county lands and potential modifications to county roads.

c. Provide general usage parameters for crossings, (including proposed access road intersection).

Response:

Level highway crossings are proposed for haulroads connecting Mercoal West and Yellowhead Tower to the main mine area. Both crossings are located on secondary highways under the jurisdiction of Alberta Transportation. Such crossings may be allowed as 'temporary' structures. Approval from the ministry is required for construction and operation of these crossings.

The proposed highway crossings will be used for relocation of mining equipment, coal haulage and access by support equipment. Crossings will be restricted to mine traffic only. All mine traffic will be required to stop at the crossings and proceed only when safe to proceed.

Table II.6-1 provides details of planned utilization of the proposed level crossings.

Table II.6-1 Utilization Plan for Proposed Level Crossings

	Existing Crossing Hwy 40	Proposed Crossing Hwy 40 (near Mercoal)	Proposed Crossing Hwy 47 (near Coalspur)
Date Installed	2001	2009	2009
Required Life	2012	2011	2015
Equipment Moved			
Page 752	2005	2009	2012
Marion 7450	2005, 2011	2009, 2010	
O&K 120 backhoe	2009, 2010	2009, 2010, 2011	2009, 2010,2012
O&K 170 backhoe			2010, 2014
Temporary Crossing			
Coal Haul	2001-2011	2009-2011	2009-2014
Closure Date	2012	2011	2015

II.7. Volume I, Section C.10, Page C-10,

CVRI makes reference to the water management plans and the measures which are designed to control erosion.

a. Provide a map that shows these erosion control features (these can be shown on the haulroad location map).

Response:

The temporary measure to control erosion discussed in the Application, Section C.1.10, before a vegetation cover is established may include:

- diversion ditches;
- drainage control;
- check dams;
- sediment ponds;
- sumps; and
- mulches.

The major components of these are shown on the water management figures that were provided in the Application (Figure C.2.3-1 for Mercoal West and Figure C.3.2-1 for Yellowhead Tower). The remainder of the erosion control features are installed as required.

b. Provide the design criteria for the water management facilities.

Response:

Water management facilities are planned with the following considerations:

Objectives:

1. Minimize amount of 'mine waste water' generated.
   a) Divert clean water around disturbance areas through use of interceptor ditches, culverts, diversions and pumping. The principle is to keep clean water clean.
   b) Minimize flow of process affected water into clean water channels through ditching, culverts and pumping. The principle is to manage the process affected water within the disturbed area where water treatment is required.
   c) Dewater pit and dump areas as soon as possible while water is still clean.

2. Minimize erosion and level of suspended solids in 'mine waste water'.
   a) Manage erosion from disturbed areas (e.g. soil salvage areas) to reduce the amount of suspended solids in the water.
   b) Use ditches, sumps and transfer ponds to retain as much water as possible, allowing solids to settle before being transferred further into the water management system.
   c) Manage haulroads to drain surfaces effectively.

3. Collect, then retain or treat all 'mine waste water' so that all discharges meet standards for release to the environment.
   a) Collect process affected water through ditches, sumps and pumping to control flows exiting the mine site.
   b) Use erosion control (e.g. silt fences, erosion control blankets) on disturbed areas to minimize erosion.
   c) Provide and maintain necessary retention and water treatment facilities (e.g. sedimentation ponds) to handle generated 'mine waste water' so that water discharged will meet regulatory standards.

Design Criteria:

Water management facilities are planned with typical design parameters, as listed in Table II.7-1.

Table II.7-1 Design Criteria for Water Management Features	
Water Management Feature	**Design Criteria**
Ditches	1.5 to 2.0 m deep
	1.0 to 1.5 m bottom width
	2:1 side slopes
	Maximum of 5 % slope on haulroads
	Typically 2 to 3 % slope
Sumps (short term retention)	5 to 10 m square
	3 to 4 m depth
	1.5:1 side slopes
	Pumping systems as required
Transfer Sumps	10 m wide, 30 m long
	3 to 4 m deep
	2:1 side slopes
	Fixed pumping system
Pump systems	6 inch and 8 inch pumps, typically with 300 gpm capacity
	Electric or diesel powered
	6 inch and 8 inch sclair line pipelines
	Managed by shift pump men, 24/7
Sedimentation Ponds	Size depends on expected flows
	Typically excavated ponds with minimal constructed dykes
	Typically multiple cells
	Fixed flocculation stations
	Typically use a decant for outflow

II.2 CONSULTATION

II.8. Volume I, Section A.7.3, Page A-17,

CVRI refers to nine issues or concerns regarding the proposed mining expansion. Provide an update on any public consultation activities which have occurred since the filing of the application. That is,

What activities have been undertaken?

Response:

As stated in the letter sent from Mr. Mike Boyd, Regional Environmental Manager (Designated Director under the Act), to Mr. Les LaFleur, Manager Technical Services, Coal Valley Mine (CVM), providing the final Terms of Reference for the Environmental Impact Assessment (EIA) for Coal Valley Mine's proposed Mercoal West and Yellowhead Tower Mine project:

Starting with the issuance of these Terms of Reference, every two months you are required to provide Alberta Environment with a report that outlines all of your consultation activities during the course of the regulatory review process.

The letter also noted that:

The Terms of Reference are dated May 29, 2007, and have been issued by Alberta Environment under Section 48(3) of the Environmental Protection and Enhancement Act. The Terms of Reference also reflect the requirements of the Alberta Energy and Utilities Board and the federal government, pursuant to the Canada Alberta Agreement for Environmental Assessment Cooperation.

A copy of the letter from Mr. Boyd was sent to A. Larson, Energy Utilities Board (now ERCB) along with L. Coulson, Canadian Environmental Assessment Agency.

<u>Provision of Public Involvement and Aboriginal Consultation Reports – Bimonthly Updates</u>

Updates on public involvement and Aboriginal consultation activities have been provided every two months to Alberta Environment, Central Region. The first update was dated Tuesday, July 31, 2007. There was a request to provide an anticipated schedule of updates to the Senior Planner, Alberta Environment, Central Region. The anticipated schedule of reports / updates was provided on August 7, 2007 with the note that “Bimonthly updates will continue until the EIA and Application have been reviewed and regulatory approval is received.”

Since the public involvement and Aboriginal Consultation programs for the project had commenced in the spring and summer of 2006, the first update included all of the public involvement and First Nations and Aboriginal Consultation activities from the spring of 2006 to the end of June 2007.

The most recent update, sent to Mr. Tom Slater, Regional Environmental Manager Central Region, dated January 29, 2009 is included as Appendix II.8-1, and includes all stakeholder contact information from project inception to January 29, 2009, as well as a detailed description of First Nations consultation. A copy was provided (as has been the case since the commencement of the bimonthly updates in July 2007) to A. Larson, EUB (now ERCB) and others.

Activities Undertaken Since Application Filing

Notification of Application – Public Advertisements and Newsletter Distribution: There was a major communications undertaking in June 2008 when public notices of the Application were circulated in the local and regional print media (i.e. Hinton and Edson). This was supplemented with a direct mail newsletter sent to approximately 420 contacts representing a range of potential stakeholders including: First Nations / Aboriginal communities, business / industry, Coalspur residents, people interested in the history of the Coal Branch, government / regulatory representatives, non-resident landowners within the area (both private and public), Mercoal residents, non-government interests, outfitters, area residents and trappers. The newsletter included updates on the contents of the Application and where copies could be obtained, Public Involvement and Aboriginal Consultation, CVM's current operations, information on end pit lakes, coal plant operation, CVM staffing updates on new leaders at CVM, as well as job opportunities and where to apply.

Between March and June 2008, CVM contacted stakeholder representatives to make them aware of and provide them with copies of the Application (either electronic or hard copy or both). If requested, information about the proposed mine extension was provided at this time.

Public Involvement – Individual Contacts: Public involvement contacts since the filing of the Application have been relatively consistent with continued involvement with potential stakeholders that have expressed an interest in the project. Formal communication with the Métis Hinton Local has been initiated since the Application was filed. Although there were Métis interests included on the contact record for the project, there was a statement of concern filed by the Métis Nation of Alberta in July 2008. Where appropriate, contacts with both First Nations and Métis advisors with Alberta Environment as well as Métis community members are noted in Appendix II.8-1.

Pages 2 through 8 of Appendix II.8-1 include summaries of all contacts since the Coal Valley Mine Application was filed. There have been a total of twenty-five (25) contacts:

- 7 related to Métis community involvement and the continuing discussions with Métis Local representatives;
- 3 contacts related to the continuing discussions with Alexis Nakota Sioux Nation;
- 1 contact with Foothills Ojibway Society to discuss involvement in the review;
- 1 contact to resolve a statement of concern made by an industrial operator,
- 1 request from a member of the public for a copy of the Application, and
- 12 contacts with people who have demonstrated an ongoing interest in the project and Application process (e.g. Mercoal, Robb and Coalspur residents, off-highway vehicle clubs, and one with owners of mineral rights in the Mercoal area).

First Nation and Aboriginal Consultation – Continuing Contacts: CVRI has been engaged in consultation with potentially affected First Nations groups for approximately 28 months. The Terms of Reference for the project were finalized on May 29, 2007. The bimonthly report to Alberta Environment dated January 29, 2009 (refer to Pages 22 through 88 of Appendix II.8-1) represents the seventh instalment on the commitment of CVRI to update Alberta Environment about the status of First Nations consultation and traditional use studies of the proposed mine extension areas.

As was mentioned previously, discussions and consultation have been ongoing with the Métis Hinton Local. The formal process of consultation with potentially affected members of the Métis community was initiated in July 2008 upon receipt of a Statement of Concern filed by the Métis Nation of Alberta. After discussion, and with the assistance of staff of Alberta Environment, formal contact was made with representatives of Métis Hinton Local #474 of Métis Regional Council – Zone IV of the Métis Nation of Alberta in September 2008.

Consultation has been ongoing for over two years with designated representatives of eight First Nations or Aboriginal communities who have applications for land entitlements. The contacts are related to the continuing review and agreement related to Traditional Land Use and Occupancy Studies (TLUOS) that have been sponsored by CVRI over the last 28 months. No new issues have been identified since the Application was filed.

Appendix II.8-1 contains a summary of the consultation activities with each of the First Nations and Aboriginal communities and detailed contact information in tables that follow. The communities consulted, the number and the nature of the contacts since the Application was filed are noted below. Page references are included to locate the detail for each contact in the *First*

Nations Consultation and Traditional Use Studies - Proposed Coal Valley Mine Extensions - Bi-monthly Update to Alberta Environment (January 2009) that is provided (refer to Pages 22 through 88 of Appendix II.8-1):

- Alexis Nakota Sioux Nation – 54 contacts to arrange various meetings to discuss the TLUOS results sponsored by CVRI and a proposal for an economic and social memorandum of understanding (MOU) that is being proposed by the Nation. Pages 14 to 20.
- Aseniwuche Winewak Nation - 11 contacts – AWN representatives indicated on November 30, 2006 that, following a review by Nation Elders, they had no concerns with the CVM expansion since it is outside of their traditional territory. Contact was maintained with representatives until June 2007. Pages 21 to 22.
- Foothills Ojibway Society – 70 contacts to arrange meetings related to the TLUOS, site verification and the review of the EIA and Application by a third party and to be paid for by CVRI. Pages 22 to 30.
- Nakcowinewak Nation – 54 contacts related to TLUOS completion and EIA and Application review. The project received approval from the Nation in a letter provided at a meeting March 26, 2008. Pages 30 to 36.
- O'Chiese First Nation – 77 contacts to discuss mitigative options for avoiding locales identified in TUS and to provide a copy of the EIA and Application. Pages 36 to 44.
- Paul First Nation – 91 contacts related to the TLUOS sponsored by CVRI, CVM, and to arrange meetings to discuss a proposed social and economic MOU. Pages 44 to 52.
- Smallboy Camp (Mountain Cree) – 47 contacts related to TLUS sponsored by CVRI, CVM as well as the EIA and Application. Pages 53 to 57.
- Sunchild First Nation – 64 contacts related to the TLUS sponsored by CVRI. Pages 58 to 63.

It should be noted that the EIA and Application was delivered to designated First Nation representatives as soon after filing as conveniently possible for them, which in most cases was prior to the end of March 2008.

- Hinton Métis Local – 9 contacts related to the mine extension proposals in the Application and EIA. Pages 63 to 65.

Contacts and discussions are ongoing with CVRI, CVM representatives continuing to make themselves available. The next update of Public Involvement and First Nation and Aboriginal Community Consultation will be provided to Alberta Environment at the end of March 2009.

What issues have been raised?

Response:

The issues, needs and concerns identified through the various public and stakeholder involvement methods have been grouped into nine (9) main themes:

- reclamation;
- access for recreation;
- noise, dust and visual impacts;
- wildlife;
- water supply;
- mining operations – seasonal timing;
- preservation of area history;
- stakeholder contact and ongoing public involvement; and
- property and other resource impacts.

There have been no new EIA or Application issues raised through the continuing involvement and consultation programs. New participants (i.e. Métis Hinton Local) have reinforced those issues already identified.

Statements of concern (SOC) have been received from:

- the Alexis Nakota Sioux Nation - SOC was filed July 17, 2008;
- the Métis Nation of Alberta - SOC was filed on July 16, 2009; and
- Suncor Energy Inc. (Suncor) - SOC was filed July 16, 2008, concerning potential conflict with the company's holdings or facilities in the area.

Potential issues have been identified by:

- Alberta Transportation – a letter to CVRI dated January 15, 2008 commented on the proposed project. Issues of concern were the accommodation of the proposed highway alignments and the provision of grade separation for haulroad crossings;
- Petro-Canada - a letter from Bob Maxwell to AENV, dated January 21, 2009, requested consultation regarding the proposed projects;
- Jimmy O'Chiese & Foothills Ojibway Society;
- Paul First Nation;

- Sunchild First Nation; and
- Smallboy (Mountain Cree) Camp.

What issues have been resolved and how?

Response:

The summary of how the nine issues and needs theme areas will be addressed are included in the Application summary in Table G.3.0-1, Section G, Pages G7 to G9. The details follow in the Application.

Issues that have been resolved are those that involve:

- the Métis Nation of Alberta - CVRI has consulted with the Métis Association in Hinton. The local Métis community has verbally indicated that there are no outstanding specific concerns regarding the proposed development, Métis local leadership has indicated that no concerns have been raised by membership since meetings in October 2008; and
- Suncor - CVRI consulted with Suncor regarding potential impacts on their operations in the area. Suncor has indicated that their concerns have been satisfied and correspondence to that affect was provided to Alberta Environment in October 2008.

What issues remain outstanding and how will they be resolved?

Response:

Issues that remain outstanding are listed below.

- Alexis Nakota First Nation - CVRI continues to consult with Alexis regarding the project. CVRI has completed 'traditional land use' review with Alexis. Discussions regarding impacts, mitigation and establishment of an MOU are continuing;
- Jimmy O'Chiese & Foothills Ojibway Society - CVRI continues consultation regarding concerns over the proposed project. CVRI considers consultation of 'traditional land use' to be completed. Report recently submitted to CVRI indicates that the proposed extensions are not supported and details several areas of concern that need to be addressed. Discussion continues regarding impacts and mitigation of the proposed project ;
- Paul First Nation - CVRI continues consultation with Paul Nation. Paul Nation is requesting an MOU with CVRI. CVRI to provide first draft of agreement language based on a Paul FN template;

- Sunchild First Nation - Sunchild FN completed traditional use studies in 2007 and have verbally indicated there are areas of concern regarding traditional use sites in area. Sunchild FN has not submitted a report to CVRI despite repeated requests; therefore, specifics of concerns related to extension areas remain unknown. TLU staff cite Chief and Council review of report as primary reason for delay;
- Smallboy (Mountain Cree) Camp - Traditional use studies have been completed, and a report for MW and YT is complete. CVRI continues consultation with Smallboy, including an open house in the community slated for this spring;
- Alberta Transportation – CVRI has engaged a qualified contractor to provide preliminary engineering drawings and specifications for the proposed crossings. A meeting was held in March 2009 with AT to clarify proposed plans and issues (refer to the response to SIR Question II.6b); and
- Petro-Canada - CVRI is consulting with Petro-Canada regarding their facilities in the Yellowhead Tower area.

Provide a response to the issues raised in the Statements of Concern which have been filed with Alberta Environment.

Response:

Alexis Nakota Sioux Nation (Alexis) Statement of Concern – Summary of Issues and Responses

The summary of issues included here are derived from a letter sent to representatives of CVRI dated July 16, 2008 from Duncan and Craig LLP legal representatives for and on behalf of the Alexis Nakota Sioux Nation (Alexis). There are ongoing attempts being made to arrange a meeting with the Alexis leaders to address the points raised in the letter and continued discussions will be required. CVRI will continue its consultation efforts with Alexis; however, the nature of some of the concerns may require intervention and possibly mediation by Alberta Environment First Nation advisors.

Alexis Statement of Concern – July 16, 2008

Issue	**CVRI Response**
Impacts that CVM will have on the Alexis Traditional Territory and, consequently the treaty rights of members of the Alexis Nation.	CVRI, CVM representatives have worked closely with designated representatives of the Alexis Nation since July 2006. CVRI has sponsored and support a TLUOS study on traditional lands defined by the Alexis Nation representatives and wishes to continue to work with Alexis Nation to resolve or mitigate any impacts that may arise.
Fisheries: • Time frame for implementing the Fish Habitat Conservation Plan • Provide regular monitoring reports to Alexis • Consult with Alexis should concerns arise • Elevated phosphorous levels in downstream waterways – the need for regular testing and a plan to deal with potential adverse effects	Further Discussion Required
Groundwater: • Demonstration of the suitability of the Coalspur spring as an alternative water source to the Yellowhead Spring • Potential for shortage and suitability of available natural sources of potable water	Hydrogeological assessments have determined that mining will not affect the quantity or quality of groundwater available to the three current domestic wells in Mercoal. An on-going sampling program will monitor these wells during mining. CVM has also assessed the spring at Steeper Landing to ensure mining does not affect it. Samples of the spring have been taken to determine current water quality parameters. Results of the water well testing have been provided to residents identified by CVM or who requested that their water sources be sampled. This information can also be provided to Alexis representatives, as well. Mining will not affect Mercoal Creek. In other locations within the proposed mine expansion areas, it is required that a diversion be designed to retain current water flows and quality.
Surface Water: • Impoundment water released to local streams and exceedances of Provincial Guidelines (chemicals that are expected to exceed the guidelines and how	The human health study found no evidence that CVRI is directly impacting health through chemical emissions.

Issue	CVRI Response
frequently) • Use of ammonium nitrate based explosives – use of alternative blasting materials or technologies to reduce environmental impact	
Wildlife: • Short term wildlife disturbance and displacement as a result of predicted noise from operations • Misstated level of impact of operations on wildlife • Impact of mining (i.e. from forest salvage) on birds and other wildlife • Baseline health studies on animal populations in the affected areas • Predicted timelines and levels of certainty for the return of bears, lynx and marten following reclamation.	Further Discussion Required
Human Health: • Long term human health impacts from eating traditional foods (fish, berries, plants, game) • Need for a baseline health study on Alexis Nation people • Inform the Alexis Nation of any potential associated risks with traditional food consumption and steps to minimize them	Long-term human health impacts from eating traditional foods are positive or good. The human health risk assessment (HHRA) determined the adverse health impacts to aboriginal people from consumption of traditional foods are not expected. Human health risk assessment did not find any need to alert First Nation communities of potential risks with traditional food consumption.
Noise: • Impact of noise from explosives on areas surrounding the mine expansion locations • Mitigation of blasting noise on animals and residents beyond being notified of impending blasting activity • Use of alternative methods of blasting to minimize noise impacts	Further Discussion Required

Issue	CVRI Response
Socio-Economic Impacts: • Lack of study on socio-economic impacts on Alexis Nation people, separate from the communities of Edson, Hinton, Robb and areas of Yellowhead County • Outline economic impacts or opportunities facing Alexis Nation members. • Develop mutually beneficial opportunities between the Alexis Nation and CVRI	Further Discussion Required
Ongoing Consultation: • Ongoing communication and consultation between the Alexis Nation and CVRI – the need to continually consult	Further Discussion Required

Alexis Nation - Additional Correspondence: In a second letter, dated July 17, 2008, from the Alexis Nation legal advisors it was stated "…we would confirm that it is Alexis' intention to continue to work with CVM to address their community's concerns with the proposed Project. In this regard, we are working on a form of Protocol / Memorandum of Understanding that we hope will formalize a process to address our client's concerns and to mitigate any impacts arising out of the Project….

In the meantime, in order to preserve our client's rights with respect to the regulatory Application submitted to the ERCB, and other various agencies, we have deemed it necessary to file a Statement of Concern."

Métis Nation of Alberta Statement of Concern – July 16, 2008

The summary of issues included here are derived from a letter sent to representatives of CVRI, Alberta Environment and ERCB, dated July 16, 2008, from Cecil Bellrose, President, Region #4 on behalf of the Métis Nation of Alberta. After discussion and with the assistance of staff of Alberta Environment, formal contact was made with representatives of Métis Hinton Local #474 of Métis Regional Council – Zone IV of the Métis Nation of Alberta in September 2008 and is ongoing.

Issue	CVRI Response
MNA lack of involvement in EIA • Lack of meaningful consultation with MNA Regional representatives	At the start of the project, it was unclear as to how the Métis Nation or their regional representatives should be involved. That said, using contact information provided in previous project and public involvement activities for the CVM, an MNA Sector Advisor responsible for resource management policy and the address for the Métis Local at the time were included. Until the correspondence was received, dated July 16, 2008, direct mail communication had been sent to the two addresses previously included. Once CVRI representatives received the SOC from the MNA discussion occurred with Alberta Environment representatives responsible for Métis Nation consultation to determine the most appropriate way to engage local Métis Nation representatives.
Lack of notification • Lack of notice about significant regulatory milestones including SOC deadline submission dates • Lack of direct notice to MNA members of an opportunity to provide input into developing a Draft Terms of Reference • Lack of MNA members participation development of the EIA report (Socio-economic, Land Use, Wildlife, Vegetation, Air, Historical Resources) • The need to directly provide project-specific information to properly analyze the EIA report prior to the SOC submission deadline • The requirement to consider any Métis issues of importance in determination the significance of environmental effects of the project • The lack of capacity and resources to undertake a traditional use study to determine the nature and extent of the infringement of their rights and interests in the project area	Now that CVRI has made contact with the regional representatives of the MNA, we will continue to discuss the project and Application with them. It should be noted that a number of local MNA members are employees of the CVM and are familiar with our operations. Notwithstanding the most recent discussions with Local MNA representatives, direct notice was provided to people in the area through newspaper advertisements consistent with regulatory requirements for notification and response for: a) The availability of Draft EIA Terms of Reference and opportunities for comment, and b) The notice of filing of the CVRI, CVM Project EIA and Application requesting SOC's Correspondence that included the notice of availability of both the Draft EIA ToR and the filing of the project EIA and Application was sent directly to the MNA office in Edmonton as one of the direct mail contacts who may have an interest in the project. It should be noted as well, that the Province of Alberta had not yet determined the process of engaging the Métis Nation in industrial Application review at the time of either the draft terms of reference review or the Application filing.

Issue	CVRI Response
Meaningful consultation through: • CVRI sponsorship of a Traditional Use Study to assess the project effects on Métis Traditional use • CVRI provide funding for environmental service professionals to review and comment on the EIA for the project • Develop an agreement for an on-going process focused on consultation, accommodation and ongoing monitoring of any potential adverse environmental impacts	On December 29, 2008, there was a letter sent to the MNA Region #4 President, from Alberta Environment's Senior Aboriginal Relations Advisor on this file updating him on the progress that has been made in consultation with Métis Local 2005, Hinton Foothills (Local). In the letter it was stated that: A meeting was held on September 25, 2008, attended by J. Jobin, Senior Aboriginal Relations Advisor, Les LaFleur (CVRI), Dr. Dan Meyer (Lifeways of Canada Limited), Colette Walker (President) and Ken Groat (member). Alberta Environment (AENV) was acting only as a liaison and that it is preferred that CVRI and the Local work together to resolve issues, if any. AENV is willing to answer any questions the Local has regarding the Environmental Impact Assessment (EIA) process At that meeting Les LaFleur, CVRI described the project and project location. A map of the project area and CVRI newsletters were provided. CVRI has been in the area for a while and will continue to operate in the area for a long time in the future. Les made a commitment to attend a future Hinton Métis Local meeting and provide the same information to all interested members who attended.

II.9. *Provide a map showing the location of residents and industries contacted as part of CVRI's notification and consultation program. Note, the* ***Response*** *to the following questions should not include personal information such as name, address, or phone number.*

Response:

The Table II.9-1 outlines the mailing address location of interests that are included on the current contact list (last verified July 2007) with a map reference from the EIA report that shows where each of the communities are located. The interests covered by the contacts noted are provided in the response to SIR Question II.8 and in Section A.7.3, Page A-17 of the Application. A map of Alberta showing the locations listed in Table II.9-1 is provided in Figure II.9-1.

Table II.9-1 Map References for Contacts for Public Involvement Program During and Following CVRI / CVM Extension Application Preparation

Location of Contacts for Ongoing Notification of Public Involvement Events and Project Updates (all interests based on surface mail information)	**Number on Contact List**	**Map Reference from CVRI Project Application**** ** If not on the Regional Study Area map or Figure II.9-1, locations can be found on a map of Canada
Edson	68	Section D: Environmental Assessment, Figure D.2.3-2 Regional Study Area (Page D-18) CR #12 Traditional Land Use, Figure 3: Location of First Nations Groups Included in Traditional Use Studies for the CVM Extension Areas (Page 34)
Hinton	39	Section D: Environmental Assessment, Figure D.2.3-2 Regional Study Area (Page D-18) CR #12 Traditional Land Use, Figure 3: Location of First Nations Groups Included in Traditional Use Studies for the CVM Extension Areas (Page 34)
Robb	79	Section D: Environmental Assessment, Figure D.2.3-2 Regional Study Area (Page D-18)
Edmonton Region*: *Includes: Edmonton, Sherwood Park, St. Albert, Spruce Grove, Stony Plain, Fort Saskatchewan, Onoway, Morinville	139	Figure II.9-1
Calgary Region* *Includes: Calgary, Okotoks, Morley	24	Figure II.9-1
Hobbema	4	CR #12 Traditional Land Use, Figure 3: Location of First Nations Groups Included in Traditional Use Studies for the CVM Extension Areas (Page 34)
Rocky Mountain House	10	CR #12 Traditional Land Use, Figure 3: Location of First Nations Groups Included in Traditional Use Studies for the CVM Extension Areas (Page 34)

Table II.9-1 Map References for Contacts for Public Involvement Program During and Following CVRI / CVM Extension Application Preparation		
Location of Contacts for Ongoing Notification of Public Involvement Events and Project Updates (all interests based on surface mail information)	**Number on Contact List**	**Map Reference from CVRI Project Application**** ** If not on the Regional Study Area map or Figure II.9-1, locations can be found on a map of Canada
Glenevis	4	CR #12 Traditional Land Use, Figure 3: Location of First Nations Groups Included in Traditional Use Studies for the CVM Extension Areas (Page 34)
Grande Cache	3	CR #12 Traditional Land Use, Figure 3: Location of First Nations Groups Included in Traditional Use Studies for the CVM Extension Areas (Page 34) Figure II.9-1
Red Deer / Spirit River / Westlock	2 from each community (Total of 6)	Figure II.9-1
Evansburg / Lloydminster / Mayerthorpe/ Morinville / Niton Junction / Peers / Ponoka / Rochester / Valleyview / Wembly / Wildwood	1 from each community (Total of 10)	Figure II.9-1
Other Locations in Canada:		
Winnipeg, MB	2	Map of Canada
Kelowna, BC	2	Map of Canada
West Vancouver, BC	1	Map of Canada
Montreal, QC	1	Map of Canada
Overall Total for Contact List Notification	***394***	

a. Identify which resident/industry was notified through direct and personal communication and which were notified by other means such as mail-outs, open houses etc.

Response:

This is described in summary in the Application in Section G, Stakeholder Consultation and in more detail in Appendix 5, Public Consultation. Pages 2 through 21 of Appendix II.8-1 also list methods of contact with stakeholders.

b. Provide an itemized list of all commitments made by Coal Valley Mine as a result of its dealings with members of the public and other interested parties.

Response:

The commitments as a result of public involvement and Aboriginal consultation are included in the Application in Section G, Table G.3.0-1, Pages G7 to G9, which is included here as Table II.9-2.

Table II.9-2 Summary of Public Issues, Needs and Concerns

Theme	Source			CVM Response
	OH[1]	S[2]	RF[3]	
Reclamation Backlog of land to be reclaimed	◆	◆	◆	The CVM has a reclamation backlog due to a shortfall in levelling and topsoil replacement over the past several years. CVRI has initiated a corporate-wide effort to eliminate reclamation backlog at all their mines over the next 10 years. There is a corporate-wide commitment to ongoing reclamation work so the backlog is eliminated. Reclamation of mined out areas will begin at the completion of each stage rather than at the end of all mining activities.
Recreational Access Reduced access to established ATV and snowmobile trails Access to Silkstone and Lovett Lakes	◆	◆	◆	CVM recognizes that mining creates barriers for recreational access and has, in past projects, met with representatives of ATV clubs in the Edson and Hinton areas to discuss opportunities to plan access during and following mining. CVM is currently preparing access management proposals for further review with the representatives. Foot access to Silkstone and Lovett Lakes is currently available. If people with disabilities wish to access the lakes using their vehicles, they can contact the mine office and permission will be arranged. CVM is moving toward opening access across the old mining areas and will be applying for reclamation certificates in 2008. This is the first step in returning reclaimed land to public use.

Table II.9-2 Summary of Public Issues, Needs and Concerns

Theme	Source			CVM Response
	OH[1]	S[2]	RF[3]	
Noise, Dust and Visual Impacts Noise from trucks, equipment and operations Dust and smoke from blasting activities Visibility of mining operations	◆	◆	◆	Impact assessments for noise and dust will be completed as part of the EIA and Application. Mitigating elements such as watering of haulroads will control dust problems. CVM will retain a "buffer zones" between the mining area and the eastern end of Mercoal to decrease the potential for visual disturbance and noise impacts. With the proposed mine plan proposals, minimal traffic impact is expected. Blast scheduling can take into account wind direction so dust will not spread toward the community.
Wildlife Impact on wildlife populations Hunting opportunities	◆	◆	◆	CVM assesses the wildlife populations on and around the mine site at regular intervals. Mitigation plans include provision for wildlife corridors through the area to permit continued wildlife movements. Reclamation plans include reforestation and provision for wildlife habitat. Once reclamation is complete, the land is returned to the provincial land base. At this point, the Province will be responsible for land management such as hunting and public access.
Water Supply Maintenance of drinking water quality at Steeper spring Use of Mercoal Creek as a water source Protection of water wells from mining activities	◆	◆	◆	Hydrogeological assessments have determined that mining will not affect the quantity or quality of groundwater available to the three current domestic wells in Mercoal. An on-going sampling program will monitor these wells during mining. CVM has also assessed the spring at Steeper Landing to ensure mining does not affect it. Samples of the spring have been taken to determine current water quality parameters. Results of the water well testing have been provided to residents identified by CVM or who requested that their water sources be sampled. Mining will not affect Mercoal Creek. In other locations within the proposed mine expansion areas, it is required that a diversion be designed to retain current water flows and quality.
Mine Operations/Timing Reduce impacts on Mercoal residents by mining in winter Safety of old underground mines in the vicinity of Mercoal	◆			Specific timing of mining is difficult to define. However, mining in the vicinity of Mercoal will be rapid and of short duration. Blasting will generally be confined to daylight hours between Monday and Thursday. Vibrations from equipment and blasting are expected to be minimal with no effect on the old mine workings.

Table II.9-2 Summary of Public Issues, Needs and Concerns

Theme	Source			CVM Response
	OH[1]	S[2]	RF[3]	
Preservation of Area History Disturbance of Mercoal townsite Recognition of the area's historic, cultural and spiritual resources	◆	◆		CVM will not mine within 500 metres of the nearest occupied residential lot in Mercoal – the townsite will not be disturbed. CVM will work with Mercoal residents to determine if it is possible to relocate historic mining equipment from the pit area to the townsite. CVM has embarked on a significant program for First Nations and Aboriginal Consultation. Area and site visits have been conducted and traditional knowledge shared by First Nations representatives to ensure that all cultural, spiritual and traditional use sites are identified and appropriate mitigation plans are prepared to address any issues, needs or concerns.
Stakeholder Contact and Ongoing Public Involvement Opportunities to meet directly with CVM Opportunities for site visits to CVM operations Alberta Environment contact to ensure the company is doing what it should during the mine Application preparation, operation, reclamation and closure	◆	◆	◆	CVM staff will arrange meetings and site visits if requested. In some cases where CVM believes that a meeting or site visit will be helpful to stakeholders, an invitation will be extended by the company. Employment opportunities at CVM are advertised in local newspapers. The Alberta Environment contact is: Larry Williams, Regional Director, Central Region, Alberta Environment, 3rd Floor, Provincial Building, 920 – 51 Street, Red Deer, AB T4N 6K8 Phone: 403-340-7747 e-mail: larry.williams@gov.ab.ca
Property and Other Resource Impacts Historical sites – keep information provided by the public confidential Purchase of public land currently leased from the	◆	◆	◆	Local information on historic and traditionally used sites is appreciated for better project planning. Such information will be held confidential. The Provincial Government Ministry of Alberta Sustainable Resource Development is responsible for public land management

Table II.9-2 Summary of Public Issues, Needs and Concerns

Theme	Source			CVM Response
	OH[1]	S[2]	RF[3]	
government Trapper's cabins – concerned about access and vandalism. Mine operators and forestry companies coordinate efforts to create shared access roads. Access for property owners and their relatives to private in-holdings mine permit boundary The effect of mine development on residential property values at Robb, Mercoal, Coalspur				and ownership. They should be contacted to discuss this further. Access for mining will be carefully planned taking into account other resource and recreational users. With regard to haulroad construction, CVM will work with West Fraser to share roads that already exist (e.g. the Mercoal Mainline Road) for safe traffic management, visual, dust and noise impact minimization. Access for private property owners is available and can be arranged by contacting the CVM. Residential property values are driven by market conditions that are beyond our control. Based on past experience and since the area has had a long and successful mining history, it is unlikely that property values will be affected negatively.

Footnotes: 1. OH – Open House
2. S – Contact with Stakeholder
3. RF – Response from Stakeholder

Other Commitments to First Nations:

- currently negotiating an MOU with Alexis First Nation detailing any commitments to protection of the environment, reclamation of disturbed lands, employment opportunities, contracting opportunities;
- on-going discussions with Foothills Ojibway Society regarding avoidance of known important traditional use sites, potential involvement in reclamation activities;
- on-going discussions with Métis Hinton Local regarding potential employment and apprenticeship opportunities;
- written commitment to Nakcowinewak Nation of Canada to avoid a traditional camping and wildlife area at the northwest end of Mercoal West, to avoid known burials near or

within Robb Trend area, to involve members on an annual basis in the identification and preservation of rare medicinal plants (CR #12, Appendix F);

- written commitment to O'Chiese First Nation to avoid a traditional camping and wildlife area at the northwest end of Mercoal West, to avoid known burials near or within Robb Trend area, to involve members on an annual basis in the identification and preservation of rare medicinal plants (CR #12, Appendix F); and
- currently negotiating an MOU with Paul First Nation detailing any commitments to protection of the environment, reclamation of disturbed lands, employment opportunities, contracting opportunities, continuing relationship between Paul and CVM.

II.10. Volume I Section A.8.4, Page A-27,

CVRI indicates that the Historic Resource assessment for YT is incomplete. Provide an update on this work.

Response:

During the summer of 2008, a Historical Resources Impact Assessment (HRIA) was conducted on the Yellowhead Tower mine area. An interim report describing these HRIA activities and recommending a Stage I mitigation program has been submitted to ACCS. The full reporting of the 2008 and 2007 HRIA program will be completed over the winter of 2008/2009 and submitted to ACCS.

The HRIA for the proposed Yellowhead Tower mine extension has resulted in the recording of 29 Precontact and Historic archaeological sites (Figure II.10-1, Table II.10-1). Stage I mitigation work has begun on two of these sites (FhQg-76 and FhQg-5). The results of this Stage I program will be used to structure any necessary Stage II program on the sites or specific features, and will be used to help determine management goals associated with CVRI's Yellowhead Tower mine extension. Potential mitigation options are listed in Table II.10-1, final mitigation requirements will be developed in conjunction with ACCS. Once completed CVRI will submit the final report to ACCS in order to obtain clearance for development.

ACCS has provided details of *Historical Resources Act* requirements for the project based on the interim report. This is included as Appendix II.10-1.

Table II.10-1 Historic Resources within Yellowhead Tower Proposed Mine Permit Area

Borden Number	Location					Site Class	Site Type	Mine Development Area	Mitigation Options
	LSD	Sec	Twp	Rge	Mer				
FhQg-1	2	33	48	21	5	Precontact	scatter >10	none	avoidance or mitigation
FhQg-5	6-11, 15	6	49	21	5	Historic	dwelling	haulroad	mitigation in progress
FhQg-17	3, 6, 7, 9-11	33	48	21	5	Historic	dwelling	none	avoidance
FhQg-23	1	32	48	21	5	Precontact	scatter <10	none	avoidance or mitigation
FhQg-28	14	28	48	21	5	Historic	dwelling	none	avoidance or mitigation
FhQg-29	13	28	48	21	5	Precontact	isolated find	none	no further work recommended
FhQg-38	7	32	48	21	5	Historic	dwelling	none	no further work recommended
FhQg-43	12	33	48	21	5	Precontact	isolated find	Pit 160	no further work recommended
FhQg-48	15	6	49	21	5	Precontact	isolated find	Pit 152	no further work recommended
FhQg-49	10	33	48	21	5	Historic	unknown	none	avoidance or mitigation
FhQg-50	10	33	48	21	5	Palaeontological	fossils	Spoil pile	see pHRIA (Wilson 2008)
FhQg-51	11	33	48	21	5	Historic	cemetery	haulroad	avoidance
FhQg-53	6	33	48	21	5	Historic	mining	haulroad	avoidance or mitigation
FhQg-61	12	35	48	22	5	Precontact	isolated find	none	no further work recommended
FhQg-62	9	2	49	22	5	Historic	dwelling	none	avoidance or mitigation
FhQg-63	11	14	49	22	5	Precontact	scatter <10	Spoil pile	avoidance or mitigation
FhQg-64	5	7	49	22	5	Precontact	isolated find	none	no further work recommended
FhQg-65	7	12	49	21	5	Precontact	scatter <10	near pond	no further work recommended
FhQg-66	8	12	49	22	5	Precontact	scatter <10	haulroad	no further work recommended
FhQg-67	14	6	49	21	5	Precontact	isolated find	Pit 162	no further work recommended
FhQg-68	6	6	49	21	5	Precontact	isolated find	none	no further work recommended
FhQg-69	2	6	49	21	5	Precontact	scatter <10	none	no further work recommended
FhQg-70	11	32	48	21	5	Precontact	scatter <10	none	no further work recommended
FhQg-71	11	32	48	21	5	Precontact	scatter <10	none	no further work recommended
FhQg-72	13	32	48	21	5	Precontact	isolated find	none	no further work recommended
FhQg-73	5	33	48	21	5	Precontact	isolated find	none	no further work recommended
FhQg-74	5	33	48	21	5	Historic	dwelling	haulroad	avoidance or mitigation
FhQg-75	5	33	48	21	5	Precontact	isolated find	haulroad	no further work recommended

Table II.10-1 Historic Resources within Yellowhead Tower Proposed Mine Permit Area

Borden Number	Location					Site Class	Site Type	Mine Development Area	Mitigation Options
	LSD	Sec	Twp	Rge	Mer				
FhQg-76	15	28	48	21	5	Precontact	scatter <10	haulroad	mitigation in progress
FhQg-77	3	33	48	21	5	Precontact	workshop	none	avoidance or mitigation
FhQg-78	15	28	48	21	5	Historic	dump	none	avoidance or mitigation

II.11. Volume I, Section E.16.3.5, Page E-320.

CVRI states "Mercoal is located to the east of the MW development. It is generally considered a recreational cottage community, as lots are leased and residences are occupied on a seasonal basis. Mercoal consists of approximately 28 designated lots, a few of which are vacant. The lots are leased from the province and have a fixed tenure. Occupation of the lots is limited with a few being used more extensively. The Community of Coalspur is located to the east of the YT development. Coalspur is a cottage community with ten lots one of which is held under a MSL. All lots are generally used on a seasonal basis."
The following is from Yellowhead County Council Minutes, April 8, 2008, Pages 3-4, Resolution # 110-04-08-08.
Website: http://www.yellowheadcounty.ab.ca/cou_min_07/040808councilminutes.pdf

[Yellowhead County Council Minutes, for April 8th, 2008, indicate a willingness of the county to assume the Mercoal leases past 2012. Specifically: " MOVED BY Councillor Olson that Council advises the Province that Yellowhead County was interested in acquiring the Mercoal lease land base to preserve the historical significance of the area; AND THAT Yellowhead County provide a form of land tenure for the existing Mercoal lease holders. CARRIED UNANIMOUSLY".]

Given that the Mercoal leases will potentially continue past 2012, does CVRI propose any dispute resolution process or mitigation monitoring with residents in this community?

Response:

CVM's proposed plans show that mining is outside of the Mercoal lease area. Letters have been written to residents clearly stating CVM's intent to avoid the Mercoal townsite and that the company has no interest in mining underneath any of the residential properties leased for recreational uses (i.e. cottages).

CVRI wishes to note that mining and much of the reclamation in the Mercoal West project area will already be completed by 2012. Therefore the mining activity proposed by the company has no bearing on long term 'land tenure' decisions by the County.

CVRI has a long and positive relationship with residential leaseholders at Mercoal through their participation in previous mine Applications and has maintained a strong relationship with the Mercoal community through numerous consultation efforts. Within the EIA program, a number of potential impact concerns have been investigated and reported. Such assessments show that adequate mitigation efforts are proposed to minimize impacts on the Mercoal Community. Ongoing monitoring and assessments are inherent within the proposed programs and CVRI will

continue to maintain and reinforce opportunities for contact, awareness and information sharing with residential leaseholders at Mercoal.

CVRI is confident that a ‘dispute resolution’ procedure will not be necessary, as the company has already shown itself to be proactive in resolution of community concerns.

II.3 GEOLOGY AND RESERVES

II.12. Volume I, Section A.1, Page A-1

CVRI refers to the depleting coal reserves within the existing mine permit area (Permit No. C 2005-6). CVRI also indicates that coal reserves within MW and YT areas are 3.6 million and 13.3 million clean metric tonnes, respectively, which will provide CVRI with additional tonnage to operate until 2015.

a. Provide the coal reserve tonnages for MW and YT in raw tonnes, including the strip ratio.

Response:

Detailed mining reserves and material volumes for individual pits are provided in Appendix II.12-1. These quantities have been updated to accommodate the revised mining plans in Mercoal West.

A summary of the reserves is provided in Table II.12-1.

Table II.12-1 Mercoal West and Yellowhead Tower Estimated Coal Reserves

Area		Coal (RMT)	Ratio (BCM/RMT)	Coal (CMT)	Ratio (BCM/CMT)
Mercoal West					
	Val d'Or	3,782,614	1.94	1,985,872	3.69
Total		**3,782,614**	**1.94**	**1,985,872**	**3.69**
Yellowhead Tower					
	Val d'Or	9,935,937	2.49	5,216,367	4.76
	Mynheer	15,480,237	1.88	8,127,124	3.59
Total		**25,416,174**	**2.12**	**13,343,491**	**4.05**

Footnotes: 1. Yield = 52.5%

b) What are the current coal reserves within the existing Permit No.C 2005-6? Provide a table depicting the remaining reserves within the existing CVM permit area. (The figures provided must be in raw tonnes and should include a strip coal ratio.)

Response:

The remaining mine reserves / resources within the existing mine permit area are indicated in Table II.12-2.

Table II.12-2 Reserves in Existing Mine Permit Area (Million Tonnes)

Area	Coal (RMT) [1]	Ratio (BCM/RMT)	Coal (CMT)	Ratio (BCM/CMT)
Pit 16	2.400	6.07	1.260	11.56
Pit 20 Cut 8	0.100	5.70	0.053	10.86
Pit 26	2.400	2.68	1.260	5.10
Pit 27W	0.500	2.32	0.263	4.42
Pit 28	1.100	1.98	0.578	3.77
Pit 29	5.200	2.80	2.730	5.33
Pit 31W	0.700	7.38	0.368	14.06
Pit 32	0.700	6.80	0.368	12.95
Pit 122 Wetland[3]	1.000	4.25	0.525	8.10
Pit 123	0.650	1.44	0.341	2.74
Pit 143	1.240	2.91	0.651	5.54
Pit 143(144)	4.350	1.63	2.284	3.10
Coal Creek	0.800	2.89	0.420	5.50
Mercoal West[2]	2.700	3.31	1.418	6.30
Total	**23.840**	**3.21**	**12.516**	**6.11**

Footnotes:
1. Yield = 52.5%
2. Mercoal West is subject to EIA approval.
3. Pit 122 Wetland is subject to Wetland Policy

c. Are the estimated reserves of 3.6 million clean tonnes only for the MW area, or does this tonnage include reserves in the existing mine permit area?

Response:

The revised mine reserves for the Mercoal West area are provided in Table II.12-3.

Table II.12-3 Reserves in Mercoal West

Area	Coal (RMT)	Ratio (BCM/RMT)	Coal CMT	Ratio (BCM/CMT)
Mercoal West				
Within Permit	2.700	3.31	1.417	6.30
Outside Permit	1.080	1.49	0.567	2.84
Total	**3.780**	**1.94**	**1.984**	**3.69**

Footnotes: 1. Yield = 52.5%

d. At the proposed coal production of 4 million clean tonnes per year, will CVRI have sufficient reserves until 2015? Discuss in detail, based on a site-wide mine plan review, where the coal will come from to make deliveries until 2015. Provide a table to aid the discussion.

The long-term plan for CVM anticipates coal production from the existing permit area in addition to production from Mercoal West, Yellowhead Tower and Robb Trend. Table II.12-4 illustrates the conceptual production plan to continue production through to 2015.

Table II.12-4 Long Term Production Plan					
Year	**Existing Permit[1]**	**Mercoal West**	**Yellowhead Tower**	**Robb Trend[3]**	**Total Production**
2009	2.500	1.250	0.250	0	4.000
2010	2.000	0.750	1.250	0	4.000
2011	1.500		2.500	0	4.000
2012	0.750		3.250	0	4.000
2013			4.000	0	4.000
2014			2.000	2.000	4.000
2015			0.250	3.250	3.500
Footnotes:	1. Existing Permit does not include any Mercoal West. 2. Pit 26 is not mined in this scenario. 3. Robb Trend will be subject to another application.				

II.13. Volume I, Section A.3.2.1, Page A-4, Table A.3.2.1

CVRI provides a summary of evaluation of project alternatives considered for the project.

a. CVRI uses weighting factors or scores of 1, 2 and 3 (Fair, Good and Best) in evaluating the best project alternative. Define each of the evaluation factors identified and discuss the criteria that determined what weight was assigned to each alternative. For example, discuss the 'Geological Understanding' rating of 3 for YT and MW when it is now known that a significant amount of geological information is required for YT?

Response:

A description of the criteria that was provided in Section A.3.2.1 of the Application is provided again:

- coal leases – are they held by CVRI or not;
- geological understanding of the coal reserves;
- engineering and mining factors - technical feasibility, pit design, operating reliability, safety, operating and capital costs and abandonment and decommissioning;
- safety;
- haul distances – distance from the plant site
- biophysical factors/environment - fisheries, vegetation, timber, wildlife, soils, air quality, noise, groundwater, surface water and hydrological; and

- social factors including regulatory, land and resource uses, recreational uses, historical values, traditional use values, public response and safety, and economic considerations.

The ratings were based on an evaluation of the information available at the time. For example although additional geological information is required for Yellowhead Tower, overall understanding of the geology and confidence in the quality and volume of the coal resource is greater than the other potential mining areas.

The response to SIR Question II.34 also provides a description of mining potential for coal reserves in the region.

b. Explain why Pits 31 W and 32 are lower in rating than any of the other non-approved areas and why the safety is at a lower rating.

Response:

Pits 31W and 32 are lower in rating because they have a very high strip ratio and the volume of coal available would only sustain the mine for a very short period of time (1-2 months).

A high strip ratio combined with the topography surrounding Pits 31W and 32 will involve deep pits and large spoil piles in areas of steep terrain, which will inherently bring stability and safety concerns. These pits are located within the Silkstone Seam present on the southern slopes of the Lovett River valley. Spoil stability on these slopes are of concern. CVRI will use sound mining and safety management practices to address any stability/safety concerns during mining.

c. Explain why the Manalta McLeod River area is listed as fair for mining factors below that of any of the other areas. Since the area has flat lying coal or shallower dipping seams this should provide more of an advantage.

Response:

The Manalta McLeod River area is listed as fair as CVM does not own the coal leases plus it is farther away than the other potential mining areas, therefore the operating and capital costs would be greater.

d. Explain why the Robb trend is evaluated high in all of the criteria when it is unapproved and not included in any applications at this time.

Response:

Robb Trend is evaluated as high relative to the other potential mining areas as it is near the existing operation and therefore, supporting infrastructure is available. CVM has conducted

exploration on the Robb Trend leases and has determined that it has a significant coal resource that can sustain the mine for a number of years. In addition, the same seams and geology as those in existing CVM pits are present and a major portion of mining has potential for dragline operations.

II.14. Volume I, Section B.3.1, Page B-3.

CVRI states "CVRI is currently undertaking additional exploration work within the Mercoal West and Yellowhead Tower mine permit areas…CVRI will continue exploration activities in order to gain additional geological information on the proposed mining areas." At the time of submission, CVRI indicated that additional exploration and field investigation would be required for ERCB licencing.

Mercoal West

CVRI noted in the original Application that the western portion of the Mercoal West project area was not considered as fully delineated. Areas were referenced as 'possible' mining reserves. Further drilling and assessments have been completed resulting in some of the western project area being removed from the mining proposal.

Exploration work within Mercoal West has been completed. No further drilling is planned. Drilling has fully delineated the mineable reserves available in the area.

Yellowhead Tower

Significant exploration work within Yellowhead Tower has been completed. Drilling has delineated the mineable reserves available in the area.

Infill drilling is continuing within Yellowhead Tower for finer definition of coal thickening and structural variations. CVM does not anticipate significant changes to existing geological interpretations or reserves estimates. The infill drilling is focused on fine tuning pit designs, especially end wall layout in podded coal measures. Should further drilling result in pit design revisions, CVRI will submit 'technical modifications' as necessary.

The January 2009 Exploration Update for Mercoal West and Yellowhead Tower is provided in Appendix II.14-1, which is included in electronic format on the CD Rom only. Hard copies can be made available upon request.

a. Provide site plans for both MW and YT that shows all mine components (individual pits, dumps and haulroads) and indicates where further work is planned to fulfill ERCB requirements.

Response:

All mine components are presented on Figures II.14-1 and II.14-2 for Mercoal West and Yellowhead Tower, respectively.

Drilling in Mercoal West is complete, while most of the drilling in Yellowhead Tower that is yet to be done is in the western end of the project area. The locations of drillholes completed in 2009 and those yet to be completed in the Yellowhead Tower area are shown on Figure II.14-2.

CVM believes that these plans are adequate to support licence requirements.

b. Provide an update on the progress of fieldwork being undertaken, estimated completion date.

Response:

Field work yet to be completed in the project areas includes further drilling and testing for geotechnical assessments. Additional work will be required to guide construction activities such as placement and construction of wastewater handling facilities.

Exploration

The status of current and future exploration is summarized as follows:

- Mercoal West is complete. Drilling has been completed on 100 m spaced sections.
- Yellowhead Tower is 95% complete. Drilling has been completed on 100 m spaced sections throughout the majority of the project area. The remaining 'in fill' holes in the western portion of the project area will be completed in summer, 2009.

Geotechnical

Geotechnical assessment of pits and dumps have been initiated.

Dump assessments require field testing of dump foundation material. Test pits have been completed in Mercoal West and Yellowhead Tower. Laboratory analyses of samples have been completed. Dump assessments for Mercoal West have been completed. Further design work is required on the larger Yellowhead Tower dumps prior to completing stability analysis.

Geotechnical analysis of pit designs has been completed. Pit slope design has been based on typical geometry as used in past production areas. Analysis has recommended some further assessment may be needed, especially in some of the deeper pits.

The status of geotechnical work is summarized:

- analysis of dumps in Mercoal West has been completed;
- analysis of pits in Mercoal West has been completed;
- analysis of dumps in Yellowhead Tower requires additional design work prior to completion of stability analysis; and
- analysis of pits in Yellowhead Tower has been initiated.

Groundwater

Piezometers have been installed and are being monitored to assist definition of groundwater conditions. Continuation of monitoring will be undertaken in order to identify ongoing effects of mining and groundwater recovery after mining is completed.

No further drilling is planned for groundwater assessment.

Water Management

Waste water management facilities, such as ponds, have been identified and strategically located. Field work is required to confirm conditions of materials at each pond site. This work often involves test pits and laboratory analysis of surficial materials to determine bedrock location and suitability of material for use in embankments.

Field work and pond designs will be undertaken as pond construction is required.

II.15. Volume I, Section B.3.1, Page B-3,

Table B.3.1-1 shows that one test pit was excavated in the YT area.

a. Provide pit location, seam mined, mining date, and amount of coal extracted.

Response:

The ‘test pit’ referenced in Table B.3.1-1 was a ‘grab sample’ obtained from a subcrop exposure.

The sample was obtained in late August 2007 during the building of an access road to a new drill site the subcrop of the Mynheer Seam was encountered. A nearby backhoe was utilized to pull away weathered surficial material and a grab sample was bagged for coal quality analysis.

The sample location is 218 E, 9176 N and is shown on Figure II.14-2 and also on Figure II.25-1 in response to SIR Question II.25.

b. Plot the test pit location in Figure B.3.1-2 and resubmit.(Yellowhead Tower Exploration)

Response:

The location of the test pit is illustrated on Figure II.14-2 and also on Figure II.25-1 in the response to SIR Question II.25.

c. Did CVRI require an ERCB approval for this test pit?

Response:

CVM has conducted exploration in the Yellowhead Tower area under approval of various coal exploration programs with CEP 2007-002 being the most current. These approvals permit CVM to construct access roads, drill pads and conduct drilling.

The 'test pit' noted was simply a 'road cut', which was established along the sub crop of a podded Mynheer Seam structure. A 'grab sample' was taken from the sub crop for quality analysis.

CVM did not seek ERCB approval for this sample site since it was incidental to the drilling program. A Temporary Field Approval (TFA 073749) was obtained from SRD for the site since some additional material disturbance was required to access areas around the coal outcrop.

d. Does CVRI anticipate the need for additional test pits to obtain mine licence information? If yes, discuss test pits exploration program.

Response:

There are no plans for additional test pits in the Mercoal West or Yellowhead Tower areas. Adequate coal quality analysis has been obtained through drill cuttings.

II.16. Volume I, Section B.3.1, Page B-3,

CVRI states that 277 coreholes were drilled in YT. In the legend for Figure's B.3.1-1 (Mercoal West Exploration) and B.3.1-2 (Yellowhead Tower Exploration) the symbols indicate that all the holes were cored.

a. Confirm all holes were cored. If not provide a map indicating which holes were cored and which were used to determine coal quality.

Response:

No 'coring' has been undertaken in either Mercoal West of Yellowhead Tower. Coal samples from rotary drill cuttings have been undertaken in Mercoal West and Yellowhead Tower. All drilling that has taken place should reference "drillholes" or coal exploration holes, not coreholes.

b. Discuss CVRI plans to conduct additional coring.

Response:

There are no plans to 'core' any drillholes for coal structure or coal quality determination.

Coreholes may be considered for geotechnical purposes in definition of pit highwalls. No such program has yet been proposed.

II.17. Volume I, Section B.3.2, Page B-4.

The indicated coal subcrop positions appear to be missing in Figure B.3.1-1.
a. Submit a geological map for MW showing the subcrop line for the Val'Dor Seam.

Response:

Figure II.22-1 shows the Mercoal West area complete with subcrop traces of coal seams. The drillhole plan is current to December, 2008.

b. Submit a geological map for YT showing the subcrop lines for the Val'Dor and Myhneer Seams along with the major fault lines.

Response:

Figure II.25-1 shows the Yellowhead Tower area complete with subcrop traces of coal seams. The drillhole plan is current to December, 2008.

II.18. Volume I, Section B.3.2 and Section B.3.3, Page B-6 to B-7,

CVRI indicates that the Arbour, Silkstone and Upper Myhneer seams are unmineable due to thickness. CVRI also states "Nowhere within Mercoal West is the Upper Mynheer an economic seam. Additional drilling will be conducted along the extreme west end of the mine project area to confirm conditions of the Upper Mynheer."

a. What would be the minimum seam thickness that could be mined and why?

Response:

A coal seam thickness of 3 to 4 metres is considered minimal to warrant consideration for mining.

Thin seams provide low volumes of recoverable coal. Small quantities are not economically viable for recovery since cost of development cannot be recovered.

b. Provide an update on the progress of the additional drilling and discuss the impacts the findings have on detailed pit designs and the overall mine plan.

Response:

Mercoal West

A second drilling program was undertaken in the west end of Mercoal West. It was confirmed that the Val d'Or seam was thinning toward the west and parting thickness increased. The western portion of the project area has been removed from the mining proposal. Refer to the response to SIR Question II.2.

A second drilling program was also undertaken in the east end of Mercoal West. The drilling information has been incorporated into mine plans. Reserve expectations were confirmed.

Infill drilling is underway throughout the Yellowhead Tower area. Data is being incorporated into geology plans and sections. No changes to the mine plan have resulted from recent drilling.

II.19. Volume I, Section B.5.2.8, Page B-14,

CVRI states that partings with sufficient thickness and consistency are subtracted from the coal seam reserve. What is this minimum parting thickness?

Response:

Parting thickness is not the only factor to consider in determination of parting removal.

Carbonaecous shales and siltstones can often be difficult for operators to visually observe as partings in the coal seam. The colour and texture can be very similar to higher ash coal.

The seams involved in the proposed mining plans are all found as steeply dipping structures. Such orientation makes parting removal difficult. Faulting and flooding will add further difficulty in parting removal.

Large equipment, with large buckets and aggressive cutting edges may pose added limitations to 'picking' partings out of the coal seam.

CVRI experience has shown that hard' blocky' sandstone partings can be successfully removed when the thickness of the parting is over 1.0 to 1.5 m. Backhoes and shovels can 'move' the blocky pieces around and selectively load them to trucks.

Mudstone, siltstone and shale partings can be handled separately when parting thickness reaches over 1.5 m. The large buckets cannot effectively strip out smaller partings.

Therefore, CVRI mining plans account for parting removal only when thicker partings are identified over a large portion of the pit. Hard sandstone partings over 1.5 m are typically targeted for removal. Extreme high ash zones are typically targeted for removal when thickness exceeds 2 m.

Operations in coal loading are monitored to attempt parting removals when it is favourable to do so.

II.20. Volume I, Section B.2, Page B-1

CVRI refers to the stratigraphy and the seam formations at the CVM.

a) Provide a stratigraphic map for the MW and YT areas that shows all of the geology, stratigraphy and major structural features of the coal seams and associated strata overlying and underlying the coal seams.

Response:

Stratigraphic maps for Mercoal West and Yellowhead Tower have been reproduced from the Exploration Update (Appendix II.14-1 on CD Rom only) and are provided in hardcopy in Appendix II.20-1. Further information is provided on the cross-section figures for Mercoal West and Yellowhead Tower provided in response to SIR Questions II.24 and II.26, respectively.

b) Provide isopach and top elevation contour maps of all superficial and major lithologic units influencing the mine design.

Response:

Isopach and contour maps are not useful tools for complex faulted structures, steeply dipping seams or repeated seams. A detailed set of cross sections remain the best method of representing such geologic structures. The CVRI geological model of Mercoal West provided by Norwest contains surfaces of topography, till contact and seam structures. Typically, coal mines provide the plan view of pit disturbances along with cross-sections to show coal geology and proposed mining.

Mine design is impacted by the upper till layer. The thickness of till not only reduces the depth of coal subcrop, but also impacts pit highwall layout. It is typical that a small 'safety berm' be provided at the till/bedrock contact to contain potential rumble or sloughing of the till slope.

All lithologic structures can have a highwall design. Specific attention is paid to bentonite layers and any other 'weak' materials. Bedding and jointing are taken into account. Such factors are described in corresponding geotechnical assessments.

c. Provide a typical seam thickness schematic for all of the coal seams in the MW and YT area. Confirm that this is representative of the true stratigraphic thickness and not apparent vertical thickness.

Appendix II.20-1 provides a figure reproduced from the Exploration Update (Appendix II.14-1 provided on CD Rom only) illustrating generalized stratigraphic thickness throughout the project areas.

Coal seam thickness is provided on geological cross-sections for Mercoal West (Figures II.24-1 to II.24-14) and Yellowhead Tower (Figures II.26-1 to II.26-18).

II.21. Volume I, Section B.2, Page B-1

Reference is made to all of the coal seams in the project area. Provide justification on why only the Val D'Or seam is considered mineable. This should include but not be limited to the estimated seam volumes, seam thicknesses, geologic complexity of the seams, and state what the environmental and economic considerations used to determine suitability or unsuitability.

Response:

The following provides a general discussion regarding the suitability of various coal seams to mining.

Mercoal West

Coal measures that occur in the Mercoal West area include Mynheer, Silkstone and Val d'Or seams. This is the normal occurrence of these seams.

Early drilling identified the location and general conditions of all three seams. It was determined that the Mynheer and Silkstone seams where thin and their subcrops were within a valley. The Val d'Or seam was determined to be of more normal thickness with the subcrop on a ridge.

Preliminary reserve assessments discounted the Mynheer and Silkstone seams from the reserve base. The thin seams provided little reserve potential. Thicker till and muskeg eliminates any opportunity for shallow reserves, thus increasing any potential mining ratio. The wet ground conditions and the presence of a creek running in parallel to the seams severely impairs any mining opportunity. Due to these conditions, mining options were limited to the Val d'Or Seam.

The Table II.21-1 indicates the rationale for selection of the Val d'Or Seam as the only viable reserve potential.

Table II.21-1 Coal Seam Descriptions

	Mynheer	Silkstone	Val d'Or
Thickness	Thin	Thin	Normal
Strike length	Broken	Broken	Consistent
Partings	Variable	Variable	Normal
Dip	Steep	Steep	Steep
Subcrop Depth	Deep	Deep	Normal
Reserve Potential	Small	Small	Medium to Small

Table II.21-1 Coal Seam Descriptions			
	Mynheer	**Silkstone**	**Val d'Or**
Mining Method	Dragline	Dragline	Dragline
Ground Condition	Wet	Wet	Okay
Accessibility	Poor	Poor	Okay
Ratio	High	High	Medium
Environmental	High Impact	High Impact	Okay
Value	low	low	Medium

Yellowhead Tower

Coal measures in the Yellowhead Tower area include the Val d'Or and Mynheer Seams. The Silkstone seam has not been found.

Portions of the Yellowhead Tower area are impacted by complex geological structure including significant thrust faulting. In these areas, the seams have been thrust into repeated occurrences and/or thrust into over thickened 'pods'.

Both seams are considered mineable when available for surface excavation. Plant yield could be impacted should over-thickened coal measures be intermixed with partings.

II.22. Volume I, Figures B.3.2-15 to B.3.2-22

These figures do not correspond to the cross-sections locations as depicted by Figure B.3.1-2. Resubmit updated figures.

Response:

In the Application, the cross-section Figures B.3.2-15 to B.3.2-22 are correctly titled and correspond to Figure B.3.1-1 not Figure B.3.1-2, however Figure B.3.1-1 was incorrectly labelled and has been updated to reflect figure numbers that are consistent with the updated cross-section figures listed in Table II.24-1 in response to SIR Question II.24b. The revised Figure B.3.1-1 is included as Figure II.22-1.

Please note that changes to the mine plan in Mercoal West have been made and are now reflected in this figure.

II.23. Volume I, Section B.3.2.1, Page B-6

CVRI provides incorrect cross-section references for Figures B.3.2-13 to B.3.2-23. Update these references.

Response:

The references in Section B.3.2.1 should read as follows:

- Figure B.3.2-12 Section 5800W
- Figure B.3.2-13 Section 6015W
- Figure B.3.2-14 Section 6800W
- Figure B.3.2-15 Section 7534W
- Figure B.3.2-16 Section 7800W
- Figure B.3.2-17 Section 8400W
- Figure B.3.2-18 Section 8800W
- Figure B.3.2-19 Section 9550W
- Figure B.3.2-20 Section 10400W
- Figure B.3.2-21 Section 11000W
- Figure B.3.2-22 Section 11200W

Some of these cross-sections have been updated in response to SIR Question II.24. Table II.24-1 lists the updated figures with the corresponding figures from the Application.

II.24. Volume I, Figures B.3.2-1 to B.3.2-22

a) Provide a master legend/key that identifies the drillhole intercepts and coal seam interpretations depicted.

Response:

Refer to the response for SIR Question II.20, where a stratigraphic diagram depicting the drillhole intercepts and coal seam interpretations is provided for Mercoal West in Appendix II.20-1.

b) expand cross-section seam interpretations beyond the disturbance limits.

Response:

Figures B.3.2-1 to B.3.2-14 have been reproduced as Figures II.24-1 through II.24-14 to show expanded cross-section seam interpretations for Mercoal West.

Due to changes in the mine plan, the cross-sections shown on Figures B.3.2-15 through B.3.2-22 (7534W through 11200W) are no longer within the disturbance area and therefore, have not been reproduced. Part I of the Exploration Update in Appendix II.14-1 contains cross-section diagrams for these areas.

Table II.24-1 lists the updated figures with the corresponding figures from the Application.

Table II.24-1 References for Updated Figures II.24-1 to II.24-14

SIR Figure#	Application Figure #
Figure II.24-1 Mercoal West 2350E	Figure B.3.2-1 Mercoal West Section 2350E
Figure II.24-2 Mercoal West 1200E	Figure B.3.2-2 Mercoal West Section 1200E
Figure II.24-3 Mercoal West 0E	Figure B.3.2-3 Mercoal West Section 0E
Figure II.24-4 Mercoal West 400W	Figure B.3.2-4 Mercoal West Section 400W
Figure II.24-5 Mercoal West 1000W	Figure B.3.2-5 Mercoal West Section 1000W
Figure II.24-6 Mercoal West 1600W	Figure B.3.2-6 Mercoal West Section 600W
Figure II.24-7 Mercoal West 2600W	Figure B.3.2-7 Mercoal West Section 2600W
Figure II.24-8 Mercoal West 3300W	Figure B.3.2-8 Mercoal West Section 3300W
Figure II.24-9 Mercoal West 3800W	Figure B.3.2-9 Mercoal West Section 3800W
Figure II.24-10 Mercoal West 4800W	Figure B.3.2-10 Mercoal West Section 4800W
Figure II.24-11 Mercoal West 5400W	Figure B.3.2-11 Mercoal West Section 5400W
Figure II.24-12 Mercoal West 5800W	Figure B.3.2-12 Mercoal West Section 5800W
Figure II.24-13 Mercoal West 6015W	Figure B.3.2-13 Mercoal West Section 6015W
Figure II.24-14 Mercoal West 6800W	Figure B.3.2-14 Mercoal West Section 6800W

c) provide a depiction of the proposed pit limits.

Response:

The proposed pit limits have been overlayed on the drillhole cross-sections depicted in Figures B.3.2-1 to B.3.2-14, which were included in Section B Geology to represent the geological cross-sections of Mercoal West, and are provided in Figures II.24-1 through II.24-14.

d) provide and identify coal seam interpretations for the Val D'Or seam that represents the text interpretations found in Section B.3.2.1, page B-6.

Response:

Appendix II.20-1 provided in response to SIR Question II.20 identifies the coal seam interpretations for the Val d'Or seam in the Mercoal West area.

The cross-sections for Mercoal West in Figures II.24-1 through II.24-14 and in the Exploration Update (Appendix II.14-1) provide further information. In addition, the detailed geologic model and 'sensitivity analysis' completed by Norwest for the Mercoal West area will be submitted to the ERCB under separate cover.

Coal 'burn zones' have been identified by drilling. Burn zones are indicated on respective cross sections.

e) provide coal seam interpretations for the Silkstone seam that represents the text interpretations found in Section B.3.2.2, page B-6.

Response:

Appendix II.20-1 provided in response to SIR Question II.20 identifies the coal seam interpretations for the Silkstone seam in the Mercoal West area.

The cross-sections for Mercoal West in Figures II.24-1 through II.24-14 and in the Exploration Update (Appendix II.14-1) provide further information. In addition, the detailed geologic model and analysis completed by Norwest for the Mercoal West area will be submitted to the ERCB under separate cover.

Thick till and muskeg cover the Silkstone Seam sub crop, which is located in the creek valley. Topographic maps, soil maps and cross-sections all illustrate the occurrence of thicker surficial materials.

f) provide coal seam interpretations for the Myneer seam that represents the text interpretations found in Section B.3.2.3, page B-6.

Response:

Appendix II.20-1 provided in response to SIR Question II.20 identifies the coal seam interpretations for the Mynheer seam in the Mercoal West area.

The cross-sections for Mercoal West in Figures II.24-1 through II.24-14 and in the Exploration Update (Appendix II.14-1) provide further information. The cross-sections illustrate the coal measures of the Mynheer Seam. The seam thickness is reduced and split with partings. In addition, the detailed geologic model and analysis completed by Norwest for the Mercoal West area will be submitted to the ERCB under separate cover.

II.25. Volume I, Figure B.3.1-2

Update this figure to include the drillhole annotation that corresponds to Figures B.3.3-1 to B.3.3-17.

Response:

Figure B.3.1-2 has been updated with drillhole annotations and also to show correct cross-section labels and corresponding cross-section figures for Yellowhead Tower. It is presented as Figure II.25-1.

Figures B.3.3-1 to B.3.1-17 have also been updated to correspond to the new labels on Figure II.25-1 and are provided as Figure II.26-1 to II.26-18 in response to SIR Question II.26.

II.26. Volume I, Figures B.3.3-1 to B.3.3-17

a) Extend cross-sections beyond the disturbance limits.

Response:

Figures B.3.3-1 to B.3.3-17 have been updated and are presented as Figures II.26-1 through II.26-18, showing expanded cross-sections past the disturbance limits for Yellowhead Tower.

Note that Section 4000E had inadvertently been omitted from the series of cross-sections provided in the Application, although it was listed on Figure B.3.1-2. (Refer to response to SIR Question II.25)

Section 4000E is now shown on Figure II.26-4. Table II.26-1 lists the updated figures with the corresponding figures from the Application.

Table II.26-1 References for Updated Figures II.26-1 to II.26-18

SIR Figure #	Application Figure #
Figure II.26-1 Yellowhead Tower 5100E	Figure B.3.3-1 Yellowhead Tower 5100E

Table II.26-1 References for Updated Figures II.26-1 to II.26-18	
SIR Figure #	**Application Figure #**
Figure II.26-2 Yellowhead Tower 4800E	Figure B.3.3-2 Yellowhead Tower 4800E
Figure II.26-3 Yellowhead Tower 4400E	Figure B.3.3-3 Yellowhead Tower 4400E
Figure II.26-4 Yellowhead Tower 4000E	Non-existent
Figure II.26-5 Yellowhead Tower 3600E	Figure B.3.3-4 Yellowhead Tower 3600E
Figure II.26-6 Yellowhead Tower 3200E	Figure B.3.3-5 Yellowhead Tower 3200E
Figure II.26-7 Yellowhead Tower 2800E	Figure B.3.3-6 Yellowhead Tower 2800E
Figure II.26-8 Yellowhead Tower 2000E	Figure B.3.3-7 Yellowhead Tower 2000E
Figure II.26-9 Yellowhead Tower 1560E	Figure B.3.3-8 Yellowhead Tower 1560E
Figure II.26-10 Yellowhead Tower 1200E	Figure B.3.3-9 Yellowhead Tower 1200E
Figure II.26-11 Yellowhead Tower 800E	Figure B.3.3-10 Yellowhead Tower 800E
Figure II.26-12 Yellowhead Tower 300E	Figure B.3.3-11 Yellowhead Tower 300E
Figure II.26-13 Yellowhead Tower 130E	Figure B.3.3-12 Yellowhead Tower 130E
Figure II.26-14 Yellowhead Tower 600W	Figure B.3.3-13 Yellowhead Tower 600W
Figure II.26-15 Yellowhead Tower 1000W	Figure B.3.3-14 Yellowhead Tower 1000W
Figure II.26-16 Yellowhead Tower 1400W	Figure B.3.3-15 Yellowhead Tower 1400W
Figure II.26-17 Yellowhead Tower 1800W	Figure B.3.3-16 Yellowhead Tower 1800W
Figure II.26-18 Yellowhead Tower 2200W	Figure B.3.3-17 Yellowhead Tower 2200W

b) extend cross-section seam interpretations beyond the disturbance limits.

Response:

Figures II.26-1 through II.26-18 show expanded cross-section seam interpretations for Yellowhead Tower.

c) update the cross-sections with the proposed pit limits.

Response:

The proposed pit limits have been overlayed on the drillhole cross-sections depicted in Figures B.3.3-1 to B.3.3-17, which were included in Section B Geology to represent the geological cross-sections of Yellowhead Tower, and are provided as Figures II.26-1 through II.26-18.

d) provide and identify coal seam interpretations for the Val D'Or seam that represents the text interpretations found in Section B.3.3.1, page B-10.

Response:

Appendix II.20-1 provided in response to SIR Question II.20 identifies the coal seam interpretations for the Val d'Or seam in the Yellowhead Tower area.

The cross-sections for Yellowhead Tower in Figures II.26-1 through II.26-18 and in the Exploration Update (Appendix II.14-1) provide further information. In addition, a detailed geologic model and analysis to be completed by Norwest for the Yellowhead Tower area will be available in Q2 of 2009.

Geologic structure includes multiple faulting, both normal and duplex. The structural complexity is well illustrated on cross-sections.

e) provide and identify coal seam interpretations for the Silkstone seam that represents the text interpretations found in Section B.3.3.2, page B-10.

Response:

Appendix II.20-1 provided in response to SIR Question II.20 identifies the coal seam interpretations for the Silkstone seam in the Yellowhead Tower area.

The cross-sections for Yellowhead Tower in Figures II.26-1 through II.26-18 and in the Exploration Update (Appendix II.14-1) provide further information. In addition, a detailed geologic model and analysis to be completed by Norwest for the Yellowhead Tower area will be available in Q2 of 2009.

Cross-sections illustrate the Silkstone coal measures found. The seam is thinned and inconsistent in the area.

f) provide and identify coal seam interpretations for the Myneer seam that represents the text interpretations found in Section B.3.3.3, page B-10.

Response:

Appendix II.20-1 provided in response to SIR Question II.20 identifies the coal seam interpretations for the Mynheer seam in the Yellowhead Tower area.

The cross-sections for Yellowhead Tower in Figures II.26-1 through II.26-18 and in the Exploration Update (Appendix II.14-1) provide further information. Cross-sections illustrate the 'pods' located by drilling. In addition, a detailed geologic model and analysis to be completed by Norwest for the Yellowhead Tower area will be available in Q2 of 2009.

II.27. Volume I, Figures B.3.3-8 to B.3.3-10

CVRI depicts an intersection with Chance Creek which is not represented on Figure B.3.1.2 Update figures.

Response:

As stated in the response to SIR Question II.26, Section 4000E had inadvertently been omitted from the series of cross-sections provided in the Application, although it was shown on Figure B.3.1-2. This resulted in an incorrect labelling of the cross-section figure references for Figures B.3.3-4 through B.3.3-18 on Figure B.3.1-2.

Cross-section Figure B.3.3-8 Yellowhead Tower 1560E should, in fact indicate an intersection with Chance Creek, just as Figure B.3.3-9 Yellowhead Tower 1200E and B.3.3-10 Yellowhead Tower 800E should. This was due to mislabelling on Figure B.3.1-2 and the omission of Section 4000E in the cross-section series. Figure B.3.1-2 has been updated and is presented as Figure II.25-1. All Yellowhead Tower cross-sections have been updated and are presented as Figures II.26-1 through II.26-18.

Refer to Table II.26-1 provided in response to SIR Question II.26 for the listing of updated figure numbers.

II.28. Volume I, Table B.3.3-1

CVRI states that underground mining is present within the cross-section 5100E, 4800E, and 1560E. Update cross-section Figures B.3.3-1, B.3.3-2 and B.3.3-8 to depict the location of this underground mine.

Response:

Table B.3.3-1 incorrectly stated that underground mining occurred at cross-section 5100E. This table has been revised and is presented as Table II.28-1. Figures II.26-2 and II.26-9 have been updated and identify underground mining at cross-sections 4800E and 1560E, respectively.

Table II.28-1 Yellowhead Tower - Mining Conditions

Cross-section (m E)	Features	Under-ground Mining	Val d'Or			Mynheer		
			Till	Dip	Thickness (m)	Till	Dip	Thickness (m)
5100	Powerline		3	Varies	9.5-13.0		70	16.0-29.0
5000			3	Varies	11.0-14.5		72	16.0-46.0
4800		U/G	2	Varies	11.0-30.0		Faulted Out	
4600			2	Varies	20.0-28.0		Faulted Out	
4400			2	Varies	15.0-32.0		Faulted Out	
4200			2	Varies	17.0-38.0		Faulted Out	
4000			2	Varies	9.0-11.0		Faulted Out	
3800			2	Varies	6.0-9.0		Faulted Out	
3700	Pipeline		2	Varies	9.0-11.0		Faulted Out	
3600			2	Varies	9.0-14.0		Faulted Out	
3400			2	Varies	11.0-19.0		Faulted Out	
3200			2	Varies	10.0-17.0	4.0	87	5.0

Table II.28-1 Yellowhead Tower - Mining Conditions

Cross-section (m E)	Features	Under-ground Mining	Val d'Or			Mynheer		
			Till	Dip	Thickness (m)	Till	Dip	Thickness (m)
3000			2	Varies	3.0-15.0		Faulted Out	
2800			2	Varies	0-10.0	2.0	90	3.0
2600			2	Varies	7.5-11.0	3.0	90	8.0-15.0
2400			2	Varies	0.0-8.0	2.5	90	7.0-18.0
2320	Pipeline		2	Varies	7.0-23.0	5.0	90	13.0-18.0
2200			2	Varies	2.0-20.0	5.5	90	8.0-13.0
2000			2	Varies	12.0-38.0	2.8	90	3.5-8.5
1800	Creek		4	Structurally Complex			Faulted Out	
1613						2.0	90	15.0
1560	Road – Creek	U/G	8	Structurally Complex				59.0-46.0
1400	Road		2	Structurally Complex		2.0	82	50.0
1200	Road		2	Structurally Complex		2.0	75	50.0
1000	Road		2	Structurally Complex			73	23.0-9.0
800	Road		3	72	12.0	4.0	51	
600	Road		3	68	11.0		Faulted Out	
450	Road		3.5	67	13.0		Faulted	
300	Road			Faulted Out				50.0-33.0
225	Wellsite		No drilling					17.0
-130	Pipeline			Structurally Complex				
-300			2	Faulted	5.5			

Table II.28-1 Yellowhead Tower - Mining Conditions								
Cross-section (m E)	Features	Under-ground Mining	Val d'Or			Mynheer		
			Till	Dip	Thickness (m)	Till	Dip	Thickness (m)
-300	Pipeline		2	Structurally Complex				
-400			2	Faulted	10.5			
-400	Pipeline			Structurally Complex				
-600			2	Faulted	12.0			
-600	Pipeline		1	Faulted	35.0			
-800			1	Fault Repeated	12.0	2.0	69	16.0
-800	Pipeline		1	Faulted	35.0			
-1000			1	Fault Repeated		2.0	71	16.0
-1000	Pipeline		1	Structurally Complex				
-1200			1	Fault Repeated			Faulted	
-1200	Pipeline		2	Structurally Complex				
-1400			1	Structurally Complex		2.0	90	26.0
-1400	Pipeline		3	Faulted 90	11.0			
-1600				Structurally Complex		3.0	80	50.0
-1800				Faulted		5.0	80	38.0
-2000				Structurally Complex		4.0	90	19.0
-2200				Structurally Complex		6.0	90	5.0

II.29. Volume I, Section B.3, Page B-3

CVRI refers to the drill holes throughout this part of the permit application area and the coal quality. Provide tables for the drilling information which show the total depths and coal intercepts.

Response:

Coal Quality

CVRI obtains occasional coal quality samples from drill holes completed in the exploration phase of development. The samples are obtained by selecting drill cuttings from the major seams. The results are utilized to observe any major variations in seam characteristics.

Appendix II.29-1 provides a tabulation of drillhole coal samples obtained in both the Mercoal West and Yellowhead Tower areas.

Coal intercepts

A listing of 'coal intercepts' from the drilling completed in Mercoal West and Yellowhead Tower would represent several hundred pages of data. Should the ERCB require this information, then a protocol for electronic data transfer is requested.

All drilling information is already provided to ERCB has part of ongoing Coal Exploration Programs. Copies of all geophysical logs are routinely copied to the ERCB.

All 'analog geophysical logs' for Mercoal West and Yellowhead Tower have been transferred to the ERCB.

CVRI also implemented 'digital geophysical log recording' in November, 2008. Therefore, the most recent geophysical logs will be transferred to the ERCB once an electronic protocol for such a transfer has been established.

II.30. Volume I, Figures C.3.1-1 to C.3.1-7

Extend the cross section past the pit limits depicted in these figures to better represent the coal deposit at depth.

Response:

Extended cross-sections showing pit limits are depicted in the figures listed in Table II.30-1. These were generated for the response to SIR Question II.26.

Table II.30-1 References for Updated Figures C.3.1-1 to C.3.1-7	
SIR Figure#	**Application Figure #**
Figure II.26-2 Yellowhead Tower 4800E	Figure C.3.1-1 Yellowhead Tower Development and Reclamation Section 4800E
Figure II.26-4 Yellowhead Tower 4000E	Figure C.3.1-2 Yellowhead Tower Development and Reclamation Section 4000E
Figure II.26-7 Yellowhead Tower 2800E	Figure C.3.1-3 Yellowhead Tower Development and Reclamation Section 2800E
Figure II.26-10 Yellowhead Tower 1200E	Figure C.3.1-4 Yellowhead Tower Development and Reclamation Section 1200E
Figure II.26-13 Yellowhead Tower 130E	Figure C.3.1-5 Yellowhead Tower Development and Reclamation Section 130E
Figure II.26-16 Yellowhead Tower 1400W	Figure C.3.1-6 Yellowhead Tower Development and Reclamation Section 1400W
Figure II.26-18 Yellowhead Tower 2200W	Figure C.3.1-7 Yellowhead Tower Development and Reclamation Section 2200W

II.31. Volume I, Section B.5, Page B-12

Reference is made to Table B.5.1-2, which cannot be located. Provide Table B.5.1-2 which is assumed to be the material handling for YT area.

Response:

Materials handling for the YT area is included in the Application as Table C.3.1-1. Table B.5.1-2 does not exist. The material handling for Yellowhead Tower is provided in Table II.31-1.

Table II.31-1 Yellowhead Tower Mining Plan

Pit	Mine Method	Seam	Waste (BCM)	Coal (RMT)	Ratio (BCM/ RMT)	Yield (%)	Coal (CMT)	Ratio (BCM/ CMT)
150	Backhoe	Mynheer	1,592,290	586,296	2.72	52.5	307,805	5.17
151	Backhoe Dragline	Mynheer	1,235,585	496,479	2.49	52.5	260,651	4.74
152	Backhoe	Mynheer	11,062,034	4,817,174	2.30	52.5	2,529,017	4.37
153	Backhoe	Mynheer	1,249,392	645,997	1.93	52.5	339,148	3.68
154	Backhoe	Mynheer	9,684,219	3,389,990	2.86	52.5	1,779,745	5.44
160	Dragline	Val d'Or	7,031,722	2,744,986	2.56	52.5	1,441,117	4.88
161	Dragline	Val d'Or	1,583,642	704,362	2.25	52.5	369,790	4.28
162	Backhoe Dragline	Val d'Or	8,492,958	4,988,606	1.70	52.5	2,619,018	3.24
163	Backhoe Dragline	Val d'Or	1,414,937	2,090,974	0.68	52.5	1,097,761	1.29
164	Backhoe Dragline	Val d'Or	9,081,067	3,923,806	2.31	52.5	2,059,998	4.41
165	Dragline	Val d'Or	1,629,941	1,027,505	1.59	52.5	539,440	3.02
Total			**54,057,787**	**25,416,175**	**2.13**	**52.5**	**13,343,490**	**4.05**

II.32. Volume I, Section B.5.3, Page B-15

Table B.5.3-1 summarizes the areas of unrecoverable coal due to various physical constraints. The ERCB understands that hydrocarbon-like odours were encountered during exploratory drilling within the YT.

a) Provide a discussion and update on the odour issue.

Response:

CVM has continued drilling in the Yellowhead Tower area. No additional occurrences of odours have been noted, even during infill drilling near locations where hydrocarbon-like odours were previously identified. Due to the sporadic nature of the hydrocarbon-like odours, the source and extent of potential impact has not been determined. CVM will continue to evaluate this issue with a focus on minimizing potential health and safety issues.

b) Discuss the potential resource impacts of the odour issue.

CVRI does not consider the issue to have any impact on resources.

There is no indication that the coal is impacted in any way.

It appears that the source of the odour is within the overburden above the coal seams. Whatever the source, testing has indicated very low concentrations of hydrocarbon constituents. It appears that the impact is limited to air impacts. It is speculated that the material is highly volatile and once exposed, dissipates rapidly.

c) Provide a plan for both MW and YT that shows the impacted areas along with the physical constraints.

The hydrocarbon-like odours do not exist in the Mercoal West mining area, therefore no areas are impacted and CVRI does not consider the issue to have any impact on resources in the Yellowhead Tower area.

d) Resubmit Table B.5.3-1 with the associated coal tonnages that will be unrecoverable.

As stated in the response to SIR Question II.32b, CVRI has no evidence that any coal resources will be lost due to the reports of odours during drilling. The issue appears to be sporadic and temporary; therefore, Table B.5.3-1 will not change.

II.4 MINING

II.33. Volume I, Section A.1, Page A-2, Table A.1.0-1

CVRI refers to the MW coal reserves as being within a steeply dipping monocline. Also in Section C.1.4.1, Page C-5 reference is made to steeply dipping coal seams and terrain suitable for dragline operations and spoiling on both sides of the pit.

Response:

Steep Monoclines

There are some fundamental practical issues resulting from mining monoclines:

- the inherent difficulty of 'inclined seams' is the inability to place spoil on the seam footwall, therefore all overburden must be completely removed from the pit;
- an 'economic' cutoff limit exists so that mining below the limit is not justified; and
- while dragline applications provide the lowest cost mining, the machine has geometric limitations.

Mining Scenarios

For discussion purposes, CVRI has provided a 'Typical Cross-Section' illustrating various mining scenarios (Appendix II.33-1). The cross-section represents a steeply dipping coal seam. The geometry of several pit configurations are superimposed on the section.

Simple Cut

Table A on the figure in Appendix II.33-1 indicates the mining quantities involved for a series of pit shells. Case 1 is an arbitrary highwall position. The following cases are spaced at 15 m intervals. The values provided illustrate the increasing strip ratio as the pit highwall moves outward and the pit depth increases.

Should an 'economic limit' of 3.25:1 BCM/RMT be employed, then the 'incremental mining of Case 3 would not be economic. While the 'overall' pit ratio is still low (1.94:1 BCM/RMT), the incremental material would be mined at a loss. In this case, the shallow coal helps pay for the loss incurred in gaining the lower coal.

Dragline Only

Table B on the figure in Appendix II.33-1 illustrates a scenario representing a dragline operation. In this case, the pit is limited to the highwall of Case 2. The dragline is not capable of mining any deeper. Should a Case 3 be attempted, the re-handling of material would become prohibitive and the pit bottom would not be reached.

Dragline Top & Backhoe Bottom

The natural extension of the previous scenario is to have the dragline 'pre-strip' the top of the pit then follow-up with a backhoe in the bottom of the pit.

Table C on the figure in Appendix II.33-1 illustrates the mining quantities involved in this scenario. The dragline can mine beyond Case 2, but only with an increasing amount of re-handle. The spoil from the first cut is in the way of subsequent cuts and must be moved again by the dragline. The result is rapidly increasing strip ratios as the pit widens and deepens.

a) Justify CVRI's proposed use of dragline equipment within this steeply dipping monocline area.

CVRI has operated a large walking dragline in the CVM operations for many years. The machine has a proven application at the mine. Operating costs for the dragline are significantly lower than any other mining method employed at the site.

Continued use of the dragline is a high priority in maintaining the mining cost structure at the CVM operation. Overburden removal by the dragline is accomplished at a low cost. The unit is capable of moving 7 million BCM/year. This represents a capability of releasing a large portion of the coal required.

The dragline is being scheduled for Mercoal West to accommodate needed coal release. There is no other suitable location for this machine to be employed. The dragline is also the most cost effective means of recovering the Mercoal West coal reserves.

b) Provide the volumes of coal (raw) that are inside the permit area but outside the pit area.

Refer to the response to SIR Question II.12c.

c) Discuss whether use of the dragline could be limiting access to or sterilizing deeper coal.

Steeply dipping seams result in shallow pits due to rapidly increasing strip ratios as depth increases. The economic depth limit of such coal structure is limited to shallow cuts.

The dragline is able to reach the economic cut-off depth and is also the lowest cost method of mining.

Regardless of what depth is utilized as a cut-off the opportunity to mine the remaining deeper coal is impacted. Utilization of a dragline further complicates this 'future case' through placement of spoil on top of the remaining coal. This further increases the stripping requirements for any future mining scenario. The remaining coal is not 'sterilized' since it is still available for future exploitation.

d) Discuss if CVRI have assessed the opportunity to do the preliminary overburden removal operations with the dragline and then totally develop both pits for truck and shovel.

CVRI has considered an alternative to 'pre-strip' with the dragline then follow up with a backhoe operation in the lower benches of the pit. While this is a practical and workable scenario, the stripping ratios involved are beyond what are economically viable.

e. Discuss whether CVRI could maximize recovery of deeper coal by a two pass mining scenario with a dragline.

CVRI has considered the alternative of a 'two pass' dragline scenario. In this case, the spoil to the up dip side is maximized. On the second pass, the dragline then moves spoil to the down dip side.

It is found that the geometry of the dragline is a limitation on the second pass and digging depth is limited. To achieve a greater digging depth, the machine has to be lowered thereby creating a chop-cut situation. An inherent result in lowering the dragline is that the dumping height is also reduced. This compounds the problems with spoil room, which can only be solved by extending the chop-cut down-dip and re-handling a major portion of the spoil. The resulting increased strip ratio is prohibitive.

II.34. Volume I, Section A.3.2.2, Page A-5

CVRI refers to other development alternatives considered.

a) Discuss in detail the alternatives considered.

Response:

Alternatives to Project

Section A.3.2 of the Application provides a description of alternatives considered to the proposed project. These included:

1. No project

   This would imply simply winding down the existing mine operation by utilizing the remaining reserves.

   This was unacceptable since the company wishes to continue mining as a business opportunity. Market demand for export, thermal coal remains as a long term, viable business.

2. Reducing production

   This would imply simply reducing production levels and stretching out mining over a number of years.

   This was unacceptable since capital has been expended to provide a capacity of 4.0 million CMT per year. Reduced production levels would increase unit costs.

3. Developing additional surface reserves within the existing permit area
   - Pit 31W and 32
   - Pit 21 Cut 8

     These remaining reserve areas within the permit area are small and have high mining ratios. These may still be placed into production, but the added mine life would be minimal.

   - Pit 26

     This pit is included in short-term mining plans.

- Extending mining deeper

  CVRI reviewed additional reserves within the permit area finding that any additional significant reserves could be developed only with significantly higher mining ratios. The cost of mining would be prohibitive.

- Pit 122 Wetland

  This reserve area is considered feasible for mining at a reasonable mining ratio. The presence of a wetland area over the reserve is prohibiting mining.

4. Adding additional coal reserves by adding adjacent CVRI coal lease areas.
   - Mercoal West

     This project area was drilled to determine reserve potential. The reserve available is limited, but is practical for the large dragline.

   - Yellowhead Tower

     This project area was drilled to determine reserve potential. Drilling indicated significant coal reserves. Additional drilling was required for definition of mining.

   - Robb Trend

     This project was drilled to determine reserve potential. Drilling indicated the presence of regular coal seams and potential surface mining for the large dragline.

   - McLeod East

     This project was drilled to determine reserve potential. No mineable coal was found.

   - Oppelt

     The project area requires additional assessment. Reserves are expected to be limited.

   - Pembina Forks

     The project requires additional assessment. Coal leases in the area are limited.

5. Adding additional coal reserves by adding adjacent ‘non CVRI’ coal lease areas.
   - Bryan Mountain

     CVRI has acquired some of the coal leases. Potentially the area could be added to Robb Trend or McLeod River.

   - Mancal McLeod River

     The lease area is owned by another company hence is not available to CVRI.

6. Developing underground mine reserves in the region.

   CVRI has prior experience in a 'test underground mine' at CVM. It is understood that specific mining conditions are required for successful underground mining and that not all seams in the region would be satisfactory for underground mining methods.

   The company believes that capital and operating costs of a large underground mine would be prohibitive.

7. Changing surface mining methods.

   - Acquiring larger or different equipment

     CVRI has acquired larger equipment in order to gain productivity and lower operating costs. The truck fleet is being switched to Cat 789 units. Large hydraulic backhoes and shovel-fronts are now in use.

   - Employing overland conveyors

     A feasibility study was undertaken to review the potential for utilization of overland conveyors to reduce haulage costs. It was determined that this would represent a high capital investment.

   - Developing shorter haulage routes

     CVRI has reviewed potential for a 'shortcut' haul route in order to lower operating costs; however, this option is no longer viable.

   - Employing a rail 'shuttle' system

     A feasibility study was undertaken to review potential for 'rail shuttle' options. It was determined that operating costs would be prohibitive.

With respect to dragline mining, various alternatives for dragline utilization were considered. These included:

1. Spoiling overburden to the 'up dip' position including re-handle of spoil to reduce material placed 'down dip'.

   Reach to the 'up dip' position is limited. Re-handle would be necessary to place any significant amount of spoil to this side.

   A buffer is required to keep the spoil toe from the rim of the footwall in order to limit geotechnical concerns for the footwall stability.

Spoil placement on the 'up dip' is often limited by terrain and impact of greater land disturbance. For example, in Mercoal West spoil on the 'up dip' side would be placed on sloping terrain with concerns of spoil stability and potential impact on creeks in the valley below.

2. Spoiling on the footwall. Options including consideration of digging out a portion of the footwall and then placing a 'buck wall'.

   The steep dip of the footwall precludes placement of any material on the slope.

3. Use of the smaller Marion 7450 to 'rehandle' spoil from the larger dragline. This would represent a 'dual' dragline scenario.

   This involves additional rehandle with inherent added cost.

4. Increasing 'chop cut' to place the dragline lower to reach to greater depth.

   Lowering the dragline by chop cut would decrease the effective dumping height which the machine could achieve thus lowering spoil capacity.

5. 'Pre-benching' with the dragline or the Marion 7450.

   This involves additional rehandle with inherent added cost.

6. Excavating the spoil foundation with the Marion 7450 to create addition spoil room for the larger dragline.

   This involves additional rehandle with inherent added cost.

With respect to backhoe mining various alternatives where considered:

1. Pre-stripping with a backhoe operation was considered to reduce the amount of material handled by the dragline. The dumping height of the dragline then becomes a limitation for spoiling capacity.
2. A scenario was considered in which the dragline would handle the top portion and a backhoe would mine a bottom portion of overburden. This represented the best option with potential for economic conditions. This option could be considered when the seam dip is reduced so that the dragline re-handle could be reduced.
3. Utilization of backhoe mining methods only. If the coal is mineable by the dragline then a cost penalty is created.

b) Provide the evaluation that CVRI used to justify the use of a dragline versus a truck-shovel when operating on 'steeply dipping monocline' coal seams.

Response:

CVRI has continued to utilize the existing large walking draglines for nearly 30 years. The units remain operational and their use is very cost effective in stripping overburden.

The operating cost of the large walking dragline is 1/3 of the cost of overburden mining with a backhoe and truck method. Continued 'full utilization' of the Page 752 dragline is a priority in order to maintain low mining costs. The Page 752 is capable of moving over 7.0 million BCM of overburden per year.

The capital and operating cost of replacing the dragline stripping capacity with other equipment is prohibitive. The 'cost structure' requires that use of the dragline be maximized.

II.35. Volume I, Section C.1.1, Pages C-1 to C-3,

CVRI indicates the mining equipment that is going to be used in the MW and YT area.

a. Provide equipment design and specification sheets for all the various pieces of equipment.

Response:

Specifications for mining equipment to be utilized in Mercoal West and Yellowhead Tower are provided in Appendix II.35-1.

Please note that a new O&K RH170 backhoe will soon be at work at CVM. The larger unit is expected to improve productivity and lower costs of overburden stripping. The machine is particularly targeted for the larger pits anticipated in Yellowhead Tower.

b. Provide range diagrams or schematics for the equipment when operating on the steeply dipping extents of the mining areas.

Response:

Range diagrams and schematics for draglines and hydraulic excavators are included in Appendix II.35-1.

Various machines have inherent limitations in any mining scenario. Some of the factors of interest in 'inclined seams' include:

1. The Page 752 dragline has limited digging depth. It is capable of reaching to approximately 40 m depth, but is very ineffective at this depth. A practical limit of 37 m is utilized in pit design.

2. The Page 752 dragline has limited dumping reach and height. The operating reach is approximately 80 m and the maximum dumping height is approximately 29 m.
3. Backhoes are used in pit bottom to recover coal. The inclined seam produces a 'pinch point' at the pit bottom, which limits the ability to get at the final pit bottom coal. The backhoe must be able to rotate 180 degrees and maintain a safe position beneath the highwall.
4. Trucks are also restricted in the pit bottom due to this same 'pinch point'. Trucks must be provided adequate room to turn around or else must be backed into position for loading.

II.36. Volume I, Section C.1.5, Pages C-6,

.

CVRI states "The spatial limits of the pit are determined by geologic, economic, topographic and operational boundaries. Variables which determine this are steeply dipping coal seams, lack of overburden spoiling room and amount of rehandle." Provide the pit design associated with a strictly shovel truck operation, which traditionally has less constraints while operating in steeply dipping coal seams and provides more dynamic waste/overburden handling and reduces the rehandle associated with dragline operations.

Response:

Alternatives utilizing 'backhoe only' methods are discussed in the response to SIR Question II.34a.

While backhoe mining avoids the re-handle inherent in dragline mining methods the relative mining cost of the backhoe operation must be considered. If the coal is recoverable by the dragline then a cost penalty would result if a backhoe operation were imposed.

II.37. Volume I, Section C.1.4, Pages C-5,

.

CVRI provides a description of mining. Provide an economic ratio (example – twice as expensive) that illustrates the economic difference between;

Response:

CVRI has proposed an economically viable mining plan for Mercoal West and Yellowhead Tower. The dragline has been utilized where and when it is available and best employed. Backhoes have been utilized for the remainder of the project.

Should economic conditions change (good or bad) then adjustments to the mining plan would be made.

Should costs become twice as expensive, then mining opportunity would become severely reduced. It is likely that the only reserve which could be considered would be the over-thickened 'pods' found in the western end of the Yellowhead Tower area.

a. employing only a truck shovel operation for the entire MW and YT project,

This implies shutting down the large walking dragline. This is the lowest cost mining method available to CVRI.

In this scenario (twice the cost) then the Mercoal West reserves would likely not be developed at all. Mining in the Yellowhead Tower would be limited to only the over-thickened coal seams.

b. employing only a dragline operation for the entire MW and YT project, and

The dragline is not capable of providing all the coal that can be sold. The plant has a capacity to handle 4.0 million CMT per year. Reducing production would further increase overhead costs.

In this scenario (twice the cost) then the Mercoal West reserves would likely not be developed at all. Mining in the Yellowhead Tower would be limited to only the over-thickened coal seams.

c. employing the proposed dragline/ truck shovel operation for the MW and YT project.

This scenario has been described in the Application.

In this scenario (twice the cost) then the Mercoal West reserves would likely not be developed at all. Mining in the Yellowhead Tower would be limited to only the over-thickened coal seams.

II.38. Volume I, Section A.6.3, Page A-13,

.

CVRI refers to the mine development production and timing over a period from 2008 to 2015. Provide a revised schedule without using the scenario of Robb as a source of production (the Robb area is not permitted);

Response:

The Page 752 Dragline is scheduled to leave the Yellowhead Tower area in Q3, 2012. It is anticipated that it would be relocated in other reserve areas (such as Robb Trend).

Backhoes would remain in Yellowhead Tower to complete mining. It is anticipated that mining would be complete in the Yellowhead Tower during 2014 – 2015. Some of the backhoes would be relocated earlier to other reserve areas, such as Robb Trend. CVRI has already discussed that Robb Trend is the next planned development beyond Mercoal West and Yellowhead Tower. CVRI has already commenced the process to apply for a permit on Robb Trend by conducting additional exploration drilling and environmental baseline collection. Refer to Table II.12-4 in the response to SIR Question II.12d.

Table II.12-1 in the response to SIR Question II.12a illustrates a production scenario without incorporating Robb Trend in the mine schedule. The result is a reduction in annual production from the mine. Alternatively, production could be added from other permitted reserves such as Pit 26.

II.39. Volume I, Sections C.2.1 and C.3.1, Pages C-13 and C-21,

.

CVRI makes reference to the incremental strip ratio and due to spatial limits due to the steeply dipping coal seams and dragline limitations a very low strip ratio is being forecast. Tables C.2.1-1 and C.3.1-1 show average strip ratios of 2.13 bcm/rmt or 4.05 bcm/cmt.

a. Discuss CVRI's rationale for the proposed strip ratio in light of the current coal market, and whether a higher ratio would be sustainable considering the trend of rising coal prices,

Response:

Coal prices are volatile. The mining proposal is based on a prediction of coal supply pricing over the next few years. Adjustments to the mine plan would be made over time in reaction to the marketplace (good or bad). Please note that current market trends are less favourable than last year.

Care should be taken in comparing open pit, export thermal coal mining to other coal mining activities in the region. The proposed mining plan is relatively unique:

- the company has developed an export market with competition from mines around the world. Pricing must be competitive;
- the product is sold on the export market, not as a domestic product;
- the mine does not operate as a 'captive' mine to a power plant. There is no long term contract or built in escalation factors;

- the coal is for thermal use not metallurgical use. The market demand and price are entirely different;
- the mine operates in the foothills region of the province. Overburden materials are not comparable to prairie operations. All the overburden must be blasted in order to be excavated;
- the coal seams are 'dirty'. The raw coal must be cleaned in order to meet marketable specification. The yield is approximately 50%. In practice this implies that each truck load only carries half of a load of coal; and
- CVM is faced with a long distance coal haul.

CVM has recently upgraded the process plant to increase production. This represented a large capital investment, which is expected to be regained over long-term production.

CVRI is willing to disclose and discuss with ERCB the economic factors and the basis for the proposed strip ratios. Should this be necessary the company would request a confidential meeting for discussion of such economic information.

b. Provide an overall pit limit utilizing an ultimate strip ratio of 5:1 for bcm/rmt and show this comparison in plan view on a map for both MW and YT areas with the current proposal.

CVRI has contracted Norwest to complete geological models for both Mercoal West and Yellowhead Tower. These models facilitate calculation of various 'what if' scenarios.

The Mercoal West geological mine model has been completed and will be submitted to the ERCB under separate cover. A 'sensitivity analysis' relating coal reserves to strip ratio and corresponding pit layouts has been completed and is included as Appendix II.39-1.

CVRI anticipates the completion of the Yellowhead Tower model by Q2, 2009. The Yellowhead Tower model and sensitivity analysis will be made available to the ERCB for their use and review as soon as it becomes available.

c. Provide a revised table with a ratio of at least 5:1 (bcm/rmt).

The reserve evaluations provided by Norwest are included in Appendix II.39-1. A 'preamble' has been added by CVRI to assist with comparisons between CVRI and Norwest reserve values. The values provided clearly illustrate the variation in 'reserves' versus depth of mining.

d. How would this increased strip ratio and volume of coal affect the timelines and schedules?

Since an increased strip ratio would result in an increase of coal recovered, this would increase the life of the proposed project.

An increased strip ratio would result in additional overburden to be removed. The existing equipment is limited in how much material can be moved, therefore, the result would be a decrease in the annual coal production rate without the addition of more 'stripping equipment'. Availability of large hydraulic excavators and large off highway trucks is limited. It would be expected that additional stripping and haulage equipment would not be in place for 12 months. Additional operators and maintenance employees would have to be hired.

Mercoal West

The dragline would still be employed in Mercoal West since it is the lowest cost method of mining. The increased strip ratio would slow coal production and lengthen the period of mining in the area. Since the reserve base in Mercoal West is limited the mining period might be stretched by only a few months. Mine disturbance would be only marginally larger. No additional infrastructure would be required.

Yellowhead Tower

The dragline would still be shifted into Yellowhead once the Mercoal West area was completed. The dragline pits would be marginally larger and would require some extra time to complete.

The backhoe pits would be increased in depth and size. The increase in the pit dimension would be expected to be only marginal. Since a significant portion of the overburden is to be placed as backfill the dump footprints would not increase significantly. No additional infrastructure would be required.

Overall Impact

The overall impact of a higher strip ratio would be a marginal increase in the mine disturbance and an increase in the time of development. Unless additional equipment was acquired, the annual production rate would be reduced.

Start time for the projects would not be impacted. Cost of mining would be increased due to increased overburden to be mined.

II.40. Volume I, Section C.1.5, Page C-6,

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CVRI states "The pit areas are designed on geologic cross-sections. The pit limits are determined by applying an incremental cut-off strip ratio (ICSR) on each of the cross-sections for the proposed pit areas." Provide technical justification for the proposed pit designs; support this justification with x-sections, plan views, overall strip ratios (not incremental strip ratio) and the economic and operational scenarios depicting the sequential pit design iterations which led to CVRI's final pit design. To further clarify the question we note that the ERCB is not requesting detailed economics. We require CVRI to provide a discussion on economic criteria that affected the mine design and how changes to these criteria might impact the design. The response should provide the major sequential pit design iterations which led up to the final pit designs)

Response:

The following discussion provides a chronological process leading to the final pit design of Mercoal West. This is intended to illustrate the 'iterative' design process that narrows the project plan to the final design. The process also includes points at which proposed mining is fit into the long-term plan and eventually into the budget process. By 'fitting' the plan into detailed production plans, the impact of the proposed mine plan is seen and can be adjusted to match financial objectives for the property.

Mercoal West

The 'design process' utilized for Mercoal West included the following steps:

- geological staff reviewed available information. This was limited to some drilling completed by Manalta and regional work by Denison;
- a drilling program was undertaken to define geology structure and seam occurrences. The drilling was generally undertaken on sections spaced up to 1000 m apart. The result indicated the occurrence of the Val d'Or seam generally as its normal thickness. The Silkstone and Mynheer Seams where identified as located in the valley floor, covered by thick till and as thinner versions of normal thickness;
- a series of (paper) cross-sections were developed for interpretation of drilling;
- a reserve estimate of the project area was completed to identify mining potential. Only the Val d'Or seam was considered as recoverable. The area was identified as conducive to dragline mining but with limited reserves;
- a second drilling program was undertaken to infill to approximately 200 m spaced sections. This resulted in identification of potential 'burn zones', thicker till areas and

thinning of the seam toward the west. Drilling had been curtailed at the west end due to thinned Val d'Or seam;

- the series of (paper) cross sections were expanded and revised;
- the geology sections were transferred to CAD drawings;
- a reserve estimate was revised based on the CAD sections. A typical dragline cut was placed on the sections and sectional areas calculated. Resulting mineable quantities were calculated and reviewed. Individual cross sections with high or low ratios were adjusted to fit a 'target' ratio;
- the reserve potential of Mercoal West was reviewed and utilized in long term production planning. The pit became integrated into the long-term production plan for the property. Efforts were focussed toward approval for the area;
- long-term haulage requirements were reviewed with inclusion of Mercoal West and Yellowhead Tower. Approximate cycle times were calculated and incorporated into long range plans and cost projections. Alternatives for haulage were reviewed, including alternative haul routes;
- additional stripping equipment requirements were reviewed with inclusion of Mercoal West and Yellowhead Tower. Long term trends illustrated reduced dragline reserves and increasing backhoe requirements. A decision was made toward more effective backhoe equipment as waste quantities were to grow. 'Front shovel' arrangements on hydraulic excavators were acquired to improve waste production. Future excavators were determined to be larger;
- a final drilling program was undertaken to infill to 100 m cross sections. Areas for drilling were identified according to the proposed mining plan. Further definition was required in the underground area and the burn areas. A western limit was imposed due to the thinner coal seam;
- the series of (paper) cross sections were expanded and revised;
- the geology sections were transferred to CAD drawings;
- cost structure within the existing mine resulted in adjustments to mining operations and stripping conditions. All equipment was moved to a single area in order to improve productivity. Poor dragline productivity required additional backhoe coal production. Poor productivity in waste removal resulted in decreased stripping ratio;
- operating cost increases were observed, partially due to fuel and tire charges. Operation changes were made to accommodate higher operating costs;
- long term plans were reworked with higher production and marginally lowered strip ratios. Target ratios for mining were adjusted;

- a reserve estimate and mine plan was developed based on the CAD sections. A typical dragline cut was placed on the sections and sectional areas calculated. Resulting mineable quantities were calculated and reviewed. Individual cross sections with high or low ratios were adjusted to fit a 'target' ratio;
- individual and collective sections were reviewed. Individual sections with limited reserve or difficult seam conditions were removed. This process involved sections around the underground mine and burn area:
- the mine plan was reviewed to consider waste placement and dragline access. Areas with steep terrain (typically valleys) were reconsidered for backhoe mining. Shallow pit areas were identified as more conducive to the small Marion 7540 dragline;
- a second and third reserve estimate and mine plan was undertaken with increasing strip ratio in order to assess sensitivity of the mine plan to ratio;
- the final pit plan was accepted. The large dragline is to be utilized for part of the reserve then quickly moved to Yellowhead Tower. The small dragline and backhoe operations will complete the Mercoal West area to supplement production from Yellowhead Tower;
- access roads and spoil placement was laid out;
- water management was laid out; and
- the final pit plan and reserves were integrated into the short term production plan. The 2009 budget was developed utilizing the Mercoal West plan.

Yellowhead Tower

The design process for Yellowhead Tower followed a similar process. However, the unique conditions in Yellowhead have slowed the process to reaching a final design package. The following discussion provides a status of the design process for Yellowhead Tower:

- finding the Mynheer Seam and the over-thickened condition of the seam was a surprise. Definition of the coal structure and limits of mining has taken longer to complete;
- the eastern end of the project area is well defined and pit designs are finalized;
- the western end of the project area requires additional assessment to optimize mining sequence. A workable mine plan and sequence has been presented but needs to be confirmed as the best option; and
- additional consideration for enlarged pits for deeper coal needs to be addressed. Additional, deep exploration may be warranted.

Licence of several individual pits is justified with the existing mine plan. Many of these pits can be mined as presented. The western Mynheer pits can be expected to involve future 'technical modifications' as further assessments of sequencing and deep coal recovery options evolve.

II.41. Volume I, Section B.4.1 and B4.2, Page B-11 to B-12.

CVRI notes the existence of abandoned underground coal mining areas underneath MW and YT. Regarding MW, CVRI states "The depth of mining is not expected to reach any major underground development areas". Regarding YT, CVRI states "Surface mining proposed by CVM is not expected to encounter significant portions of the old workings." In general, CVRI states "… surface mining in vicinity of old workings can pose operating concerns related to safety of people and equipment. There are dangers of subsidence, noxious gases and potential for encountering burning coal. CVM has worked through such areas previously and maintains 'codes of practice' for operating in such area. These procedures involve early identification of danger areas, anticipation of risks, and prescribed steps to minimize and eliminate risks. CVM anticipates that surface mining above and around abandoned underground workings can be accomplished safely and successfully."

a. Provide the assessments that CVRI has conducted for the MW and YT areas to delineate the underground workings, both laterally and vertically, which confirm CVRI's expectation that underground workings will not be reached.

Response:

CVRI has acquired and reviewed archival underground mining plans for underground workings in both MW and YT. These plans have details of main entries, block and pillar layouts, and zones of pillar extraction. Such details provide an excellent projection of the location of workings and extent of coal removal.

Example 'underground mine plans' are provided in Appendix II.41-1.

Through comparison of legal markers and surficial features, such as air shafts and entries, the archived plans have been scaled and oriented to the current mine grid. Projections of underground room and pillar panels can be made to current mine plans and cross-sections. Exploration drilling has confirmed the accuracy of these projections. Specific drill holes have encountered underground openings and confirmed removal of the coal seam in given pillars. Refer to cross-section Figures II.24-1 through II.24-14 and Figures II.26-1 through II.26-18 for Mercoal West and Yellowhead Tower, respectively, which indicate the presence of any underground mining encountered.

b. Discuss whether CVRI have defined its YT pit locations (and general mine plan) to be confident that surface mining will not encounter major or significant portions of the abandoned underground workings. Define what CVRI considers to be "major underground development areas" or "significant portions of the old workings".

Response:

CVRI has taken the location and extent of underground workings into account during pit layout and design in the Yellowhead Tower area. Some 'minor' underground workings 'will be incorporated into the surface mine limits. Surface mining will also occur above or adjacent to 'major' mine workings.

Entries and development headings are considered to be 'minor' workings. Coal previously recovered from these areas is expected to be limited to narrow development tunnels. Therefore, sufficient coal reserves remain to warrant inclusion in the surface mine limit.

'Depillared' workings are considered major workings. In these instances, major portions of the coal seam have likely been withdrawn from the mine. This work has decreased the volume of remaining coal to make further recovery impractical. Large 'voids' may also be present, posing extra hazard to mining.

CVRI is confident that all 'major' underground workings have been identified and located. The company recognizes that 'a margin of error' exists in the projection of underground locations. Differences of several metres measured laterally are possible.

In recognition of such potential inaccuracy, the operational practices include barricading areas with underground workings and taking care and attention in progressing into such areas. A 'safety margin' is provided around the expected hazard area.

Any areas where significant volumes of rock or coal have been removed or suspected to have occurred is considered as a potential hazard area due to potential collapse or adverse environmental condition. Small adits or simple rock entries are not considered as hazard areas. Deep room and pillar panels where no pillar extraction has occurred are considered a lesser hazard than near surface panels with major pillar extraction.

c. Provide CVRI's "code of practice" for operating in such areas.

Response:

CVM code of practice for working within the vicinity of underground workings is provided in Appendix II.41-2.

II.5 GEOTECHNICAL

II.42. Volume I, Section B.7.1, Page B-16

CVRI states "Results are presented as a preliminary evaluation of highwall stability based on the experience of designing and mining geotechnically similar slopes at CVM over a 30 year period.", and "The stability of the proposed overburden dumps in the Mercoal West Extension and Yellowhead Tower areas can be similarly addressed. This includes future plans for carrying out site-specific geotechnical field investigations and methodologies for designing these structures." As noted in CVRI's May 16, 2007 project clarification letter to the ERCB and AENV, CVRI is applying for mine and dump licences in addition to a permit amendment. Therefore detailed mine pit and dump designs that include geotechnical field investigations and stability assessments are required. Provide detailed designs for each of the proposed mine pits and dumps within the MW and YT areas.

Response:

The status of geotechnical evaluations is:

- Mercoal West – Pit Design
  - Exploration drilling has been completed to 100 m spaced cross-sections. KEH & Associates has reviewed the interpreted geologic sections and representative geophysical logs to provide preliminary advice regarding pit design and dump placement.
  - KEH & Associates has provided a geotechnical assessment of the proposed Mercoal West pit designs. This report is provided in Appendix II.42-1.
- Mercoal West – Dump Design
  - A field program consisting of several test pits has been completed in the dump areas. This program was intended to characterize surface materials and identify any critical areas regarding dump foundations. Laboratory work was completed on several samples. The report on test pits is provided in Appendix II.42-1.
  - KEH & Associates has provided a geotechnical assessment of the proposed Mercoal West dump designs. This report is provided in Appendix II.42-1.
- Yellowhead Tower – Pit Designs
  - Exploration drilling is ongoing toward the objective of completion to 100 m spaced cross sections. KEH & Associates has reviewed the available interpreted geologic sections and representative geophysical logs to provide preliminary advice regarding pit design and dump placement.

For dragline cuts, Pit 123 pit design geometry was recommended for initial design work.

For backhoe pits, Pit 29 pit design geometry was recommended for initial design work.

- KEH & Associates is currently undertaking a detailed geotechnical assessment of the proposed Yellowhead Tower pit designs. This report is expected to be completed in Q2, 2009 and will be submitted to ERCB for review.

- Yellowhead Tower – Dump Design
  - A field program consisting of several test pits has been completed in the dump areas. This program was intended to characterize the surface materials and identify any critical areas regarding dump foundations. Laboratory work was completed on several samples. A summary of the test pit program results is provided in Appendix II.42-1.
  - KEH & Associates is currently undertaking a detailed geotechnical assessment of the proposed Yellowhead Tower dump designs. This report is expected to be completed in Q2, 2009 and will be submitted to ERCB for review.

II.43. Volume I, Section B.2, Page B-1

CVRI states "The Coalspur Formation is a succession of interbedded mudstone, siltstone and fine grained sandstone with subordinate coarser grained sandstone layers and channel lag deposits. Chertpebble conglomerate occurs in the lower part of the formation, and coal beds interbedded with coaly shale, mudstone, sandstone and numerous thin bentonite beds form the upper part of the formation. The predominant cementing agent within the siltstones and sandstones of the upper succession is an illite-montmorrillonite clay which expands on hydration." Provide a detailed discussion on the challenges CVRI anticipates with respect to geotechnical stability, short and longterm, in the local geology.

Response:

CVRI has a long history of working in the geology encountered within Mercoal West and Yellowhead Tower. The experience gained over the years and in the various circumstances encountered in a variety of previous pit developments will be useful in mining the new areas. Challenges posed by the expansion areas include:

- Mercoal West Pits

The Val D'Or Seam is present as a steeply dipping structure throughout most of the Mercoal West area. The steeply dipping structure will improve the highwall stability by improving the orientation of jointing. However, the footwall stability will be impaired. Experience in such conditions (Pit 27, 120, 122, 123) requires increased care in coal recovery due to potential footwall slab failures.

The pit design and coal recovery procedures planned for Mercoal West take these conditions into account.

- Yellowhead Tower Pits

The Val D'Or pits in Yellowhead Tower are also steeply dipping.

Many of the Mynheer Seam pits in Yellowhead Tower include 'over thickened' seams due to thrusting and folding. The geology structure is very complex and likely involves multiple thrust faults within highwall and footwall materials. Rock strength in these conditions is likely impacted. Experience gained in similar conditions (Pit 14, 13, 12, 26) will result in increased benching in pit walls.

- Dumps

A program of test pits will be utilized to identify the most favourable dump foundation areas. Steep terrain and areas with wet materials are less favourable for dump development. However, multiple years of experience in dump construction has shown that rock dumps can be successfully developed even in areas with poor foundation conditions.

II.44. Volume I, Section B.5.2.1, Page 13

CVRI states "The overall highwall angle is generally drawn on cross-sections at an angle of 40 to 45 degrees. (In steeply dipping areas a highwall angle perpendicular to the footwall bedding may be more appropriate to accommodate jointing patterns.)". Provide site plans for both MW and YT that identify the locations within each of the proposed pits that have been assessed and found to require modified pit wall design. This can be provided as part of the detailed geotechnical pit design, as required for licencing.

Response:

Geotechnical evaluations of pits and dumps for Mercoal West are provided in Appendix II.42-1. Evaluations for Yellowhead Tower will be provided to the ERCB in Q2, 2009.

II.45. Volume I, Section B.7.2, Page B-17

> *Regarding rock mass strength parameters, CVRI states "…intact bedrock and rock mass strength evaluated at Coal Valley by laboratory testing and highwall back analyses over the years can be expected to be directly applicable to the new mine areas." CVRI provided Table 7.2-1 as a summary of these strength parameters.*

It should be noted that most 'stability evaluations' center on the 'weakest material' rather than the common overburden material. It is the presence of small weak layers that often control pit wall stability or dump stability. Geotechnical analysis accounting for such material would rely on 'conservative' strength values.

Test pits have been performed over large areas considered as dump areas. Specific laboratory testing has been completed for the materials encountered in these test pits.

> *a. Discuss the level of site-specific field, laboratory and analytical investigation that CVRI has conducted to confirm with certainty that parameters evaluated at Coal Valley are directly applicable to the new mine areas.*

Response:

Geotechnical evaluations of pits and dumps for Mercoal West, as well as results of a test pit program in both Mercoal West and Yellowhead Tower, are provided in Appendix II.42-1. Geotechnical evaluations for Yellowhead Tower will be provided to the ERCB in Q2, 2009.

Previous mine developments have occurred in the CVM area over the past 30 years. These pits have ranged over a strike distance of nearly 40 km. While variations in geology structure have been noted over the length of the property, the general rock types and characteristics have remained consistent. Observations from the surrounding areas, (rock outcrops, road cuts, exploration drilling pipeline excavations, river banks) also confirm consistency in overburden characteristics.

> *b. Provide details and results of the latest site-specific field, laboratory and analytical evaluations for comparison with historical information. This information can be included in the detailed designs requested above for each of the proposed mine pits and dumps.*

Response:

Geotechnical evaluations of pits and dumps for Mercoal West, as well as results of a test pit program in both Mercoal West and Yellowhead Tower, are provided in Appendix II.42-1. Geotechnical evaluations for Yellowhead Tower will be provided to the ERCB in Q2, 2009.

II.46. Volume I, Section B.7.3, Page B-19

CVRI provides a brief hydrogeological assessment and states that "The hydrogeological conditions anticipated in the extension areas are not expected to affect highwall and overburden dump design." It is unknown whether a site specific hydrogeological assessment has been conducted for this project. It is important to note that groundwater could have a significant impact on mine operations (water management) and geotechnical slope stability of pit walls and dumps.

a. Provide a detailed assessment of the site-specific hydrogeological conditions at the proposed pits and dumps, and the associated impacts on the detailed designs.

Response:

Information on the hydrogeologic condition at proposed pits and dumps is provided in Section 3.5 of Appendix II.42-1. Evaluations for Yellowhead Tower will be provided to the ERCB in Q2, 2009.

b. Hydrogeological information such as groundwater elevation should be shown on appropriately scaled geological cross sections across the proposed pits (perpendicular and longitudinal). This information can be included in the detailed designs requested above for each of the proposed mine pits and dumps.

Response:

Information on the hydrogeologic condition at proposed pits and dumps is provided in Section 3.5 of Appendix II.42-1. Evaluations for Yellowhead Tower will be provided to the ERCB in Q2, 2009.

II.47. Volume I, Section B7.4, Pages B-19 to B-21

CVRI provides a brief discussion on footwall, highwall, external overburden dump, and spoil pile slope stability. Provide the detailed designs for each of the proposed pits and dumps for both MW and YT, which include the detailed slope stability assessments. Ensure that the detailed slope stability assessments:

- *Are based on site-specific field and laboratory investigations,*
- *are conducted at representative cross sections,*
- *consider variations in geologic/lithologic structure, and soil strength and pore pressure parameters,*
- *identifies options available to mitigate instability,*
- *identify critical areas where monitoring and mitigation measure might be required,*
- *present stability results in tabular or graphic format.*

Geotechnical evaluations of pits and dumps for Mercoal West are provided in Appendix II.42-1. Evaluations for Yellowhead Tower will be provided to the ERCB in Q2, 2009.

II.48. Volume I, Section B.7.6, Page B-22.

CVRI discuss seismic monitoring of blasting at CVM. CVRI state that "A 'blast design chart' was developed from the information".

a. Provide this blast design chart and a discussion on how CVRI uses this chart.

Response:

Various standard charts are available in technical literature to illustrate the relationship between 'charge weight', distance and PPV. A 'design chart' was developed in 1982 for CVM by Mr. Keith Hebil. The chart was derived from 'site specific rock parameters for the Coal Valley minesite'. In December 2003 CVM had MREL provide a review of blasting proposals for work near pipelines. This review included an assessment of the earlier 'design chart' and resulted in a comparison with an MREL chart. This comparison is provided in Appendix II.48-1. The MREL report recommended a 'design PPV' of 152 mm/s (6 in/s) with a minimum distance of 50 m from any pipeline.

CVRI utilizes a PPV target level of 50 mm/s (2.0 in/s) for designing blasts around sensitive facilities such as gas wells and pipelines. The loading plan, with proposed charge weights, is used to calculate predicted vibration levels. The loading plan can then be adjusted to the suitable level required by adjusting charge weights per delay. As mining approaches a given facility, blast monitoring is utilized to determine a comparison between predicted and actual vibration results. Predictions of subsequent blasts can then be modified in accordance with this 'calibration'.

b. Discuss the applicability of this chart to the MW and YT areas.

Response:

The 'design charts' and recommendations referenced above are based on industry studies. The MREL report provided a chart in Appendix II.48-2 which "represented peak particle velocity plotted versus scaled distance for open pit and rock strip mine multi-period blasts which contains more than 10,000 data points recorded worldwide". CVM accepts this information as likely representative of conditions in Mercoal West and Yellowhead Tower.

c. Provide a site plan which shows CVRI's proposed blasts (and any mining activities in general) at MW and YT that fall within the 400m infrastructure no-mining zone.

Response:

Refer to Figures II.4-1 and II.4-2 provided in the response for SIR Question II.4, which highlight infrastructure within 400 m of mining activities. All pit areas will require blasting. As mining approaches the 400 m infrastructure no-mining zone, attention to PPV must be paid.

d. Does CVRI's commit to provide an application to the ERCB to mine within 400 m of infrastructure at least 6 months prior to mining (including soil removal).

Response:

CVRI commits to a minimum of six months notice for any 'mining excavation' or 'blasting' within 400 m of any pipeline or gas well. Please note that CVRI requests approval for minor activities (timber harvest, soil salvage, road construction) within the 400 m buffer zone. The company proposes that a more appropriate buffer limit should be considered for these minor activities. A buffer limit of 50 m is recommended instead of 400 m for these activities.

Refer to response to SIR Question II.4.

II.6 ERRATA

II.49. Volume I, Section A.4.2, Page A-6, Table A.4.2-1

CVRI provides the existing approvals. The EPEA Approval expiry dates do not correlate to the actual approvals in Appendix 6. In addition, the CVRI coal processing plant Approval No. C 2005-19 is not included under the Coal Conservation Act heading in this table. Provide a revised Table A.4.2-1 with the necessary corrections and additions.

Response:

Table A.4.2-1 in the Application is not intended to provide a complete list of approvals held by CVM. For example, ERCB licence approvals for pits and dumps or Public Lands Approvals for surface leases are not included. The approvals related to the coal processing plant were not included since the operation of the plant is not changed by the addition of Mercoal West and Yellowhead Tower.

The updated information is provided in Table II.49-1.

Table II.49-1 CVM Existing Approvals (updated Table A.4.2-1)

Approval Number	Description	Issued Date	Expiry Date
EPEA			
00011066-01-00	Coal Valley Mine	Sep. 01, 1999	Aug. 31, 2009
00011066-01-01	Pit 27	Sep. 13, 2000	Aug. 31, 2009
00011066-01-02	Pit 27 West	Sep. 18, 2001	Aug. 31, 2009
00011066-01-03	Pit 120 (South Pit)	Dec. 18, 2001	Aug. 31, 2009
00011066-01-04	Pit 130	Dec. 12, 2003	Dec. 11, 2013
00011066-01-05	Lovett and Embarras Pits	Feb. 20, 2004	Feb. 19, 2014
00011066-01-06	Pit 28	June 1, 2005	Dec. 11, 2013
00011066-01-07	Pit 132W and 142W Tech. Mod.	June 9, 2005	Dec. 11, 2013
00011066-01-08	Mercoal Phase 2	Jan. 5, 2006	Aug. 31, 2009
00011066-01-09	Plant Expansion	June 5, 2006	Aug. 31, 2009
00011066-01-10	Transfer Approvals to CVRI	May 31, 2006	Aug. 31, 2009
Water Act			
00080855-00-00	Reclamation of Pit 44	Mar. 07, 2000	Mar. 06, 2010
00150769-00-00	Coal Valley/Construction/Luscar Ltd.	Jan. 23, 2002	Aug. 31, 2009
00154332-00-00	Coal Valley/Construction/Luscar Ltd.	Sep. 24, 2001	Aug. 31, 2009
00154332-00-01	Pit 130 Drainage Works	Dec. 16, 2003	Aug. 31, 2009

Table II.49-1 CVM Existing Approvals (updated Table A.4.2-1)			
Approval Number	**Description**	**Issued Date**	**Expiry Date**
00203212-00-00	Lovett and Embarrass Pits	Feb. 20, 2004	Feb. 19, 2014
00203212-00-01	Lovett, Embarrass and Chief Creek	June 9, 2005	Feb. 19, 2014
00215635-00-00	Pit 28 Drainage Works	Jun. 1, 2005	Dec. 11, 2013
00222448-00-00	Divert water from Coal Creek	May 25, 2006	May 24, 2016
00222449-00-00	Divert groundwater from 16-23	May 25, 2006	May 24, 2016
Coal Conservation Act			
#C2004-1	Mine Permit		Rescinded and replaced by #C2005-6
#C2005-19	Coal Processing Plant Approval	Nov. 22, 2005	
#C2005-6	Mine Permit	May 18, 2005	

II.50. Volume I, Section A.6, Page A-13.

Provide the units for values in Table A.6.2-1 providing details for the production values presented.

Response:

The production estimates listed in Table A.6.2-1 in the Application are in millions of clean metric tonnes (million CMT).

II.51. Volume I, Section A.8.16, Page A-53,

CVRI refers in the last paragraph to mitigation measures will be implemented as required (Section A.9.16), however, the volume only goes up to A.9.14.2 on page A-64. Provide the missing information for section A.9.16 if available and update the table of contents.

Response:

Mitigation measures that will be implemented to reduce impact to other land users in the area were omitted in error from the Application. Section A.9.16 should have included a summary of the mitigation and monitoring information that makes up Section E.16.6 of the Application.

Appendix II.51-1 contains a new table of contents and the missing information on mitigation and monitoring from both Sections A.9-15 and A.9-16.

II.52. Volume I, Section B.3.3, Table B.3.3-1, Page B-8.

Confirm that the missing units of measure for the "Till" and "Dip" headings are meters and degrees.

Response:

The units of measure for "Till" and "Dip" headings in Table B.3.3-1 of the Application are metres and degrees.

II.53. Volume I, Section B.7.6, Page B-22,

Reference is made to Peak Particle Velocity (PPV) of 0.6 in/s. Provide all measurements in metric.

Response:

A PPV value of 0.6 in/s is equivalent to 15.0 mm/s.

II.54. Volume I, Section B.7.6, Page B-22.

CVRI states "Results are indicated in Table B.7.6-1. PPV values were below 50 mm/s (0.2 in/s)." Confirm that the 0.2in/s should read 2in/s.

Response:

Correct, a value of 50 mm/s is equivalent to 2.0 in/s.

II.55. Volume I, Section C.2, Page C-11,

CVRI makes reference to the total projected coal production of 3 million CMT. Previously in this report, CVRI indicated coal production of 4 million CMT for this project. Clarify this apparent discrepancy.

Response:

Coal production available from Mercoal West should have read 3,644,506 (see Table C.2.1-1 of the Application).

The mine plan and reserves for the project areas have been revised. Please note that the revised mine plan proposed for Mercoal West includes reserves estimated at 3,782,614 RMT (1,985,872 CMT) (refer to the response to SIR Question II.12a).

Coal reserves in the Yellowhead Tower area are provided in Table II.12-1 in the response to SIR Question 12a.

CVRI is anticipating an annual production rate of 4.0 CMT per year over the next several years. The coal for this production level will be gained from various reserve areas including Mercoal West and Yellowhead Tower.

II.56. Volume I, Section D.2.1, Page D-3,

CVRI makes reference to the full description of the Project being included in Part B of this Application. Part B of this application is the Geology section. Provide clarification.

Response:

This should read that a full description of the project is included in Part C of the Application.