

Meetings

MINUTES OF EA COORDINATION MEETING
Marter Township GS on the Blanche River
Hydroelectric Project

Date: Wednesday, September 14, 2011, 10:30

Meeting Location: MNR Kirkland Lake District Office and via Teleconference Call

Prepared By: Kai Markvorsen

Attendees:

MNR Kirkland Lake:

- Rick Gordon, Acting District Planner (RG)
- Shaun Walker, A/Information Management Supervisor (SW)
- Eleanor Moro, Area Supervisor (EM)
- Lauren McDonald, Area Biologist (LMc)
- Ivan Cragg, Lands & Waters Technical Specialist (IC)
- Bertha Cormier, Resource Liaison (BC)
- Rob Schryburt, Senior Project Engineer (RSc)
- Sandra Dosser, NE Renewable Energy Coordinator (SD)
- Adam King, Resource Management Technician (AK)

Ontario Ministry of Environment

- Carroll Leith, District Supervisor (CL)
- Eva Maciaszek, Surface Water Specialist (EM)
- Tina Webb, Environmental Assessment Coordinator (TW)
- Mohammed Sajjad Khan, Regional Hydrologist (SSK)

Via Teleconference

Canadian Environmental Assessment Agency (CEA Agency)

- Stephanie Davis, Project Manager (SD)

Fisheries and Oceans Canada (DFO)

- Kelly Eggers, Habitat Biologist (KE)

Environment Canada (EC)

- Sheryl Lusk, Environmental Assessment Officer (SL)

Xeneca Power

- Ed Laratta, Manager, Environmental Affairs (EL)
- Mark Holmes, VP Corporate Affairs (MH) 11:20-11:50 (approx.)
- Mike Vance Engineering (MV)
- Dean Assinewe, Aboriginal Relations (DA)
- Don Chubbuck, Environmental Specialist (DC)

Ontario Resource Management Group

- Kristi Beatty (KB)
- Bruce Wheaton (BW)

OEL-HydroSys Inc. (Environmental Approvals Consultants):

- Karen Fortin, Environmental Approvals Coordinator (KF)
- Kai Markvorsen, Environmental Approvals (KM)

Attachments

Project Description Marter Township (Blanche River) Hydroelectric Generating Station

(document issued in advance of meeting)

The following Meeting Minutes were recorded by Karen Fortin and Kai Markvorsen of OEL-HydroSys Inc. The notes reflect the understanding of discussions held at the meeting.

Record issued: October 21, 2011

Item	Item Description	Action by
1.0	<p>Meeting objectives</p> <ul style="list-style-type: none">to initiate the discussion surrounding information that has been distributed to regulators for the proposed project;to identify applicable legislation and permitting requirements early in process;to identify any gaps in data analysis;to open dialogue <p>OEL (KF) clarified roles/responsibilities of project team.</p> <p>CEAA (SD) confirmed Federal Coordination Request completed, Fisheries and Oceans and Transport Canada are the identified Responsible Authorities, Environment Canada, Health Canada, and NRCan will provide expert advice. SD advised that an EA scoping document under the Canadian Environmental Assessment Act would be issued approximately 5 weeks.</p> <p>Xeneca (MV) provided information on the proposed dam conceptual designs, discussing the two alternatives presently under consideration: the higher and lower dam alternatives. MNR and MOE requested the height of each dam, and sought clarification as to whether the inundation values provided in the project description were based on static or dynamic modeling. Height of structure above water level was not readily available, though proposed structure elevations were provided:</p> <p>Higher option: headpond elevation 201 masl, dam elevation 204 masl Lower option: headpond elevation 196 masl, dam elevation 198.7 masl</p> <p>MV confirmed that Xeneca is presently working through its dynamic modeling scenario and that the results would be provided to the regulators. MNR (RSc) cautioned that dynamic modeling of flood conditions (100 year event) in the headpond would be required to confirm that all potentially affected landowners have been duly informed, and all required legal agreements are in place to secure site release.</p> <p>Xeneca (AC) provided an update on landowner consultation in the area, since riparian lands would be impacted by this undertaking. AC confirmed that the lower dam option would affect two property owners, whereas the higher dam alternative may affect 5 landowners. It was also noted that the connection line would run across land belonging to one of the property owners. MNR confirmed that it was not able to provide site release until all landownership issues were appropriately addressed, and that this would</p>	<p>CEAA to distribute federal scoping document when ready</p> <p>Xeneca to confirm dam height for each option</p> <p>Xeneca to continue on securing landowner agreements</p> <p>Xeneca to provide MNR with a figure denoting land ownership and area of dynamic</p>

	<p>require legal agreements from all affected landowners agreeing to occupancy or flooding. AC reported that he anticipates agreements for the Lower Dam alternative will be finalized shortly. IC commented that the Ontario Northland Railway needs to be identified as an affected landowner as either proposal may impact the railway bridge crossing given the 1:100 year event.</p> <p>Discussion surrounding modeling parameters continued, with the MOE (MSK) cautioning the proponent to properly execute its modeling exercises, noting that this information was provided by the MOE to Xeneca during an all sites hydrological and operation meeting in April 2011 (reference to "Northern Region Hydraulic and Hydrologic Modeling Requirements, 2001"). MNR (LM) added that soils in the area are very erodible, and that fluctuations in the proposed headpond will cause shoreline erosion. MV indicated that erosion potential was being taken into account and would be reviewed following the completion of the dynamic modeling. MV also indicated that the preliminary design of the dam included an Obermeyer gate control structure which would allow for greater control of flows and water levels.</p> <p>MNR (RG) clarified that the Site Description Package has yet to be provided to Xeneca because the proponent has not followed the usual process which typically sees an application for site release made once legal agreements with landowners are in place. It was suggested that Xeneca complete the dynamic modeling exercise and finalize agreements with any potentially affected landowners to facilitate the completion of site release.</p>	<p>inundation</p> <p>Xeneca to include Ontario Northland Railway as an affected landowner</p> <p>MOE to provide reference documentation to Xeneca</p> <p>See relevant action items above</p>
<p>2.0</p>	<p>Project Description and Public Consultation</p> <p>MNR (RG) noted dissatisfaction with the recently issued project description (PD), reminding the proponent that they were provided with PD information requirements at the April 2011 meeting. OEL (KF) stated that the project description is used as a starting point in project planning under the Class EA for Waterpower, that the document itself would not be revised. MNR indicated that they had provided comments to Xeneca on the project description which pointed out inaccuracies in the Marter Project description. The MNR suggested that the proponent look into how corrections or project updates can be made and communicated to the public through Xeneca's website. For example, MNR stated that the identification of Marter Township in the project description was incorrect, and that the proponent would need to consult with the Township of Chamberlain; that the waterway is unmanaged, not managed and therefore the appropriate EA process must be followed; and that there is no MNR dam located upstream of the proposed facility, etc. Xeneca (EL) agreed to look into this matter. The MNR cautioned that it will be examining the quality of the information made available to the public.</p> <p>The MOE (TW) raised concerns with the current identification of effects matrix presented in the project description. There is a considerable amount of items with unknown effects and requiring further study. It was the recommendation of the ministry that in order to meet the intent of the EA process, that these unknowns be resolved prior to the submission of the ER. This not only helps the ministry in the technical review of the project</p>	<p>Xeneca to look into method to providing project description corrections on its website</p> <p>Xeneca to provide project description to Township of Chamberlain <i>Xeneca has scheduled a meeting with Township Council in Nov 2011.</i></p>

	<p>but it also allows the public to evaluate the full effects of the project and make a decision on their right to request a Individual EA under the Part II Order Provisions. Also, this can have significant impacts during the permitting and approvals stage as the MOE will not issue a Permit To Take Water or Industrial Sewage Works CofA (if required) until the appropriate baseline studies and data requirements are met.</p> <p>Xeneca (MH) provided a summary of the Public Information Centre (PIC) held in Englehart on August 23, 2011. Approximately 25 persons attended, many participants were in attendance because they were seeking additional information from the proponent on its' Larder River project. Others were interested in the potential for economic benefits/job creation from the project. One attendee voiced his displeasure with the Class EA process. Xeneca reported having met with Englehart Council. Xeneca presented both project options at the PIC, (MH). Certain landowners identified a concern that the project could increase access to a presently inaccessible section of the waterway resultant from flooding of upstream rapids. RG commented that he heard a land owner comment that the trees in the inundation zone may be difficult to access for harvest purposes; RG added that if the trees were owned by the land owner and not the Crown that it would be Xeneca's responsibility and cost for removal.</p>	
<p>3.0</p>	<p>Field investigations/study area/cumulative effects/SAR</p> <p>MNR commented that based on its examination of a recently released Environmental Report (ER) for another Xeneca project, that Xeneca's field investigation program appears to be limited in scope for that project. MNR added that if this was the case for the Marter project, the data collection portion of the environmental assessment would fall short of Ministry requirements. ORMG (KB) confirmed that to date only the Lower Dam option has been assessed. MNR (LM) noted that there is active benthic habitat at the proposed location of the Higher Dam, and inquired whether the proposed compensatory value of 0 for the Lower Dam option would be revisited. Xeneca's hydrological expert was not available for the meeting, therefore no answer was available.</p> <p>A discussion followed on other Canadian jurisdiction modeling requirements (BC standards document referenced) for peaking facilities. MNR (LM) stated that based on the Ministry's understanding of the area, the presently identified downstream zone of influence for the project extends well beyond what the proponent has selected (and could in fact extend all the way to Lake Timiskaming). MNR noted that information showing the effects of the Misema operation on the Blanche River is clearly seen on live hydrometric data available through Environment Canada. ORMG (KB) replied that aquatic investigations have been undertaken to the confluence of the Misema River. OEL (KF) inquired what was required in order to achieve a consensus of the extent of the zone of influence. MNR (LM) replied that until they are provided with dynamic modeling results, no decision regarding the extent of the downstream zone of influence can be made. LM added that the baseline data collected should include the area of inundation identified through the dynamic inundation modeling exercise.</p>	<p>MNR to provide reference documents for modeling requirements to Xeneca</p> <p>Xeneca to provide MNR with response towards achieving consensus of downstream zone of influence</p>

<p>MNR (RG) stressed that the cumulative effects of both the proposed undertaking and the operating Misema Power facility will have to be assessed as part of the Marter EA process. MNR added that the onus is on the proponent to show that the Marter facility will not affect the Misema operation, and that the combined effects of these two projects will not impact species at risk and the fisheries. RG cautioned that it may not be possible to operate two peaking facilities, or that peaking schedules may have to be altered in order to prevent fisheries impacts. The proponent was also cautioned that there may be a requirement to consider the effect of the downstream zone of influence of the proposed Larder project on the Marter project. MNR indicated that it would be in everyone's best interest to come to an agreement on the overall size of the project's zone of influence.</p> <p>MNR (LM) confirmed that the proponent will require a permit under the <i>Endangered Species Act</i> prior to the construction of the transmission line should the line intersect bobolink habitat. LM added that the proponent would be required to submit a proposal identifying an overall benefit to the species (bobolink). MNR (SD) confirmed that location approval will not be issued until there is a draft <i>ESA</i> agreement in place. MNR (LM) confirmed that once the submitted proposal is accepted as complete, the turnaround time for processing an <i>ESA</i> permit is 5 months. LM added that an agreement, and possibly a permit under the <i>ESA</i> for Lake sturgeon will likely be required prior to the commissioning of the facility. MNR noted that they have concerns regarding the impacts of erosion from the project on the downstream sturgeon habitat. LM noted that the conceptual drawings in the PD orient the tailrace towards a large clay silt bank, noting concerns of sediment transport in the waterway. MNR commented that there may be other SAR identified once they examine the extended downstream and upstream zone of influence.</p> <p>A discussion surrounding water management planning followed, a WMP is not required for a greenfield development however there is a requirement to address water management planning principles in the environmental report, and that this also needs to be addressed during public consultation events. Proposed water management principles must address facility operation during high and low flow conditions as well. MNR added that the proposed water management monitoring program should be included in the ER.</p> <p>OEL (KF) inquired as to whether there is a possibility of metal leaching rock in the project area, no definitive answer was available. KF inquired as to what might be required by the regulators to satisfy that acid rock drainage has been appropriately addressed in the Environmental Report. MNR noted that at a minimum a desktop study into the potential for ARD in the project area would be required. Xeneca (DC) confirmed that they have made permit applications for geotechnical investigations, MNR replied that the permit applications will likely be screened through the RSFD Class EA process. MNR (SD) agreed to provide additional guidance. MNR (LM) added that no road investigation work could proceed without an accepted draft proposal for the <i>ESA</i> permit for bobolink, should the project impact its habitat.</p> <p>MNR (SD) requested that the proponent complete a table provided by the Ministry to the proponent in April 2011. The table is designed to provide</p>	<p>Proponent will be required to submit an application for a Permit under the <i>ESA</i> prior to issuing of location approval.</p> <p>Xeneca to revisit tailrace design alignment to determine and address potential impacts of erosion/ sedimentation at the outfall</p> <p>MNR to provide additional guidance on ARD requirements for EA and permitting for geotechnical</p>
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	<p>preliminary dam operation planning information in one format. SD suggested the table could be integrated into the environmental assessment report, and confirmed that it would be required prior to the issue of any permits.</p>	<p>investigations</p> <p>Xeneca will be required to complete operations info table prior to issue of any permits</p>
<p>4.0</p>	<p>Legislation, permits and approvals</p> <p>CEA Agency (SD) identified the federal law list triggers for the project, the <i>Navigable Waters Protection Act</i> and the <i>Fisheries Act</i>. DFO (KE) listed several key sections of the <i>Fisheries Act</i> that may require Authorizations, include fish passage, HADD, screening of intakes, destruction of fish, etc. More information on federal requirements will be included in the federal screening document. CEA Agency and TC also advised that an Application for Project Review under the <i>Navigable Waters Protection Act</i> should also be submitted as soon as possible.</p> <p>MNR noted that likely the only approval from the Ministry not required among the list provided in the PD is the license of occupation under the <i>Public Lands Act</i>. IC commented that other authorities/tenures could include Waterpower Lease Agreement, Easements, Work Permits, and temporary Land Use Permits etc. as authorized under the <i>Public Lands Act</i>.</p> <p>The Township of Chamberlain Official Plan: proponent will be required to confirm whether an amendment would be required to the plan in regards to the Township's landfill licence to accept waste. Proponent should also confirm capacity of landfill and ability to accept waste associated with project construction and operation.</p> <p>MOE (CL) reviewed potential permitting requirements, e.g. under the <i>Ontario Water Resources Act</i>, and <i>Environmental Protection Act</i>, during the construction phase (industrial sewage approval for any needed water treatment and its discharge, waste management using approved waste disposal sites, burning of clean wood under only approved circumstances (no general waste burning), potential air approval for diesel generators).</p>	<p>Xeneca to consult with Township of Chamberlain for Plan amendment and landfill capacity for construction waste</p>
<p>5.0</p>	<p>Aboriginal and First Nation Consultation</p> <p>Xeneca (DA) provided an overview of First Nation and Aboriginal consultation to date, noting that the proponent is working under the premise that this will be a direct site release.</p> <p>DA listed Beaverhouse and Matachewan First Nations, and the Métis Nation of Ontario (or their local council office). MNR (BC) noted that the Temiskaming First Nation has recently asserted Aboriginal rights in the project area. DA confirmed that the project description has not yet been issued to the First Nations or Métis Nation of Ontario. DA confirmed that</p>	<p>Xeneca to issue Aboriginal Consultation Plan to First Nations, MNO</p>

	<p>the First Nations and MNO had received a copy of the Stage 1 Archaeological Summary Report, and that invitations had been issued for participation in the Stage 2 Archaeological field investigations. He added that a draft Aboriginal consultation plan has been prepared and that the proponent is working with the First Nations in business to business discussions and to secure signed MOUs. MNR (BC) noted that First Nation communities would likely prefer early engagement and direct consultation outside of the general public consultation program even at the conceptual stage. MNR (BC) inquired as to when they would be provided with a copy of the Aboriginal Consultation Plan. DA responded that they hope to have it ready for issue to First Nations, MNO and regulators within the next few weeks when it has been finalized.</p>	<p>and regulators when available.</p>
<p>6.0</p>	<p>Natural Resource Values</p> <p>Based on conceptual design, the majority of the lands with the potential to be impacted by the construction of the facility and creation of the headpond are private.</p> <p>MNR noted no Crown reserve along the shorelines, indicating that the 66 foot allowance shown on surveys is for a distress clause only. MNR identified that rights to lumber on private land, and costs for remove lumber will have to be examined by proponent. It was reported that the area was heavily forested to the water's edge, and that the removal of timber as a mitigation measure to methyl mercury effects of inundation would have to extend to the maximum operating level. MNR would like to see map submissions with property ownership identified on the maps.</p> <p>MNR could not provide information on aesthetic values at site though noted that it was used for angling. There is no known baitfish harvesting in the area, there are possibilities for bear management and trapping but this would require further investigation since lands are privately owned. MNR could not confirm traditional land within the project area.</p> <p>MOE (EM) commented on the surface water investigation program completed during 2011, noting that dissolved organic carbon content was not reported. MOE (EM) also advised that surface water analyses for total and methyl-mercury as well as tissue analysis for mercury in fish tissue should be conducted. EM also indicated that the further information was provided in the <i>Ministry of the Environment Northern Region Guidance for Conducting Baseline and Post Development Monitoring of Water Quality and Fish Tissue for Proposed New Green field Waterpower Projects with New Reservoirs</i> document.</p> <p>Xeneca commented that undertaking sampling and analyses, as written in the draft guidance document, would be very expensive. Xeneca indicated that they had not yet received a response from the MOE to their request for a meeting to discuss baseline sampling requirements. It was agreed that the MOE (TW) would look into a Ministry/proponent meeting to discuss surface water sampling program for all Xeneca waterpower projects to ensure a consistent approach.</p>	<p><i>Xeneca met with MOE on Sept. 27, a 2nd meeting is planned for October</i></p>

7.0	Meeting adjourned at 14:30	
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Record issued October 21, 2011

1/ Engineering Confirmation of Two Options proposed for Marter: M Vance

Option 1: High Dam, 17.5 m head

NOL = 201, 100 yr flood = 203, Dam height = 204 m elevation

Tailwater = 183.5 m

Option 2: Low Dam, 12.5 m head

NOL = 193, 100 yr flood = 198.03, Dam height = 198.7 m elevation

Tailwater = 183.5 m

Question: When is dynamic inundation analysis available for Marter?

(Internal note: Static Inundation maps show inundation at 201 and 196 (vs. 193 headpond) respectively. Why difference for lower site?)

2/ Hydrology and Inundation Concerns:

MOE Hydrologist concerns: (Mohammad () – For last name see formal minutes to be published post meeting). MOE has made comments as part of Ivanhoe, the Chute submission ; re: modeling of dynamic inundation and Operations report. (Laurie Brown will provide, as we have not yet received the comments). The comment will be related to a document issued from the MOE as a draft version Essentially, MOE hydrologist advised us to look at Jan 2001, draft version of document related to inundation maps.

(An additional comment was made that even though the comments have not been formally received, there was 'apparently' earlier feedback which the commenter would have thought would have been folded into the 'new' Marter EA. ??? (Internal Note: did we agree with the comments, agree to any changes to the Operation Plan?)

3/ Downstream Effects Comment: 2 km is insufficient re: Zone of Influence and all studies completed to date.

Belief among regulators (Environment Canada) that per 2.2.2, 4 "2 km downstream reach", the effects of the plant extend well below the Misema/Blanche confluence. Further since Misema is a peaking plant, the effects of the Marter site would necessarily overlay the Operation Plan for Misema as it applied to our 'effects' on flora and fauna in downstream zone of influence. Refn: per BC baseline practice, signal attenuation extends to a location on the river where the watershed is 5X that at the site. EC will send reference for Xeneca's review.

Further EC believes that the plant at Larder & Raven will also extend to the Blanche river (where it empties). They then perceive that there is an interaction of the two sites re: the peaking operation 'imprint' beyond the location for the joining of the Blanche and river flowing out of the Raven Lake.

Therefore they believe that we must be careful re: which project comes first and the overlay of the 'mutual dependencies'. Simply put, they believe the sites are linked? We have disputed this. In addition we should 'review' and comment of the BC document referenced.

Request for maps from PIC which include to Rick () re: private land and locations of all structures, lines and roads. Concern if there is any crown land re: merchantable timber and secondly any rivers re: culverts required etc re: roads and lines. Xeneca to provide.

Request for further articulation Dam Operation Plan & Hydrology reports, re: magnitude, duration, timing frequency. (They advise we agreed to fill in a table of values provided at April meeting from MNR which includes base flows influence.) Ie; copy attached to the 'engineering minutes'. Generally, the table includes two sections. Left side generally includes information included with Hydrology report, while the right side generally refers to additional metrics related to what should go into the EA re: development of a monitoring plan. Eg. High flow pulse, bankful flows, not usually part of the hydrology report.

Endangered species; Bobolink concern re: habitat is open field area of roads and lines routing (some of which is already on an existing roadway)

Endangered species; Lake Sturgeon concern depends on downstream zone of influence / impact discussion first.

Location approval is at risk, if downstream zone of influence is not 'agreed' upon with regulatory bodies. They strongly believe that a quantitative analysis is required versus a qualitative analysis.

Legal comment: Chamberlain Twp, Official Plan Amendment (OPA) or Zoning Bylaw Amendment (ZPA) may be required to be reviewed? Also check re: landfill capacity. Review public consultation concerns re: did we include Chamberlain Twp.

Question re: if Xeneca plans a zero compensatory flow for the bypass reach? Ie: dam has changed location. (ie: dam moves upstream into an active benthic area and bypass area has increased) Note that the earlier turbine flow was given with design capacity of 16 m³/s (it continues to be the so after check), so the regulators are assuming that the environmental flow will also be the same as noted earlier in April mtg. Therefore, the concern is that the extreme low flows below the powerhouse naturally do not go as low as what has been proposed as an environmental flow.

Michael Vance 2011 09 14

September 14th, 2011 EA Coordination Meeting on Marter GS

- DFO and TC are triggers – scoping report to be out in a month's time
- 2 properties impacted by smaller dam – one owner supports small over large dam and willing to give easement for smaller dam option
- 3 additional properties impacted by larger dam option – German couple (1/2 acre impact) are fine with option, no consent yet with 2nd property, 3rd property (near bridge) ½ acre impact already has microhydro turbine on site
- No evidence of any opposition yet from any of 5 owners
- Distribution line will cross railroad – have not talked to Northland yet
- Concern for erodible banks (clay etc.) on headpond; extent will be dependent on OP
- **See MOE comments on Chute hydrology unsteady flow modeling; need to consider hourly fluctuations in modified ROR**
- Jan 2001 MOE hydrological analysis for water power publication (**obtain**)
- **Need to submit NWPA application for all projects ASAP** to trigger review of project
- Environment Canada usually sees acid rock drainage (ARD) assessment in EA at least as a desktop exercise; if there is a problem, then need to determine mitigation in EA
- Environment Canada wants more field data, e.g. SWQ, than was in Chute
- Surface water sampling meeting with MOE is required
- Baseline report 2010 data to be ready next week (Kristi)
- **Should 2011 data be added to 2010 data report?**
- Kristi got high dam option a few days before PIC; now has field work for high dam on tributaries but not of upstream river section
- Downstream ZOI should be extended 2 km, well below the Misema/Blanche confluence
- Extent of downstream ZOI determined where watershed is 5x greater than at dam site (from British Columbia model)
- **Check out Environment Canada website hydrology regime**
- Cumulative effects of Misema and Marter operations should not impact downstream aquatics d/s –need to show Marter operations do not affect these
- EC believes that the plant at Larder & Raven will also extend to the Blanche River (where it empties). They then perceive that there is an interaction of the two sites re: the peaking

operation 'imprint' beyond the location for the joining of the Blanche and river flowing out of the Raven Lake.

- **Should use Misema WMP not Charlton WMP- need to find**
- **Want feedback on PD comments**
- **PDs on website not being updated based on regulator comments – let regulators know revisions are on website**
- **Must determine downstream ZOI**
- **Address dynamic effects, not just static effects** – can we use dam to mitigate higher flows during freshet?
- **Need to sort out private land ASAP re site release process and SIP release**
- **Get letter from land/riparian owners recognizing impacts of project and consent to go ahead**
- Need to provide dynamic inundation map with land ownership boundary
- **Review April meeting minutes**
- Trees on private land are to be removed at Xeneca's expense
- Should remove vegetation to maximum operating levels – keep root/stump to mitigate erosion
- Consider all natural amenities
- There will need to be a stage2 as there are two historic portages
- Hazard potential of project
- **Will need Boblink permit/agreement for line/road corridor**
- There is a 5 month turnaround if ESA application complete
- There is a large clay/silt bank in direct line with the station discharge
- CoA (Air) may be required if any residence within 1000m; therefore need screening/acoustic assessment and audit
- No licence of occupation needed
- Water quality monitor mercury ultra clean monitoring, DOC.
- Only burn clean waste, not manmade waste
- Need capacity of local waste disposal as it may be at capacity
- Official Plan Amendment (OPA) or zoning bylaw amendment may be required
- MNR is satisfied with studies on original inundation; need additional data from extended flooded area for EA
- **Check out and add to ER:**
 - **May be 2 traplines in ZOI upstream; baitfish licence is not known**

- **Boat launch at Misema downstream**
 - **Unknown users for aesthetics purposes**
 - **Add Town of Chamberlain to PD**
-
- Check SARA for new SAR listed
 - There is no 66 foot Crown reserve along the shoreline



Agency Meeting Marter Twp. GS



Friday, July 20, 2012
Kirkland Lake, ON



**Thank you for your time and for
your valuable input to this
project.**

**Today's meeting will be focused
on Natural Heritage and
primary concerns.**





Purpose of Meeting

1. Update on Marter Twp. GS
 - Studies
 - EA progress
2. Identify key issues of concern for agencies
3. Discuss possible mitigation options and strategies



Update on Studies

- Main data gaps identified in 2011
 - Additional habitat studies
 - Downstream Zone of Influence
 - Water quality/ water quantity





Update on 2011/2012 Studies

- Additional habitat studies conducted 2011
- Downstream Bathymetry/Hydraulic Modeling
- Operating scenario graphs
- Downstream features Identification maps
- Update of Draft Operating Plan
- Water quality monitoring program



Update on 2011/2012 Habitat Studies

- Quantification of critical aquatic habitat areas
- Fish community sampling on main river
- Invertebrate sampling in fast water habitat
- Fish tissue sampling for mercury
- Bobolink surveys
- Downstream features maps prepared



2010-2011 Survey Results – Marter Township Hydroelectric Project

Selected Species of Interest	Provincial Designation	Federal Designation	Detected during 2010-2011 surveys?
Lake Sturgeon	THR	-	No
Bobolink	THR	-	Yes
Whip-poor-will	THR	THR	No
Canada Warbler	SC	THR	Yes
Yellow Rail	SC	SC	No
Northern Pike	NAR	-	Yes
Muskellunge	NAR	-	No
White Sucker	NAR	-	Yes
Walleye	NAR	-	No
Freshwater Mussels	Various	Various	No
Freshwater Sponges	Various	Various	No
Rocky Mountain Capshell	SU	-	No
<i>Syngnaba altera</i>	S2?	-	No
Incurvate Emerald	S1	-	No

Designations: END – Endangered; THR – Threatened; SC – Special Concern; NAR – Not at Risk; S1 – S3 – Species of conservation concern: (SU – Unrankable; S1 – Critically Imperilled; S2 – Imperilled; ? – Rank uncertain)

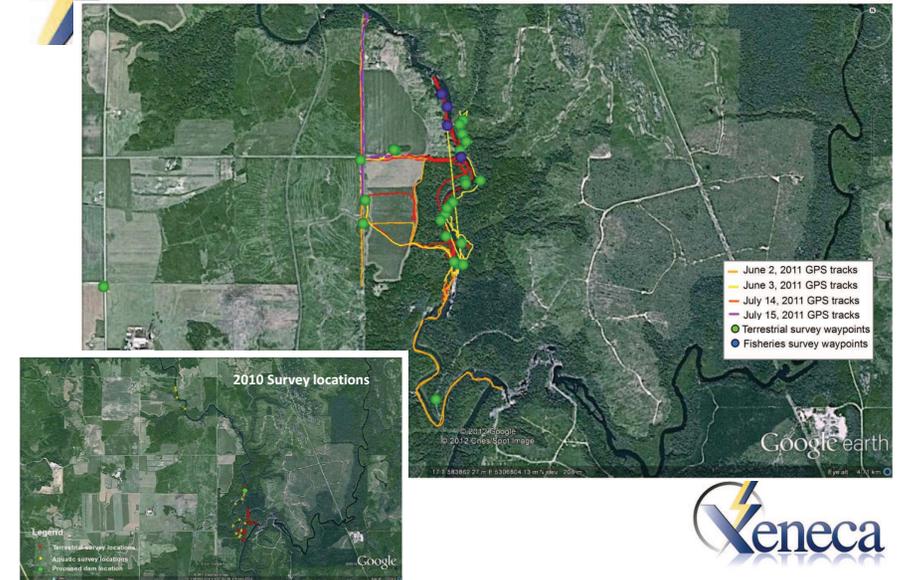


Lake Sturgeon: Image © New York State Department of Environmental Conservation



Bobolink: Image © Lisa Uskov (ORMG)

2011 Survey Locations – Marter Township Hydroelectric Project





Proposed/ Ongoing 2012 Studies – Marter Township Hydroelectric Project

Selected Species of Interest	
Bobolink	Lake Sturgeon
Whip-poor-will	Walleye
Canada Warbler	Northern Pike
Golden-winged Warbler	Freshwater Mussels
Yellow Rail	Freshwater Sponges
Short-eared Owl	Rocky Mountain Capshell
Common Nighthawk	Syngrapha altera
Olive-sided Flycatcher	Rusty Blackbird

Ongoing 2012 surveys

- Surface water quality sampling in zone of influence
- Nocturnal insect surveys utilizing light traps
- Targeted broadcast calling for Canada Warbler, Rusty Blackbird, and Golden-winged Warbler
- Passive call monitoring for target and incidental species using acoustic receivers
- Targeted Bobolink surveys in suitable habitat
- Methyl-mercury fish tissue sampling (July 2012)
- Extended inundation area habitat surveys
- General fish community sampling surveys in Blanche River using 4' trap nets



New Biology Studies

- Methyl-mercury fish tissue sampling (proposed for July 2012)
- Extensive surface water quality sampling
- Targeted Bobolink surveys
- Fisheries surveys utilizing 4' trap nets
- Broadcast call surveys for selected avian species of interest
- Nocturnal insect surveys utilizing light traps



Bobolink Habitat: Image © Lisa Uskov (ORMG)



Nocturnal Insect Light Trap: Image © Lisa Uskov (ORMG)



Update on 2011/2012 Hydraulics

- Developed operating scenarios on a monthly basis
- Bathymetry depth studies in key areas to compliment 2010 data
- Steady state hydraulic modeling to calculate velocities, wetted perimeter and water depth at various flows
- Unsteady state hydraulic modeling to calculate water level fluctuations associated with operations
- Operations Plan updated draft to include spawning and other restrictions



Update on 2011/2012 Water Quality

- Coordinated with MOE on new permit to take water (PTTW) guidelines
- Developed an ongoing water quality monitoring program (location/ sampling frequency and parameters)
- First round of data collection in 2012
- Water quality information will be combined with downstream hydraulic modeling to better inform the PTTW process (Post EA)





Update on Stakeholder Issues

- Working with affected riparian landowners - agreements & land deals finalized or pending
- Working with Chamberlain Township regarding roads & community benefits
- Working with Ontario Federation of Anglers and Hunters on issues related to fisheries/access to resources



Agency Concerns

- Out of all of the information received what are the issues remaining to be addressed?





Possible Mitigation Options & Strategies

- Special operations restrictions:
 - no intermittent operation during spawn
 - ramp rates designed to minimize sudden change in flow
 - ongoing water level monitoring
 - commit to run of river operation in drought conditions
 - Lake Sturgeon telemetry station

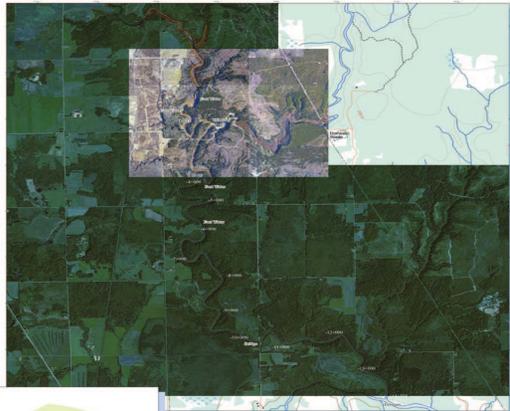


ZOI

- Downstream Zone of Influence to the Englehart River



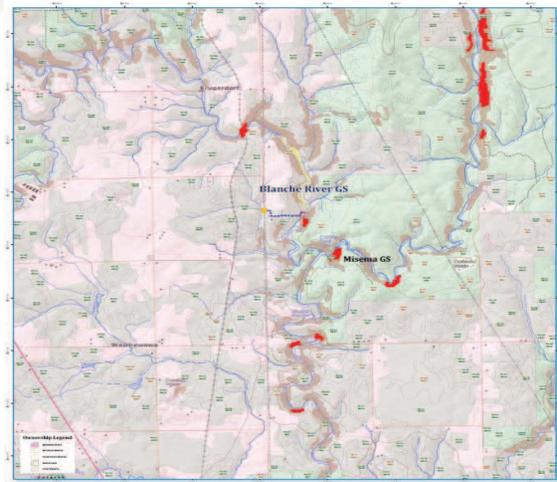
Upstream/Downstream ZOI



Reference data from the 2,005 MNR, NRC on 1/11/11 17h. Produced by N. Collier
 Marter: Project Zones of Influence and Potentially Affected Downstream Features
 Existing Conditions 100% Final Elevation
 Proposed Conditions 100% Final Elevation
 E.EAF on Right Side, boundary
 E.EAF MNR boundary
 State
 Federal Roads



Marter Power Lines & Roads

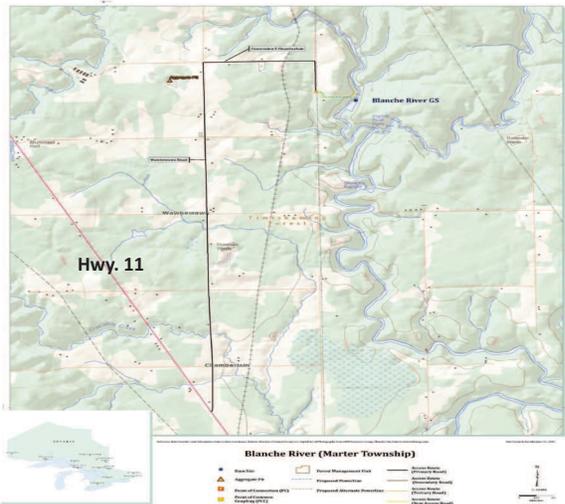


Title: E.29 Blanche River (Marter Township)

Point of Connection (PC)	Potential Foundation Area	Proposed 120kV/138kV Access Road (Proposed line construction)	Secondary Road Road
Point of Connection (POC)	Proposed Distribution Line	New Access Road	Water Road Road
Slope Class 20 - 30%	Proposed Water Retention Line	Potential New Access Road	Tertiary Road Road
Slope Class 30% plus	Proposed Wetland Distribution Line	Primary Road Road	



Marter Project Location



Marter Project Layout





Thank you!



NOTES OF MEETING

July 20, 2012

PROJECT Marter Twp Proposed Project on Blanche River

LOCATION MNR Kirkland Lake District

Notes Taker Adam Waters

Participants:

Brian Turnbull (BT)	MNR	Kristi Beatty (KB)	ORMG
Christine Greenaway (CG)	MNR	Tami Sugarman (TS)	OEL
Shaun Walker (SW)	MNR	Uwe Roeper (UP)	XENECA
Eleanor Moro (EM)	MNR	Mark Holmes (MH)	XENECA
LM McDonald (LM)	MNR	Nava Pokharel (NP)	XENECA
Leah Marinigh (Leah M)	MNR	Edmond Laratta (EL)	XENECA
Corrine Nelson (CN)	MNR	Adam Waters (AW)	XENECA
Tina Webb (TW)	MOE		
Kelly Eggers (KE)	DFO		

PURPOSE

- Xeneca to update the studies and EA progress
- Identify key issues of concern for agencies
- Discuss possible mitigation options and approaches

Item

Action By

<p>1) EA Status Update PPT presentation by Xeneca (MH):</p> <ol style="list-style-type: none"> 1. Presentations were made on Field Studies conducted in 2010/11/12. 2. Work by Xeneca to resolve the Downstream Zone of Influence (DS ZOI) to Englehart River confluence. <p>CG pointed out that the proponent and agencies have not yet come to a consensus on the DS ZOI.</p> <p>(This was further discussed on August 15th with MNR/MOE. See Item 4 for detail.)</p> <ol style="list-style-type: none"> 3. Work included bio field work, bathymetry, hydraulic modeling, downstream features assessment and revised draft Operations Plan (OP Plan). 4. Now working on effects and mitigation analysis for EA. 5. Draft ER for Agency review is in final preparation and to be released to 	
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Item

Action By

<p>Agencies for review at early August for a 30 days review period. After comments are incorporated, the updated ER will be released to the general public.</p>	
<p>2) LM noted that ESA authorization will required information on downstream impact on Sturgeon. This would first require identification of all sturgeon habitats and then an impact analysis on those habitats. This includes less obvious habitat types such as juvenile nursery habitat. She also noted that Sturgeon spawn and hatch over late spring and into early summer – spawning period ends July 15th.</p> <p>KB outlined the Sturgeon work that has been completed downstream. Special emphasis was placed on Stuart’s Rapids.</p> <p>KB also detailed other aspects of her site studies:</p> <ul style="list-style-type: none">-3 years of study from past the railway bridge to Englehart confluence – no fish surveys have taken place downstream of the Misema confluence, the uppermost section upstream inundation zone would have, at max, 1 year due to the extension forecasted last fall.-presence of Bobolinks and a Canada warbler.-possible pike spawning habitat in affected zone.-Upcoming mapping and monitoring: fish habitat mapping (including juvenile sturgeon habitat), surface water monitoring and methyl mercury in fish monitoring. <p>CG asked about the timing of the 2012 studies with respect to draft and final ER submission. Studies are planned for July and August, but Xeneca plans to submit draft ER by end of July. Will draft ER therefore be incomplete? CG referred Xeneca to letter from MOE EAB to Xeneca in response to submission of the Chutes ER, which cites incomplete baseline data collection as one way in which Xeneca did not meet the OWA Class EA requirements.</p> <p>(Xeneca - 2012 environmental field studies will be included in the draft ER.)</p>	<p>Xeneca</p>
<p>3) MNR raised the issue of the presence of Bobolinks and (endangered species) present in the vicinity of the Marter project.</p> <p>***ACTION: ORMG to complete the “Information gathering form for Bobolink.” Xeneca to follow up with KB at ORMG to resolve a long term program.</p>	<p>Xeneca/ORMG</p>

Item

Action By

<p>4) Limits of ZOI discussed.</p> <p>The OWA Class EA document provides guidance on assessing the extent of the ZOI. Uwe explained it is impractical for some agencies to ask the ZOI be extended to where there would be no measurable effect or produce zero effect on the river. An agreement should be in place to limit ZOI to a very long distance where levels are within natural variability ± 10cm.</p> <p>TW noted that this is not inline with the Class EA or with MOE's current position on the definition of the ZOI. MOE will discuss this approach internally prior to meeting with Xeneca on the downstream ZOI.</p> <p>CG referred to the MNR's response to a document previously submitted to the MOE and MNR describing Xeneca's proposed approach to downstream ZOI. The response document noted that in the aquatic environment the MNR considers the ZOI to extend to where the alterations in physical, chemical and biological processes are not discernable from natural variability.</p> <p>UR noted that he can live with a ZOI definition that refers to discerning an effect from natural variability.</p> <p>TS noted that the proponent will have to propose its DS ZOI boundary and rationale in the ER. The risk is to the proponent if consensus is not reached with agencies in advance of ER submission.</p> <p>TS clarified to Xeneca that DS ZOI is not defined by impacts that are considered "significant". Within the total ZOI you look at all impacts and consider the significance of those impacts.</p> <p>***ACTION: Xeneca to set up a meeting with MOE to arrive at consensus on extent of downstream ZOI.</p> <p>(The downstream ZOI was discussed on August 15th. MOE indicated support for the concept of basing the extent of ZOI influence on parameters falling within natural variation. On which to base its decisions, MOE will require accurate: Flow data, Modeling and Operating scenarios.)</p>	<p>Xeneca</p>
<p>5) Concerns raised over effects of variable flow on spawning points.</p> <p>MNR pointed out current spawning chart goes until June 20th, but hatching actually ends on July 15th.</p>	

<u>Item</u>	<u>Action By</u>
<p>6) LM noted that she would like to understand flow, temperature and sedimentation changes. Noted that ZOI does not only consist of flow changes, but also of temperature and sediment alterations above that expected by natural variation, as this could have significant impact on aquatic ecosystems, or any other areas where biota are affected by facility. Interested to understand what erosion and sediment work has been done. Existing erosion and landslide location immediately downstream of site were discussed.</p> <p>UR noted that erosion occurs in high flow events (flood flows) and that the turbines discharge flows are in the normal to low flow ranges. Therefore Xeneca does not anticipate that turbine operation will significantly affect erosion. However, UR noted that erosion hazard locations have been mapped and Xeneca plans to monitor those locations during construction and early operational phases by a qualified erosion/sedimentation specialist.</p> <p>***ACTION: Copy of erosion study to LM and keep LM involved during the planning period of the erosion/sedimentation program.</p> <p>(Erosion study report was forwarded to MNR.)</p>	Xeneca
<p>7) LM questioned how ice scour could affect sediment load, deposition and transport.</p> <p>UR noted that sediment load in this river is mostly clay which gives it the strong brown colour. Clay consists of colloidal material. Unlike sand, the colloidal clay erodes slowly but stays suspended in the water for a long time. It does not drop out and form sand bars. This means where ice scour does occur, a plume of clay will go into suspension and migrate down river. The plume disperses (further and further) but it does not settle into sand bars. Ice scour is most likely to occur in fast water sections and while water levels are changing. The change in water level causes the ice to crack. The fast water causes the ice pieces to move. UR noted that it is very difficult to predict if scour would be significant.</p> <p>*** ACTION: Xeneca is proposing to monitor Stuart’s Rapids (only fast water section within DS ZOI) during construction and early operational period to assess the need and nature of an ice scour control program.</p>	WESA/Xeneca
<p>8) Access roads and power lines discussed.</p> <p>KB pointed out that the designs are not finalized. The most current design does not interfere with Bobolinks. The road design was recently altered to avoid a</p>	ORMG/Xeneca

Item

Action By

<p>steep section of topography between the field and river. Further discussions need to occur before confirming routing so that habitat for Bobolink is preserved and Canada Warblers using the area are not impacted during construction.</p>	
<p>9) TW asked about Water Quality monitoring.</p> <p>UR noted that Xeneca had been working with Todd Kondrat at MOE to work out a WQ monitoring plan. The plan will be included in the EA document. TW asked that available results from the first year of monitoring (2012) be included, as baseline water quality results will help inform on current conditions of the river. (Also, a report was prepared in 2010 on WQ before the MOE Guidance was issued; these field data are also helpful in informing current WQ thus most likely these data will also be included in the EA.)</p> <p>*** ACTION: To include available 2012 SW results and 2010 results in EA.</p>	<p>Xeneca/WESA</p>
<p>10) EM asked about stakeholder consultation and whether DS ZOI was presented to stakeholders (and wants the public to be aware of all future ZOI changes). E.g. concern over whether the fishing community was aware of possible effects on walleye spawning.</p> <p>MH noted that consultation process had been extensive and exceeds what is required under EA guidance.</p> <p>LM noted that based on the ZOI advertised in media releases and PICs, Xeneca might not have heard all potential public comments, as the ZOI has increased through time. At the district level comments have been received from Timiskaming anglers expressing concern over any effect to lake population.</p> <p>SW asked if Xeneca looked at livestock watering features, docks, etc., when developing contact list. UR replied that anywhere that looked like there was a use was identified.</p>	
<p>11) CG noted that changes have been made to the LRIA which enable the MNR to order a proponent to prepare a WMP in conjunction with S14 approvals, in advance of the dam actually existing. New LRIA guidance is in preparation.</p> <p>UR noted that Xeneca is including WMP in the PIC presentations. A discussion and reference is also included in the operations plan document. Xeneca is making effort to include WMP consultation requirements in the EA</p>	<p>Xeneca/WESA</p>

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Action By

<p>consultation process to the extent possible.</p> <p>CG noted that effective consultation that meets the intent of the WMP process includes fulsome consultation on proposed flows and levels.</p>	
<p>12)-1 Hydraulic modeling discussed.</p> <p>BT (MNR) concerned about some of the calibration accuracy of the hydraulic model due to the limited number of calibration points. Observed levels were only provided for the area immediately downstream of the proposed dam; bathymetry information is lacking.</p> <p>UR noted that Xeneca is aware of the limitations of the hydraulic models. However, the models, none the less, provide tremendously useful insight into how the river behaves. UR also noted that Xeneca is using the models to inform the EA process, but that the model results are NOT the proposed compliance limits. Compliance limits are proposed in the Operations Plan. For example, where the models show large fluctuations, Xeneca may have constrained the operation and proposed to limit fluctuations to a tighter band.</p>	
<p>12)-2 TW noted that Sajjad had some concerns about the hydraulic modeling.</p> <ol style="list-style-type: none">1. There is no true representation of the river bed.2. Calibrations are not satisfactory to MOE. Appropriate information such measured flows and corresponding water surface elevations and velocities were not used during model calibration.3. There are errors in the flow assumptions at the Blanche confluence with the Misema.4. There are difficulties in determining cumulative effects (note that this may be related to the operation of the Misema GS (TransAlta Utilities) where the operator may be out of compliance. A water monitoring station at Stewarts (Stuart's?) rapids is indicating that operation of the Misema GS is resulting in downstream water level fluctuations. Xeneca noted that the operations plan for Misema GS shows that it is permitted as a run of river facility. UR noted that if Misema GS is not being operated in accordance with the operations plan, then it is something the MNR will have to resolve with the operators of that facility. <p>TW: Xeneca needs to take the Misema operations into consideration as this facility's operations (once operations are inline with WMP/project documentation) forms a part of the current river conditions and is required as a part of the assessment in order to receive accurate results from the</p>	<p>Nava/Xeneca</p>

Item

Action By

<p>model. Cumulative effects assessment is also in line with our Ministry’s statement of environmental values and will be reviewed during permitting.</p> <p>***ACTION: Nava to contact Brian and Sajjad to discuss the modeling approach and limitations of the model for the Marter project (Blanche River).</p> <p>(Nava had a follow up meeting with Sajjad Khan, Brian Turnbull and Rich Pyrc on August 7th. On this meeting Nava agreed to collect some additional bathymetry survey information on the Key controlled sections of the river and compare the HEC RAS unsteady state results with the present results which is based on the FRI DSM information in the river reach where the LiDAR information is not available. Everybody agreed that Marter TWP will be a pilot project on that regard and will give confidence for the other Xeneca Projects which has similar data for the downstream river reach unsteady modeling and no additional works will be required for the other projects.)</p> <p>CG notes that in the presentation of bathymetry information it was unclear what transects were actually measured in field and what transect information was assumed.</p> <p>LM pointed out that she had provided comments on specific sites recommended for transect work (fall 2011). Would like some report back on results of bathymetry and work completed.</p> <p>(Xeneca responded to LM after the meeting.)</p>	
<p>13) LM expressed concern about the environmental flows proposed for low flow periods, and how they will affect fish passage. She is concerned about 2 locations that have potential to be impacted are Stuart’s Rapids and James’ Rapids, however low flow periods can impact other areas of the river as well. Concern over navigability was also identified.</p> <p>KE noted that DFO had also expressed concern regarding fish passage at both sets of rapids last fall in response to comments on the proposed bathymetry program.</p> <p>Kristi noted that Stuart’s Rapids was in the DS ZOI and had been studied. LM noted that James’ Rapids is very flat and shallow and that she is concerned it could be affected by relatively small changes in water levels. UR noted that James’ Rapids is a significant distance downstream (downstream of Misema, Englehart and Larder confluences). The current draft operations plan commits to +/- 0.1 metres fluctuation limit at Englehart. This would be further reduced at the time it goes to Larder, say +/- 5 cm.</p> <p>KB suggested the ORMG could take a look at James’ Rapids to confirm that it</p>	<p>Xeneca/ORMG</p>

Item

Action By

<p>would not be affected. UR suggested that if there is any doubt, Xeneca will reduce the fluctuation limit the end of the DS ZOI (at Englehart) to ensure no impact downstream from there.</p> <p>Xeneca to prepare modeling for low flow scenarios under proposed operating regime. Modeling should show downstream water level fluctuations at James' Rapids (downstream of the confluence of the Larder and Englehart Rivers). Modeling should be shared with DFO's Kelly Eggers and ORMG Biologist Kristi Beatty.</p> <p>***ACTION: Xeneca / ORMG to look at James' Rapids to confirm that it is beyond the extent of the ZOI.</p> <p>(Additional depth measurements at Stuart's rapids were completed. Measurements for further downstream James' Rapids to be done in Fall.)</p>	
<p>14) SW asked how compliance monitoring would be done with respect to the proposed (+/-) at the downstream end of the ZOI and if MNR would have access to realtime data (i.e. monitoring station installed and maintained by Xeneca).</p> <p>UR committed to future monitoring to ensure that HEC RAS modeling predictions are confirmed in real time once the plant is in operation.</p> <p>UR confirmed that compliance would be assured through compliance monitoring (water level stations) and that MNR would be given access to the data. If live data, then MNR would be given live access. If batch data then MNR would be given access whenever the data is downloaded.</p> <p>***ACTION: Tami to ensure commitment to share compliance monitoring data is in the EA document.</p>	Tami/WESA
<p>15) LM requested that Xeneca fill out SAAS flow comparison tables. These are useful in helping MNR evaluate flows and changes to flows, and are a useful tool when discussing minimum flows and ramping rates.</p> <p>UR confirmed that Xeneca would assign this task to its consultant and get it done a.s.a.p.</p> <p>***ACTION: Xeneca to provide completed SAAS flow tables to MNR.</p> <p>(MNR forwarded SAAS table to Xeneca)</p>	Xeneca/ORMG

<u>Item</u>	<u>Action By</u>
<p>16) LM asked about construction mitigation monitoring plan.</p> <p>UR explained that a mitigation plan is included in the draft EA that will be circulated in the coming weeks for agency review.</p>	<p>WESA/NRSI</p>
<p>17) MNR noted large erosion/landslide immediately downstream of tailrace area.</p> <p>Discussion occurred on ensuring that tailrace orientation does not aggravate this area. UR noted that tailrace velocities are lower than river velocities and also committed to look at this aspect in more detail during Plans & Specs approval / detailed design stage.</p> <p>***ACTION: Xeneca should include engineering of tailrace to ensure alignment steers flow away from soft clay/sand embankments that are contributing to erosion.</p>	<p>Nava/Xeneca</p>
<p>18) KE noted that information should be included on turbine mortality and other factors related to DFO approval.</p> <p>KE noted that if Xeneca proposed a mortality rate, DFO will consider comments from MNR on how that mortality rate will affect MNR's ability to meet its fisheries management objectives.</p> <p>Xeneca confirmed that information on fish mortality will be provided to DFO as part of the DFO approval process. Kristi noted that there is no natural upstream fish passage at the dam location. Downstream passage is possible at all points on this river during most if not all flow levels. Entrainment and turbine mortality are legitimate concerns for fisheries values for downstream movement. These will also be considered in selection of equipment and as part of DFO permitting.</p>	
<p>19) The group discussed having a follow up to review cross section and flow information with MNR (especially at Stuart's Rapids to support an invertebrate nutrient flow for juvenile sturgeon and prevent stranding) to reach consensus on minimum environmental flows. Cross sections under various flow scenarios are to be provided.</p> <p>The meeting is to occur after the SAAS tables and cross-sections can be provided to MNR. LM noted that she is especially concerned about low flow periods and having flow fluctuations that are far outside of the normal range. LM noted that 1 cms minimum flow is the lowest recorded flow on record. The discussion is to include how Xeneca plans to achieve compliance.</p> <p>***ACTION: To arrange follow up meeting or call to discuss minimum</p>	<p>Xeneca</p>

Item

Action By

<p>flows with ORMG, MNR and DFO.</p>	
<p>20) UR confirmed that the facility would be operated daily, including weekends, as it was determined from the hydraulic models that water levels drop too much if environmental flow occurs all weekend. Modeling also showed that water levels are easier to maintain if operation is only daily.</p> <p>The needs of sturgeon may dictate operation of the generating station. During sturgeon incubation periods the eggs must be kept wet, so run-of-river may have to be used. During spawning, run-of-river will be necessary. For nightly dispersal of young sturgeon, run-of-river may be required.</p> <p>CG asked for Xeneca’s definition of run-of-river. UR responded that he understands it to be instantaneous inflows = outflows 100% of the time.</p> <p>CG noted that compliance requirements would include hourly reporting to demonstrate that run-of-river was implemented as described above. UR said that hourly reporting would not be a problem.</p>	
<p>21) Xeneca to provide in its EA information on how bypass flow will be directed when turbines are shut down. Copy of this material should be sent to LM McDonald.</p> <p>***ACTION: Xeneca to provide this information to LM ASAP and include it in the ER.</p>	<p>Xeneca</p>
<p>22) Xeneca to send MNR a list of the sites where bathymetry studies or other were conducted in the DS ZOI.</p> <p>(Bathymetry study locations provided.)</p>	<p>Xeneca</p>
<p>23) Christine Greenaway to send Xeneca an electronic copy of the Hydrological Regime Assessment Table.</p> <p>Xeneca to fill out the HRAT and submit to MNR District and Region.</p>	<p>CG/Xeneca</p>
<p>24) MNR and DFO asked about the status of Aboriginal consultation. CG reminded that AoR status has not been granted and that it is expected that a proponent will have completed the site release process prior to MNR issuing any permits and approvals. CG noted risk to proponent in pursuing EA in advance of getting private land owner agreements in place to complete site release process at this site.</p> <p>MH noted that significant consultation efforts have been made over past 3</p>	

Item

Action By

<p>years on environmental matters and B2B matters, but there are still outstanding issues that are being worked on. UR noted that Xeneca is offering 25% FN participation that takes advantage of government programs, but that even with this offer, it is still challenging to make progress, especially with where multiple FN are in the mix.</p>	
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agenda

Marter Pre-Submission Consultation Meeting

1/17/2013

9:30 a.m. – 4:30 p.m.

MNR Offices, Kirkland Lake

Meeting called by: Xeneca

Attendees: Lianne Kentish, Shaun Walker, Eleanor Moro, Lauren Mcdonald, Christine Greenaway, Kelly Eggers, Kristi Beatty, Uwe Roeper, Mark Holmes, Karen Fortin, Stephanie Hodsoll

Via Telephone: Brian Turnbull, Eva Maciaszek, Rosanna White, Ed Laratta, Nava Pokharel

Please read: Briefing Notes distributed by Xeneca

Discussion Items

1. Minimum ecological flows
2. Downstream fish passage
3. Road and bobolink
4. Zone of Influence
5. Erosion and sedimentation
6. Habitat modeling for sturgeon
7. Public & Aboriginal consultation

NOTES OF MEETING: Marter Pre-Submission Consultation Meeting

DATE: January 17, 2013
PROJECT: Marter Twp. Project on Blanche River
LOCATION: MNR Kirkland Lake District Offices

ATTENDEES:

Shaun Walker (SW) MNR
Karen Fortin (KF) WESA
Uwe Roeper (UR) Xeneca
Stephanie Hodson (SH) Xeneca
Mark Holmes (MH) Xeneca
Eleanor Moro (EM) MNR

VIA TELECONFERENCE:

Kristi Beatty (KB) ORMG
Kelly Eggers (KE) DFO
Nava Pokharel (NP) Xeneca
Rosanna White (RW) MOE
Brian Turnbull (BT) MNR
Lauren McDonald (LM) MNR
Leanne Kentish (LK) MOE

a. Introductions

b. Opening Remarks

UR provided an overview of the process to date, noting much of today's discussion evolved from issues raised at last summer's (July 20, 2012) pre- draft ER meeting in Kirkland Lake. Subsequent to the release of the draft Environmental Report Xeneca was provided with agency review comments on the document. Xeneca issued comments and Xeneca response to the review comments in mid December 2012.

UR stated that Xeneca is now nearing a submission of the Final ER and the Notice of Completion, and the purpose of this meeting was to work towards reaching consensus on any outstanding issues.

UR observed that MNR comments were consistent with discussions during summer/fall 2012. He added that the proponent has been working towards addressing the issues raised during these previous discussions. He expressed surprise at some of the recent comments raised by MOE, since some of the issues raised were, had not surfaced in any of the earlier meetings or discussions.

UR added that a November 16th meeting with Regional MOE staff narrowed down key concerns applicable to multiple project sites, including Aboriginal and Public consultation, downstream zone of influence, and surface water quality,

Agenda items

(A) Minimum Flows:

MH framed the discussion noting that minimum flow discussion is focused on the bypass reach and within the downstream zone of influence.

MH stated that field investigations confirmed no ecological values in the rock channel that comprises the bypass reach, and therefore a minimum flow of 0 cms had been proposed. MNR acknowledged negligible ecological value in the Krugerdorf Chute but stated that maintaining ecological function at the base of the Chute was a project requirement. Xeneca proposed that minimum flow can be provided in the bypass reach either through the spillway or through the turbine.

For the downstream reach, Xeneca stated that minimum flow values in the Operating Plan were derived from hydraulic studies.

MNR (LM) noted that, with respect to downstream fish passage, ministry concern is continued movement of fish within the downstream reach, as well as with gravel bar habitat at the very base of the Krugerdorf Chute. KB added that ecological flows and fish passage are linked.

DFO (KE) and LM clarified that concern is related to downstream fish passage upstream through Stuart's Rapids during low flow periods and the hydraulic effects at the tailrace. The presence of the gravel bar indicates there may be fish spawning habitat in the area. DFO added that it was important to understand what changes might occur at the gravel bar should minimum flow be delivered through the powerhouse. DFO confirmed that there were no outstanding concerns regarding moving fish through the powerhouse, adding that this method was well established in the waterpower industry.

- 1. ACTION: KB to set up call in the next two weeks to discuss the downstream minimum flow issues, zooming in on hydraulic effects occurring where habitat values have been identified and river cross section information has been developed. KE, LM, RW, UR and NP are to attend. Also slated for the same meeting will be discussion on effects of differing flows on Stuart's Rapids (modeling details are to be sent out in advance to inform the discussion), as well as daily fluctuation impact on habitat; call to include MNR, DFO, and MOE.**

NP and UR noted that bathymetry and hydraulic modeling at the confluence of the Englehart River were revised to reflect agency comments during previous discussions. NP reported no significant change in results from revised modeling, adding that the additional work provides greater confidence in the data.

- 2. ACTION: Updated hydraulic modeling to be distributed prior to Action Item 1.**

Regarding fish passage at Stuart's Rapids, KB observed that additional investigations were completed and that Stuart's Rapids is likely passable by fish at various flows. Even under low flow conditions, there remains a large sluice between the rock formations which provides fish passage under most flow conditions except at extreme low flows. KB confirmed that cross sectional depth information at Stuart's Rapids under key flow scenarios is available, and could be used to model fish passage at this pinch point under various flow conditions.

A discussion followed detailing on intermittent operation scenarios, with UR clarifying Q_{tl}, Q_{min} and Q_{max}.

On the question of whether there will be fish passage at Qtl (limited turbine flow), UR explained that, if minimum turbine flow is 4.8 cms, the difference in downstream discharge will be between 1 and 3 cms. UR added that the provision for fish passage is dependent on what is naturally occurring under low flow conditions. UR noted that the key discussion needs to be around what the river looks like when operating below 4.8 cms. DFO agreed with the statement.

3. ACTION: MNR to provide minimum flow numbers in order that they can be modeled along with what is being proposed by Xeneca.

The discussion moved to the Misema GS and the whether the facility is operating as per its Water Management Plan (WMP.) MNR (SW) indicated that the facility is likely operating within the compliance terms of its WMP, though the WMP may not have considered all operational scenarios as incentives have changed since its approval. He added that the Ministry may be revisiting the terms of the Misema WMP in the future.

With respect to the existing water level fluctuation created by the Misema GS and the potential cumulative effects to water fluctuations downstream once the Marter GS was commissioned, Xeneca proposed an operating regime designed to work around Misema's operations, i.e. when Misema is discharging water, Xeneca would hold back water, and when the Misema facility is holding, Xeneca would discharge. UR explained that this approach would possibly result in less fluctuation than what is presently being experienced downstream as a result of Misema's operating strategy.

The Operating Plan would have to be worked out with TransAlta as the current WMP does not address downstream effects past the Misema River's confluence with the Blanche River, but recent studies have shown that Misema's effects go much further. Meeting participants inquired as to how Xeneca was proposing to establish communication between the facilities. UR responded that Misema has a dial-up system which could work in a coordinated fashion with the Marter GS system.

It was noted by MH that Misema's operational regime is clearly a WMP issue. In terms of meeting the requirements of the Waterpower Class EA, Xeneca's proposal to operate around TransAlta's schedule should be all that is required. RW responded that MOE will want more detail on how Xeneca's operating plan with TransAlta will work and that cumulative effects of both facilities was to be covered as part of the environmental assessment. MNR added that assurances that both facilities will indeed operate collaboratively would be required at permitting.

UR replied that Xeneca would draft a formal proposal document for the regulators confirming its intended 'time shifting' operational approach. He added that the approval of this approach should be independent of TransAlta's compliance.

Xeneca requests that SW take Xeneca's operating proposal to MNR's Regional Office to confirm it meets the intent of the Class EA.

4. Action: Xeneca to submit formal proposal to MNR/MOE/DFO demonstrating how Marter GS operation will work around Misema GS operation.

MNR (LM) stated that it was difficult for the ministry to discern how much habitat would be altered based on the information presented in the Draft ER surrounding minimum flows. She added that the document failed to establish direct links in how key downstream habitat sections would change subsequent to minimum flows. KB responded that linkages had not been made because ORMG did not have minimum flow information when the Draft ER was released. UR confirmed that Xeneca has since

been working on min/max flows on daily basis. KB and NP have been discussing effects and now have the cross-sections to show what key environmental features will look like at different flows. It was suggested that a follow-up call between ORMG, MNR and DFO to ensure consensus on key habitat areas prior to the modeling.

5. ACTION: ORMG to confirm key habitats with MNR and DFO. Xeneca to model effects of different flows to include in Action item 1 discussion.

MNR (LM) identified data gaps in Draft ER on juvenile sturgeon movements and habitat. ORMG responded that juvenile sturgeon were not found during studies but KB said that Xeneca is proceeding under the assumption that sturgeon are present. Sturgeon discussion can also be held at the same time as minimum flows (see Action Item 1.)

6. Action: KB to provide MNR and DFO with habitat modeling for confirmation as to which habitats may be favoured by juvenile sturgeon.

Responding to the question of whether additional study is required, UR pointed out that Xeneca has already modeled to a worst case scenario, so moving to less impactful minimum flows would further decrease the potential for negative effect.

7. ACTION: Rosanna confirmed that MOE be included on the Action 1 discussion call, as the minimum flow discussions will ultimately relate to the Permit to Take Water (PPTW) as well.

(B) Habitat for Sturgeon

LM noted that the MNR requires additional information to determine whether the project will require an authorization under the *Endangered Species Act* (ESA) to allow development that may impact a species at risk i.e. sturgeon. She added that an Information Gathering Form (IFG) for the project should be completed and returned to MNR. LM observed there is a need to identify the type of habitat being affected and if required, an ESA authorization would be issued for each phase, construction and operation. LM cautioned that the permitting for authorization is lengthy. The minimum time for approval is typically six months for an operating facility, and could take significantly longer for a new development, noting a requirement to post the permit application on the EBR. She also noted that further information regarding ESA Waterpower Agreements can be found on the Approval requirements can be found in the ESA under 242/08, Section 11.

LM added that additional desktop analysis as to whether sturgeon are getting through Stuart's Rapids should be considered. KB said she has become fairly well-versed on the river habitat and she suspects that, under certain flows, sturgeon can get up through Stuart's Rapids.

MNR (LM) confirmed that if the proponent can avoid impact, no ESA permit would be required but if avoidance was not possible and mitigative measures were proposed, this would trigger a permit. She added that if loss is only temporary; i.e. during construction and impacts occur when sturgeon are not using the habitat, and habitat is returned to the same useable state prior to sturgeon re-appearance, then the project would be considered to be avoiding habitat impact. UR asked if construction is timed to occur when sturgeon are not present and rationale is confirmed through testing, would that serve as a work around? LM affirmed the method as workable and noted this approach has been successful when taken with respect to turtle habitat.

LM said that it may not be necessary to obtain authorizations that cover the entire section of river within the ZOI if significant habitat is identified and avoidance or mitigation strategies are put into place. UR noted that the base of Krugerdorf Chute is a deep pool suitable for sturgeon. It was proposed to construct the GS tailrace into the pool.

In a discussion about ESA authorization not being a requirement for the EA but being required for permitting and approvals, LM commented that she would leave EA requirement comments to MOE. DFO confirmed that it has yet to make a decision on a HADD authorization and that it has been unable to do so based on the information provided in the Draft ER. MOE (RW) added that from the EA perspective, the Ministry would have to confirm that the proponent had obtained all data necessary to properly assess impacts, and provide appropriate avoidance/mitigation measures.

A question was posed regarding the size of screen on trash racks. KE noted the DFO fish screen guidelines are available online, added that the proponent will be required to provide a fish mortality estimate with appropriate supporting documentation for a Section 32 Fisheries Act Authorization, noting that turbine type, and reduced flow velocities at intakes are common approaches used to minimize entrainment and entrapment. KE observed that mortality estimates would be dependent on fish size. UR confirmed that Kaplans are planned for the Marter GS. It was noted field studies completed at the project site captured only minimal numbers of fish upstream.

- 8. ACTION: Once DFO has confirmed if and/or what is the potential HADD (Fisheries Act Section 35), or if there are any other requirements under the Fisheries Act, KE will provide this in writing.**

RW commented that, in order to determine if the EA is complete, the key is having enough information to assess whether there is impact and, if so, that the required mitigation is in place.

LM repeated earlier information provided to the proponent, that MNR has modeling that helps determine sturgeon habitat, and the model may be worthwhile to use.

- 9. ACTION: KB will call Tim Haxton to determine if there is enough info to run the habitat models and then go back to NP to get any additional info.**

It was stated that if all of the info required for modeling is not available, known habitat information could be used to identify significant areas. Xeneca cautioned that while it wants to work with the agencies to develop the best possible suite of information, the clock has run out on undertaking additional studies that are time intensive. MH added that the requirements of the EA have been met or will be by the time Notice of Completion is issued. UR noted that, even with a one year extension, Xeneca is already out of compliance with OPA contract provisions, and Xeneca will be going back to OPA to advise of delays and that it is inevitable that commissioning deadlines will not be met. UR strongly advised on the need to avoid lengthy delays. He suggested that, if quick and fast analysis can generate useful info, Xeneca is prepared to do so, but the projects simply cannot afford further lengthy delay.

KB advised that there is enough habitat data to use Haxton's modeling parameters and complete analysis. LM added that if it was not feasible to use the model, the proponent should examine the model parameters to aid in habitat analysis.

Note: ORMG has contacted MNR for habitat modeling however it appears that there are inconsistencies in the modeling software which is outdated and conflicts with the newer software versions in use by Xeneca.

KF advised that confirmation of whether an ESA permit is required will be needed for the Final ER, to ensure comprehensive impact analysis.

Referring to federal EA process, RW observed that in her experience two years of data is generally enough to meet federal environmental assessment regulatory requirements. KB said that Xeneca recognizes sturgeon are present in the river and have already committed to operational constraints to ensure there are no adverse effects during the spring spawning and nursery period. This has been proposed on other sites and accepted by district regulatory review bodies. LM remarked that Xeneca may want to consider cumulative thermal units as a means to determine when operational constraints should be in place. KB agreed that thermal units are better than temperature as predictive means to determine when the spawning period is occurring. LM will forward thermal unit information to ORMG once she obtains it. LM observed that with sturgeon, both water temperature and flows are critical. Sturgeon may have more than one spawning run that is spread out over a longer period of time. She suggested that further dialogue could occur during discussion on minimum flows.

(C) Roads and Bobolink

LM said she has read Xeneca's response to MNR comments on the Draft ER and she agreed the proposed approach may be sufficient to avoid impacts to Bobolink. However, she requires a completed Information Gathering Form (IGF) to answer any remaining questions. Once she has the IGF she would be able to confirm whether impacts to the species at risk and its habitat have been avoided, negating the requirement for an ESA permit KB noted MNR should have the completed documentation next week.

(D) Zone of Influence

MH initiated discussion by providing a brief overview of the work being done as per MOE Regional's direction at the November 2012 meeting. The proponent is working with a three-party technical working group, including MOE's Brian Turnbull and Sajjad Khan and MNR's Ryan Stainton, Rich Pyrcce and Bob Metcalfe, to develop a framework document to define the end of the downstream Zone of Influence (ZOI.) NP explained the statistical approach to defining the downstream ZOI that has been developed is now in final review by the team and was recently provided to MOE for comment. RW confirmed that MOE's hydrologists (also part of the technical working group) were reviewing the framework document.

NP added that the approach would determine the magnitude of the level of fluctuation at the end of the downstream ZOI. UR added that the operation of the facility would be tailored so that it does not exceed the natural fluctuation levels at the end of the ZOI. He added that the Marter GS level fluctuation would be plus or minus 10 cm at the confluence of the Blanche and Englehart River. MNR (EM) remarked that there has yet to be a consensus on the downstream ZOI and that this should be recognized in minutes. RW confirmed that MOE had not confirmed downstream ZOI.

UR expressed concern, noting a Nov. 16, 2012 meeting with regional decision-makers focused in part on how to reach a resolution on downstream ZOI, but two months later, consensus still hasn't been reached. He added that if there are regulatory requirement for downstream ZOI, then these need to be identified so that decisions can be made. He expressed frustration in that no one within the various regulatory agencies has yet taken the lead in downstream ZOI decisions. RW said that from MOE

understood the frustration but noted that the process leading to conclusions on ZOI shifted somewhat, and that the MOE was under the impression the framework would be developed through tripartite discussion. UR expressed his disagreement noting that the proponent was told by MOE to work with a technical working group, including MOE's Brian Turnbull and Sajjad Khan working, which the proponent did. He added that meetings had been held between the proponent and several regulatory agencies to discuss project area of influence on Nov. 16, 2012 and Dec. 11, 2012.

NP explained that some additional studies bathymetry/hydrology studies were recently completed. Detailed bathymetry of key river sections were correlated with both steady and unsteady state Hec-Ras models, and results show that the conclusions are both consistent and reasonable. The new information will be ready for dispersal to the agency teams by next week. It was further observed that SASS tables have been completed and forwarded to hydrologists. If Xeneca does not receive a response from the agencies they will assume the tables are accepted. MNR (LM) confirmed she would follow up with MNR hydrologists on the SASS review.

UR noted there is some ongoing discussion regarding ramping rates. LM concurred asking how habitat is being affected by different ramping rates and if there might be fish stranding. UR provided assurance that Xeneca can work with ramp rates, and that changing ramping rates is easily managed. If lengthening ramping times is desirable, Xeneca will do so.

LM advised that Xeneca needs to examine the impacts that would be experienced in the river at +/- 10cms by detailing what is there now, and how the river would be changed by what is being proposed to determine biological impacts. UR added that minimum flow and biology discussions can occur separately from ZOI.

13. ACTION: The downstream ZOI can be finalized for this project once the three-party technical working group (MOE, MNR & Xeneca) has completed their work and some agreement has been reached on an approach that could be applied to individual projects. BT will provide MOE's comments on the draft framework document to the technical working group by the end of the week, including MNR's Ryan Stainton, Bob Metcalfe and Rich Pyrcce.

14. ACTION: MH to follow up with Paula Allen to confirm timeline for the decision making process.

(E) Erosion/sedimentation

Participants were provided with a draft report on Marter geomorphology the day before the meeting in response to review comments on the Draft ER. Agencies requested one week to review report and provide comment electronically to Xeneca.

15. ACTION: Agencies to review Parish Geomorphology Study with any clarification/additions required and Xeneca to set up a subsequent meeting involving MOE/DFO/MNR/ORMG, Xeneca and Parish consultant. KB to review report and identify if there are any impacts on habitat.

(F) Public Consultation

MH provided brief overview of public consultation undertaken as per the requirements of the Class EA.

Questions were asked regarding impacts to the ONR bridge upstream. The meeting heard that ONR was contacted regarding the Marter project. Xeneca confirmed that there will be no impact to the bridge or abutments as a result of the project.

MNR (EM) questioned how downstream landowners had been informed about the project and its potential impacts. MH noted that Xeneca conducted studies within the proposed ZOI to determine both natural and manmade features that could be affected by variations in water levels. MH added that landowners were notified through a variety of means including notices published in local media, public meetings, website, correspondence, and notices sent to all Chamberlain Township residents along with their tax bills.

MOE (RW) raised an earlier correspondence from the Ministry on Oct. 19, 2012 letter which suggested the proponent consider additional consultation to better inform public and Aboriginal communities once a final downstream ZOI is determined (if different from the current proposal.)

MNR (EM) identified that there are no 66-foot Crown Shore Reserves on the riverfront properties. MNR must consider riparian owners' concerns when issuing LRIA approvals.

MNR suggested the proponent should consider an additional notification to downstream landowners on both sides of the river (separate Townships) and provided suggestions on how best to obtain landowner mailing information.

16. ACTION: Xeneca will prepare a project update, and advise of an opportunity to comment on the project targeted to all known downstream property owners within the proposed ZOI advising there may be some variation in water levels. A similar project update will also be provided to the affected Aboriginal Communities.

(G) Aboriginal Consultation

Xeneca confirmed that Draft ER documents were provided to the Aboriginal Communities. MH added that robust outreach to all identified Communities has occurred. Consultation plans, notifications, offers to participate in archaeology studies and provide input of traditional knowledge were issued on several occasions.

UR described economic participation program Xeneca is offering to Aboriginal Communities at other project sites, adding that these discussions have yet to be initiated for the Marter GS project.

The agencies confirmed that the proponent is required to provide all documentation related to the environmental assessment and efforts of engagement and consultation in its Final ER.

17. ACTION: RW will check back with MOE regarding whether the proposed approach (project update) to consultation for both public & Aboriginal groups once there is a final ZOI is appropriate (as compared to a more extensive approach.)

18. ACTION: LM to review Xeneca's responses to MNR comments on Draft ER and advise Xeneca whether any outstanding concerns remain.

- End of document -

From: Nava Pokharel <NPokharel@xeneca.com>
Sent: February-21-13 2:28 PM
To: Stephanie Hodsoll; White, Rosanna (ENE); Walker, Shaun (MNR); lauren.mcdonald@ontario.ca; Eggers, Kelly; Mark Holmes; Karen Fortin; Conference Communications; ormgb@ormg.org; ormglu@ormg.org; CDeJong@ortech.ca; Muriel Kim
Cc: Grace Yu; kbeatty@vianet.ca; Ed Laratta
Subject: RE: Marter Twp. Project Follow-up Discussion: Downstream Flows, Modeling & Habitat
Attachments: Marter Twp Tailrace area Gravel Bar Hydraulic Analysis Feb 21, 2012.pdf

Hello Everyone,

One of the discussion topics of tomorrow's call is about the effects of project operation on the Marter Twp project tailrace area sandbar. I have extracted hydraulic information of that area from the steady state HEC RAS model (Report produced on March 8, 2012) and attached with this email. I am hoping this information will be helpful for that discussion.

<<Marter Twp Tailrace area Gravel Bar Hydraulic Analysis Feb 21, 2012.pdf>>

Regards,

Nava Pokharel

-----Original Appointment-----

From: Stephanie Hodsoll
Sent: Tuesday, February 19, 2013 12:36 PM
To: Stephanie Hodsoll; White, Rosanna (ENE); Walker, Shaun (MNR); lauren.mcdonald@ontario.ca; Eggers, Kelly; Mark Holmes; Nava Pokharel; kfortin@wesa.ca; Conference Communications; ormgb@ormg.org; ormglu@ormg.org; CDeJong@ortech.ca; mkim@wesa.ca
Cc: Grace Yu; kbeatty@vianet.ca; Ed Laratta
Subject: Marter Twp. Project Follow-up Discussion: Downstream Flows, Modeling & Habitat
When: Friday, February 22, 2013 10:00 AM-12:00 PM (GMT-05:00) Eastern Time (US & Canada).
Where: Teleconference - [REDACTED]

Hi everyone,

Sorry for all of the re-schedules.

This teleconference will be to discuss issues brought up at the January 17 Marter agency meeting including:

- Downstream minimum flow issues, zooming in on hydraulic effects occurring where habitat values have been identified and river cross section information has been developed;
- Effects of differing flows on Stuart's Rapids, as well as daily fluctuation impact on habitat;
- Updated hydraulic modeling; and
- Model effects of different flows.

We will provide some further information before this teleconference.

Call-in details

[REDACTED]

[REDACTED]

**MOE / Xeneca / OWA Teleconference Meeting Minutes
Road Assessment under the OWA Waterpower Class EA
April 3, 2013**

Attendees:

Paula Allen (PA), MOE	Mark Holmes (MH), Xeneca
Carrie Hutchison (CH), MOE	Mike Vance (MV), Xeneca
Laurie Brownlee (LB), MOE	Arnold Chan (AC), Xeneca
Rosanna White (RW), MOE	Grace Yu (GY), Xeneca
Kevin Hosler (KH), MOE	Dave Thomson (DT), Dowland
AnnaMaria Cross (AC), MOE	Karen Sounders (KS), KBM
Ross Lashbrook (RL), MOE	Al Harris (AH), Northern Bioscience
Paul Norris (PN), OWA	Tami Sugarman (TS), WESA
Colin Hoag (CH), OWA	

Meeting Purpose: To clarify the requirements for roads assessment under the OWA Waterpower Class EA

CH provided a short overview of the purpose of the call which was to determine what the requirements are for roads assessment under the OWA Waterpower Class EA. She indicated that MOE had internally reviewed the Class EA and indicated that roads are within the project components and also under the Glossary of Terms. She further noted that she was not entirely current on Xeneca's approach.

MH mentioned the OWA Class EA does not clearly say what is required for roads assessment. There may be different interpretations of the requirements. Xeneca had discussed different approaches with consultants. He updated Xeneca's approach by noting that Xeneca is currently undergoing a very robust desktop review incorporating ELC, GIS information, MNR's input values, and also forestry resource inventories with an intention to avoid any sensitive areas or private properties. If any roads were transecting private property, Xeneca would engage in discussions with those parties. The next phase would involve a ground assessment to confirm the desktop review. He noted ground assessment would be in the EA. MH also mentioned the routes information was presented to the Public and FNs.

MH noted that there were two tracks: those that were on a fast-track process because of timeline constraints and those that have greater flexibility on deadlines. For projects requiring fast tracking MH noted that Xeneca would assess within a 500 m wide swath and that if sensitive values were identified in the desktop review, Xeneca would re-route the roads around the feature to avoid it, or otherwise address, assess and mitigate any impacts all of which will be included in the final ER. This approach was under development by Dowland Inc. and Northern Biosciences and KBM since last October and is intended specifically to meet the requirements of the OWA Class EA.

DT noted that Northern Bioscience (Al Harris) and KBM have been engaged to conduct a detailed desktop review followed by spring field work to identify areas of significant habitat and potential impacts. DT indicated that this activity would like occur based upon appropriate weather during mid-spring, which was likely to occur in late April or the first two weeks of May of this year. DT further indicated that KBM Forestry was compiling an assessment of the GIS database in order to focus the assessment. With assistance of new ELC data, GIS information and MNR input, new roads will be fully

sampled. Through verification of significant habitat, if any candidate significant habitat exists, mitigation and follow-up monitoring will be implemented. The process would be applied differently site by site.

CH indicated her appreciation that Xeneca was getting on the ground assessment information. She then raised concerns about archaeology assessment for roads as well. DT indicated that Woodland Heritage would be conducting Stage 1 and Stage 2 on the ground assessments, and that in one case Wanatango, there would be a Stage 3 assessment. DT indicated that Woodland was of the view that all of the fieldwork could be completed by the end of June with reports following shortly thereafter. MH indicated that for the roads, there was unlikely to be many areas of high potential, but they would focus on obvious areas such as water crossings and known portage trails. MH reconfirmed however, that on-the-ground assessment work would occur for archaeology.

MH also noted three Stage 3 sites are known within Wanatango project footprint. One could be avoided and mitigation measures would occur. The other two sites, he noted that Stage 3 and 4s were likely to be conducted. Aboriginal consultation was occurring for archaeological work on this site. CH reiterated that avoidance strategies should be employed for Wabagishik Rapids and the appropriate protocols would need to be put in place in consultation with the MTCS. MH told CH that Xeneca's archaeology consultant will provide written confirmation of avoidance and monitoring protocols to MTCS.

Commenting on Xeneca's proposed assessment plans CH said that from what she had heard, this was much more detailed than she had previously understood and that the approach through a robust desktop study to help field assessment looked good and appeared to be sound. She then asked whether LB or MM were in a position to speak to specific projects. They indicated that for the purposes of this call, they were not in a position to speak to these issues. LB did note that Marter Twp. was scheduled for discussion next week. CH reiterated that, notwithstanding today's discussions, there was no final decision of assessment on any of Xeneca's projects. She noted however, that if the discussed process was being followed, this would appear to meet the intent of the Class EA.

PA noted that these discussions with MOE were intended to provide advice to proponents about the requirements to meet the Class EA and good process has been made. She noted that the appropriate staff appeared to be on the call. She reminded Xeneca that it was important, notwithstanding the discussion, to adequately and properly document in the Environmental Reports all work that is being undertaken

MH then asked about the adequacy of the assessment process proposed for projects that were on the fast track. CH indicated Xeneca's approach appeared sound.

MH observed that the roads assessment requirements for OWA Class EA are different than what is required for the forestry industry and it would be helpful to understand why there is such a substantive difference. At some future point, the waterpower industry might ask why it is being required to adopt a more rigorous approach than the forestry industry.

He noted it is good to have confirmation on the approach to construction of new roads, but questions remain regarding upgrades to existing roads, how much assessment was required? CH responded by indicating that the proponent was required to fully describe the project area and its potential impact, but indicated that MOE was always open to discussion and clarification on whether a particular approach would be appropriate. MH noted that the purpose of these calls in these instances is to get clarification, so as to ensure that we can properly scope the necessary work, and avoid receiving future comments that "the assessment was inadequate and did not meet the requirements of the Class EA".

MH then turned to PN for an industry perspective. PN noted that he has been invited to join the call to speak to industry issues and indicated his appreciation to participate. He noted that there is never a single way to approach a problem and that the creativity of the parties is an important feature of the design of the Class EA. He went on to note that this was part of a planning process and that the purpose of these assessments was to lead to the issuance of interim tenure to the proponents so that they could proceed with their projects. He then noted that on the broader challenge of policy interpretation, the OWA would continue to work with MOE's policy shop to address these issues.

In wrapping up the call, PA noted that, while the MNR had been invited to participate, it appeared that they could not send a representative today. PA reminded Xeneca that MNR should be looped into the same discussions as today's. She noted MNR is ultimately required to provide a disposition of the Crown Resource, and that any disposition must be consistent with Crown Stewardship EA requirements. MH responded that while MNR was not on the call today, KBM and Dowland had been in discussion with MNR for several months in the course of developing this approach. In previous discussions with Sudbury and Chapleau Districts, MNR had indicated they were comfortable with the proposed approach; the requirements of the Lands and Rivers Improvement Act (LRIA) are met.

**Marter Operating Plan/Krugerdorf Rapids/DZOI/Consultation
Meeting Minutes
April 11, 2013**

Attendees:

Shaun Walker (SW)
Lauren McDonald (LM)
Rosanna White (RW)
Ciara DeJong (CDJ)
Muriel Kim (MK)
Mohammed Hansa (MH)
Kristi Beatty (KB)
Kelly Eggers (KE)

Uwe Roeper (UR)
Mark Holmes (MDH)
Nava Pokharel (NP)
Rich Pyrcce (RP)
Grace YU (GY)
Scott Manser (SM)
Christine Greenaway (CG)

Regrets:

Stephanie Hodson (due to illness)
Brian Turnbull (due to illness)

Introductions:

Opening remarks:

Responding to questions from LM, UR noted that the modeling presented in the March 27, 2013 memo by SM was based on when intermittent operations are occurring and when the worst case effects would be observed.

UR further explained the operating flow graphs and the proposed year round minimum flows as result of the combined operation of Misema and Marter GS.

RW said she would consult with Brian Turnbull regarding the proposed operational numbers.

RP was told that Xeneca can address his questions by looking at both wet and dry years, but it is unlikely that increases in water level fluctuations or frequency of occurrence will change.

The meeting heard that intermittent operation will only occur during low flow periods

SM also pointed out that, under drought conditions, the Marter facility will be run-of-river. He further noted that studies were based on flow data from both the Water Survey Canada gauge and on data from the Misema operation.

Attention was directed to Figure 2 which outlines how Marter operations will be staggered to offset effects of the Misema operations.

RP remarked that it will be difficult for Xeneca to operate in a coordinated fashion without data from Misema and UR responded noting that Xeneca is familiar with the operator of the Misema plant and can

operate in a coordinated manner. He further observed that if Xeneca were to run into difficulty operating around Misema, the Marter facility would revert to run of river operation.

Commitment: If Xeneca is unable to get an agreement with TransAlta about coordinating operations, Xeneca will revert to run-of-river operations. This commitment to be added into Operating Plan.

Further it was noted that Misema operates on a 30 hour schedule, and operation could be improved at that facility. UR said most, if not all operational issues can be addressed through water management planning and it is Xeneca's intent to work with the Misema operators to improve operations.

LM asked what annual graphs (similar to what was produced for the three day graphs) would look like as opposed to the 3 days presented, and SM responded by saying that it was possible to generate annual graphs.

Action: Xeneca to provide additional information to other agencies describing the operating plan during various flow conditions

RP asked if the headponds of Misema and Marter were similar and if drainage, snowmelt, rain events etc. could leave one headpond full while the other is dry.

SM responded noting that all water is expected to be turned over from the Marter headpond within 24 hours, but, under extreme low flow conditions, it may be possible to hold water for up to 3 days.

ACTION: R.P to provide drainage basin data to SM.

ACTION: RP and SM to discuss new operating plan concept with Brian Turnbull and NP [addition: this meeting is scheduled for Monday May 13, 2013.]

ACTION: Scott to provide MNR the operating parameters for Marter when Misema holds water for more than 24 hrs.

Responding to questions from CG, UR said downstream erosion and temperature effects are not expected to be significant. It was noted a full discussion involving the Geomorphology consultant will be held April 12 and that MNR has received a thermal report (written by Ortech, sent out May 2, 2013) that clearly shows there is not downstream alteration.

ACTION: Xeneca to provide temperature report to MNR.

KB noted that her temperature loggers were lost, but NP said Xeneca has 4-5 level loggers in place to record data including a reference base of information.

Responding to questions from KE, UR said the operating plan includes spawning tables which outline Xeneca's commitment to operate run of run during critical periods that are defined by temperatures. Temperature based operations begin at a 4 degrees C when walleye stage for spawning. Run-of-river will continue through temperatures required for walleye and sturgeon. Agencies noted that the most recent

Operating Plan they had was dated July 2012, and that the spawning tables needed updating from that version.

ACTION: GY to send spawning tables and operating plans to KB to be updated and sent to SW and KE.

2. Krugerdorf sandbar and effects

KB noted that Misema GS operations are already fluctuating water levels at the sandbar at the base of Krugerdorf Rapids.

Only during spring freshet is the sandbar inundated and most of the year it is exposed, and, as such, is not considered productive aquatic habitat.

LM said she now understands what is occurring at the sandbar but questions where the molluscs found at the sandbar are coming from and if they will be impacted by the Marter GS operations.

KB said there is no evidence of upstream mussel beds, and, because mussels are found at the sandbar they must be located nearby on the downstream side. Given that water levels are already fluxing downstream because of Misema GS and Xeneca is not going to exacerbate the existing conditions, it can be expected there will be no effect on the mussels.

Minimum Flows:

There was agreement at the meeting that discussion on minimum flows should occur after the meeting between NP, BT, SM and RP.

ACTION: After Operating Plans are finalized LM, KB, NP, KE and RW will meet to discuss minimum flows.

Responding to questions from KE, KB noted that, although spawning has not been confirmed at Krugerdorf Rapids, Xeneca will assume that it could happen and has committed to run-of-river operation during the spawning season, and that the flows are so high during the spawn that even with the turbines at maximum operation there will be enough water going through the bypass to support any spawning habitat at its base.

KE remarked that she is comfortable with that approach.

ACTION: KB and NP to discuss flow apportionment between the tailrace and spillway.

Consultation:

The need for additional consultation will be able to be better assessed once DZOI is determined. As the zone of influence may be (pending further discussion) significantly reduced from that which was presented to the public and Aboriginal Communities, further consultation may not be necessary.

Affected riparian landowners upstream have been engaged for several months. Several agreements and land transactions have taken place and two remaining landowners are in discussion with Xeneca. It is Xeneca's intent to have agreements with all affected landowners. Xeneca's position is that downstream effects on property owners are within the existing conditions present on the river and, as such, Xeneca deems that landowners are not affected.

Xeneca has notified landowners through a wide variety of means including public advertising, public meetings, meetings with interested individuals and groups, website presence and notification through tax roll mailing to all landowners within the Township of Chamberlain which is host to the project. Xeneca believes its consultation efforts with landowners have been robust and thorough.

Outstanding concerns:

SW said he remains concerned about the Downstream Zone of Influence which is awaiting affirmation by the Northeast Regional Director's office.

RW said she has reviewed Xeneca's responses to MOE comments on the draft EA and said that it appears most issues have been addressed.

RW added that water quality process needs some clarification which will be sent to Xeneca through Steph Hodson.

Archaeological and ecological assessment for roads is being included in the final ER.

The Information Gathering Form (IGF) for bobolink had not yet been submitted. IGF for lake sturgeon will be submitted after finalization of minimum flow discussions and final consensus on DZOI.

MH updated the meeting on progress in reaching agreements with affected land owners, noting that agreements have been reached with all but two and both are in discussion.

**Marter Operating Plan/Krugerdorf Rapids/DZOI/Consultation
Action Items & Commitments
April 11, 2013**

Commitment: If Xeneca is unable to get an agreement with TransAlta about coordinating operations, Xeneca will revert to run-of-river operations. This commitment to be added into Operating Plan.

Action: Xeneca to provide additional information to other agencies describing the operating plan during various flow conditions

ACTION: R.P to provide drainage basin data to SM.

ACTION: RP and SM to discuss new operating plan concept with Brian Turnbull and NP [addition: this meeting is scheduled for Monday May 13, 2013.]

ACTION: Scott to provide MNR the operating parameters for Marter when Misema holds water for more than 24 hrs.

ACTION: Xeneca to provide temperature report to MNR.

ACTION: GY to send spawning tables and operating plans to KB to be updated and sent to SW and KE.

ACTION: After Operating Plans are finalized LM, KB, NP, KE and RW will meet to discuss minimum flows.

ACTION: KB and NP to discuss flow apportionment between the tailrace and spillway.

Marter Geomorphology Teleconference - Minutes

April 12, 2013

Attendees:

Shaun Walker (SW)
Lauren McDonald (LM)
John Parish (JP)
Ciara DeJong (CDJ)
Nava Pokharel (NP)

Uwe Roeper (UR)
Mark Holmes (MH)
Rosanna White (RW)
Rich Pyrcce (RP)
Stephanie Hodson (SH)

Introductions

Opening remarks

RP said he has three main comments/concerns regarding geomorphology and sedimentation on the Blanche River.

1. There is a lot of suspended sediment in the river
2. Potential for headpond slumping
3. Areas of bank instability and failure

Every time RP has been to the Blanche River RP said he has observed high levels of sediment and that follow up monitoring will be important to understand if the Marter GS project will add to the sedimentation and impacts on benthics, mollusks and other aquatic species.

He also expressed concern about sedimentation in the headpond of the Marter GS and referred to a commitment by Xeneca to undertake TSS studies.

JP noted that the Marter River is located in a clay belt and that fines are entering the system from within the river channel. He observed there is no evidence of a lot of bank erosion or scour. Substrates were studied and TSS samples were taken and findings of 20 mg per liter are not considered high or unusual.

LM remarked that the river is “flashy” and that sediment loading appears to coincide with a rain event or freshet.

UR remarked that Marter is a small hydro project with a small footprint. Over \$1 million has been spent studying the river and numerous time delays have led to a point where Xeneca is going to be in default of its FIT contracts. He asked if MNR’s sedimentation issues will stop the project or if they can be managed and or resolved through post EA studies.

He noted that clay and fine particles are coming from runoff from farm fields and that studies have clearly shown there is little to no effect on the headpond, nor will there be much change in the manner in which sediment is transported downstream

SW said he is encouraged that a future monitoring program will be put into place and he did not think the sedimentation issues would be a show stopper for the project.

RP said it is important to understand the regime in the river as it relates to biology and whether the project will trap sediment in the headpond and alter the river downstream.

UR observed that clay is electrostaticly suspended in the water and will not be trapped, and, in fact, will go through the turbines unimpeded. The river profile is relatively flat, and, while there might be some sand build up, it will be relatively small.

JP explained to RP that there might be some bedload moving through the system at high flow events but settling will not alter the headpond much more than 5 to 10 percent over a 20-30 year period.

Responding to concern that sand in the headpond could smother substrate habitat, UR suggested a small pipe could be installed at the bottom of the weir and allow sand to be transported down the river.

UR noted that Xeneca is not opposed to collecting samples for future reference to which RP said he, LM and SW would need to discuss.

With respect to water quality related to sedimentation, RW said she too would like to be part of the discussion.

ACTION: RP will provide a soils report conducted in the 1960s that could be helpful to the sedimentation discussion.

JP reiterated that effects from the Marter operation will be localized and effects on the overall river will negligible

ACTION: JP to send RP all sedimentation related information and reports.

ACTION: MNR/MOE to discuss and clarify their concerns with respect to sedimentation and slope stability in relation to EA (MOE) and regulatory approvals (MNR).

RP asked about the potential for bank erosion and a river valley failure that could block the river to which JP replied that there are a number of erosional processes occurring and photo comparisons from the 1950s, 60s, 70s and 80s as well as more recent aerial photography have been used to assess. He observed that the likelihood of a collapse blocking the entire river is very unlikely.

LM noted there was a river blocking bank failure in the river last year and flow was impeded for about 4 hours.

JP reiterated that the likelihood of such a failure is low and work has been done to tease out where events of that nature could occur. The headpond is low risk and downstream may have a slightly greater possibility of occurrence.

LM noted that MNR was also interested in the level of potential for the project to increase erosion and sedimentation from natural levels, where the additional erosion, sediment loading, and sediment deposition would be expected to occur, and how this would impact fish and wildlife (ie: is sediment expected to be deposited on a spawning site for lake sturgeon) as well as user groups

RP mentions there are some assumptions and errors in the SIAM results that this needs to be carefully considered. Looks like some of the results are incorrect by orders of magnitude.

UR noted that in proximity to the confluence of the Blanch and Misema River and downstream are already affected by the Misema GS operation where water levels fluctuate up to 60 cm. The area has also been surveyed for Bathymetry and Lidar.

ACTION: Bathymetry and LiDar data to be sent to RP.

ACTION: JP to prepare a report showing potential erosion effects and mitigation as well a future monitoring plan and use the data to assess if operational effects of Marter GS will be significant i.e. potential for a major river channel-blocking event.

ACTION: Another meeting to follow up on the discussion is to occur the week of May 6, 2013.

Geomorphology & Sedimentation Marter Meeting Minutes May 7, 2013

Attending:

Lauren McDonald (LM) MNR
Shaun Walker (SW) MNR
Christine Greenaway (CG) MNR
Rich Pyrcce (RP) MNR
Rosanna White (RW) MOE
Brian Turnbull (BT) MOE
John Parish (JP) Parish Geomorphic
Kristi Beatty (KB) ORMG
Muriel Kim (MK) OEL
Ciara DeJong (CD) ORTECH
Scott Manser (SM) ORTECH
Mark Holmes (MH) XENECA
Ed Laratta (EL) XENECA
Nava Pokharel (NP) XENECA

Introductions:

MH made introductions, recapped previous meeting.

Discussion:

RW asked if JP could summarize what he had agreed to do at the end of our last meeting on this topic.

JP explained that he was including more detail in relation to his proposed monitoring approach including frequency, duration and a matrix of parameters that will be monitored.

CG asked whether there would be some baseline monitoring as part of this approach?

JP said that post-operational monitoring often BACI (before, after, control, impact) type analysis. Don't yet have control sites regarding slope stability, but will be determined. Also proposing suspended sediment monitoring.

MH stated that existing conditions are not changing under proposed OP. Working within Misema fluctuations. Asked what the extent of JP's monitoring work would be.

CG asked if dam OP been followed up on? Left last call with action item to update OP. Caution against providing effects comments until the ZOI and OP discussions occur.

MH – disagreed – modified OP to fall within existing conditions created by Misema. Downstream ZOI ends at Misema confluence. Major details are determined. Any change will occur between Marter and Misema. Inundation also to remain within natural channel.

RW went back to initial comment on Parish geomorphology report. Final extent needs to be determined after discussions on ZOI.

MH said that even using Metcalfe approach, still have acceptable geomorphology result. No substantive change to what is being proposed.

CG stated that discussion is occurring regarding Metcalfe approach is specific to hydrologic ZOI, as they anticipate it has potential for greatest alteration. Thermal and sediment also need to be considered. Understanding of changes in sediment regime needs to be part of ZOI discussions.

MH said that the initial work states that the change in sedimentation will not be significant due to OP. No large headpond, small inundation and heavier sediment will settle out in headpond. No results of significance. Most sediment is small diameter, will remain in suspension, as it occurs now. No sediment deprivation would occur downstream. Effects are limited to a small reach to the Misema confluence.

RP said that MNR will do some work themselves to confirm that this is the case.

MH asked about the timing of MNR's work – could it be post-EA? Does it need to happen pre-EA? How long will it take? Why is it necessary with good science already in place?

RP said he would defer to someone else for policy, but does not agree there is only a 20cm difference in head from Krugerdorf to Misema. 60cm alteration due to Misema? Wants to put MNR transducer in to see what the actual change is over time. Entire OP is based on this small area between Krugerdorf and Misema – needs to be sure.

NP said that the 20cm change is actually based on bathymetry not LiDAR. This section of the river is very flat, under high flow conditions. Misema impacts that reach, so it will be monitored.

RP said that ZOI isn't under discussion here. Need to confirm gradient. At low flow there is a higher gradient. Important to check and confirm since it is the basis for the entire OP proposal.

NP said that if OP works around Misema, removes entire issue.

RP has received info from SM, but questions remain. Uwe was to work with Misema on how they operate in conjunction with Marter. If that discussion happens, MNR needs to see agreement as well.

JP will add an addendum to geomorphology report, including a monitoring plan and TSS. It will be an addendum only, not a new report.

SM said that Xeneca will not be issuing a new OP either. OP will be updated and included in the final ER. Will increase detail with additional graphs re OP vs. Misema.

LM said that she was told at last meeting that due to Misema backwater effect to the base of Krugerdorf Chute, minimal habitat impacts were expected. Need to confirm whether there is actually going to be an impact, and whether backwater effect occurs. Not convinced that during low flows, Misema is having an impact at the base of the chute.

NP said that at a flow of 20cms, the water surface profile difference is 22cm between Krugerdorf Chute and the Misema confluence.

LM stated that even if this is the case at 20 cms, under low-flow conditions there may be a greater drop in elevation, which means less backwater effect. Marter station is only proposed altering flow when natural flows are less than turbine capacity, which is less than 20 cms. Still unclear how Marter operations will be altering the site compared to existing conditions between the Chutes and the Misema confluence under those lower flows.

MH asked whether low-water effects discussions means July/Aug field work? Will EA not be accepted until this work is complete?

LM said that if MNR is told in EA that minimal impacts to habitat occur as a result of Misema operations, with current data, reply would be "insufficient information."

SM asked if Xeneca needed to consider $<20\text{m}^3/\text{s}$ flows?

MH/NP asked why this would need to be done. What is in the reach between Misema and Marter that will be enough to stop the project? Now hearing that EA won't be considered complete until additional studies are done by MNR internally?

CG – "The EA won't be deemed complete" was not said by any agency person. Question being asked is what Bio concerns there are and what impacts there may be to those as a result of the OP. Existing conditions at $<20\text{m}^3/\text{s}$ are not sufficiently addressed. MNR District needs more info before issuing LRIA permits.

MH asked RW if Xeneca can issue the Marter EA before MNR do their personal assessment. Will MOE position be that the EA would be accepted?

RW stated that she could not answer the question as such. What she could say was that MOE would be considering the comments of MNR due to their technical expertise on certain matters as part of the MOE review. Understood that additional clarity for geomorphology and ZOI will be presented with the OP. Technical expertise from other agencies does feed into MOE decision though. On some topics there are additional discussions needed.

LM reminded the meeting that there had been discussion of bios etc. meeting to discuss final OP. That discussion would go a long way to addressing these concerns. Beneficial that Bio and P.Eng (NP, BT, RP) chat to review potential impacts.

MH – have the meeting, but this needs to end. More issues are always being added. Reports have shown no sediment or erosion issue around Marter GS.

JP – no but there are still concerns over large scale slope stability. Potential does exist, quantifying it in an addendum with slope lines and proposed mitigation, but low risk. If it fails it will be large scale failure, but this would be unlikely.

SW asked what would happen if there was a large-scale failure at the GS site.

JP speculated that the river would not be entirely blocked, and that the river would adjust over time. Does GS increase risk? Hard to quantify, hazard is there, so mitigation options will be proposed.

CG asked for clarification – if the potential for failure does exist now, what changes if we add the GS? Does it increase the risk? Clarity needed. MH said the studies have been done, JP said they are doing it now – is the risk assessment done?

MH said that the chance of monumental failure and channel-blocking event is low and could happen naturally. Back to reasonable mitigation. Standards to consider options if the critical failure occurs. Speculative and low-risk.

JP has responded to RP's comments re opinions and thoughts on risk and hazards. Part of monitoring plan is to provide detection and changes in angles over time. Additional insights are provided.

CG – concerns with the risk of putting a dam in at that spot, for critical slope failure to occur and an increased incidence of slope failure due to impacts from the GS. Low likelihood of occurrence, but important impacts if it does occur. Need to talk to legal & policy re how much info they need for slope analysis for site approval. If work is done and mitigation is determined already they can go into EA and the rest goes into permitting. A thorough slope stability analysis would be a good idea to protect Xeneca against the risks associated with slope failure.

SW – stability is ok, if MNR checks with Policy folks, and addendum is sufficient. Still does not address sedimentation issue though. Can we put slope stability behind us and move to sediment?

MH asked if something specific was missing.

SW said that the hydrologist and bio concerns are specific to Lake Sturgeon habitat impacts due to suspended sediment and where it will settle out. Work done to date may not be sufficient to address.

MH asked JP if any substantive changes to sediment load going to occur here due to the GS.

JP said that this in the claybelt area, so highly turbid, which is linked to TSS. They took TSS samples, low results (<20mg/L), so insignificant. Tells us there is fine particulate suspension giving it the appearance of high load. During high flows when tributaries input extra flow, TSS spikes. Doesn't feel this will change with GS. Implications are low.

RP asked whether they were spot measurements or one-time shots.

JP said they took daily TSS for a week. Not at low flow, got some higher flow rain events, but river was not responsive to changes in flow.

RP stated that headpond small but this is in clay belt. Dam has 100-year lifespan, so 20-30 years may show no potential infilling, but what about over the lifetime of the dam?

MH said he believes this information was covered in the Parish geomorphology report.

JP said that eventually, bedload and suspended load will settle out. Generally only for higher weight particulate. Clay should remain suspended.

JP told the meeting that he was there in October 2012.

RP asked if he had any idea about the maximum sediment load in the river.

JP said that TSS load and discharge are linked. Low flow sees higher TSS due to decreased dilution. Peak likely in the range of 150mg/L, max 200mg/L. 1000mg/L is considered significant.

Discussions by KB, JP, SW, LM, RP re settling out of TSS, especially onto spawning beds.

JP – providing opinion on site specific pools, reaches, stretches is difficult – huge variations. In headpond, erosion and slumping that may bring in sediment, increased flow may also increase clarity. No large scale long term bedload study. Consider that potential changes in sediment and supply increase. May be subtle changes over time, may fluctuate 10-30mg/L, which is fine in the greater scheme of things. Between GS and Misema, no change in sediment load. Below Misema things should be back to “normal”.

CG said that she’d heard monitoring mentioned, which is great, part of the process, but wondering about effectiveness of monitoring of changes to system. Was initial assessment accurate? Need good baseline to work from. There is no solid base of current conditions, only out once in 2012. What are you going to propose for monitoring?

JP – stations – nothing passed by or approved by Xeneca yet, but TSS and transducer flow gauges to confirm suspended solids and flows. Trying to pick up changes in sediment vs. flow changes. Ideally install below and above GS location now to sample periodically through the year. Of course, 5 years is best, but something is better than nothing.

RP – further to that, get in now – baseline info to be reviewed preconstruction. Need “before” data to assess “after”

CG – from permits and approvals standpoint, need pre-construction baseline info, but is it needed to inform long term monitoring effectiveness or to inform the EA?

RW – John’s addendum will address these concerns and show potential effects (which he says are minimal.) For EA that will stand. Monitoring plan will be included in the final EA and provide details to support the opinions presented.

RW said that if erosion and sedimentation are not considered significant, need summary from JP on proposed monitoring to ensure predictions are accurate.

LM – what about impacts to fish habitat? If this changes how sediment drops out or load increases, this could be an impact?

KB/LM – Discussions on Parish results vs. habitat; if information from John is accurate, and is borne out through monitoring, this should not occur.

MH – next year we could catch freshet.

LM – would like to see this info to inform site release and permitting.

MH – will have internal discussions about baseline monitoring, the monitoring plan will be in the ER.

CG – ok for permitting/approvals, but haven’t got a good feel that this info might not also be needed to inform effects discussions from a Bio standpoint.

RW – need ER to address proponent info saying low potential for impacts.

CG – further concerns with needing info pre-EA?

RP – pleased with the monitoring provisions suggested by Parish.

LM – because we haven’t had the opportunity to review the new OP the ZOI hasn’t yet been agreed to by all parties. If ZOI goes beyond Misema, studies will also have to go further. Key habitat beyond Misema to Stuart’s Rapids, etc. Need more info!

RW – agreed, from an EA standpoint, if downstream ZOI increases, then additional studies will be required to extend that distance.

MH said that Xeneca will confirm what needs to go into ER and addendum, follow-up call on 13 May, minutes will be sent out.

Meeting adjourned – MH to send out action items.

**Marter Technical Discussion –
Downstream Zone of Influence/Operating Plan
May 13, 2013**

Attendees:

Lauren McDonald (LM) MNR
Rich Pyrcce (RP) MNR
Brian Turnbull (BT) MOE
Kelly Eggers (KE) DFO
Kristi Beatty (KB) ORMG
Muriel Kim (MK) OEL
Scott Manser (SM) ORTECH
Stephanie Hodson (SH) XENECA
Mark Holmes (MH) XENECA
Nava Pokharel (NP) XENECA

Purpose:

Discussions about Operating Plan & Downstream Zone of Influence (DZOI.)

Discussion:

Mark noted that any OP discussions were difficult without incorporating information from Misema operations, which Xeneca is working on. Agency representatives expressed concerns that, without an agreement in principle with TransAlta, and knowledge of the operation regime, it will be impossible to predict effects. Everything would have to be reactive.

Largely due to agency input, Xeneca has changed its approach: Changed operations to work around Misema based on concern about both facilities peaking or storing water at the same time.

Xeneca has studied the effects of operations and can now conclude that the DZOI ends at the Misema confluence.

RP stated that many of his concerns were addressed by Scott at the May 7 meeting. He asked how Xeneca will be collecting data and that satellite uplink with real time data downstream of the Misema operation will be required for the Marter GS to operation around Misema GS. RP said that everything modeled from 2012 was done via the Water Survey of Canada (WSC) gauge. No transducer info, all based on averages minus Misema known values. Reconstructing Misema/Blanche flows then subtracting Misema operational flows doesn't necessarily predict future operations. If Misema shuts down or releases water at any given moment, changes will have to occur immediately at Marter to prevent DZOI issues.

Nava said it is Xeneca's intention to work with TransAlta and use data directly from the Misema GS. The installation of a real-time level logger downstream of Misema GS tailrace will help to inform the Misema operation, but it still lacks lagging time from Marter GS tailrace to confluence of Misema River.

RP asked questions regarding graphs presented in ORTECH report. Shows Marter proposed operations at $8\text{m}^3/\text{s}$? Thought Marter was trying to mirror Misema? Shows Marter on Misema off...

Scott explained how Marter & Misema will communicate. Misema may still operate at lower flows, but not peaking. Trying to avoid both plants peaking at the same time.

RP noted comments made by Uwe in a previous meeting suggesting a new operating regime to TransAlta – MNR needs to see this is writing.

NP says Xeneca will work with TransAlta, but that can come at a later stage. If Xeneca cannot achieve operating around Misema, Xeneca has committed to going run-of-river (ROR) until we come to an agreement with TransAlta. It was never indicated that Marter would not operate when Misema was operating. Committed to operation without affecting conditions beyond the range of current fluctuations caused by Misema operations to date. MH says that this is also part of WMP.

LM asked how high peak would be if Misema ran ROR? Change in frequency, duration, timing and rates of change are key to consider in addition to peak flows.

MH said that commitment is to keep fluctuations within the range they are already experiencing on the river, to remain outside of ZOI discussions.

SM said we have to also consider randomness of Misema. Based plan on 2012 but they may peak every day in 2013 – nothing prevents them from doing so. Huge amount of flexibility being offered to Misema, little to Marter. Marter is attempting to operate within their range.

RP asked if Misema is not operating, or is ROR, and Marter peaks, what is downstream effect? Need to avoid a double peak on a single day. Misema has been seen to store for 2 days then release on 3rd. If Marter OP indicated they will operate within existing conditions, but it is hard to say you can take 2 plants and keep them both within the OP curve of the first plant without commitment from that 1st plant.

MH stated that Misema is NOT operating ROR, as they were commissioned/permitted to do. Xeneca is now being asked to do something more restrictive than the other operator on the system. Have proposed Marter will operate within existing conditions, and to work as closely as possible with the other facility. WMP needs to be addressed (outside of EA.) Is it enough to have the commitment in the EA and deal with the rest under WMP?

With respect to defining the DZOI, Mark observed that that the DZOI letter from MNR/MOE may not be issued anytime soon and that determination of the DZOI will have to be made on a case-by-case basis in

each district. Xeneca will point to the conclusions of its exhaustive studies to define the DZOI at the confluence of the Misema River.

NP added that the effect of the Marter GS will not exceed existing conditions in the river.

Lauren reminded Xeneca that MNR does not yet have an updated operation plan, or new proposed minimum flows on a monthly scale. DZOI discussions need to consider flow impacts downstream if they will be lower than current. Page 5 shows flow of $1 \text{ m}^3/\text{s}$ – stated that the river does not currently experience this flow.

BT asked if Xeneca is proposing 2.3 at d/s location, what happens if Misema is passing 2.3, would Marter be operating/passing any flow?

NP said that the minimum flow recorded at the WSC station is 2.3cms. Xeneca has committed to a minimum flow of not less than $2.3 \text{ m}^3/\text{s}$ at the confluence of the Blanche and Misema. In the event that this requirement cannot be met for any reason, the Marter GS will go into run-of-river operation. This will be reflected in the final Operating Plan and final ER.

RP suggests that if Xeneca cannot get agreement with TransAlta, could put in a transducer with satellite communicator to collect data. Nava says this would result in a time lag, and that Xeneca will try its best to work with TransAlta to collect best data and have forecast operating plan.

LM's understanding, based on Bob Metcalf's work, is that Marter may exceed existing conditions.

MH stated that Misema is operating out of compliance, and we are trying our best to work around them and he reiterated that discussions on both Misema and Marter GS operations should be part of WMP, not the EA process.

Lauren said that 2.5/2.3 cms was mentioned as minimum flow at the last meeting, and the letter from SM shows different numbers. Part of DZOI will be how far minimum flow levels are measured.

Discussion about magnitude of Misema vs. Marter operations.

BT asked how Xeneca came up with 2.5 or 2.3 cms as the minimum flow. Current conditions on river are much higher at different times of the year from what is being proposed.

LM said that MNR needs to be comfortable with the assessment of the effects of minimum flows – concerned that using $2.3 \text{ m}^3/\text{s}$ at water gauge may not be accurate. When $2.3 \text{ m}^3/\text{s}$ is assessed against natural levels at the WSC gauge it shows a significant effect. To set 2.3 as the compliance limit, we have to compare to natural. Bob Metcalfe work = 38-56% exceedance due to operations = low impact. $2.3 \text{ m}^3/\text{s}$ is below the river's minimum flow the majority of the time. Xeneca stated that 2.3cms is not always the minimum flow being proposed by operations. LM stated that, based on the information currently available to MNR, it appears as if 2.3cms is the minimum flow being proposed for the compliance limit, year-round. If this is the case, then MNR needs to understand what the impacts of a year-round minimum flow of 2.3cms is, and this would be accomplished by comparing to existing flow conditions. LM stated that, if the proposed compliance limits being proposed are not 2.3cms, perhaps

the updated Operating Plan would provide a better indication of what Xeneca is proposing as compliance limits. Can't speak to EA obligations but understanding of impacts caused by proposed minimum flows is needed for permitting and approvals.

KB said that as long as operations remain within existing conditions, there shouldn't be any change in the river biology. NP reminded LM that a project is being built on the river and that some change is inevitable. She said she understood that, but that she wanted to know what changes were anticipated and what these would look like.

MH said that there is no letter from agencies regarding this topic – Xeneca does not necessarily agree with the Metcalfe values. Industry association says the same. Change in standards of that magnitude needs industry buy in – can't be enacted without assessment and consultation. Work done with Bob (Metcalfe) has not been accepted.

LM said that if there is an alternate method that shows with confidence that the flow proposed would not cause significant changes, would be happy to review it.

SM informed the meeting that the OP will be updated now that this discussion has occurred. Wanted to ensure that everyone was comfortable with this approach before changes were made. Numbers will be fine-tuned in updated OP. RP said that internal agency discussions need to occur and that an updated OP would certainly help in those meetings.

Meeting adjourned – MH/SH to send out minutes.

agenda

Marter - Final Pre-EA Meeting

7/5/2013

10:30 a.m. – 12 p.m.

Meeting called by: Xeneca

Attendees: Shaun Walker, Lauren McDonald, Eleanor Moro, Bertha Cormier, Rich Pyrcce, Rosanna White, Brian Turnbull, Kelly Eggers, Christine Greenaway, Kristi Beatty, Muriel Kim, Scott Manser, Mark Holmes, Nava Pokharel, Stephanie Hodsoll

Please read: Briefing Note

Discussion Items

1. Downstream Zone of Influence
2. Minimum Flow Requirements
3. Flow Splitting – Tailrace & Spillway
4. Operating around TransAlta
5. Erosion and Sedimentation Monitoring
6. Degree-Day vs. Degree Approach
7. Aboriginal Consultation
8. Public Consultation
9. Updates to Marter Operating Plan
10. Updates to Marter Monitoring Plan

Xeneca's Proposed Marter Hydroelectric Generating Station – Final Pre-EA Meeting Briefing Note

Downstream Zone of Influence

Throughout the proponent-driven EA process, Xeneca's position has been that the Downstream Zone of Influence (DZOI) for the proposed Marter Generating Station ("Marter") ends at the Misema confluence. The hydrological modeling studies that we have commissioned and our commitment to work with TransAlta clearly demonstrate that the DZOI ends at the Misema confluence.

Xeneca is committed to ensuring that at the confluence of the Misema and Blanche Rivers, the effect of Xeneca's operations at Marter will be **within existing conditions**.

Xeneca has proposed monitoring, including at Stuart's Rapids, to confirm that the proposed operation follows existing conditions.

The commitment to operate within existing conditions beyond the Misema confluence has been incorporated into the updated Operating Plan. The monitoring commitments have been included in the Monitoring Plan section of the Environmental Report (ER.)

We submit that DZOI has been addressed for the purposes of the final ER.

Minimum Flow Requirements

Xeneca has committed to a minimum flow of not less than 2.3 m³/s at the Blanche/Misema confluence. In the event that this requirement cannot be met for any reason, Marter will go into run-of-river operation. This commitment has been added to the Operating Plan.

We believe this reflects the consensus that was reached during agency meetings.

Flow Splitting – Tailrace & Spillway

Minimum compensatory flow in the spillway area or bypass reach has been proposed to be zero as there are no ecological activities on that section of the river.

The initial proposal was to provide the minimum flow over the spillway at times when the turbine is off. However, it was determined later that it is more practical and accurate to provide it through the powerhouse. There were no environmental values identified within the bypassed section of Krugerdorf Chutes.

The commitment to provide the minimum flow through the powerhouse will be reflected through the Operating Plan and in the final EA.

Operating around TransAlta

Xeneca has proposed to work around Misema operations. This means that Xeneca will **not** peak at the same time that TransAlta is peaking, and that minimum flows will never fall below the established existing condition baseline of 2.3 m³/s. Flow data will be recorded at Marter and verified at the Water Survey of Canada (WSC) station downstream.

Xeneca plans to enter into a data-sharing arrangement with TransAlta that will facilitate synchronized operations. If TransAlta is not prepared to share the necessary operating information, Xeneca will install a real-time monitoring station at the Misema/Blanche confluence to inform Xeneca's operations.

If Xeneca is unable to work around Misema at any point in time, the Marter GS will go to run-of-river operation until both facilities return to normal operation.

The above operating protocol will be incorporated in the Operating Plan prior to submission of the final EA.

For monitoring, the WSC station data will be used to verify that the operating commitment made has been met annually.

We believe this issue has been addressed for the purposes of the final EA.

Erosion & Sedimentation Monitoring

This issue was raised on several occasions but was closed off on the April 12 and May 7 calls with John Parish.

Effects from the Marter operation will be localized and effects on the overall river will negligible. Xeneca recognizes that there was a river-blocking bank failure in the Blanche last year, but the likelihood of this type of event is low and work has been done to tease out where events of that nature could occur.

Questions were raised about increased sediment impacts to sturgeon habitat downstream. The Parish report indicates that increased sediment load downstream is not likely to occur.

Xeneca has committed to a putting a future monitoring program in place. This will include a control site regarding slope stability upstream, and continuous suspended sediment monitoring downstream. In addition, monitoring will also be done in years 1, 5 and 10 at a cross-section location in the headpond to determine if sediment is accumulating.

If monitoring were to demonstrate that unanticipated effects are occurring, adjustments will be made to the operations strategy over time.

The monitoring commitment will be included in the monitoring section of the final ER. The details of the monitoring plan will be discussed during Plans & Spec permitting stage.

We believe this issue has been addressed to the extent required for the final EA.

Degree-Day vs. Degree Approach

No change to the method used to determine when to operate as a run-of-river during spawning times will be implemented without consent of the agencies.

Xeneca will include a clearly-worded commitment to the development of a thermal-based approach (timing) in the final ER and associated operating plan to address all fish spawning concerns identified by MNR and DFO prior to this issuance of regulatory approvals from either agency.

All known aspects of this proposal, including the commitment to operate the facility as run-of-river during spawning periods dictated by this thermal approach, will be included in the final ER and in the Operating Plan. The final ER will show the work that has been done to date and will state that the details of the final thermal-based approach will be agreed to with MNR and DFO at the permitting stage.

Aboriginal Consultation

Xeneca has sent out all of our reports (engineering, hydrology, sedimentation and archaeology) to First Nation and Métis Communities with the offer to assist with review of the reports by a qualified consultant.

Public Consultation

Xeneca's public consultation has been extensive and robust. In addition to the two Public Information Centres (PICs) in Englehart, Mark Holmes (Xeneca) presented at a public meeting in Chamberlain Township in the fall of 2012 and the project was advertised in the local tax role mail-out (September 2012) to all local addresses. Furthermore, as per MNR's request at the January 17 agency/Xeneca meeting, Xeneca sent out a project update letter to all identified downstream landowners. The letter advised of an opportunity to comment on the project and was targeted to all known downstream property owners within the proposed ZOI, advising there may be some variation in water levels.

Xeneca believes that they have met the public consultation requirements in the Class EA. No further public consultation initiatives are planned prior to final ER submission.

From: Mark Holmes <mholmes@xeneca.com>
Sent: July-12-13 3:28 PM
To: Stephanie Hodsoll; Vanesa Enskaitis; Greenaway, Christine (MNR); Walker, Shaun (MNR); McDonald, Lauren (MNR); White, Rosanna (ENE); Turnbull, Brian (ENE); Scott Manser; Nava Pokharel; Uwe Roeper; Muriel Kim; Kristi Beatty; Eggers, Kelly; Ed Laratta; Cormier, Bertha (MNR); Pyrce, Rich (MNR); Moro, Eleanor (MNR); Arnold Chan; Ciara DeJong; Dosser, Sandra (MNR); Grace Yu; Uwe Roeper
Subject: RE: Marter Discussion - Continued

Good afternoon all:

In advance of Monday's call we'd like to revise the agenda to better inform the discussion on DZOI.

1. Roseanne White to provide an overview of the EA planning process and how to meet the requirements
2. Uwe Roeper to provide history and context to the DZOI issue
3. Scott Manser to review May 9 memo on Marter Operating Plan
4. Discussion on questions raised at during the July 5 Conference Call

Thanks and best regards,

Mark Holmes

Vice President

Corporate Affairs

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-----Original Appointment-----

From: Stephanie Hodsoll

Sent: Friday, July 05, 2013 12:23 PM

To: Stephanie Hodsoll; Mark Holmes; Vanesa Enskaitis; 'Greenaway, Christine (MNR)'; Walker, Shaun (MNR); McDonald, Lauren (MNR); White, Rosanna (ENE); 'Turnbull, Brian (ENE)'; Scott Manser; Nava Pokharel; Uwe Roeper; Muriel Kim; Kristi Beatty; Eggers, Kelly; Ed Laratta; Cormier, Bertha (MNR); Pyrce, Rich (MNR); Moro, Eleanor (MNR); Arnold Chan; 'Ciara DeJong'; Dosser, Sandra (MNR); Grace Yu

Subject: Marter Discussion - Continued

When: Monday, July 15, 2013 1:00 PM-4:30 PM (UTC-05:00) Eastern Time (US & Canada).

Call to continue with agenda from July 5, 2013

Topics to be discussed

(1. Conclude DZOI Discussion from July 5)

2. Minimum Flow Requirements

3. Flow Splitting – Tailrace & Spillway

4. Operating around TransAlta

5. Erosion & Sedimentation Monitoring

6. Degree-Day vs. Degree Approach

7. Aboriginal Consultation

8. Public Consultation

9. Updates to Marter Operating Plan

10. Updates to Marter Monitoring Plan

11. MOE Update re. Misema GS (if available.)

**Marter Issues Call – Minutes
July 5, 2013**

Attendees:

Rich Pyrcce (MNR)	Grace Yu (Xeneca)
Shaun Walker (MNR)	Stephanie Hodson (Xeneca)
Lauren McDonald (MNR)	Scott Manser (ORTECH)
Corrinne Nelson (MNR)	Kelly Eggers (DFO)
Eleanor Moro (MNR)	Muriel Kim (OEL)
Leah Marinigh (MNR)	Rosanna White (MOE)
Mark Holmes (Xeneca)	Brian Turnbull (MOE)
Nava Pokharel (Xeneca)	

Discussion:

a) Review of Action Items

1. April 11 Operations Call

Commitment: If Xeneca is unable to get an agreement with TransAlta about coordinating operations, Xeneca will revert to run-of-river operations. This commitment to be added into Operating Plan.

SM confirmed this has been incorporated into the Operating Plan.

Action: Xeneca to provide additional information to other agencies describing the operating plan during various flow conditions

SM confirmed this was done in his May 9 2013 memo.

ACTION: R.P to provide drainage basin data to SM.

RP confirmed this was sent to SM on April 12 2013.

ACTION: RP and SM to discuss new operating plan concept with Brian Turnbull and NP [addition: this meeting is scheduled for Monday May 13, 2013.]

Discussed on May 13 2013 call.

ACTION: Scott to provide MNR the operating parameters for Marter when Misema holds water for more than 24 hrs.

This has been done through verbal discussion. Criteria in Operating Plan is not to hold back water for more than 24 hours. Xeneca has proposed minimum flow target of 2.3 cms.

ACTION: Xeneca to provide temperature report to MNR.

The report was sent to agencies by SH on May 2.

MOE has provided comments to SH regarding the temperature report.

KE confirmed that DFO has no comments on the temperature report.

ACTION: GY to send spawning tables and operating plans to KB to be updated and sent to SW and KE.
SH will ask Kristi to send the spawning tables to SW & KE for review prior to release of final ER.

ACTION: LM, KB, NP, KE, BT and RW will meet to discuss minimum flows.
This is on the agenda for today's call.

ACTION: KB and NP to discuss flow apportionment between the tailrace and spillway.
This is on the agenda for today's call.

2. April 12 Geomorphology Call

SW said that in the interest of time, did not need to run through Action Items. Agencies agreed that they were happy with what John Parish had proposed on the April 12 call and would be looking to see the corresponding monitoring plan incorporated into the final ER document.

b) Agenda Items

1. Downstream Zone of Influence

RW said that MOE takes viewpoint that existing conditions on river are flows on the river at any given time (water levels). The MOE letter of July 3 says still don't have enough info to explain to MOE what those existing conditions are downstream and how Marter GS will change those. 60 cm fluctuations are not the existing condition, the existing condition is what is happening on the river all the time, not just a one-snapshot range.

MOE would want more info on how the pulses etc coming downstream will affect the river.

NP said agencies & Xeneca has been discussing this for years. We have done many studies to the Englehart River, done extensive studies to Englehart confluence. After much discussion, Xeneca felt that it was time to be pragmatic and to solve these issues. At that time, Xeneca proposed to operate around Misema GS so that the effects would end at Misema confluence. Misema is operating as they want, without a specific regime. We are doing our best to operate around Misema and not exacerbate effects on the river.

RW – main thing MOE is trying to say is that whatever the Misema GS is doing does affect conditions in the river, but whatever Marter does on top of that, still need to know what the alterations from Marter project will be. Unless we are doing exactly the same thing as Misema, Marter will create a different regime on the Blanche. Proposal for peaking will dictate what the downstream effects are.

BT – questions 60 cm fluctuations and the frequency that it is currently occurring on the river. How much more will this happen with the addition of Marter? Frequency, duration etc.

NP – we do not have operating plan for Misema so we don't know what they do. We do not have baseline data for the river because Misema doesn't have any operating conditions. How can we analyze frequency?

SW says that MNR has asked several times what the communications have been between Xeneca and TransAlta. MH says that some discussion has gone on, but nothing will move forward quickly. TransAlta is also looking at their operations. MH says that WMP is creeping into the ER, but none of those questions can be answered until there is communication with Misema. WMP is the ER is concerning. Questions are impossible to answer with the lack of info at this time.

MH says that Xeneca has identified and responded to concerns that have been raised, and has commitments in place. He stated that the rest can be discussed during Water Management Planning.

Xeneca's preference is to conduct Water Management Planning in a separate process, subsequent to EA completion.

Xeneca cannot be responsible for another operator's decisions and operations (Misema has not conducted peaking operations since February.)

SW says delaying operational discussions until WMP involves significant risk on Xeneca's part, as the WMP process may result in compliance requirements that jeopardize the proposals economic feasibility. May have a very negative effect for Xeneca. Want to ensure that Xeneca understands and accepts this risk given expressed preference for delaying such discussions.

MH acknowledged this risk and confirmed Xeneca's intent to postpone such discussions until the Environmental Assessment process was complete.

MH re-iterated that agencies cannot make one operator responsible for another operator's actions. Xeneca is prepared to cross that bridge at a later date and is in discussion with TransAlta now.

SW says it is not MNR's intention to make Xeneca responsible for TransAlta. Trying to work with all parties to achieve positive end result but not looking to hold Xeneca responsible for anyone's operations but their own.

SM says that we know how Misema operated during 2012. Would operations be the same in 2013, 2014, etc? If they are not consistent, challenge is identifying what this "existing condition" is because Misema is not operating in a predictable manner. It's hard to identify what the baseline data is.

RP says that's why Xeneca would need TransAlta's operating data in advance, to plan around it. Magnitude at Marter will be similar, peaking, rate of change will be similar, but frequency (of peaks) & timing may be very different. Those are his concerns. Has made these comments before.

RW would like to let meeting know that because of complexities with Misema (from WSC gauge), MOE is looking into what's going on with that facility. They were screened as a run-of-river operation, so it is under internal review at this point. May help with clearing up complexities we are having in these

discussions. MH says this is good to know. Asks about timing. RW says MOE would like to complete its review ASAP. The District is the lead for the review. RW will report back to us when she knows more about the process.

MONITORING for DZOI: NP says first effort will be to work with TransAlta. If we cannot do this, we will install a real-time level logger at the Blanche-Misema confluence. We will also install level-logger upstream & downstream of the dam and provide that info annually to agencies, to show we are working within compliance.

LM would like to note that MNR has provided comments in regards to environmental characteristics in the past, and have never heard back. Assumes that means that they'll be addressed for final ER.

Still questions from MNR about where DZOI ends.

MNR still has questions about rigour of work that has been done between Misema & Englehart confluences.

MH says we have provided the science to show that effects end at Misema-Blanche confluence. Asks LM to clarify what exactly she is looking for.

LM says MNR & MOE both have concerns about frequency & timing of peaks and the DZOI, and if there are differences from impacts of existing conditions, need to know what they are. MH says there are investigations going on right now that may answer these questions.

NP says that studies were done to the Englehart River, but based on Xeneca's current Operating Plan, the DZOI ends at Misema confluence. We have worked to resolve issues with agencies but still can't seem to find a path to move forward on this issue.

RP does not agree that DZOI ends at Misema confluence. Says to match flows & negate effects, would have to have TransAlta's operations information weeks or days in advance. Therefore ZOI has to go beyond Misema confluence. NP says if we cannot get an agreement with TransAlta, Marter will go run-of-river.

NP explains a possible scenario where Xeneca operates around TransAlta. RP says Marter operations will introduce a second peak in a day to the river. NP says Marter GS will reduce the fluctuation in the river system. SM observed that based on info from WSC gauge, the magnitude of peak in the river flow will be reduced with introduction of Marter. Peak will not be as high, but will be extended. From time to time, Misema is not peaking (true ROR) – but no explanation as to why. In those situations, Marter would peak – so a peak would occur where pre-project would not have. So, increase in frequency of peak. No increase in magnitude. RP says he is not concerned with the magnitude of the peaks, but rather the timing and the increase in frequency of peaks – this will be seen below the confluence of the Misema/Blanche.

RW refers back to Class EA, which required that any changes to the environment be identified. Need to know how far downstream we will see effects of projects. Discussion about what effects/any effects means.

SW comments that we seem to be at an impasse. Would like Xeneca to take all previous comments and advice into consideration and hopes that it will help inform the final ER submission. MH says that what we are trying to avoid is people writing in and deeming this EA as “incomplete.” Says that in discussion with District, if there is an impasse about interpretation, proponent is asked to rationalize how they reached their conclusion. Asks: Can we continue with discussions with agencies during permitting and approvals. RW would go back to SW’s comments that the agencies’ perspectives has been provided to Xeneca in letters & discussions. BT is looking for Xeneca to provide existing condition & what the alterations to this would be with proposal. MH says that we believe we have done that, but it’s not being accepted (RP was clear.) We have done everything that has been asked, gone over and above any work on previous EAs, but it’s still not being accepted. Can we agree to discuss the issues rather than using the ER to do this?

Corinne – Xeneca has MNR’s comments. Not a new position. This has been in discussion for a very long time, would like to see guidance of MNR technical experts incorporated into final ER.

MH asks for clarity from RP on why ROR commitment isn’t sufficient. RP says need to have agreement in place and have TransAlta’s operating info days ahead of time to piggyback on their operations. RP would like to review notes and talk with District colleagues.

Action: RW will get back to Xeneca with next steps for Misema GS.

Discussion to be continued on July 15, 2013.

Call Continued July 15, 2103

Attendees:

Kelly Eggers (DFO)	Stephanie Hodson (Xeneca)
Rosanna White (MOE)	Scott Manser (Ortech)
Brian Turnbull (MOE)	Ciara DeJong (Ortech)
Shaun Walker (MNR)	Kristi Beatty (ORMG)
Lauren McDonald (MNR)	Muriel Kim (OEL)
Christine Greenaway (MNR)	Mark Holmes (Xeneca)
Rich Pyrcce (MNR)	Nava Pokharel (Xeneca)
Eleanor Moro (MNR)	Uwe Roeper (Xeneca)
Corrinne Nelson (MNR)	

Opening Discussions:

UR had subsequent calls after July 5 meeting with Shaun & Rosanna & internally to discuss how we can reach consensus on some of the issues.

Moving forward with new agenda.

1. Rosanna – planning process from Class EA

MOE agreed to provide some context to the July 3 letter based on what is in the Waterpower Class EA. This relates to discussions that have been ongoing since March regarding operating around TransAlta. Following the May 13 technical meeting to discuss this operating proposal, MOE sent Xeneca a July 3 letter with technical comments on the proposal. The letter requested more information about the DZOI reach/and what minimum flows would be in comparison to existing conditions.

Would like to point out from the Class EA:

- a. Step 1 of the process is identifying what project will include & what potential effects might be (focussing particularly on the downstream reach for this discussion today.) MOE needs to understand how all aspects of a project will affect environmental conditions. This is why MOE requested additional information.
- b. Identify mitigation strategies etc if they are needed
- c. ER should be complete enough to show full effects of project.

UR asked whether RW had read Randy Pickering's letter regarding DZOI. She indicated she had and that it provides MNR's perspective... MOE is working from the June 14 letter from John Taylor and the July 3 letter from MOE is consistent with that.. UR says that that 6-point letter from MNR is confusing. CG says that this is a framework. UR responds we cannot determine ZOI by using a framework, have to have some autonomy at a project level.

RW says from Class EA perspective, pg 34, the proponent must assess the potential effects and of the project

OE is looking to understand the types of alterations that will occur to the environment. Pulsing, peaking, etc – how far downstream will this be altering the existing conditions.

2. Background of Xeneca's View on DZOI– Uwe

Project underway since 2010. First discussion of DZOI occurred in meeting in 2011 – MOE hydraulics folks suggested that Misema confluence may not be far enough. Had some discussions about extending down to Englehart River. Fall 2011, additional modeling work was done (steady state & unsteady state) down to Englehart confluence. In 2012, District suggested that the fieldwork completed to that time did not allow Xeneca to complete a fulsome impacts assessment (especially Stuart's Rapids.). KB took cursory observations of the river between Stuart's Rapids and the Englehart confluence. Plus, some additional work was done at Stuart's Rapids. On June 29, 2012 CG sent out a memo asking for further work, down to where there was 'no discernable difference from natural variability.' Xeneca had agreed to extend the DZOI down to the Englehart, but then got another memo asking to extend it even further than that. In fall 2012, Xeneca submitted statistical analysis from CPL that was not accepted by agencies. MOE/MNR were working on own statistical analysis at that time with Peterborough science branch (MOE commented upon reviewing the draft minutes: when MNR and MOE were involved to develop a method to characterize daily fluctuation, Xeneca was also present at the meeting to assist with the discussion and present their approach.) That was even more restrictive – would only look at daily fluctuations.

In January, Xeneca stated that we would not be able to meet those requirements. Will not study river down to Lake Timiskaming. OWA got involved and said this would have far-reaching implications for Ontario's waterpower industry. Need public consultation on this.

Then, received Randy Pickering memo in early June 2013 – it seemed to be a change in direction. Refers back to the basic requirements of the Class EA.

Xeneca would like some recognition that we have now been discussing the same issues for 2 years and that we are seeking consensus. We want to address MNR & MOE's questions, but we are hopeful that we can keep them in a framework where we can actually address and deal with them.

3. Scott- walk through main points of May 9 memo

SM quickly explained the memo and how it came about (March 2013 memo.)

If both facilities working at same time, peak would have increased magnitude and a 'double dip.' Looked at how we could offset the operations so both would not peak at same time. 2.3 set as minimum flow as it was the lowest water level recorded from WSC gauge.

Misema seems to go RofR above 10 cms.

Other graphs trying to show historic water levels at WSC gauge and how Marter GS would operate.

Amplitude & minimum flows won't be exacerbated from what they are now.
It's possible to operate both facilities in staggered-type operations.
22% increase in a one-year peaking analysis with Marter GS added to river.

4. Key Outstanding Concerns from Agencies

RW says 22% increase stat is very helpful. This is the type of information that MOE needs to understand, how the Marter project would affect the system.

BT asked about amplitude, frequency, duration, of flows.

LM asks about seasonal & daily timing of occurrences and the environmental impact of the change in timing.

RP says this discussion has been helpful. Notes that it's one thing to back-calculate this but in real-time, would need to know TransAlta operations forecast 48/72 hours in advance. Would be helpful to know exactly how TransAlta was operating.

Rosanna does not have an update on the Misema review. (It was screened as run-of-river facility.)

UR says that for purposes of EA, is it fair to say that Misema's operations to-date are the existing condition? Or, what they should be? RW says existing condition is river conditions today (and during all the time they have been working on their EA), with Misema operating as it is operating.

Prior to August 8 2013 call, Scott will prepare info for discussion regarding:

- Increased frequency on occurrence of daily operation
- Frequency of max amplitudes
- Timing of occurrences (what time of day, also seasonal)
- Double cycling
- Uncertainty re Misema operations (UR says facilities don't always have an operating plan)
- 22% increase in pulses – how far would we see the effects of that?
- Minimum flows

DZOI

ITO public consultation, has gone down to Englehart confluence. RW says she cannot answer question of where the downstream ZOI is (e.g. Misema/Englehart confluence) because MOE doesn't yet understand exactly what the Marter project is adding to system or how far effects will extend.

CG says – in June 29, 2012 memo – came from MNR as outcome of joint MNR/MOE discussions. Recommended that Xeneca acknowledge entire area of hydrological change and then follow EA process to ID/assess impacts within that geographic area – would be up to Xeneca to decide what studies were needed and where.

MNR is still looking for rationale for DZOI definition.

MOE needs to understand entire footprint of project. UR says reading EA Act is difficult because there are no definitions around the wording. “Any effect”, practically, presents an infinite challenge. Waterpower Class EA tries to put some practicality and restraints around that.

CG says that proponent-driven process is supposed to give proponents like Xeneca the opportunity to rationalize issues and bring them forward to agencies.

SM to answer RP/BT questions, Xeneca to circulate rationale on DZOI.

RW suggests that Xeneca look at the MOE Oct 19 2012 – Draft ER letter - Tina Webb email to Xeneca – because Tina summarized in Table 1 of that letter the requirements of the Class EA for the ER along with summary comments related to the Marter project.

Degree vs. Degree-Day Approach

As stated in the July 5 briefing note:

No change to the method used to determine when to operate as a run-of-river during spawning times will be implemented without consent of the agencies.

Xeneca will include a clearly-worded commitment to the development of a thermal-based approach (timing) in the final ER and associated operating plan to address all fish spawning concerns identified by MNR and DFO prior to this issuance of regulatory approvals from either agency.

All known aspects of this proposal, including the commitment to operate the facility as run-of-river during spawning periods dictated by this thermal approach, will be included in the final ER and in the Operating Plan. The final ER will show the work that has been done to date and will state that the details of the final thermal-based approach will be agreed to with MNR and DFO at the permitting stage.

Aboriginal Consultation

Xeneca asked Agencies whether they wished to see the re-writes of those sections prior to seeing the final ER. RW said that no, MOE would not need to see these if there is no change to the DSZOI. However, if a more extensive ZOI is identified than has already been consulted on, there may be a need for additional consultation prior to submitting the final ER.

CG concurred that MNR would not need to review the edits that were made to the Aboriginal Consultation summary either prior to the release of the Final ER, provided that the Aboriginal groups and the public were informed of the appropriate ZOI extent.

Arnold – gave an update. Temagami FN not interested/affected. Meeting with Beaverhouse & Timiskaming FNs this week. Matachewan – part of Wabun Tribal Council – Wabun will not advance discussion until they have economic arrangement. Will have to check on updates to documentation.

ER will show Xeneca's efforts to date. If Communities choose not to participate, that's not Xeneca's fault.

SW indicated that the documentation associated with Aboriginal consultation efforts to date is not likely to be sufficient for the issuance of permits and approvals from MNR. Arnold indicated that efforts were ongoing and that documentation would be improved in the final ER.

Riparian Landowners

There are five upstream landowners. Xeneca has land deals with three of the five. Arnold Chan is trying to determine, with the cost of land acquisition, how to move forward from here.

Public Consultation

No questions.

Monitoring Plan

Erosion – currently proposes 2 locations. If 22% is going to be an issue, we could add a third location.

Monitoring plans will be included in ER.

LM /CG noted that there have not been a lot of discussions about biological effects. LM sent Xeneca comments on biological effects section of Draft ER (2012) as well as effects paper (comments received in May 13.) LM re-stated that MNR believes that a meeting between the biologists and hydrologists to discuss the proposed operation, its potential impacts on the environment, and potential mitigation to those impacts would be very helpful for the determination of minimum flows, ramping rates etc.

ACTION: SH to set up call for KB, LM, KE, SW, cc RW, CG - call for biological effects

ACTION: NP to have John Parish send RP suspended sediment report.

Other Items

Rich Pyrce & Lauren went to site. Saw a slope failure area (edge of plunge pool - clay area) and because of high flows, tons of sand & lots of woody debris.

SM said he would try to work on an analysis of the 22% peak increase; the work will probably take 2 weeks. UR said that once SM's work is done, the information will be circulated and a call will be scheduled for August.

Marter Operations Discussion
August 15, 2013

Attendees:

Rich Pyrcce (MNR)	Scott Manser (ORTECH)
Shaun Walker (MNR)	Kelly Eggers (DFO)
Lauren McDonald(MNR)	Muriel Kim (OEL)
Leah Marinigh (MNR)	Rosanna White (MOE)
Christine Greenaway (MNR)	Brian Turnbull (MOE)
Mark Holmes (Xeneca)	Uwe Roeper (Xeneca)
Grace Yu (Xeneca)	Ciara DeJong (ORTECH)
Stephanie Hodson (Xeneca)	

Discussion:

Review of action items

- 1. Action: RW will get back to Xeneca with next steps with respect to the MOE internal review of the Misema GS.**
This occurred at the end of the call.
- 2. ACTION: SH to set up call for KB, LM, KE, SW, cc RW, CG - call for biological effects**
This has been on hold but, pending a comfort level from next week' hydrology call attendees.
- 3. ACTION: NP to have John Parish send RP suspended sediment report**
Completed.
- 4. Action: SM said he would try to work on an analysis of the 22% peak increase**
Completed. This memo is the basis for part of this call.

Introductions:

UR outlined previous discussion – that there would be alteration in flow from the Marter GS. Scott prepared memo which has been circulated. We are prepared to discuss that, however, we already understood that there are additional days of alteration. Xeneca's focus is – what do we do about these days of alteration, rather than setting a definition.

RW would like to discuss additional alteration as the report addresses several points raised in MOE's July 3 letter to Xeneca.

UR suggests that if discussion become very technical, might be a better offline discussion for the technical folks. Everyone agreed to that approach.

SM walked the meeting through the *Pre and Post Hydrology Report Aug 12 2013* memo.

BT asks regarding compliance and commitments about certain fluctuation – are these peaking conditions within existing conditions. SM says that when the operations and commitments were developed, ensure that fluctuations were within natural fluctuation range.

BT asks re. water levels/flow downstream – what are the actual numbers? SM says we are looking at 2.3 cms to maintain normal limits. At WSC it was +/- 30 centimetres. UR says commitment was to work within existing water level fluctuations that occur at WSC station now – these were 40-50 centimetres in level fluctuations.

UR - Max/min flow discharges between daytime and nighttime – would have to provide at least minimum flow that SM's analysis has shown as minimum flow that WSC shows as the lowest current level at WSC gauge. From daytime to nighttime – does the flow fluctuation that's being created at Marter exceed flow fluctuations that would have occurred under existing conditions due to Misema. This was analyzed and model was submitted in spring 2012 – shows that predicted fluctuation in levels based on input parameters were very similar to observed fluctuations under existing conditions at WSC gauge. In final OP, intent is to control daytime and nighttime flows to water level range that is consistent with the range observed at WSC gauge. OP has not been finalized because Xeneca has been waiting for today's discussion to occur.

UR says you can split this into 2 questions: 1. How many days of additional operation are there? 2. How many of those are we running within existing conditions?

ACTION: BT, RP, NP & SM cc SW, CG to go over unsteady state hydraulic model info from last year – also discuss Englehart and modeling, and transducer information.

RP – looking at Table 1, April & May – no concerns. June – November – seeing increase of 15-63% in peaks. Real concerns are Dec – March – the assumed values under ice conditions can make analysis difficult. Jan – March, 350% increase in peaks. Is it important to understand what's going on in those four months, as the WSC gauge can't be used. Suggests discussing this data on a seasonal/monthly basis.

RP says that thinking of Blanche from proposed Marter site to Misema GS, wondering how many peaks occur in that reach annually right now (pre-project.) UR thought that the observations at WSC for the last 2 years represent "existing conditions." Is Rich asking we assess this river under pre-Misema conditions? RP says just asking about frequency of peaks. UR says that when Misema operates, there's a backwater effect that occurs all the way to Marter under existing conditions – about 20 centimetre fluctuations around Marter. Flow coming from Blanche at Marter site is currently unaltered, and current coming down Misema is highly altered flow, and WSC gauge measures some combination of these 2 river systems.

MH asks what end result RP's questions will serve. Why does he want all of this info? RP says he wants clarity for District. Doesn't think the 25% peak increase assertion reflects what's going on annually. Winter/fall as uncertain.

UR says operating profiles were a major undertaking in 2011/2012, and hydraulic modeling has been undertaken to show what associated water level fluctuations will be with those proposed operating profiles. Thought that we had come to a good understanding of what water levels and flow fluctuations would be (daytime & nighttime) and received buy-in. Xeneca had also shown how Marter GS would operate around Misema GS. Thought the current discussion was about recognizing BT & RP's point: there will be some days where fluctuations will occur now where Misema did not operate previously.

RP would like to discuss with SW and LM what the effects of peaking increase will be in fall and winter.

LM – MNR is trying to gather sufficient information to be confident with what's going on and later on for permitting and approval.

UR asks if we could have the technical discussion next week and discuss the path forward now. We defined the flow alteration a long time, and the Misema work around was proposed as a mitigation measure.

Purpose of this exercise was to say OK, we have some alteration beyond Misema confluence as we will be operating some days that Misema will not, so the question is –which DZOI can we agree to? Agencies do not seem comfortable with Misema, so Xeneca said let's use Englehart. Where do we go from here?

RW says that MOE want to see extent of effects on environmental components. BT suggests using transducers below Englehart to full understand how far downstream effects will go. RW says that if there are effects downstream of Misema, MOE needs to understand the extent. UR says we did a study over fall/winter/spring of 2011-12 below Englehart – this model shows the attenuation of the flow downstream.

Xeneca has firmly committed to work within existing conditions (amplitude, flows and levels.) So what we are talking about – in addition to existing conditions operating for some days of the week (Mon-Thurs), Marter GS will be adding additional days of existing conditions occurring (Friday.)

RW stated that MOE needs to know how much Marter GS will be altering existing conditions.

MH asks LM where she thinks Misema peak attenuates. LM says she has not examined this. MH rephrases and asks if it ends when effect is zero? Does any type of alteration cause a biological effect? LM says that not all effects are impacts from a biology perspective. CG says that Xeneca has received Randy Pickering advice from MNR. Indicated that MNR will be looking for Xeneca to rationalize its decisions, rather than using a precise definition.

UR says hydraulic models were never accepted, and discussion on the call today seems to show that MOE has not accepted this. This was submitted in the winter/spring of 2012. RW suggests this might be discussed on technical call next week.

CG recommends a path forward: let's look at what model is suggesting alteration would be in existing condition and look at what that is compared to data at WSC gauge. Describe the model and the data uncertainty. Paint a picture of this vs. existing conditions. Rationalize how Xeneca came to determination of no impacts, even if there are alterations. Acknowledge existing condition, acknowledge alteration, and rationalize.

UR acknowledges that Xeneca is trying to move forward with consensus. The next step for the Marter project is submitting a final EA. We'd like to avoid having technical folks submit comments, which will go to Assessment Branch and they will have to give it "incomplete" or an elevation request. This is a huge business risk.

CG has observed that we were working together towards determining DZOI in the past. These discussions today are just part of working together and having open discussion, and returning to the question that had been left open in the past.

MH suggests magnitude is the same, but the frequency is changing. RP reminds the meeting that the OP is not complete yet, so what may change. UR says point of OP is to document commitments made, so no point in putting out update until these discussions are resolved. LM says it appears that the proposed magnitude is closer to existing conditions than frequency.

KB asks how MOE is interpreting/defining what the "existing condition" is. RW says that data from 2004-2013 will be considered as "existing conditions."

MOE Update on Misema GS Internal Review

MOE district has been looking into situation with Misema GS. They have a PPTW, and MOE is doing an internal review regarding whether operations have been consistent with the in screening report from 2001. District sent a letter on Monday to TransAlta, requesting information and asking the company to look into the situation.

Marter Hydrology Call

August 26, 2013

Attendees:

Rich Pyrcce, Shaun Walker, Lauren McDonald, Scott Manser, Brian Turnbull, Ciara DeJong, Mark Holmes, Nava Pokharel, Christine Greenaway, Stephanie Hodssoll

Discussion:

SM: Gives summary of Ortech's Aug 23 memo. Scott Went through MNR level logger data, found corresponding links to WSC gauge. Seems to indicate that Misema is peaking through entire range. Water levels are consistent with Steady-State HEC-RAS modeling that Xeneca completed.

Asks what outstanding questions technical folks at MNR/MOE have.

CG – at last meeting, came to the point where we needed to have a technical discussion. Assuming Xeneca operates in a way that does not add to Misema operations, we were looking at changes in frequency in which this operation occurs. How far downstream does hydraulic change occur due to operation?

SM – talked about frequency and statistics in August 23, 2013 memo – which showed about a 25% increase in peaking. For winter months, the variability is significantly underestimated in pre-project projection.

BT – had mentioned the potential for installing pressure transistors at certain locations, including just below the Englehart River.

NP – we have installed 4 level loggers (one just upstream of Englehart, one just downstream of Englehart, at the mouth of Lake Timiskaming & one just below the Larder River confluence.) Misema hasn't been operating as they have in previous years. Xeneca can share the level data with MNR when it is downloaded.

MH – we have had a chance to look at RP's numbers. It seems that RP's numbers are coming back close to what the modeling showed.

SM – Good correlation with unsteady-state HEC-RAS modeling. Showing fairly consistent numbers. One challenge (WSC gauge upstream vs. MNR logger downstream) – looks like Misema (with their headpond capacity) has the ability to hold water in headpond for longer than one day. This affects info between the 2 data sets.

RP asks if Xeneca has done any analysis of data from the 4 level loggers.

NP says we have not downloaded data yet, since last fall when they were installed. HEC-RAS model gives fairly accurate information. At Wabagishik, for example, we have found consistent results from loggers & modeling. Main uncertainty would be downstream boundary limit/effect. We will provide data with MNR once we have it. NP constantly checks data just below Misema confluence, but they have not been operating the same way as they have in the past.

CG – For context, it would be up to Xeneca to rationalize the methodology used to come to these hydraulic determinations. Why Xeneca feels that the model is so robust, why uncertainty is manageable. Xeneca only has 2 weeks' worth of data, which isn't a lot. CD suggests that even 2 weeks' worth of data is enough to validate data output.

NP feels that Xeneca's engineering team has done robust work and is frustrated that MNR keeps pushing for more validation.

CG mentions an email from her last year – MNR acknowledging need for and use for HEC-RAS modeling for DZOI work. Also acknowledged some of the limitations of that kind of work. Reasonable to request some kind of characterization of uncertainty. Are the 2 weeks of data a good tool to characterize conditions throughout the year, in all seasons? Suggests rationalizing approach and data in final ER.

MH brings the conversation to next steps – moving forward. Need to determine where DZOI ends. Believes we have enough information to make that determination now. Asks if MNR is comfortable moving forward with the information that we have at this time?

LM has 2 main concerns after discussions with RP.

1. How the new proposed minimum flow fits in with this. Last update, was 2.3 cms at WSC gauge. Different than what was originally proposed and modeled. Not clear on how often/when 2.3 would be reached.

SM – re. 2.3 cms commitment – represents flow increase from earlier proposal. Wanted to ensure that flows wouldn't go lower than they currently go. Monitoring is key.

LM – seems like 2.3 cms was chosen based on the lowest value that was recorded at the WSC gauge during 2012, which was a drought year. Unclear how often that low level would be reached under proposed regime vs. how often it is reached under current conditions. What would minimum flow be from Krugerdorf Chute to Misema confluence?

NP says that when Misema shuts down, they release 0.5 cms. Xeneca would have to release 1.8 cms to meet the requirement.

LM – the most recent proposal states that the minimum flow between Krugerdorf Chutes and the Misema confluence is 0.5cms, which is lower than the previously proposed 1.0cms that had been modeled (but not agreed to).

ACTION: LM would like to know what ecological impacts of going from current conditions to 0.5 cms in the Krugerdorf – Misema confluence zone?

2. What happens if Xeneca cannot reach agreement with TransAlta? What is the reality of operating this way? Sounds like Xeneca has agreed to put level logger beneath Misema to gather real-time data, but that seems reactive, and still not sure how proper levels will be maintained.

SM – Misema doesn't have a consistent operation. Installing real-time feedback downstream of Misema, looking at when it's ramping down, looking at how it currently ramps down, will allow Xeneca to operate appropriately.

Commitment that without an agreement with TransAlta, Marter will operate as run-of-river.

NP says that as soon as he has level logger data, he will provide it to RP and BT.

Asks technical folks if they are comfortable with the information they have in hand to move forward?

BT says that Sajjaad Khan's October 2012 comments indicated that MOE was looking for transducers to assist in confirming data. Re information provided so far - this can be used.

Would like to review Ortech's August 12 report with his team.

RP asks about difficulties if Xeneca cannot reach agreement with TransAlta. Will the level logger data be sufficient? NP says that the main challenge is the lag time, but ideally would like to have an agreement with TransAlta.

ACTION: SH to set up biological effects call including LM, KB, RW, SW, CG, Kelly Eggers, for week of September 16.

ACTION: RP/BT to advise SH if they want to tag onto the biological effects call, separate call, call directly with SM/NP.

From: Stephanie Hodsoll <SHodsoll@xeneca.com>
Sent: September-16-13 11:12 AM
To: Uwe Roeper; McDonald, Lauren (MNR)
Cc: Ciara DeJong; Kristi Beatty; Eggers, Kelly; Pyrce, Rich (MNR); Turnbull, Brian (ENE); Mark Holmes; Nava Pokharel; Muriel Kim; Greenaway, Christine (MNR); White, Rosanna (ENE); Walker, Shaun (MNR); Moro, Eleanor (MNR)
Subject: RE: Agenda for Marter (Xeneca) Call on Monday, September 16 at 3 pm

Hi everyone, in the interest of having all the key players on the phone, we are going to switch this meeting until Thursday. As I would propose 9:30 – 11:30 a.m.

Is that OK with everyone?

Thanks,
Steph

Stephanie Hodsoll

Stakeholder Relations Officer | Xeneca Power Development | 5255 Yonge St., Suite 1200, North York, ON M2N 6P4 |
Tel: (416) 590-3077

From: Uwe Roeper [<mailto:URoeper@ortech.ca>]
Sent: Sunday, September 15, 2013 4:58 PM
To: McDonald, Lauren (MNR)
Cc: Ciara DeJong; Kristi Beatty; Eggers, Kelly; Pyrce, Rich (MNR); Turnbull, Brian (ENE); Mark Holmes; Nava Pokharel; Muriel Kim (mkim@wesa.ca); Stephanie Hodsoll; Greenaway, Christine (MNR); White, Rosanna (ENE); Walker, Shaun (MNR); Moro, Eleanor (MNR)
Subject: Re: Agenda for Marter (Xeneca) Call on Monday, September 16 at 3 pm

Hi Lauren, as I understand it, this meeting is largely for you and Kristi to have the floor on ecological discussions. Others are there to provide context as needed. So if you need to be late, then it may be best to delay the meeting start.

How much time do you need? Should we delay to 3:30 or 4:00?

Uwe.

Uwe Roeper, M.Sc., P.Eng.
Sent from mobile device.

On 2013-09-13, at 5:02 PM, "McDonald, Lauren (MNR)"
<Lauren.McDonald@ontario.ca> wrote:

<image002.gif>
Hi all,

My apologies, but a personal matter has come up and I may be late to the meeting on Monday.

Regards,

Lauren

Lauren McDonald | Management Biologist, Kirkland Lake/Claybelt Area | Kirkland Lake District
OMNR | Tel. 705-568-3241 | Fax. 705-568-3200 | lauren.mcdonald@ontario.ca

From: Ciara DeJong [<mailto:CDeJong@ortech.ca>]

Sent: September 13, 2013 3:50 PM

To: Kristi Beatty; McDonald, Lauren (MNR); Eggers, Kelly; Pyrce, Rich (MNR); Turnbull, Brian (ENE);
Ciara DeJong; Mark Holmes; Nava Pokharel; Muriel Kim (mkim@wesa.ca); Stephanie Hodson

Cc: Greenaway, Christine (MNR); White, Rosanna (ENE); Walker, Shaun (MNR); Uwe Roeper

Subject: Agenda for Marter (Xeneca) Call on Monday, September 16 at 3 pm

Greetings.

Stephanie Hodson's (Xeneca) email is having some technical difficulties this afternoon so I am sending out the agenda for the Monday 3pm call on her behalf.

Proposed Agenda:

1. Overview of Xeneca's ZOI position (extent, sediment/geomorphology, flows) to set the stage for the ecology related discussions
2. Discussion of the ecological concerns divided into the 3 reaches of the river system:
 - a. Proposed Marter headpond (~ ONR Bridge to the Marter weir)
 - b. Downstream of the Marter weir to Misema confluence
 - c. Misema confluence to Englehart confluence
3. Other concerns

Call in details:

[REDACTED]

[REDACTED]

Regards,

Ciara

Ciara De Jong, Principal

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Mobile: 647-328-8484

cdejong@ortech.ca

<http://www.ortechconsulting.com/>

Marter Biological Effects Call
September 19, 2013

Attendees:

Lauren McDonald, Kelly Eggers, Kristi Beatty, Rosanna White, Mark Holmes, Muriel Kim, Ciara DeJong, Nava Pokharel, Uwe Roeper, Stephanie Hodsoll

Introductions:

Purpose of today's call is defining the extent of project effects, what is the nature of the effect, is there room for mitigation?

Xeneca's position is that the majority of influence is from Krugerdorf Rapids to confluence of Misema River. This area is already subject to fluctuations due to Misema GS. The existing condition is based on the record of operation of Misema GS. Based on this, Xeneca has looked down below the confluence of the Misema & Blanche to see what effects might be happening there. Xeneca's plan is to operate around Misema operations, and if this is not possible, to revert to run-of-river.

Discussion:

Lauren's focus of concern is the entire river, not a specific area.

- Sturgeon currently can, at some times of the year, pass Stuart's Rapids up to Krugerdorf Chutes.
- The Blanche supports walleye fishery. MNR suspects that the walleye spawn at base of Stuart's Rapids, and potentially at the base of Krugerdorf Chutes.
- Concern over benthic activities.

LM asks if everyone has seen OWA distributed new regulations around endangered species and hydropower projects.

In terms of ensuring that habitat and spawning are maintained, Xeneca has made commitment to revert to run-of-river between 6 and 16 degrees (spawning period.) Therefore, any flow that would normally be coming down Krugerdorf and Stuart's Rapids will still be doing so.

Below the confluence of the Misema and Blanche River, Xeneca is proposing to operate within existing conditions (based on Misema GS's operations); KB said her studies of the river lead to a conclusion that no additional effects from the Marter project will be felt if the same conditions exist one extra day of the week.

LM still has concerns over benthic production upstream, and drift. Cases are documented where low-flow winter flows have resulted in extremely low benthic production (upstream of spawning site and within spawning areas.) MNR has caught very small sturgeon at Stuart's Rapids so this could be

indication of nursery habitat. Concerns not only for extra day(s) of operation, but for WHEN those days would occur.

MH says that if 0.5 cms is minimum flow requirement, there will continually be flow through the section of river from the tailrace to the confluence of the Misema and Blanche rivers. Downstream of the confluence, minimum flow will be 2.3 cms. As such, much of the existing wetted perimeter will be maintained and won't be large sections of river being dried out. LM has not seen modeling for 0.5 cms, has only seen 1 cms.

ACTION: NP to provide this updated modeling information. Another call/discussion may be necessary to discuss this information. Modeling should include wetted perimeter conditions under 0.5 cms scenarios in the Marter to Misema reach, as well as the 2.3 cms flows downstream of the confluence. A copy of the new operating plan should be included in the package.

LM says according to 2010 report, there is a mussel bed right under the dam location (dam location had moved.) KB says it's part of the seasonally-inundated sandbar at the base of Krugerdorf, below tailrace, so it won't be affected.

KE asks about keeping the pool at the base of the Chute inundated. KB says during high flows (spring), we are looking at between 20-60 cms (April – June), and the powerhouse can only take 16 cms. The rest will come through Krugerdorf or the spillway. KB says boulder/bedrock substrate in this area at the base of Krugerdorf has spawning potential for sturgeon, not likely walleye. Flows will sustain any potentially existing spawning activities due to ROR operations. KE says this type of analysis should be written somewhere in a report, including consideration of the rest of the year for benthic production, because although we have talked about it, she has not seen it in a report.

KE asked KB if any data on benthic abundance or other benthic indices was available to indicate significance of the benthic invertebrate production areas. KB replied that the benthic surveys conducted were for presence/absence.

KB says benthic-production loss will be mostly upstream, at the rapids series at the proposed extent of inundation. Until exact inundation depth of the rapids is known, can't say exactly what effect will be

ACTION: Nava to provide Kristi with exact inundation depth when it is determined

RW says that, wherever Marter will have additional influence from baseline, there needs to be definition of what effects are. We have talked about frequency of pulses, but have to look at other effects from additional pulses. KB is not sure how an additional day of fluctuation will have an impact, if Xeneca is working within existing conditions. Does not see why there would be a cumulative impact.

LM says that in Scott Manser's report, fluctuations will last longer than they do currently. Concerns for winter (e.g. Feb) low flows adversely impacting fish/benthos. KB to sit down with Scott, Nava & Uwe to see what, in real terms, this means.

LM says that SM's report was missing rationale for minimum flow values – it seemed that he had chosen a minimum flow from an extreme drought year (0.5 cms.) Why this value was chosen and how often/when it will occur needs to be addressed.

ACTION: Xeneca to provide rationalization regarding minimum flow values.

NP says 2.3 cms actually happens quite frequently and has been documented by the WSC gauge over the last few years many times. LM has not seen this type of rationalization.

LM noted Q99.99 for reach Marter-Misema is 0.73cms (Sept value). 0.5 cms rationalization for this reach? Needs discussion on rationalization of 2.3cms flow proposed below Misema as well.

ACTION: Xeneca/ORMG to add this type of rationalization to Effects Report

UR clarified that Xeneca has never said that it would work within existing conditions between Marter and Misema GS. The 0.5 cms release at Marter is a project impact, but Xeneca has done extensive hydraulic modeling which shows that the reach, characterized by very flat topography and deep water channels, will not run dry under the proposed flow. Marter GS will operate within existing conditions downstream of the Marter GS.

UR refers to his letter from August 2013 and asks everyone to read it.

NP- When Misema GS operates, there is some backwater effect all the way up to the proposed Marter location, especially during moderate flows.

LM's concern is that the 20 centimetre difference in levels that NP and the Xeneca team refers to was observed during a high flow, and that in low flow conditions, the backwater effect could be very different. Model at 0.5cms needs to be presented prior to Permits and Approvals, can't assume continuous backwater effect.

UR described that the Marter Operating Plan commits that GS will run continuously, except when river flows drop below 5.3 cms. Other than that, it will run intermittent (turn off at night, restart at day – won't run to full turbine capacity.) Most notable effects in reach will occur at intermittent operations (off at night), which will happen when flows are below 5cms (min turbine cap). During those low flows (approx.1/3 of the year) 0.5cms will occur – already minimum flows in reach at that time. Daily flow changes to 0.5cms are not the same as a long term drop, which impacts DO, temp, etc. No water quality changes here. Same amount of water per 24 hour period.

LM- difference 0.5-5.0cms re: wetted perimeter in this reach needs to be assessed and discussed.

ACTION: This will be discussed with KB provided to LM.

KB needs to provide Xeneca with possibilities of issues that could arise: e.g. fish stranding, de-watering, etc.

ACTION: Text in Effects Report should describe flow alterations (levels), what are the possible biological effects, and then analysis of what this means, plus mitigation. (Reach from Marter – Misema)

ACTION: Kristi to write up a draft of Effects Report, LM willing to review prior to release of final ER, if requested by Xeneca (will be out of office Oct 31-Nov 18.)

KE says topics covered today have given DFO a comfort level.

SH confirms with KE that, as per her September 18 email, KE is going to follow up with MNR on what maximum daily range in the Lake Sturgeon table is appropriate for the Marter site (for Wabagishik site maximum daily range was 20cms.) They will do this by email/phone. NP clarifies that the maximum possible range based on turbine minimum and maximum operation is actually 11 cms.

ACTION: NP to work with SM to clear up numbers

LM says that, regarding new SAR regulations, if there are impacts to SAR, there could be rules and regulations to follow rather than dealing with MNR for permits.

RW says that regarding the hydrological downstream, BT is reviewing SM's data from Aug 26 call and will be providing technical comments.

ACTION: BT to provide comments on Aug 26 minutes and SM's technical documents

Agency comments & Xeneca response tables

AGENCY COMMENTS & XENECA RESPONSES - MNR

Theme	Date	Comment	Xeneca Response	Report Reference	
				Report	Section
Environmental Impacts		States that extensive inventory of fauna within study site was completed; however description of study site includes area to Englehart River confluence and no fisheries inventory work was completed from the Misema/Blanche confluence to the Englehart/Blanche confluence. For permitting and approvals, MNR requires a thorough understanding of the proposed environmental impacts of the project, throughout the entire area being impacted by the project.	The section of river from the Misema/Blanche confluence to the Englehart/Blanche confluence will be affected only in a limited fashion. Extensive hydrologic, hydraulic and operating assessment was carried out to define the existing conditions and the alterations caused by the proposed Project. It was determined that this section of river already experiences extensive flow alterations under existing conditions due to daily operation of Misema GS. Xeneca has committed to operate largely within the flow and level alterations that already occur on this section of river. This operation includes a commitment to: (i) special operating restrictions during spawning (i.e. ROR); (ii) release of all water within 24 hours when modifying daily flow rates; (iii) minimizing intermittent operation and providing minimum flows when do so; (iii) operating in a manner so that maximum daily water level changes are not greater than those under existing conditions. The operating restrictions are further explained in the Operating Plan document (Annex I). However, operation of the existing Misema GS and the proposed Project will result in additional days of operation in this section of river. A cursory review of this section river was carried out by a professional biologist. Except for two short fast water sections, the river is flat, slow moving and deep. It was concluded that the fish habitat in the flat, slow moving and deep sections of the river would not be adversely affected by the proposed flow alterations provided those alterations are limited as outlined in the Operating Plan documents (Annex I). The two fast water sections were examined in more detail. Extensive assessment of the larger and more significant fast water section (Stuart's Rapids) was carried out, including assessment of depth, substrate, shoreline features. It was determined that there would be no effect from the additional days of operation provided that the remaining operating restrictions are followed as proposed. Based on the assessment carried out, the environmental impacts of the proposed project on this section of river has been considered and addressed in a reasonable manner.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex I
Environmental Impacts		MNR had informed Xeneca that impacts to the environment needed to be assessed throughout the entire downstream zone of influence.	All impacts have been assessed. The environmental effects resulting in flow variations have been carefully assessed. MNR has provided a rationale for defining and assessing the ZOI on June 6, 2013 and Xeneca has provided a rationale in accordance with that direction. Refer to Section 7.1	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	7.1
Fish Spawning		Stated that Fish Spawning assessments were completed - further elaboration required (MNR has previously commented that night flashlight surveys for walleye spawning are not an accurate spawning survey in the Blanche River, due to the high turbidity - have any additional spawning surveys been completed?)	Details of spawning surveys are outlined in Annex III. Xeneca has committed to flow restrictions to protect Walleye and Sturgeon spawning. Spawning assessments have not been intensive because the proponent opts to use the precautionary approach to potential spawning habitat throughout the ZOI. The Spawning Table has been designed to ensure sufficient flows for staging, spawning, incubation and larval drift for Walleye and Sturgeon.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex III
Habitat Impacts		Unclear how aquatic habitat was categorized across the study area. Description of the category types and locations of such required.	This is a minor semantical variance. Aquatic habitats were "characterized" in Section 5.2 of the 2011 EC Report, and in Section 4.1, 4.2 and 4.3 of the 2012 EC Report. It could, in fact, be said that it was categorized by habitat as well - the river is broken down by habitat type in both of these sections.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Environmental Characteristics Reports (Annex III) - Section 5.2 (2011), Section 4.1, 4.2 & 4.3 (2012.)

Habitat Impacts / Fish Spawning		Rapids - describes the presence of 2 sets of rapids located downstream from Stuart's Rapids. No discussion on potential habitat at these sites, or potential impacts to these habitats. Is there potential for fish spawning and/or invertebrate production at these sites? Must be considered in the impact assessment (perhaps this information will be forthcoming in the 2013 report described in sections 5.1 and 5.2?)	A general habitat assessment was carried out from the extent of inundation, through the Project site, and downstream to Englehart. Stuart's rapids was identified as the most critical habitat for spawning in that reach. James' Rapids was barely discernable as a riffle feature on the dates of survey and was not determined to be a critical spawning site. A mitigation strategy was put in place (in the form of flow availability between certain temperatures) for the DZOI in order to mitigate impacts on spawning. The same mitigation approach applies to the entire habitat reach. Operations will maintain depths within existing conditions throughout this lower extent of the ZOI.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	4.1.1
Habitat Impacts		States that an additional report analyzing the impacts to aquatic habitat in the downstream zone of influence will be provided in 2013 - MNR has not yet received this report.	All additional analysis is included in the final ER.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex III - Sections 5.1 & 5.2
Habitat Impacts		Stated that there are no rare or significant habitats in the "Extended Inundation Area". Rapids at the top end of the zone of inundation are expected to be fully contained within the inundation area, and are described as rare habitat type within the river in section 5.6.2. Additionally, the 2010 Environmental Characteristics Report describes and provides a photograph of a mussel bed, however it is unclear of exactly where the mussel bed is located. If within the inundation area, considering the evidence of extensive feeding of mussels by mammals (and perhaps other species) in the immediate vicinity this could be considered a significant habitat.	Please note that these rapids are described as "uncommon in the surrounding landscape", not "rare within the river" in Section 5.6.2 of the 2012 report. Also, Section 5.3 specifically refers to the Extended Inundation Area as described in the report - this does not include the rapids in question. Those rapids are described as part of the original inundation area in Section 5.2.1 of the 2011 EC Report. Section 5.6.2 refers to potentially significant habitats in the study area, and so includes the rapids as part of the original inundation area. The mussel bed described in Section 5.4.21 of the 2010 report specifically places the Mussel Bed at Site 093. Section 5.1 of the same report includes a map detailing the location of site 093 as part of Zone 6. Additionally, the habitat of the mollusc bed is described in Section 5.3 of the 2011 report, and Section 6.5.2 of the 2011 report indicates the location of all "empty shells" discovered on the Sandbar habitat (as described in Section 5.3).	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex III Section 5.3
Environmental Impacts		Insufficient to describe that a series of impacts will occur, that deterioration will happen, and that mitigation will occur when it does. In order to assess the project for permitting, MNR will require an understanding of what level of impacts will occur. Providing a comparison of this project against other projects is not acceptable (ie: impacts will not be as significant as it would be if the project was larger). Must describe impacts to local situation in relation to local situation (e.g. expected that x will increase by y%, which is outside/well within acceptable ranges for the area)	As indicated in the opening line of this section, specific surface water quality parameters are not within the scope of ORMG's expertise, and detailed analyses are provided in another report. The statements referenced in this comment are included purely for the sake of introduction to the biological perspectives provided immediately after.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex III Section 5.4
Species at Risk		Should read that non-SAR wildlife species do not receive mandated habitat protection under the ESA or SARA (as in 5.6.1)	Noted.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex III Section 5.6

Fish		<p>Netting protocols utilized during the surveys are not rigorous enough to claim that the Blanche River is sparsely populated by fish species. The Blanche River is known to contain many more species than were netted during the project site, including SAR species. It should be noted that netting did not occur throughout the entire project site (no nets were reported to be set downstream of the Misema/Blanche confluence), nor did it always occur under ideal conditions (for example, 2010 and 2012 were drought condition years, and fish behaviour, especially during spawning events, may have been affected by this). MNR has previously provided information to the proponent describing additional known species at the site, as well as information regarding the extensive recreational fishing industry the river supports on an annual basis. Impacts to these additional species and the fishery must be considered during the impact assessment and during mitigation discussions; this information will be required by MNR for permitting and approvals.</p>	<p>Fish inventory surveys have included gill nets, trap nets and angling, and were performed in 2010 and 2012 for a total of 65 person hours. Very few fish were caught. Netting protocols undertaken were short sets to prevent mortality of fish caught out of concern for the potential for Lake Sturgeon within the Blanche River system. ORMG staff did not want to risk accidental mortality of captured Strugeon due to long/overnight sets of gill nets. Given flow parameters, trap nets were determined to be less than ideal for this system after initial sets. It is not realistic to delay surveys by years on end in anticipation of more "normal" conditions for fish spawning. This would be extremely prohibitive to any and all future development. It is well documented that our global climate is shifting, and that irregular weather patterns are likely the result. ORMG does not believe that withholding fish inventory assessments until favourable conditions for spawning are met properly represents standard conditions within an aquatic ecosystem. Mitigation recommendations for adverse impacts such as stranding, impingement and entrainment WILL consider all key species that have been confirmed to be present within the river system, and not just those species which were captured during the course of recent surveys.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.2</p>
Species Diversity		<p>It is stated that, due to the river base being clay, the water being turbid, and a low amount of aquatic vegetation in the area that "these conditions make the majority of the river inhospitable for many wildlife species" This statement is unclear. Is there a specific list of wildlife species that would find the river inhospitable that are of concern for a waterpower development, or is the statement meant to mean that most species of wildlife would find the river inhospitable, so species richness and diversity is expected to be low at the site? (It should be noted that the introductory paragraph in Section 5.6 states that a wide range of suitable wildlife habitat has been recorded within the study area, refuting the second position). This statement requires elaboration and references.</p>	<p>It is noted that this statement is not well defined. The intent was to indicate that species diversity is expected to be low at such a site. The introductory paragraph of Section 5.6 does not solely describe the aquatic habitat of the Blanche River, but rather the entire survey area (terrestrial and aquatic) and therefore does not really contradict this position (i.e. - there are certainly a wide range of suitable habitats within the project area, including rapids, sandbars, mixedwood forest, wetlands, agricultural fields, etc.).</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.2</p>
Sampling		<p>Stated that no invertebrates were observed in the rapids at the top end of the zone of inundation. Unable to locate sampling data for this site - what type of sampling was conducted at this location on which to base this conclusion? What portion of the rapids were made inaccessible due to high flows? How would the inability to access the entire rapids site affect estimates of invertebrate production?</p>	<p>Sampling was performed at these rapids in 2013 Results and conclusions will be included in the final ER.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.2</p>
Flow Conditions		<p>Stated that flow conditions at the location of the rapids at the top end of the upstream zone of inundation are too high for activities such as fish spawning. This statement requires elaboration and references, as flow conditions within the river are variable, and preferred spawning conditions for different species of fish are variable.</p>	<p>Noted. These rapids were further surveyed in 2013, and Xeneca will engage in habitat compensation discussions with agencies.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.2</p>

Environmental Impacts		<p>Stated that the impacts to the rapids section at the top end of the zone of inundation are minimal as "it is located well upriver of the proposed dam location, but may include heightened water levels as a result of inundation" MNR's understanding of the project description is that this set of rapids will be completely inundated, thus completely altering the characteristics of this site. Please elaborate on this comment, and provide references for how inundating a rapids site results in minimal impacts to the habitat at that location.</p>	<p>It is noted that this statement is incorrect, and impacts to the rapids will indeed be significant. Hydraulic data was evolving rapidly at the time that this report was written and ORMG was mistaken in our assessment of impacts at the rapids site. These rapids were further surveyed in 2013, and results will be presented in the final ER.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.2</p>
Erosion & Sedimentation		<p>Described that some "shallow water over sand will be lost on the south shoreline of the pool below the rapids" Please elaborate on this comment - e.g. lost due to erosion or dewatering? Also concerns that geomorphological studies to date have been based on clay substrates, so may not be applicable to sandy areas in the river, such as this one and the sandy bank downstream.</p>	<p>The tailrace is proposed to run over a portion of this sandbar. Further comment is not possible until tailrace designs are finalized, but it is anticipated that the area of the sandbar will be minimally affected by changes in flow, as water from the tailrace will emerge upstream of the bar. Natural flows expose/dewater much of this sandbar seasonally under current conditions. Operations may result in more "dry" days for this feature, but should not alter the site due to erosion given the low velocities anticipated. The downriver sandy area described in Section 4.1.4 of the 2012 report occurs 11 km downriver of the proposed dam location, and extends approximately 60m along the shoreline. While geomorphology is not ORMG's area of expertise, it seems highly unlikely that this habitat will be significantly impacted as a result of the proposed project - especially given the fact that water levels are already destabilized by the Misema dam, and the current proposal will operate within existing conditions below Misema. For these same reasons it seems unlikely that it will significantly impact the river. We reserve final comments until geomorphologists provide detailed analysis on this subject.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.2</p>
Habitat Impacts		<p>Stated that increasing the lacustrine habitat within the inundation zone could potentially affect beaver populations by providing an excess of ideal habitat, which could discourage individuals from building dams requires elaboration and references.</p>	<p>Noted - this comment is not well substantiated.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.4</p>

Habitat Impacts		<p>Stated that no noteworthy habitats for fish or invertebrates have been detected - the 2010 Environmental Report provided by Xeneca describes that a clam bed is located below the proposed dam location, and the "Marter Below Chutes Summary" document provided in March 2013 by Xeneca discusses the presence of invertebrate carcasses on the exposed sandbar at the base of the secondary channel at Krugerdorf Chutes. This is indicative of a feeding area for semi-aquatic mammals which is most likely the result a fair-sized population of invertebrates in the immediate vicinity. It is also noted that the rapids at the top of the headpond are potentially suitable for invertebrate production - please see above note on this piece, and a wide array of aquatic habitat types are described throughout this and the 2010 and 2011 documents, many of which would provide quality habitat to both fish and invertebrates (e.g. rapids, riffles, deep holes, and slow moving water). Impacts to the invertebrate production areas and fish habitat, and subsequent impacts to other species must be understood prior to permitting and approvals.</p>	<p>It is noted that this section should refer to the pool at the base of Krugerdorf Chutes and the rapids at the top of the inundation area as potentially containing invertebrate habitat. The final ER will reflect this. The feeding bed described in the EC reports could certainly be described as significant for mammal species, since it does appear to provide substantial feeding opportunity. However, ORMG does not believe that this feature could be described as significant for invertebrates. It is likely that these invertebrates are either: a) carried downriver during high water conditions in the secondary channel on the west side of Krugerdorf Chutes that appears to receive overflow during high water periods; or b) disperse to the sandbar habitat during high water periods from below Krugerdorf Chutes. It seems likely that these invertebrates are simply carried (or migrate) to the sandbar (and the intermittent channel within it) and are then stranded when water levels recede if they are not first eaten by opportunistic mammals. ORMG has not located any areas directly upriver of the Krugerdorf Chutes that would be described as significant invertebrate habitat, although there is a benthic bed at the very upper extent of inundation that has been assessed in 2013, and which will be discussed in the Final ER and Mitigation Report. There is potentially suitable invertebrate habitat at the base of Krugerdorf Chutes, as described in Section 5.2.3 of the 2011 EC Report, however this habitat should remain wetted under all conditions, as it is below the proposed tailrace location. Section 5.6.2 highlights the pool at the base of Krugerdorf Chutes as a potentially significant and very unique feature of the Blanche River in the project area and recommends mitigation should it be shown that habitat in this feature will be adversely impacted.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III Section 5.6.4</p>
Lake Sturgeon		<p>Note: information on the protection of lake sturgeon is a significant data gap in this document. Based on discussions with Xeneca and statements made in the 2010 and 2011 Environmental Characteristics report, it was MNR's understanding that further work to identify impacts of the project on the Threatened lake sturgeon population within the project site would be completed during the 2012 field season; however, it appears that no work was completed to identify significant habitat that will be impacted by the project. A complete Information Gathering Form (IGF) containing this information must be submitted to MNR for review prior to permit approvals. The IGF must contain sufficient information to enable MNR to determine if Xeneca will require an authorization under the Endangered Species Act. If it is determined that an authorization is required, the proponent will require sufficient information to enable the determination of the level of impact on the species and its habitat at all life stages.</p>	<p>As noted above, the current proposed operation plan will work on a schedule functionally opposite to the Misema Dam operation, maintaining existing conditions seen under the current Miema operating regime. This proposal will potentially decrease water level fluctuations downriver of the Misema confluence, thereby decreasing habitat disturbance in this area. In addition, the proponent has agreed to proceed with the project under the assumption that Lake Sturgeon can and do use those habitats that have been flagged by MNR as significant - i.e. the precautionary approach will be applied. Therefore, further inventory of Lake Sturgeon populations would be extraneous. The only feature within the inundation zone that is potentially significant to Lake Sturgeon is an invertebrate production area at the upper extent. It has not been confirmed by MNR that Sturgeon are present above the proposed project location at Krugerdorf, so any impact to Sturgeon due to the loss of this benthic bed would be through potential loss of benthics via drift from the upstream extent through Krugerdorf. Given the distance these invertebrates would have to travel to reach Sturgeon or other fish populations below Krugerdorf, this benthic bed may have little impact for downstream fisheries. Xeneca proposes to provide compensatory habitat for this feature if agencies show that there is potential impact for fish populations due to inundation of this feature.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III - Additional Comments</p>
Environmental Impacts		<p>In order for MNR to issue permits for the project, an understanding of the impacts of the project to the environment throughout the entire zone of influence (both up and downstream) as well as the terrestrial project footprint is required.</p>	<p>It is the opinion of ORMG that ecological assessments of the entire study area have been sufficient and proportional to the potential impacts in each area as understood at the time of surveys. The results of the ecological studies are documented in three separate reports in Annex III, and summarized in Sections 2.9 and 7.3 of the ER.</p>	<p>Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station</p>	<p>Annex III - Additional Comments</p>

General Comments		Many statements made throughout the document are broad, lack elaboration and lack references. Some of them are contrary to information accepted throughout the scientific community (e.g. human-built dams create an excess of ideal beaver habitat and may result in beavers building less dams). These types of statements will not be accepted by MNR as an appropriate assessment of impacts in the absence of additional rationale and/or peer-reviewed references to support them.	It is the opinion of ORMG that most statements made in the 2010-2012 reports are substantiated by project studies or referenced sources. However, not all statements are substantiated repeatedly as they occur throughout the document. Future reports will endeavour to be clearer about the origin of statements as they appear. It is, however, noted that the comment regarding beaver habitat in the inundation area was not adequately substantiated.	Comments on the 2012 Environmental Characteristics Report, Marter Township Hydroelectric Generating Station	Annex III - Additional Comments
Species at Risk	7/20/2012	MNR indicated that ESA authorization will require information on downstream impact on Sturgeon, including identification of habitats and impact analysis on those habitats	ORMG outlined Sturgeon work that has been completed downstream. Upcoming mapping and monitoring will include fish habitat mapping (including juvenile sturgeon habitat).	Marter Twp EA Meeting Minutes	
Timelines	7/20/2012	2012 studies are planned for after draft ER submission. Will draft ER be incomplete?	2012 environmental field studies have been included in the Final ER in Annex III.	Marter Twp EA Meeting Minutes	Annex III
Species at Risk	7/20/2012	MNR raised issue of the presence of Bobolinks and endangered species present in the vicinity of the Marter project	ORMG has completed the Information Gathering Form for Bobolink. As noted in Section 6.3.2 of the ER, the IGF was submitted to the MNR on April 12, 2013.	Marter Twp EA Meeting Minutes	Section 6.3.2
Fish Habitat	7/20/2012	Would like to understand flow, temperature and sedimentation changes as alterations above that expected by natural variation could have significant impact on aquatic ecosystems	A temperature study was submitted, in which additional information on temperature, sedimentation, and flows were provided. These items can be found in the Annex I of the final ER	Marter Twp EA Meeting Minutes	Annex I
Erosion & Sedimentation	7/20/2012	What erosion and sediment work has been done beyond that immediately downstream?	Xeneca noted that erosion occurs in high flow events and the turbine discharge flows are in the normal to low flow ranges. Therefore, Xeneca does not anticipate that the turbine operation will significantly affect erosion. However, erosion hazard locations have been mapped and Xeneca plans to monitor those locations during construction and early operational phases. Erosion study report was forwarded to MNR. The monitoring plan is included in the Final ER.	Marter Twp EA Meeting Minutes	Annex I
Ice Scour	7/20/2012	How does ice scour affect sediment load, deposition and transport?	The sediment load in the Blanche River is clay, therefore, where ice scour occurs, a plume of clay will go into suspension and migrate down the river. The plume disperses but does not settle into sand bars. Since ice scour is most likely to occur in fast-water sections and while water levels are changing, Xeneca is proposing to monitor Stuart's Rapids (the only fast water section within the downstream zone of influence) during construction and early operational period to assess the need and nature of an ice scour program.	Marter Twp EA Meeting Minutes	Monitoring - Section 12.2 (Post-Construction / Operation Monitoring)
Zone of Influence	7/20/2012	Was DS ZOI presented to stakeholders (inform public of all future ZOI changes)?	The downstream ZOI was presented to local stakeholders at the Public Information Centre on June 27, 2012. Please see the PIC panels in Appendix D.	Marter Twp EA Meeting Minutes	Appendix D
Zone of Influence	7/20/2012	Did Xeneca look at livestock watering features, docks, etc when developing contact list?	Xeneca has consulted with landowners within the headpond inundation area and has provided extensive consultation opportunities, details of which can be found in Section 6.4 of the ER. In the downstream portion landowners were also provided with consultation opportunities. Throughout extensive consultation, the issue of livestock watering and docks has never been raised and is not believed to be an issue for landowners.	Marter Twp EA Meeting Minutes	Section 6.4
WMP	7/20/2012	Effective consultation that meets the intent of the WMP process includes fulsome consultation on proposed flows and levels	Extensive consultation on all aspects of the project including flows and levels has occurred over the past four years. Records of Consultation can be found in Section 6.4 and Appendix D.	Marter Twp EA Meeting Minutes	Section 6.4

Hydraulic Modelling	7/20/2012	Concerns about calibration accuracy of hydraulic model due to limited number of calibration points.	Xeneca met with MNR to discuss modelling, and Xeneca agreed to collect some additional bathymetry survey information on the key controlled sections of the river and compare the HEC RAS unsteady state results with the present results which are based on the FRI DSM information in the river reach where LiDAR information is not available. Additional river sections information was collected, the model was updated and that model was submitted to agencies. This updated model is included in Annex I of the final ER.	Marter Twp EA Meeting Minutes	Annex I
Hydraulic Modelling	8/7/2012	Unclear what transects were actually measured in field and what transect information was assumed in bathymetry information	This information was clarified in the in the updated hydraulic modelling report which can be found in Annex I.	Marter Twp EA Meeting Minutes	Annex I
Low Flow	7/20/2012	Concern about the environmental flows proposed for low flow periods and how they will affect fish passage, in particular Stuart's Rapids and James' Rapids.	Additional analysis was completed on the downstream flows. The operating plan (Annex I) was updated as a result of this analysis and Xeneca has committed to operate the Project within the existing condition downstream of Misema. Hence there should be no negative impacts on fish passage below Krugerdorf Chute.	Marter Twp EA Meeting Minutes	Annex I
Low Flow	7/20/2012	Concern regarding navigability.	Xeneca has committed to operate within existing conditions downstream, hence there should be no impact on navigability. Currently (pre-project), there is a portage at a rapid 2km above Krugerdorf Rapids (the proposed Marter GS location.) As a result of upstream inundation to this rapid from the project, the portage will no longer be necessary as the river will become navigable. At Krugerdorf Rapids, Xeneca will provide appropriate safety boom and signage, and the construction of a new portage trail on the east side of the river during and post-construction. Details of the portage route can be found in the Construction Management Plan (Annex II.)	Marter Twp EA Meeting Minutes	Annex II
Compliance Monitoring	7/20/2012	How will compliance monitoring be done with respect to the proposed +/- at the downstream end of the ZOI. Will MNR have access to real-time data?	The downstream of zone of influence of the Marter Twp Project is the confluence of the Blanche and Englehart Rivers. However, as outlined in the Operating Plan (Annex I) and as summarized in Section 5 of the ER, the Marter Twp project will have harmonized operations with the existing Misema GS. The minimum river flow and magnitude of maximum water level fluctuations downstream of the Misema River confluence will be similar to the existing conditions. In other words, the minimum flow at the Misema River confluence will be no less than 2.3 (m3/s) and the maximum water level fluctuations will not exceed 60 cm. Monitoring will be done at the confluence with the Misema River to ensure the flow will not be less than 2.3 cms there and that the fluctuations are within the existing conditions of 60 cm. The available data will be submitted annually to MOE. The data will be collected and downloaded on a regular basis. See Section 12.2 for a summary of post-construction monitoring plans.	Marter Twp EA Meeting Minutes	Annex I, Section 5 and Section 12.2
Minimum Flows	7/20/2012	Requested that Xeneca fill out SAAS flow comparison tables.	This has been completed and is included in Annex I.	Marter Twp EA Meeting Minutes	Annex I
Erosion & Sedimentation	7/20/2012	Noted large erosion/landslide immediately downstream of tailrace area. Xeneca should include engineering of tailrace to ensure alignment steers flow away from soft clay/sand embankments that are contributing to erosion.	Xeneca will conduct detailed engineering of the tailrace during the Plans and Specs portion of the permitting in order to consider this issue.	Marter Twp EA Meeting Minutes	Annex I
Flow Information	7/20/2012	Concern regarding low flow periods and having flow fluctuations that are far outside of the normal range. How will Xeneca achieve compliance?	Additional analysis was carried out in 2013 and is included in Annex I. Xeneca has set specific compliance commitments in operations.	Marter Twp EA Meeting Minutes	Annex I

Operations	7/20/2012	Compliance requirements would include hourly reporting to demonstrate that run-of-river was implemented - run-of-river may have to be used during sturgeon incubation periods, will be necessary during spawning and may be required for nightly dispersal of young sturgeon.	The fish spawning tables for the project have been finalized with inputs from MNR and DFO and included on the operating plan.	Marter Twp EA Meeting Minutes	Annex I (Fish spawning tables are in Appendix 2 of the Operating Plan)
Bypass Flow	7/20/2012	Xeneca to provide information on how bypass flow will be directed when turbines are shut down in its EA. A copy of this information should be sent to MNR	Table 7 in the Operating Plan provides flow split under various monthly flow scenarios.	Marter Twp EA Meeting Minutes	Annex I Table 7
Study Sites	7/20/2012	Xeneca to provide list of sites where bathymetry studies or other studies were conducted in DS ZOI.	Bathymetry study locations provided to agencies within the "Hydrographic Studies: Blanche River (13 December 2012)" report prepared by Coldwater Consulting Ltd. on January 14, 2013.	Marter Twp EA Meeting Minutes	Annex I
Hydrology	7/20/2012	Xeneca to complete Hydrological Regime Assessment Table and submit to MNR District and Region.	This was completed and provided, it is included in Annex I	Marter Twp EA Meeting Minutes	Annex I
Minimum Flows	1/17/2013	MNR acknowledged negligible ecological value in the Krugerdorf Chute but stated that maintaining ecological function at the base of the Chute was a project requirement.	Xeneca has committed to minimum flows which can be provided in the bypass reach. Details can be found in the Operations Plan located in Annex I.	Marter Pre-Submissions Consultation Meeting	Annex I
Minimum Flows	1/17/2013	Concern regarding continued movement of fish within the downstream reach, as well as with gravel bar habitat at the very base of the Krugerdorf Chute	The gravel bar was assessed as part of the habitat assessment. Fish movement is not expected to be a significant impact below the confluence of the Misema River because Xeneca has committed to operating within existing conditions created by the Misema Dam. The final ER and Mitigation Report will illustrate that fish movement will be possible at all proposed flow conditions.	Marter Pre-Submissions Consultation Meeting	Annex III
Minimum Flows	1/17/2013	Need to understand changes which may occur at the gravel bar at Stuart's Rapids should minimum flow be delivered through the powerhouse.	Additional investigations were completed and Xeneca has committed to operate within existing conditions. Fish passage is currently thought to occur at Stuart's Rapids only under certain high flow conditions. No impact on existing fish passage is expected at Stuart's rapids	Marter Pre-Submissions Consultation Meeting	Operating Plan (Annex I) and Mitigation Report (Annex III)
Minimum Flows	1/17/2013	Will there be fish passage at limited turbine flow?	Upstream fish passage is known to occur on the Blanche River system, including at Stuart's Rapids under certain high-flow conditions. Upstream passage is not possible at Krugerdorf under natural conditions, nor will it be possible post-construction. Downstream passage through Krugerdorf will still be possible under high flow conditions, but the Chutes will be dry under low flows.	Marter Pre-Submissions Consultation Meeting	Annex III
Cumulative Effects	1/17/2013	How is Xeneca proposing to establish communication between facilities	There are two options available, the preferred option is that Xeneca will enter into a data sharing agreement with the Misema facility. If this option is not available, Xeneca will install its own monitor in the tailrace of Misema facility to detect operations. If the data from either of these options is not available at any one time, the Marter operations will go run-of-river during the data outage. This operating commitment is in the Operating Plan (Annex I) in Table 6 (Item #5).	Marter Pre-Submissions Consultation Meeting	Annex I Table 6 (Item 5)
Cumulative Effects	1/17/2013	Require assurances that both facilities will indeed operate collaboratively. Xeneca to submit formal proposal to MNR/MOE/DFO demonstrating how Marter GS operation will work around Misema GS operation.	The foundation to generate a formal proposal is outlined in the Operating Plan; please see Annex I.	Marter Pre-Submissions Consultation Meeting	Annex I

Minimum Flows	1/17/2013	Draft ER failed to establish direct links in how the downstream habitat sections would change subsequent to minimum flows. Document failed to establish direct links in how key downstream habitat sections would change subsequent to minimum flows. ORMG to confirm key habitats with MNR and DFO. Xeneca to model effects of different flows.	Extensive follow-up occurred with agencies between the issuance of the draft and the final ER. The aspect of linking proposed flow alteration to impacts was improved in several aspects. To this end, the existing condition was better defined, including the existing flow alteration due to Misema GS. An operating strategy (Annex I) was put forward and discussed with agencies that would minimize any additional alteration. The residual impacts were then considered and assessed in the context of the degree of proposed alteration (Annex III, ER Section 7 (Evaluation of Potential Project Effects) and Section 9 (Residual Adverse Effects and Significance)). As a result, Xeneca has proposed to operate downstream of the Misema/Blanche confluence largely within existing conditions. Where flow alteration is proposed in addition to existing conditions, careful consideration has been given to limiting the extent and magnitude so as to mitigate impacts. In the reach where significant new flow alteration occurs (proposed site to Misema/Blanche confluence), habitat assessment was carried out. Where the proposed operation is largely within existing conditions (Misema/Blanche confluence to the Blanche/Engelhart confluence), more limited habitat assessment was done with special emphasis on critical fast water habitat sections. Stringent flow restrictions have been proposed for critical habitat periods (i.e. ROR during spawning) and limitation to daily operations and level alterations have been committed to, so as to minimize habitat impacts.	Marter Pre-Submissions Consultation Meeting	Annex I, Annex III, Section 7 (Evaluation of Potential Project Effects) & Section 9 (Residual Adverse Effects and Significance)
Fish Habitat	1/17/2013	Data gaps in Draft ER on juvenile sturgeon movements and habitat.	There were no sturgeon found in the upstream ZOI. The Krugerdorf Chutes are a natural barrier to fish passage, so downstream Lake Sturgeon populations are not expected to be impacted by project inundation. Xeneca has agreed to operate within existing conditions downstream from the Misema confluence and has agreed to move to run-of-river operations during spawning. Consequently, Impacts on juvenile sturgeon movement are not anticipated. Refer to Annex I for the Operating Plan and Annex III of the ER.	Marter Pre-Submissions Consultation Meeting	Annex I & Annex II
Fish Habitat	1/17/2013	Additional information required to determine whether the project will require an authorization under the Endangered Species Act (ESA) to allow development that may impact a species at risk (ie. Sturgeon). An Information Gathering Form should be completed. Further information regarding ESA Waterpower Agreements can be found in the ESA under 242/08, Section 11.	Xeneca will follow all ESA requirements and submit all IGFs as required.	Marter Pre-Submissions Consultation Meeting	IGFs will be submitted as part of permitting requirements
Fish Habitat	1/17/2013	Was suggested that Xeneca consider cumulative thermal units as a means to determine when operational constraints should be in place with regards to ensuring that no adverse effects occur during the spring spawning and nursery period.		Marter Pre-Submissions Consultation Meeting	Annex I
Roads and Bobolink	1/17/2013	Require a completed Information Gathering Form (IGF) to answer any remaining questions with regards to the impacts to the species at risk and its habitat.	A completed IGF will be submitted according to the ESA as required.	Marter Pre-Submissions Consultation Meeting	IGFs will be submitted as part of permitting requirements
Minimum Flows	1/17/2013	How is habitat being affected by different ramping rates and if there might be fish stranding.	Fish stranding has been assessed as a potential impact between Krugerdorf and Misema due to variability of flows under the proposed Operating Plan. Stranding is not anticipated, and rationale is discussed in the final ER (Section 7) and the Mitigation and Recommendations Report in Annex III. As Xeneca is operating within existing conditions between the Misema confluence and the Englehart River, potential stranding below Misema is not anticipated. Ramping rates within the Operating Plan (Annex I) were changed from 20 to 60 minutes in order to minimize the potential for ramping effects.	Marter Pre-Submissions Consultation Meeting	Section 7; Annex III; Annex I

Public Consultation	1/17/2013	Questions asked regarding the ONR bridge upstream	An engineering assessment was carried out and it was determined that no there will be anticipated impact on bridge as a result of the Project activities. The engineering assessment, dated April 9, 2013, is included in Annex I of the ER.	Marter Pre-Submissions Consultation Meeting	Annex I
Public Consultation	1/17/2013	How were downstream landowners informed about the project and its potential impacts?	Landowners were notified through a variety of means including notices published in local media, public meetings, website, correspondence and notices sent to all Chamberlain Township residents along with their tax bills. Refer to Appendix D for the Record of Consultation	Marter Pre-Submissions Consultation Meeting	Appendix D
Public Consultation	1/17/2013	Xeneca to prepare a project update, and advise of an opportunity to comment on the project targeted to all known downstream property owners within the proposed ZOI advising there may be some variation in water levels. A similar update will be provided to Aboriginal Communities.	An additional mailing was prepared and sent to all property downstream landowners in Chamberlain Township in February 2013. This letter contained additional information about the project and another offer for consultation. Please see Appendix D for the letter template. A similar letter was prepared and sent to all affected Aboriginal Communities in November 2013. Please see Appendix E.	Marter Pre-Submissions Consultation Meeting	Appendix D & Appendix E
Erosion & Sedimentation	3/26/2013	Potential for large scale river valley failure and smaller scale river bank failure, into the Blanche River, due to the dominant clay, silt and sand overburden. Clay has unique properties and is susceptible to catastrophic failure if saturation conditions are just right. (Examples - sensitive clay landslides in the South nation River: 1971 & 1993, Eden et al., 1971; Brooks et al., 1994). We are uncertain as to whether or not the "clay belt" clays are susceptible to similar kinds of saturation and failure but this should be further investigated.	There is some potential for valley wall failure (R8), based on field observations and historic air photos. That said, it is more of a geotechnical issue than a river process, as the role of hydraulic erosion of the toe is minimal. The failure would more likely be related to changing the pore water pressure and sudden change in loadings on the base of the slope. The area of concern, however, is downstream of the headpond. The area of headpond inundation has not display any evidence of current or past valley wall adjustments. A detailed geomorphology monitoring plan, which includes monitoring of slope instability within the project zone of influence, has also been included in the ER in Annex I.	Marter Twp Geomorphology Report	Annex I
Erosion & Sedimentation	3/26/2013	The suspended sediment concentration in the Blanche River is high and there is mention of potential infilling of the proposed Marter headpond but this is only qualitatively discussed. This should be more formally investigated	It appears that suspended sediment concentrations in the Blanche River varies significantly throughout the year under various weather and flow conditions. Much of the suspended sediment is expected to pass through the project, over the weir and through the powerhouse. However, some sediment is expected to accumulate in the headpond over time, such accumulation of sediment is normal and is not considered to be a significant detriment to project operations. Monitoring for headpond infilling has been proposed and included in the Monitoring Section of the ER (Section 12.2 (Post-Construction / Operation Monitoring)).	Marter Twp Geomorphology Report	Monitoring - Section 12.2 (Post-Construction / Operation Monitoring)
Zone of Influence	3/26/2013	The Zone of Influence extends beyond the confluence with the Misema River. This fluvial geomorphology work should be extended downstream to coincide with the defined ZOI downstream of the proposed G.S.	After recent meetings with MNR and other regulatory agencies, Xeneca has proposed to operate the proposed Marter project around Misema GS operations. The proposed Marter project will operate within existing conditions downstream of the Misema confluence. Consequently, additional sediment study is not required downstream of the Misema confluence. The reach between the proposed Marter site and the Misema confluence has been assessed as part of the geomorphology report in Annex I. Monitoring for sediment and erosion has been proposed and included in the Monitoring Section of the ER (Section 12.2 (Post-Construction / Operation Monitoring.))	Marter Twp Geomorphology Report	Monitoring - Section 12.2 (Post-Construction / Operation Monitoring)

Erosion & Sedimentation	3/26/2013	<p>In the Executive Summary, it states in the 6th paragraph that "very few signs of channel instability were observed during the field reconnaissance, ...". MNR staff have traveled the Blanche River from the Misema river confluence up to bedrock chute and noticed some very large scale channel and valley instability within this 1.7 km stretch. This included at least one very large valley slump scar, and a number of smaller river bank slumps and failures into the channel. In one instance a tree was still partially standing on slumped material in the channel. This is a major concern and channel stability seems questionable due to these slope failures ... as noted in the report "landslide scars were observed along the valley wall, but they appeared to be linked to hill slope activity, as opposed to channel adjustment." (Photos are included)</p>	<p>The channel instability noted by MNR was also observed during the geomorphological survey. The observations are noted in Parish 2013 (Annex I.) The observed conditions form part of the existing conditions. The purpose of the assessment was to determine if the proposed project would exacerbate the existing conditions. The report concluded that it would not, as the failure mechanisms were primarily geotechnical slope stability problems and not channel processes. The assessment concluded that the proposed water level changes would not significantly exacerbate the slope failure processes. However, monitoring and an adaptive management plan has been proposed and committed to by Xeneca to address any outstanding concern (refer to Section 12.2 of the ER (Post-Construction / Operation Monitoring.))</p>	Marter Twp Geomorphology Report	Executive Summary; Monitoring - Section 12.2 (Post-Construction / Operation Monitoring)
Erosion & Sedimentation	3/26/2013	<p>In the Executive Summary, 7th paragraph, the report states "Sediment will also likely fill the headpond at the upstream end and immediately upstream of the dam." How much sediment and at what rate is it expected to fill the headpond? Will this affect the life of the proposed G.S.? This is a key concern.</p>	<p>Whenever a new dam is built in a river there is always some potential of reservoir sedimentation, as impoundment slows down the river flow and suspended sediment settles in the headpond. The Blanche River in the project area does not have significant bedload. The field measured Total Suspended Sediment (TSS) results show that TSS in the river is not significant enough to cause substantial sediment deposition in the headpond. The TSS field measurement results are included in the Annex I.</p>	Marter Twp Geomorphology Report	Executive Summary; Annex I
Zone of Influence	3/26/2013	<p>In Section 2.2 Proposed Conditions, at the end of the 1st paragraph, the report states "The anticipated zone of influence of the operational facility on the downstream waterway is 2 km to the Misema River." The proponent now believes the ZOI will extend to the confluence of the Englehart River and discussions are still ongoing as to whether this extent is sufficient to capture the proposed facility's ZOI. As such, extending the fluvial geomorphology study to at least the Englehart River is warranted.</p>	<p>Xeneca divides the DZOI into 3 segments, i) Marter to Misema confluence, ii) Misema confluence to Englehart confluence, and iii) downstream of the Englehart confluence. Information presented to the public asserts that there is no significant effect downstream of the Englehart confluence and therefore is excluded from the DZOI (see the DZOI rationale in Section 7.1). Between Misema confluence and Englehart confluence the facility will largely operate within existing conditions except for a marginal increase in the number of operational days. This marginal increase in operational days is not expected to impact sediment transport; hence no further study is required in this reach. The reach between Marter site and Misema confluence is impacted by flow alterations and may be impacted by sediment transport. Gemorphology studies have been carried out on this segment and monitoring has been committed to in the Final ER (Monitoring Section (12.2) of the ER; Geomorphology Report in Annex I).</p>	Marter Twp Geomorphology Report	Section 7.1; Monitoring - Section 12.2 (Post-Construction / Operation Monitoring)
Operations	3/26/2013	<p>In Section 2.2 Proposed Conditions, 2nd paragraph. The facility will be a peaking system. The Marter site will only be operated as a run-of-river during spring freshet flows and during very low flows when all incoming flow will have to be spilled to provide a QEA (environmental flow). Regulated rivers need hourly flow data to clearly understand their operation. The statement "the amount of water passed through the facility over a period of several days is equivalent to the natural run of the river flows" may be true, but it will not capture the daily peaking and ramping that will control any change in channel morphology and sediment transport in the Blanche River below the proposed dam site.</p>	<p>Section 8 of the Operating Plan (Annex I) has been edited to indicate that "the amount of water passed through the facility over a period of 24 hours is equivalent to the natural run of river flows."</p>	Marter Twp Geomorphology Report	Section 8, Annex I

Flow Information	3/26/2013	The flows summarized in Tables 2.1 & 2.2 look good. Are the Extreme Low Flows 7Q20 flows?	These tables were extracted from Marter hydrology reports (please see the Hydrology Review by Hatch, 2009, in Annex I of the ER, which was also included in the draft ER sent to agencies.) The 7Q10 flow for the Marter Twp project is estimated to be 1.39 (m3/s.), as reported to agencies on March 27, 2013 in the table "Response to Agency Comments_Marter Geomorphology Report_PGL and Xeneca Response_26march13."	Marter Twp Geomorphology Report, Response to Agency Comments_Marter Geomorphology Report_PGL and Xeneca Response_26march13	Tables 2.1 & 2.2
Erosion & Sedimentation	3/26/2013	The "old landslide scars" mentioned in Section 2.4 Physiography section are a great concern, and indicate massive slope failures into the Blanche River in the vicinity of the proposed dam site. Could you hypothesize the effects of such a failure if it happened in the proposed headpond area or downstream of the dam? I would expect a catastrophic input of fine sediment into the Blanche River, which Blanche River flows would not be able to readily remove, could entirely block the channel etc. under worse case conditions. What would the impact to the G.S. be?	The studies completed confirm that areas of slope instability do exist along the Blanche River under existing conditions. If a slide failure were to enter the river, large quantities of sediment would be transported downstream from the slide, pre- or post-construction. If this event occurred upstream of the GS, it would accelerate the natural and gradual infilling of the headpond. Xeneca does not anticipate this to be an operational problem. Further, slope stability along the headpond walls has been assessed; increased slope failure due to headpond filling is not expected to be a significant risk. Increase slope failure is not anticipated from headpond filling as identified in the geotechnical assessment (Annex I.) If the failure were to occur downstream of the GS it would be similar to failure that would occur under existing conditions. The consequences would be similar pre and post construction; the geomorphology study showed that the primary failure mechanisms were due to upslope geotechnical conditions (not due to river processes.) As such, operation of the project is not expected to exacerbate the existing slope failure risk in the area.	Marter Twp Geomorphology Report	Section 2.4
Modelling	3/26/2013	In the Previous Work section (2.5) is the extent of the HEC-RAS model strictly that 6.7 km distance? We believe it also now includes Stuart's Rapids below the Misema River confluence. Is there any possibility of extending this analysis below the Misema River confluence?	HEC-RAS analysis was extended from the ONR bridge upstream to the Englehart confluence. The model results for the entire reach was provided to the agencies for review in 2012. This can be found in Annex I.	Marter Twp Geomorphology Report	Annex I
Modelling	3/26/2013	How many of the cross-sections have generic "below water geometry", as indicated in Section 2.5.3 (Existing Hydraulic Model)?	Both actual and interpolated below water profiles were used in the Hec-Ras analysis. The profiles are shown in Hec-Ras reports in Annex I.	Marter Twp Geomorphology Report	Section 2.5.3
Peak Flow	3/26/2013	From Figure 3.2, in Reach 8 there is a bedrock pinch point just upstream of the confluence with the Misema River (see picture below, taken September 2011). High flows would be forced to the west side of the channel here and may be susceptible to erosion especially under a peaking regime. It would be worthwhile to have a cross-section at this pinch point to investigate water level and flow fluctuation here.	The maximum operating flow (turbine flow) for the project is 16 m3/s. This flow rate is significantly below the channel forming flow rates, (annual flood flow (75 (m3/s)) during spring run-off. Consequently any erosion impact from operational flows appears unlikely. This pinch point area has been assessed as part of the geomorphological assessment. Actually, field surveyed bathymetry section was collected on this particular location (HEC RAS Model STA – 1+691) for the underwater information and LiDAR contour information is available for the river valley. HEC RAS unsteady state modeling result shows that the maximum level fluctuation in any location from the project tailrace to Misema River confluence is not more than 35 cm for the proposed operation of the project.	Marter Twp Geomorphology Report	Figure 3.2

Erosion & Sedimentation	3/26/2013	The pool that is indicated in Reach 7 is below the chutes or rapids section of Reach 6. Could you hypothesize if fine sediment deposition could occur in this pool? I imagine that sediment deposition here would be reduced if a dam is constructed upstream of the chutes section in Reach 6.	Correct. By way of a hypothesis, there will likely be slightly less sediment movement downstream of the dam. The hydraulics will be more varied and sediment removal through this pool may in fact be increased and not replenished as much from upstream sources based on the slight reduction of sediment supply. However, the depth and extent of the pool are controlled by the inflow of fast water from Kruegdor Chute (Reach 6) and by the bedrock ledge downstream. The fast water flowing down the chute results in the pool being scoured to a significant existing depth. This scouring process will continue post-construction. The bedrock ledge downstream prevents the pool from scouring deeper than it is under existing conditions. Consequently a significant change to the geomorphology of the pool is not expected. The pool geomorphology is further discussed in the Parish 2013 report in Annex I.	Marter Twp Geomorphology Report	Annex I
General Comments	3/26/2013	Table 3.1 is helpful, we appreciate the gradient information presented here. There are obviously contrasting sections of fairly flat channel interrupted by steeper rapids.	Noted.	Marter Twp Geomorphology Report	Table 3.1
Erosion & Sedimentation	3/26/2013	For proposed waterpower projects such as Marter, the construction of a dam, penstocks, and tailrace and the manipulation of flows and levels will have a significant influence on the hydrology of the river upon which the sediment transport and channel change potential is dependent. As such, we don't believe a "Rapid Geomorphic Assessment" does the potential channel alterations any justice and would prefer to see a "Full Geomorphic Assessment" instead.	"Rapid geomorphic assessment" is a fluvial geomorphic assessment process as recommended by (Ontario) Ministry of the Environment. 2003. Stormwater Management Planning and Design Manual, Ontario Ministry of Environment, March 2003. Rapid assessment does not mean, this assessment done by method is not detailed enough. The geomorphic assessment report (Annex I) covers other detailed field studies and analysis as well.	Marter Twp Geomorphology Report	Annex I
General Comments	3/26/2013	In Section 4.1.1 Rapid Geomorphic Assessment, please provide the full references for: Ontario Ministry of Environment (1999), and Ontario Ministry of Environment (2003), as they are not in the References section.	(Ontario) Ministry of the Environment. 2003. Stormwater Management Planning and Design Manual, Ontario Ministry of Environment, March 2003.	Marter Twp Geomorphology Report	Section 4.1.1
Flow fluctuation	3/26/2013	In Section 4.2 Reach Characterizations, Reaches 1, 2, 3, and 4 are not included? But these reaches would be inundated and banks influenced by continual wetted and drying due to fluctuating reservoir / headpond levels? Does the conclusion of Reach 5 "appeared stable" consider the consequences of headpond fluctuations on the banks "comprised of clayey sands and silts"?	Section 4 presents the findings from the field assessment. The focus during the assessment was the proposed dam area as well as downstream areas. The furthest upstream extent of the field investigation was Reach 5. However, subsequent to the geomorphology report, a preliminary slope stability analysis was carried out in the headpond area. The analysis shows that side slopes in the headpond below water and above water are similar in gradient. This information would suggest that the slope angle will not change significantly after inundation. Refer to the April 1, 2013 letter from Uwe Roeper to John Parish in Annex I	Marter Twp Geomorphology Report	Section 4.2
General Comments	3/26/2013	For Reach 7 it would be better to refer to banks as on the west or east side of the channel rather than "left" or "right".	Referring to "left" and "right" (banks) is standard engineering practice. This means "left" and "right" when looking in the direction of flow (so, looking downstream from the proposed project site.)	Marter Twp Geomorphology Report	

Erosion & Sedimentation	3/26/2013	For Reach 8 the report indicates that the "reach appeared stable with little evidence of recent channel adjustment" but there certainly is visual evidence of massive valley failures that would deliver sediment and vegetation to the channel, along with smaller river bank erosion scars. Considering that most dams are built with a 50 to 100 year lifespan in mind I think it is worth thinking in those types of timescales. Were historic air photos examined to look at the age and occurrence of the bigger valley failures? Large scale failures are likely to happen somewhere in this vicinity of the Blanche River every 30 to 40 years at least.	Air photos from 1959, 1970, 1986 and a current ortho photo were reviewed as part of this work. There was evidence of valley wall erosion in both the 1959 and 1970 air photo. The river in the '59 photo displayed a locally braided form, suggesting a slump and the river re-working the sediment. Since that time, the site has been stable and has re-vegetated. Please refer to the Parish Geomorphology Report in Annex I.	Marter Twp Geomorphology Report	Annex I
Erosion & Sedimentation	3/26/2013	In 4.2.2 Rapid Assessment Results, the report states "The higher RGA numbers for the widening factor were primarily based on the presence of leaning and fallen trees and woody debris along the channel. Although this could be a sign that the channel is widening due to watershed changes in hydrology, the trait is also typical of northern rivers and may not necessarily be indicative of channel adjustments." The high amount of fallen trees and LWD in the channel are likely due to saturation of the high clay and silt content in the river banks which cannot support trees leading to eventual failure into the channel.	Noted, thank you. This comment has been incorporated in the updated geomorphic assessment report included in the final ER. (Table 4.2 provides results from the RGA surveys conducted along the Blanche River study reach, which confirm the general site descriptions which suggested the channel throughout the study area is relatively stable and in regime.)	Marter Twp Geomorphology Report	Section 4.2.2
General Comments	3/26/2013	The last sentence of Section 4.2.2 is poorly worded and doesn't make sense: "In this case, the bedrock channel is likely natural and not a symptom of instability." Consider revising to something like "The bedrock channel is stable."	Noted. The explanation in the geomorphology report in Annex I has been updated to reflect this form of channel adjustment.	Marter Twp Geomorphology Report	Section 4.2.2
River Profile	3/26/2013	The summary of information presented in Tables 4.2 & 4.3 is good. However, average cross-section values are not particularly useful and it is best to look at the raw cross-section values. From these tables it looks like the Blanche River is narrowing downstream, comparing Reach 5 with Reach 8. Is there an idea or explanation for this?	It is true in that it appears that R8 has a slightly smaller cross-sectional area compared to R5. This may be due to the number of sites measured and/or placement of the sections. The river form and profile are comparable. Some of the narrowest sections appear to be controlled by bedrock outcrops and are not a function of sediment and erosion processes.	Marter Twp Geomorphology Report	Tables 4.2 & 4.3
Hydraulics	3/26/2013	In Section 4.3.2 Bankfull Hydraulics it looks like some flood frequency information was calculated using flow data from Water Survey of Canada gauge 02JC008 – Blanche River above Englehart? The summary of information provided in Tables 4.4 & 4.5 is greatly appreciated.	The information in this section was determined based on the field measurements and hydraulic analyses of this field data.	Marter Twp Geomorphology Report	Section 4.3.2
Erosion & Sedimentation	3/26/2013	In Section 4.4.2 Suspended Material there is mention of surprise at the lack of sediment noticed in suspension. People who know the river often remark that the suspended material is a big concern and deserves close attention. Turbidity and suspended solids are two different things, but they seem to be considered the same in this section.	An addendum to the geomorphic report has been attached in the final ER, which summarizes all information related to TSS (Annex I.) The study concludes that TSS is not a concern for the Marter Twp project.	Marter Twp Geomorphology Report	Section 4.4.2

Flow	3/26/2013	In Section 4.5 Flow Measurements, it would be helpful to prorate the measured flow with drainage areas from the discharge measurement locations and the Water Survey of Canada gauge location to get a truer sense of comparison. Are the 02JC008 values daily averages? The daily peaking of the Misema G.S. is captured by the WSC gauge, thus it is better to use hourly data to compare to measured discharges elsewhere on the river.	The values presented are daily means. Xeneca is in agreement that using an area:flow relationship would be appropriate in an effort to remove the contributions from the Misema River. An additional analysis report has been included in Annex I. The watershed calculations were re-examined. Depending on the calculation method, slightly different apportionment ratios can result. These results were discussed with agency staff at Project Coordination Meetings and it was concluded that the differences in calculation methods were not significant enough to impact the environmental effects assessment.	Marter Twp Geomorphology Report	Section 4.5
General Comments	3/26/2013	In Section 4.5 Flow Measurements, the 2nd paragraph refers to "Velocity measurements were taken just upstream of Xeneca XS0." Do you mean XX0? We did not see XS0 on Figure 4.7.	Noted. The geomorphology report in Annex I has been updated.	Marter Twp Geomorphology Report	Section 4.5
General Comments	3/26/2013	In Table 11, the 14.0 m3/s date should be (15/10/2010), and this table is referenced as Table 4.8 later in the same paragraph.	Noted and agreed.	Marter Twp Geomorphology Report	Table 11
Erosion & Sedimentation	3/26/2013	Section 5 analyses and describes the erosion of bed material (both sand and clay). Fairly low discharges are able to erode the fine and medium sized sand material (0.2 mm). Given this, we do not agree with the statement "so while lesser flows may push the sands around, the overall channel shouldn't experience much change with the proposed change in the hydrograph". With the proposed daily peaking cycles, this sand erosion threshold will be exceeded on a daily basis, providing a daily opportunity to move this material downstream, especially in Reaches 7 & 8, and downstream of the confluence with the Misema River. It looks like the depositional fate of this sediment is questionable and the magnitude, frequency, and timing of this transport could use further thought.	The channel forming flows (2-year flood flow) of the Blanche River at the proposed Marter site are 95 (m3/s). This value is significantly higher than the maximum operating flow rate of 16 (m3/s). Consequently, at no time will the operations at the powerhouse reach the channel-forming flow rates. It is acknowledged that the sediment transport occurs at all different flow levels, however significant changes in channel morphology occur almost exclusively during channel-forming flows. Extensive hydraulic modelling has been carried out which supports the energy and erosion assessment carried out in the Geomorphology Report in Annex I. This geomorphology report is based on credible engineering information, and the interpretation and conclusion is subject to the amount of sediment supplied in this size range. Based on the field work and assessment, it has been assessed that the actual amount of sediment supplied and ultimately transported and re-worked is relatively low. The opinion from MNR that the potential is high based on possible bank failure is noted.	Marter Twp Geomorphology Report	Section 5
Monitoring	3/26/2013	We agree that Reach 7 looks as though it will be a zone of deposition. But below the dam the amount of sediment should be reduced, and erosion in Reach 6 is minimal to begin with. At the end of this reach are some clay banks that are actively eroding, and worthy of monitoring as the G.S. comes online. A recommendation and/or commitment to such monitoring should be made.	Noted. The geomorphology report in Annex I has been updated. This recommendation along with an adaptive management plan has been included in the Monitoring section of the Final ER (in Section 12.2).	Marter Twp Geomorphology Report	Monitoring - Section 12.2 (Post-Construction / Operation Monitoring)
Modelling	3/26/2013	We understand that the SIAM model must be "treated cautiously and interpreted as general trends of surplus and deficit". Looking at Table 5.3, we would expect that everything under the Proposed Dam column from R1 to R5 would be aggrading, as this is all inundated now from the headpond / reservoir? This aggradation would increase closer to the dam? It would be best to put NA for R5 and R6 as this model fails in these reaches.	It is possible to put an NA for the results, but Xeneca feels it is beneficial to provide the results for each reach.	Marter Twp Geomorphology Report	Table 5.3
Erosion & Sedimentation	3/26/2013	In Section 5.3 Bank Erosion, a reference is missing from the 4th paragraph. In the 5th paragraph there again is a statement that "most of the banks in the study reach appeared to be very stable", when much erosion and instability is noticed, especially in R8.	The slumpage in R8 is caused by soil stability issues and is related to a slump failure. It is not at all related to river water erosion or scouring.	Marter Twp Geomorphology Report	Section 5.3

Erosion & Sedimentation	3/26/2013	Does Rosgen's (2002) method account for clay bank material, along with the rooting depth, root density, bank height, bank angle etc..?	Yes – it is applied under the 'surface protection' value.	Marter Twp Geomorphology Report	Annex I
Mapping	3/26/2013	In Figure 5.5 (Erosion potential map for the Marter Township Site), the colour scheme does not look correct; darker green section are not in the legend for example. The highest erosion potential is at the top of the valleys, on the floodplain? We would expect the highest erosion would be adjacent to the channel in most cases. The Areas of Concern are poorly identified and rectangular boxes as depicted do not show where the concern is very accurately. It looks like most of R8 is an Area of Concern; assume the suggestion here is toward future monitoring of these locations. If so this should be more clearly indicated.	The report has been updated and Figure 5.5 has been updated. Please note that some erosion potential is at the upstream slope locations. A monitoring commitment for R8 is included in the Monitoring section of the ER (Monitoring Section 12.2). It should be emphasized that the results were based on GIS and DEM (Lidar). The areas of concern has been updated in the Geomorphology report (Annex I).	Marter Twp Geomorphology Report	Figure 5.5
Misema Agreement	4/11/2013	Difficult for Xeneca to operate in coordinated fashion without data from Misema	There are two options for getting data from the Misema facility available, Xeneca will either install its own monitor in the tailraise of Misema facility to detect operations or enter into a data sharing agreement with the Misema facility. If either of these option is not available, the Marter operations will be run-of-river. This commitment to be added into Operating Plan in Annex I.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I
operating plan	4/11/2013	Xeneca to provide additional information to other agencies describing the operating plan during various flow conditions.	This information was provided in ORTECH's May 9 memo, which was distributed to agencies on May 9, 2013.		Appendix C/Annex I
operating plan	4/11/2013	Inquiry as to whether the headponds of Misema and Marter similar and if drainage, snowmelt, rain events etc. could leave one headpond full while the other is dry.	Xeneca has committed that over a 24 hour period the total volume of water entering the headpond will be equal to the total quantity of water leaving the facility. The headponds of the two facilities are not hydrologically linked. Refer to the Operating Plan in Annex I	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I
operating plan	4/11/2013	ORTECH to discuss new operating plan concept with MNR (Scheduled for May 13, 2013). ORTECH to provide MNR the operating parameters for Marter when Misema holds water for more than 24 hours.	Minimum flow commitment at WSC Station of 2.3 cms. In practical terms this situation would occur during very low inflow periods, with Marter providing additional downstream flows along with a commitment to balance inflow and outflows over a 24 hour period operations may not be practical. Operation of Marter would most likely be limited to flows around the Qmin value if modified operations were possible.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I
Temperature	4/11/2013	Xeneca to provide temperature report to MNR	The Marter temperature report was sent to agencies by Xeneca on May 2, 2013.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex IV
operating plan	4/11/2013	Agencies noted that the most recent Operating Plan they had was dated July 2012, and that the spawning tables needed updating from that version.	The Operating Plan (Annex I) has been updated. The most current Operating Plan is dated October 28, 2013 (Revision 4.)	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I
Krugerdorf Sandbar	4/11/2013	Discussion regarding Krugerdorf sandbar and effects	The sand bar should be essentially unaffected as it is below the tailrace, and not in the direct path of flows from the tailrace itself. Currently, it is seasonally inundated, and a large percentage is on land, flooded only during spring freshet when flows run down a secondary channel on the west shore. The riverine portion will continue to be inundated during operations. ORMG and Xeneca have included it as a site for post-construction monitoring to ensure erosion and sedimentation are not occurring at that site due to increased frequency of flow fluctuations. Mussel beds on the bar should be largely intact, with the exception of shallow organisms, which may be exposed during rapid drawdowns. Please see the full discussion in the Mitigation Report.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex III

Molluscs	4/11/2013	Where are the molluscs coming from that are found at the sandbar and will they be impacted by the Marter GS operations?	ORMG did not find evidence of mollusc beds in the project inundation zone. Live molluscs were, however, located in the area below Krugerdorf Chutes (as described in the 2010 Environmental Report). These molluscs were found in the vicinity of the sandbar habitat, and it is logical to assume that the mollusc shells located on the sandbar would (at least in part) have originated from this adjacent bed. It would be extremely difficult to determine with confidence the precise origins of the mollusc carcasses. This issue will be further assessed in the final ER. This sandbar habitat can be monitored during and post construction to ensure continued presence of live mussels on this substrate.		Annex III
Erosion & Sedimentation	4/12/2013	Concerns regarding geomorphology and sedimentation on the Blanche River as there is a lot of suspended sediment in the river. Follow up monitoring will be important to understand if the Marter GS project will add to the sedimentation and impacts on benthics, mollusks and other aquatic species.	Agreed. Xeneca has committed to future monitoring of water quality, suspended sediment and geomorphological monitoring. Suspended sediment is largely expected to pass through the powerhouse and over the weir. Downstream suspended sediment loads are not expected to be altered significantly.	Marter Sedimentation Meeting	Annex I - Parish's two addendum documents ("Addendum #1 - TSS Data" and "Addendum #2 - Monitoring Program")
Erosion & Sedimentation	4/12/2013	Concerns regarding potential for headpond slumping	Slope stability along the headpond walls has been assessed; increased slope failure due to headpond filling is not expected to be a significant risk. Increase slope failure is not anticipated from headpond filling as identified in the geotechnical assessment (see Annex I.)	Marter Sedimentation Meeting	Annex I
Erosion & Sedimentation	4/12/2013	Concerns about areas of bank instability and failure.	If a failure were to occur downstream of the GS it would be similar to failure that would occur under existing conditions. The consequences would be similar pre and post construction; the geomorphology study showed that the primary failure mechanisms were due to upslope geotechnical conditions (not due to river processes). As such, operation of the project is not expected to exacerbate the existing slope failure risk in the area (see Annex I).	Marter Sedimentation Meeting	Annex I
Erosion & Sedimentation	4/12/2013	Important to understand the regime in the river as it relates to biology and whether the project will trap sediment in the headpond and alter the river downstream.	It appears that suspended sediment concentrations in the Blanche River varies significantly throughout the year under various weather and flow conditions. Much of the suspended sediment is expected to pass through the project, over the weir and through the powerhouse. The suspended sediment loading downstream is not expected to be significantly altered from existing conditions from the operations of the proposed Mater project (see Annex I). Monitoring has been proposed in the Monitoring Plan (see section 12.2).	Marter Sedimentation Meeting	Annex I; Monitoring Plan (Section 12.2)
Erosion & Sedimentation	4/12/2013	interested in the level of potential for the project to increase erosion and sedimentation from natural levels, where the additional erosion, sediment loading, and sediment deposition would be expected to occur, and how this would impact fish and wildlife as well as user groups.	The Parish geomorphology report (Annex I) concluded that there will not be a significant change in sedimentation and erosion due to the Marter project. An impact on fish and wildlife and user groups is therefore not expected. Monitoring has been proposed in the Monitoring Plan (see Section 12.2) along with an adaptive management plan to address any unexpected results.	Marter Sedimentation Meeting	Monitoring Plan (Section 12.2)
Erosion & Sedimentation	4/12/2013	Parish to send MNR all sedimentation related information and reports	A Parish Geomorphic document containing the sampling results for total suspended solids (TSS) investigated as part of the field program in 2012 was sent to MNR and MOE on July 18, 2013.	Marter Sedimentation Meeting	Annex I; Appendix C
Erosion & Sedimentation	4/12/2013	Some assumptions and errors in the SIAM results.	The report has been reviewed and updated.	Marter Sedimentation Meeting	Annex I
Erosion & Sedimentation	4/12/2013	Bathymetry and LiDar data to be sent to MNR.	A surveyed water surface profile chart from downstream of Krugerdorf Rapids to the Misema River confluence was sent to MNR, MOE and DFO on April 12, 2013. The chart showed that the water surface elevation difference is 23 cm (183.67m – 183.44m) when the flow in the river is about 20 m ³ /s.	Marter Sedimentation Meeting	Appendix C

Erosion & Sedimentation	4/12/2013	Parish to prepare a report showing potential erosion effects and mitigation as well as future monitoring plan and use the data to assess if operational effects of Marter GS will be significant.	During consultation with agencies, Xeneca committed to putting a future monitoring program in place. Discussions with agencies set out parameters for the program, including a control site regarding slope stability upstream, and continuous suspended sediment monitoring downstream. In addition, Xeneca agreed to monitoring in years 1 - 5, and the again in years 7 and 10 at a cross-section location in the headpond to determine if sediment is accumulating. The monitoring program is included in the Addendum #2 to the Parish Report, in Annex I of the ER. If monitoring were to demonstrate that unanticipated effects are occurring, adjustments will be made to the operations strategy over time. This monitoring commitment is in the final ER in the form of the Sedimentation and Erosion Monitoring Plan.	Marter Sedimentation Meeting	Addendum #2 to Parish Report (Annex I)
Monitoring	5/7/2013	Will baseline monitoring be part of the proposed monitoring approach?	Monitoring has been proposed in the geomorphology report (Annex I) and Xeneca has committed to implement the proposed monitoring as detailed in the Monitoring Plan (Section 12.2).	Marter Geomorphology & Sedimentation Meeting	Annex 1; Monitoring Plan (Section 12.2)
Zone of Influence	5/7/2013	Understanding of changes in sediment regime needs to be part of ZOI discussion.	It appears that suspended sediment concentrations in the Blanche River varies significantly throughout the year under various weather and flow conditions. Much of the suspended sediment is expected to pass through the project, over the weir and through the powerhouse. The suspended sediment loading downstream is not expected to be significantly altered from existing conditions from the operations of the proposed Marter project (see Annex I). Monitoring for sediment and erosion has been proposed in the Monitoring Plan (see section 12.2). Sediment and geomorphology has been studied from upstream end of the headpond to the Misema confluence. Beyond the Misema confluence the project will operate largely within existing conditions. Therefore sediment assessment adequately addresses the entire zone of influence.	Marter Geomorphology & Sedimentation Meeting	Annex 1; Monitoring Plan (Section 12.2)
Zone of Influence	5/7/2013	Do not agree there is only a 20 cm difference in head from Krugerdorf to Misema - 60 cm alteration due to Misema? Want to put transducer in to see what actual change is over time. Need to be sure as entire OP is based on this small area. Need to confirm gradient.	Additional validation of the hydraulic model was carried out in the Fall of 2012. Additional bathymetry field work was carried out and used to improve the calibration of the hydraulic model. The updated model results were provided to the agencies during the project coordination meetings (and is also included in Annex I.) Xeneca believes that the model results are accurate and defensible. The reach between the Marter and Misema confluence was assessed for both level fluctuations and geomorphology (see Annex I for related reports.) Xeneca has placed additional water level monitors between the Marter site and Englehart. Data will be collected in an ongoing basis and if any discrepancy is found between the monitored data and the model outputs, the data will be used to refine operations to stay within projected and proposed operating levels.	Marter Geomorphology & Sedimentation Meeting	Annex I, Appendix C

Low Flow	5/7/2013	<p>Still unclear how Marter operations will be altering the site compared to existing conditions between the Chutes and the Misema confluence under lower flows. Need to confirm whether there is actually going to be an impact to habitat and whether backwater effect occurs. Marter station is only proposing to alter flow when natural flows are less than turbine capacity. Existing conditions at < 20 m3/s are not sufficiently addressed.</p>	<p>-"Marter station is only proposing to alter flow when natural flows are less than turbine capacity." This statement is inaccurate. Xeneca is proposing to alter flows when inflows into the facility are greater than the Qea (0.5 m3/s depending on the season) up to and including the turbine design capacity (16 m3/s). When flows are less than Qea or greater than Qd (design capacity) Xeneca has no control over the downstream flows (the facility is run-of-river). - The environmental characteristics of this area are described in the 2011 Baseline Environmental Report. The final 2012 Environmental Report included in Annex III of the ER will further address the potential impacts due to flow alterations under the proposed Operating Plan. - "Existing conditions at < 20 m3/s are not sufficiently addressed." Additional reports have been issued to further address the existing conditions at flows less than 20 m3/s including ORTECH report dated August 22, 2013 (Annex I) which provides hydrological conditions pre and post construction for the section of river downstream of the Marter project and the Misema confluence. An ORTECH Memorandum dated May 9, 2013 (Annex I) illustrates the proposed Marter operations at various flows.</p>	Marter Geomorphology & Sedimentation Meeting	Annex III; Annex I
Erosion & Sedimentation	5/7/2013	<p>What would happen if there was a large-scale slope failure at the GS site?</p>	<p>The studies completed confirm that areas of slope instability do exist along the Blanche River under existing conditions. If a slide failure were to enter the River, large quantities of sediment would be transported downstream from the slide regardless pre or post construction. If this event occurred upstream of the GS, it would accelerate the natural and gradual infilling of the headpond. Xeneca does not anticipate this would be an operational problem. Further, slope stability along the headpond walls has been assessed; increased slope failure due to headpond filling is not expected to be a significant risk. Increase slope failure is not anticipated from headpond filling as identified in the geotechnical assessment (Annex I) If the failure were to occur downstream of the GS it would be similar to failure that would occur under existing conditions. The consequences would be similar pre and post construction; the geomorphology study showed that the primary failure mechanisms were due to upslope geotechnical conditions (not due to river processes). As such, operation of the project is not expected to exacerbate the existing slope failure risk in the area.</p>	Marter Geomorphology & Sedimentation Meeting	
Erosion & Sedimentation	5/7/2013	<p>If the potential for failure does exist now, what changes if GS is added? Does it increase risk?</p>	<p>The studies completed confirm that areas of slope instability do exist along the Blanche River under existing conditions. If a slide failure were to enter the River, large quantities of sediment would be transported downstream from the slide regardless pre or post construction. If this event occurred upstream of the GS, it would accelerate the natural and gradual infilling of the headpond. Xeneca does not anticipate this would be an operational problem. Further, slope stability along the headpond walls has been assessed; increased slope failure due to headpond filling is not expected to be a significant risk. Increase slope failure is not anticipated from headpond filling as identified in the geotechnical assessment (Annex I) If the failure were to occur downstream of the GS it would be similar to failure that would occur under existing conditions. The consequences would be similar pre and post construction; the geomorphology study showed that the primary failure mechanisms were due to upslope geotechnical conditions (not due to river processes). As such, operation of the project is not expected to exacerbate the existing slope failure risk in the area. Monitoring for erosion and sediment is included in the Monitoring section of the ER (see Section 12.2).</p>	Marter Geomorphology & Sedimentation Meeting	Annex I; Monitoring Plan (Section 12.2)

Erosion & Sedimentation	5/7/2013	Concerns regarding Lake Sturgeon habitat and the impacts due to suspended sediment and where it will settle out.	Under existing conditions, suspended sediment erosion and deposition occurs in the system. The geomorphology study (see Annex I) indicates that suspended sediment will largely move through the powerhouse and over the weir with limited effect on suspended sediment loadings downstream. Also assessed was the impact on erosion and headpond slope failure (refer to the geotechnical assessment in Annex I). It would appear that the proposed Marter project will not exacerbate the existing sediment processes. Therefore significant alteration to the Lake Sturgeon in the system due to the proposed Marter project is not anticipated. However, monitoring for sediment and erosion is included in the Monitoring Section of the ER (see Section 12.2).	Marter Geomorphology & Sedimentation Meeting	Annex I; Monitoring Plan (Section 12.2)
Erosion & Sedimentation	5/7/2013	Were TSS results from spot measurements or one-time shots?	Xeneca took daily TSS measurements for a week. The measurements were not taken at low flow, but did have some higher-flow rain events. The river was not responsive to changes in flow.	Marter Geomorphology & Sedimentation Meeting	Annex I
Erosion & Sedimentation	5/7/2013	What about potential infilling over lifetime of dam (100-year lifespan)?	Agreed. Over the lifetime of the project the headpond will fill in to a point where natural channel processes take over.	Marter Geomorphology & Sedimentation Meeting	
Erosion & Sedimentation	5/7/2013	What is the maximum sediment load in the river?	Parish Geomorphologic Ltd. indicated that the peak is likely in the range of 150 mg/L with a maximum of 200 mg/L. 1000 mg/L is considered significant.	Marter Geomorphology & Sedimentation Meeting	Annex I
Erosion & Sedimentation	5/7/2013	Concerns about effectiveness of monitoring of changes to system. Was the initial assessment accurate? Need a good baseline to work from. There is no solid base of current conditions. What is being proposed for monitoring?	The initial geomorphology assessment was done Parish Geomorphologic Ltd., a recognized consulting firm specializing in geomorphology studies. Parish has been the consulting firm of record for numerous similar waterpower projects in Ontario. The geomorphology study was based on a detailed LiDAR topography survey, hydraulic modelling, comprehensive field surveys, and a detailed analysis. Xeneca believes this work is highly defensible and forms a reasonable baseline for environmental effects assessment. Parish has proposed monitoring in the report which has been accepted by Xeneca and included in the Monitoring Section of the ER (Section 12.2) and includes an adaptive management plan.	Marter Geomorphology & Sedimentation Meeting	Annex I; Monitoring Plan (Section 12.2)
Data Collection	5/13/2013	How will Xeneca be collecting data. Satellite uplink with real time data downstream of the Misema operation will be required from the Marter GS to operate around Misema GS	There are two options available, Xeneca will either install its own monitor in the tailraise of Misema facility to detect operations or enter into a data sharing agreement with the Misema facility. If either of these option is not available, the Marter operations will be run-of-river. This commitment to be added into Operating Plan (Annex I).Table 6, Item #5 in Operating Plan addresses situations where harmonization of the two facilities cannot be achieved.	Marter Geomorphology & Sedimentation Meeting	Annex I; Table 6 (Item 5)
operating plan	5/13/2013	Graphs presented in ORTECH report show Marter proposed operations at 8 m3/s. It was thought that Marter was trying to mirror Misema?	The proposed Marter project will be operated "around" the existing daily operation on the Misema River. The operation would avoid having high flows from both facilities coinciding, and would seek to maintain flows of 2.3 m3/s at the Waster Survey of Canada Gauge Station 02JC008 such that the maximum flow fluctuation and the minimum flow provided would be within the range currently experienced on the Blanche River. The proposed operation is outlined in the memo by ORTECH Environmental, dated March 27, 2013 and a follow-up memo dated May 9, 2013, both can be found in Annex I.	Marter Geomorphology & Sedimentation Meeting	Annex I

operating plan	5/13/2013	Concerns regarding Marter operating around Misema.	The proposed Marter project will be operated "around" the existing daily operation on the Misema River. The operation would avoid having low flows and high flows coinciding, such that the maximum flow fluctuation and the minimum flow provided would be within the range currently experienced on the Blanche River. The proposed operation is outlined in the memo by ORTECH Environmental, dated March 27, 2013 and a follow-up memo dated May 9, 2013, both can be found in Annex I.	Marter Geomorphology & Sedimentation Meeting	Annex I
Peak Flow	5/13/2013	How high will peak be if Misema ran run-of-river? Change in frequency, duration, timing and rates of change are key to consider in addition to peak flows.	Xeneca is proposing to alter flows when inflows into the facility are greater than the Qea (1 or 2 m3/s depending on the season) up to and including the turbine design capacity (Qd 16 m3/s.) When flows are less than Qea or greater than Qd (design capacity) Xeneca has no control over the downstream flows (the facility is run-of-river.) The ORTECH memo dated August 22, 2013 (Annex I) specifically addresses these concerns.	Marter Geomorphology & Sedimentation Meeting	Annex I
Peak Flow	5/13/2013	If Misema is not operating or is run-of-river and Marter peaks, what is downstream effect? Need to avoid a double peak on a single day.	There are two options available, Xeneca will either install its own monitor in the tailraise of Misema facility to detect operations or enter into a data sharing agreement with the Misema facility. If either of these option is not available, the Marter operations will be run-of-river. This commitment to be added into Operating Plan. The ORTECH memo dated August 22, 2013 (Annex I) provides pre- and post-construction conditions between the Marter project and the Misema confluence which represents conditions without the influence of the Misema facility. Further, the August 22, 2013 memo includes analysis of the Marter flow fluctuations downstream of the Misema confluence when the Misema facility is both peaking and operating run-of-river. Please refer to Table 6, Item #5.	Marter Geomorphology & Sedimentation Meeting	Annex I; Table 6 (Item 5)
Minimum Flows	5/13/2013	Concerned that using 2.3 m3/s at the water gauge may not be accurate and is being proposed for the compliance limit year round.	Marter will be run-of-river during spawning season and when the inflow in the river is greater than 16 cms or less than 0.5 cms. Additional downstream Qea conditions apply to ensure minimum downstream flow of the Misema River confluence of 2.3 cms are maintained. Please see Table 5 in the Operating Plan, Annex I.	Marter Geomorphology & Sedimentation Meeting	Annex I (Table 5)
Minimum Flows	8/26/2013	It seems like 2.3 cms was chosen as a level that river reached during a drought river. I am not sure how often that low level would be reached under proposed regime vs. how often it would actually be reached under current conditions. What would the minimum flow be from Krugerdorf Chute to Misema confluence?	When Misema is not operating it releases 0.5 m3/s therefore the proposed Marter project would have to release 1.8 m3/s (specific to this question, 1.8 m3/s is released between the site and the Misema confluence) to meet the 2.3 m3/s at the WSC Gauge. While Misema is operating, the proposed Marter project would provide 0.5 m3/s. A hydraulic modeling study is included in Annex I showing that 0.5 m3/s will ensure that this section (from the proposed project to the Misema confluence) of the river remains wetted. In addition, monitoring of the water levels will occur between the proposed project and the Misema confluence to ensure that minimum water levels are maintained.	Marter Hydrology Meeting	Annex I
Ecology	8/26/2013	What are the ecological impacts of going from current conditions to 0.5 m3/s in the Krugerdorf – Misema confluence zone?	A hydraulic modeling study is included in Annex I showing that 0.5 m3/s will ensure that this section (from the proposed project to the Misema confluence) of the river remains wetted. In addition, monitoring of the water levels will occur between the proposed project and the Misema confluence to ensure that minimum water levels are maintained. The environmental characteristics of this area are described in the 2011 Baseline Environmental report. The final 2012 Environmental Report included in Annex III of the ER will further address the potential impacts.	Marter Hydrology Meeting	Annex I; Annex III
Operations around TransAlta	8/26/2013	What happens if Xeneca cannot reach agreement with TransAlta? What is the reality of operating this way? Sounds like Xeneca has agreed to put level logger beneath Misema to gather real-time data, but that seems reactive, and I am still not sure how proper levels will be maintained.	There are two options for getting data from the Misema facility available, Xeneca will either install its own monitor in the tailraise of Misema facility to detect operations or enter into a data sharing agreement with the Misema facility. If either of these options is not available, the Marter operations will be run-of-river. This commitment is included in the Operating Plan in Annex I.	Marter Hydrology Meeting	Annex I

AGENCY COMMENTS & XENECA RESPONSES - MOE

Theme	Date	Comment	Xeneca Response	Report Reference	
				Report	Section
Zone of Influence	7/20/2012	Xeneca's proposed definition of Downstream Zone of Influence not inline with the Class EA or MOE's current position	In June 2013 the regional MNR provided a 6 point directive on ZOI. Xeneca has prepared a rationale for delination of ZOI for the Project in accordance with this guidance memo. It can be found in the ER. (See section 7.1)	Marter Twp EA Meeting Minutes	Section 7.1 and Appendix C
Fish Spawning	7/20/2012	Current spawning chart goes until June 20th, but hatching actually ends on July 15th.	The spawning restrictions in the operations plan (Annex I) have been updated to reflect the discussions with agencies staff.	Marter Twp EA Meeting Minutes	Annex I (Effects table)
Water Quality	7/20/2012	Include available results from the first year of monitoring (2012) be included in WQ monitoring plan. Baseline water quality results will help indicate current conditions of river	2012 water quality data has been included in the final ER. It can be found in Annex IV	Marter Twp EA Meeting Minutes	Section 2.8.2
Hydraulic Modelling	7/20/2012	No true representation of the river bed	Agencies expressed reservation about the model accuracy of the original hydraulic model prepared in 2011. During 2012 additional bathymetry crosssection work was completed and the models were updated. These updated models can be found in Annex 1.	Marter Twp EA Meeting Minutes	Annex I
Hydraulic Modelling	7/20/2012	Calibrations are not satisfactory to MOE. Appropriate information such as measured flows and corresponding water surface elevations and velocities were not used during model calibration.	During 2012 additional bathymetry crosssection work was completed and the models were updated. These updated models can be found in Annex 1. Additional model calibrations were completed and resubmitted for review to agencies. Xeneca's understanding was that models were accepted.	Marter Twp EA Meeting Minutes	Annex I
Hydraulic Modelling	7/20/2012	There are errors in the flow assumptions at the Blanche confluence with the Misema.	The flow apportionment between the Misema River and the Blanche River basin were revisited. There are minor differences in flow apportionment however the difference in values is very small.	Marter Twp EA Meeting Minutes	Annex I - Ortech's May 9, 2013 document: "Re: Follow Up Information: Marter Operating Plan/ Krugerdorf Rapids DZO/Consultation April 11, 2013".
Cumulative Effects	7/20/2012	Xeneca needs to take the Misema operations into consideration as this facility's operations forms a part of the current river conditions and is required as part of the assessment in order to receive accurate results from the model.	Xeneca has accepted this comment and carried out a detailed analysis in 2012 and 2013. There are several memos prepared by ORTECH in annex I. Based on these memos the analysis in the Operations Plan (Annex I) was revised such that the two facilities will not release high flows or low flows concurently	Marter Twp EA Meeting Minutes	Annex I

Hydraulic Modelling	7/20/2012	Xeneca to contact MOE to discuss modelling approach and limitations of the model for the Marter project.	This was done, and additional work was agreed to with agencies. Xeneca had a follow up meeting with MOE on August 7, 2012. Xeneca agreed to collect some additional bathymetry survey information on the key controlled sections of the river and compare the HEC RAS unsteady state modeling results with the present results which are based on FRI DSM information in the river reach where the LiDAR information is not available. HEC RAS results can be found in Annex I. The additional work resulted in a minor reduction of the expected level alteration predictions, but the overall model results did not change appreciably. The updated model continues to confirm that a flow alteration caused by daily operation attenuates quickly with distance downstream. By the time the river reaches the Blanche/Englehart confluence, the level alteration is 1/3 or less of the alteration at the source.	Marter Twp EA Meeting Minutes	Annex I
Cumulative Effects	1/17/2013	How is Xeneca proposing to establish communication between facilities	The operations plan has been updated to describe how the flow releases at Misema facility will be tracked. Two options are outlined in the Operations Plan which is available in Annex I.	Marter Pre-Submissions Consultation Meeting	Annex I
Cumulative Effects	1/17/2013	More detail required regarding how Xeneca's operating plan with TransAlta will work.	The Operations Plan has been updated to include additional engineering analysis and is included in Annex I	Marter Pre-Submissions Consultation Meeting	Annex I
Cumulative Effects	1/17/2013	Cumulative effects of both facilities was to be covered as part of the environmental assessment	Yes a cumulative effect assessment of both facilities has been included in the environmental assessment. This can be found in section 10.	Marter Pre-Submissions Consultation Meeting	Section 10
Cumulative Effects	1/17/2013	Require assurances that both facilities will indeed operate collaboratively. Xeneca to submit formal proposal to MNR/MOE/DFO demonstrating how Marter GS operation will work around Misema GS operation.	Both facilities will operate collaboratively. This has been incorporated in the operations plan. Please refer to Annex I.	Marter Pre-Submissions Consultation Meeting	Annex I
Public Consultation	1/17/2013	Questions asked regarding the ONR bridge upstream	ONR was contacted regarding the Marter project. Xeneca confirmed that there will be no impact to the bridge or abutments as a result of the project. Engineering assessment has been carried out by an independent engineer to confirm this and is available in Annex I.	Marter Pre-Submissions Consultation Meeting	Annex I
General Comments	3/26/2013	Paragraph 1, p. 1 – It would be helpful to add a reference to the provincial requirement for Class EA for Waterpower Projects as this is a key reason for this study.	Noted, however this report is part of the overall Environmental Report.	Marter Twp Geomorphology Report	

Zone of Influence	3/26/2013	On p. 4 the report states that the “anticipated zone of influence of the operational facility on the downstream waterway is 2 km to the Misema River”. This is not MOE’s understanding of the downstream zone of influence for the project. It is our understanding that Xeneca has proposed the confluence of the Blanche and Englehart Rivers as the downstream zone of influence and that they would manage the flow at this location to be in compliance with a + - 10 cm range in variation. However, there is no agreement between the company and MOE on this approach because it is not based on the geographic extent of the downstream effects from the project as outlined on p. 39 of the Class EA for Waterpower Projects document.	In June 2013, the regional MNR provided a 6-point directive on zone of influence (ZOI.) Xeneca has prepared a rationale for delineation of ZOI for the project in accordance with this guidance memo. It can be found in Section 7.1 of the ER.	Marter Twp Geomorphology Report	Section 7.1 and Appendix C
Zone of Influence	3/26/2013	This draft report is helpful in identifying the potential effects of the project on erosion and sedimentation for the upstream area and from the proposed operation downstream to the confluence of the Blanche and Misema River. However, as noted above, the proponent will need to ensure that any negative effects are identified downstream to the full extent of the zone of influence.	In June 2013, the regional MNR provided a 6-point directive on zone of influence (ZOI.) Xeneca has prepared a rationale for delineation of ZOI for the project in accordance with this guidance memo. It can be found in Section 7.1 of the ER.	Marter Twp Geomorphology Report	Section 7.1 and Appendix C
Monitoring	3/26/2013	With respect to the current assessment of erosion and sedimentation, there are a number of locations where monitoring is suggested. MOE recommends that a monitoring plan be developed and submitted as part of the final report that identifies locations that will be monitored and how often this will occur. The final monitoring plan should include the full up and downstream zones of influence for the project.	A detailed erosion and sedimentation monitoring plan has been developed and included in Annex I of the ER. It recommends installing three monitoring stations - one 'control' station upstream of the impoundment area, one upstream in the impoundment area and one below the dam. Please see Section 12.2 of the ER and the geomorphology assessment report in Annex I.	Marter Twp Geomorphology Report	Section 12.2 and Annex I
Zone of Influence	3/26/2013	Hydrology - Still no agreement on the zone of influence, as an approach is still being developed with MOE/MNR and Xeneca, based on the principle of characterizing the current condition of the river, as well as the proposed alterations. As such, the study examines the headpond of the proposed facility down to the confluence with the Misema, so that the entire reach which could be impacted is not fully examined. It was previously communicated to Xeneca that the cumulative effects of Misema must be considered reflecting the downstream conditions of the confluence of the Misema and Blanche (Note 12, Tina Webb, Meeting minutes 20-Jul-2012). It has also been proposed that Xeneca will potentially operate off cycle from the Misema project to minimize sub-daily water level fluctuations within the river channel, however many of the details have yet to be provided. The consideration of current conditions and proposed operations should be considered during further review, as well as potential cumulative effects of both facilities.	In June 2013 the regional MNR provided a 6 point directive on ZOI. Xeneca has prepared a rationale for delineation of ZOI for the Project in accordance with this guidance memo. It can be found in the ER. (See section 7.1)	Marter Twp Geomorphology Report	Section 7.1 and Appendix C
Operations	4/11/2013	Discussion regarding intermittent operation	The Operating Plan (Annex I) was revised to detail additional information on minimum flows and downstream Zone of Influence. Please see Section 5 of the ER.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Section 5
operating plan	4/11/2013	Xeneca to provide additional information to other agencies describing the operating plan during various flow conditions.	The Operating Plan (Annex I) is in the Final ER which has been provided to other agencies as described in section 6.		Section 6

Minimum Flows	4/11/2013	Xeneca and MOE to discuss flow apportionment between the tailrace and spillway.	Additional discussion on flow apportion has been added to Operating Plan.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Operating Plan (Annex I) Section 4
Water Quality	4/11/2013	Water quality process needs some clarification.	The water quality section (Section 2.8.2) has been updated with the most recent data available. Please refer to Annex IV	Final Minutes Marter Operating Plan Meeting April 11, 2013	Section 2.8.2.
Species at Risk	4/11/2013	Information Gathering Form for bobolink not yet submitted. IGF for Lake Sturgeon to be submitted after finalization of minimum flow discussions and final consensus on DZOI.	All requirements for permits and approvals for ESA will be completed.	Final Minutes Marter Operating Plan Meeting April 11, 2013	IGFs will be submitted during permitting
Erosion & Sedimentation	5/7/2013	If erosion and sedimentation are not considered significant, a summary of the proposed monitoring to ensure predictions are accurate will be required	Agreed, a monitoring plan has been developed and incorporated into the ER for tis purpose. This can be found in Section 12.2.	Marter Geomorphology & Sedimentation Meeting	Section 12.2
Erosion & Sedimentation	5/7/2013	ER needs to address information which indicates that there is a low potential for impacts on habitat due to sedimentation.	No loss of natural habitat or function is anticipated, monitoring programs factor in erosion and sediment. The effects assessment discusses this in detail and can be found in Annex III.	Marter Geomorphology & Sedimentation Meeting	Section 8 and Annex I
Zone of Influence	5/7/2013	If downstream zone of influence increases then additional studies will be required to extend to that distance.	In June 2013 the regional MNR provided a 6 point directive on ZOI. Xeneca has prepared a rationale for delination of ZOI for the Project in accordance with this guidance memo. It can be found in the ER. (See section 7.1)	Marter Geomorphology & Sedimentation Meeting	Section 7.1 and Appendix C
Minimum Flows	5/13/2013	If Xeneca is proposing 2.3 m3/s at downstream location, what happens if Misema is passing 2.3 m3/s? Would Marter be operating/passing any flow?	Marter will pass a minimum flow of 0.5 m3/s even if there if the flow from Misema is more than 2.3 m3/s. The details of this are in the Operating Plan located in Annex I.	Marter Geomorphology & Sedimentation Meeting	Annex I
Minimum Flows	5/13/2013	How did Xeneca come up with 2.5 or 2.3 cms as the minimum flow? Current conditions are much higher at different times of the year from what is being proposed.	The details of the minimum flow assessment are in Annex 1	Marter Geomorphology & Sedimentation Meeting	Annex I
Zone of Influence	7/3/2013	At May 13 meeting Xeneca indicated that their new approach to operations would result in a hydrologic downstream zone of influence that goes no further than the Misema confluence. MOE does not have sufficient information to understand what the downstream ZOI is as yet. Information is needed on the frequency, duration, timing, rate of change and magnitude	In June 2013 the regional MNR provided a 6 point directive on ZOI. Xeneca has prepared a rationale for delination of ZOI for the Project in accordance with this guidance memo. It can be found in the ER. (See section 7.1)	MOE Final Comments Re: OP Approach, July 3, 2013	Section 7.1 and Appendix C

Minimum Flows	7/3/2013	With respect to the proposed new minimum flow of 2.3/2.5 cms, Xeneca also needs to provide appropriate rationale for this, including how their proposal compares to existing conditions	Additional rationale was provided in a series of 3 technical memos prepared by ORTECH Environmental in support of agency meeting discussions that occurred during 2013. The memos outlined how the minimum flow values were chosen based on existing conditions on the river. The technical memos and the meeting notes are included in the ER (Annex I and Appendix C, respectively). It appears that agencies have accepted that the operation on the Misema GS as the existing condition on the river. The existing flow alteration is documented at the WSC gauge station on the Blanche River represents the "existing condition" from which any flow "alteration" is defined. It should be noted that the minimum flow commitment is only one of a series of operating restrictions proposed to mitigate potential environmental effects of the proposed Project. Others in include: (i) limiting the occurrences of intermittent operation to days when natural inflow is below the minimum turbine capacity; (ii) limiting the range of low alteration during intermittent operation; (iii) passing all natural inflow within 24 hours; (iii) special operating restrictions during spawning (i.e. ROR).	MOE Final Comments Re: OP Approach, July 3, 2013	Annex I; Appendix C
Sampling	7/3/2013	Sampling to complete temperature profiles of the reservoir should be carried out in three consecutive years between July 15 and August 15 to confirm lack of thermal stratification in the reservoir	This monitoring request has been added to the Monitoring Plan and is reflected in the final Environmental Report (ER)	Screening Assessment - Water Temperature - Blanche River	Section 12
Mitigation	7/3/2013	If thermal stratification has the potential to occur, mitigative measures in the form of bottom drawer multi-level draw systems should be considered.	This is included in the Monitoring Plan and is found in Section 12.2 of the final Environmental Report (ER). A tempeartre memo was prepared and submitted to MOE; it was estimated that very small changes in temperature can be expected due to the propsoed project.	Screening Assessment - Water Temperature - Blanche River	Section 12

AGENCY COMMENTS & XENECA RESPONSES - DFO

Theme	Date	Comment	Xeneca Response	Report Reference	
				Report	Section
Low Flow	7/20/2012	DFO previously expressed concern regarding fish passage at both sets of rapids (Stuart's Rapids and James' Rapids) last fall in response to comments on the proposed bathymetry program.	The Marter Twp project has been proposed to have harmonized operation with Misema GS operation, as detailed in the Operating Plan (Annex I.) The minimum flow and water level fluctuation magnitude, downstream of the Misema River confluence, will be similar to existing conditions. James Rapids is located downstream of the Englehart River confluence and Larder River confluence. A detailed steady and unsteady state HEC RAS modeling have been completed to Englehart River confluence, which is about 23 km downstream from the project site. James Rapids is about 9 km downstream from the Englehart River confluence, or 32 km downstream from the Marter Twp project site. From the HEC RAS modeling it can be concluded that the James Rapids will see no noticeable effects (changes) in flows and level due to the Marter Twp operations.	Marter Twp EA Meeting Minutes	Annex I
Low Flow	7/20/2012	Xeneca to prepare modelling for low flow scenarios under proposed operating regime. Modelling should show downstream water level fluctuations at James' Rapids.	Hydraulic modelling was carried out between Marter site and Englehart confluence. The modelling shows significant attenuation of level fluctuations with distance. At Englehart the maximum residual level fluctuations are approximately +/- 10 cm. James' rapids is located downstream of the Englehart confluence and Larder River confluence. The residual water level fluctuations were not specifically modelled but it can be said with some confidence that the residual water level fluctuations will not be more than +/- 3 cm. This information is consistent with water level measurements collected by MNR downstream of the Englehart confluence in the summer of 2012. In addition, Xeneca retained ORMG Consulting to investigate the James' Rapids site. ORMG concluded that small water level fluctuations will not have noticeable effect on habitat conditions.	Marter Twp EA Meeting Minutes	Annex III
Fish Mortality	7/20/2012	Information regarding fish mortality and other factors related to DFO approval should be included.	Xeneca confirmed that information on fish mortality will be provided as part of DFO approval process.	Marter Twp EA Meeting Minutes	Appendix C
Environmental Impacts	9/28/2012	This section states that Stuart's Rapids are considered a natural barrier to upstream fish passage, however the Ministry of Natural Resources Fisheries Management Objectives essentially state the opposite in expressing concern that facility operation may impact fish passage at Stuart's Rapids. MNR's Site Information Package does not state that Stuart's Rapids is a complete barrier to passage by all fish species, only that it is potentially a seasonal barrier for Lake Sturgeon passage. If the bathymetry and survey work done at the site have shown that the rapids are a barrier, please include that information in this section, otherwise it should not be described as a barrier.	This section of the report has been updated to address this comment. The proponent concurs that fish passage beyond Stuart's Rapids does occur under certain flow conditions. However, the Krugerdorf Chutes has been confirmed as an impassable barrier. Consequently it has been confirmed that there is no fish passage beyond the proposed dam site. Xeneca has committed to placing a telemetry receiver above Stuart's Rapids (location to be determined after consultation with MNR) in order to confirm passage of telemetry tagged Sturgeon in future.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Sections 2.9 (Ecology), 7.3 (Identified Potential Ecological Effects) and 12 (Monitoring & Follow-Up Programs)

Fish Spawning	9/28/2012	This section mentions a potential spawning site at the base of Krugerdorf Chutes. The most current information should be presented in this section, including whether this area was confirmed to provide spawning habitat through the baseline environmental surveys. We note that neither the 2010, 2011 or draft 2012 baseline environmental reports indicate spawning surveys or habitat survey work being done at the base of Krugerdorf Chutes. Without additional information, DFO will apply the precautionary principle to the available information, which means the habitat at the base of Krugerdorf Chutes will likely be considered as spawning habitat during our review of the proposed project.	Xeneca has noted DFO's proposal to apply the Precautionary Principle. Run of River operations have been proposed to address any potential impacts on spawning at the base of Krugerdorf Chutes. Special spawning restrictions have been included in Table 6 of the Operating Plan (Annex I). Discussions with MNR and DFO are ongoing regarding the precise extent and nature of operational restrictions.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Annex I (Table 6)
Fish Habitat	9/28/2012	This section indicates there will be significant adverse effects on fish habitat, however, Table 6 in the ER assesses the residual effects on fish habitat as not significant. If there are significant adverse effects on fish habitat, please describe what they are in this section.	The discrepancy has been noted and has been updated in the final ER document (Section 7.3.10 (Aquatic Habitat and Species)). We anticipate no significant adverse impacts to fish habitat.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Section 7.3.10
Procedure	9/28/2012	The second paragraph indicates there may be a requirement for a Fisheries Act Section 35 Authorization. Please also include a requirement for a Fisheries Act Section 32 Authorization for destruction of fish by means other than fishing.	Requirement for a Section 32 Authorization is noted in Section 13 (Regulatory Approvals and Permits) and Section 15 (Conclusion.)	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Section 13, Section 15
General Comments	9/28/2012	Please note that the new Fisheries Act subsection 35(1) states "No person shall carry on any work, undertaking or activity that results in the harmful alteration or disruption, or the destruction, of fish habitat." Please update the HADD definition to reflect the current wording	HADD definition was corrected throughout the ER.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Throughout the ER
General Comments	9/28/2012	We recommend that the wording of the second sentence in the second paragraph be changed for clarity to "If required, a fish habitat compensation plan..."	Noted.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Executive summary, Section 14

Fish Spawning	9/28/2012	This section indicates the by-pass reach is not designed to provide fish habitat within the falls or at the base. However the sections in the ER that describe fish and fish habitat indicate that there is potentially walleye and sturgeon spawning habitat at the base of Krugerdorf Chutes, which we understand to be the by-pass reach. Since the sensitivity of the fish habitat at the base of Krugerdorf Chutes has not been confirmed, DFO will likely consider this habitat as being spawning habitat in our review of the proposed Operating Plan.	The proposed tailrace will be located directly below the Chutes, and oriented so that its flows will be directed into the pool. Consequently, the pool will not be dewatered. A small area at the base of the chutes will be wetted by backwater effects from the tailrace. The substrate in the area that will be located upriver from the tailrace is bedrock. The remainder of the pool will continue to receive flow from the tailrace, which will be designed so that outflow creates minimal impact. Run of River operations have been proposed to address any potential impacts on staging and spawning. Special spawning restrictions have been included in Table 6 of the Operating Plan (Annex I).	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Annex I (Table 6)
General Comments	9/28/2012	Please change the reference to DFO to Department, as DFO is not an Agency.	Noted.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Throughout the ER
Procedure	9/28/2012	Detailed engineering drawings are not the only requirement for DFO to make a Fisheries Act determination; detailed habitat information, compensation plan and operating plan are also required.	Noted.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Section 6.3.1 under "Fisheries and Oceans Canada" was updated to reflect these requirements.
Fish Spawning	9/28/2012	The ER states "Based on the assessment it is anticipated that the impacts associated with the dam, spillway have a high potential to result in the harmful alteration, disruption or destruction (HADD) of holding and refuge fish habitat for Walleye and Lake Sturgeon." Our understanding of the biological information provided is that the potential HADD includes spawning habitat for these species. This should be indicated.	This has been noted. ORMG has recommended that the proposed Spawning Flow Tables be implemented here due to potential impacts on Sturgeon and Walleye spawning in the pool at the base of Krugerdorf. Run of River operations have been proposed to address any potential impacts on spawning at the base of Krugerdorf Chutes. Special spawning restrictions have been included in Table 6 and Appendix 2 of the Operating Plan (Annex I of the ER).	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Annex I (Table 6)
General Comments	9/28/2012	Please update the HADD definition to "harmful alteration or disruption, or destruction" to match the wording in the current Fisheries Act	Noted.	Draft Environmental Report (ER) for the Marter Township (Blanche River) hydroelectric development project	Wording was revised throughout the ER.
Minimum Flows	1/17/2013	Need to understand changes which may occur at the gravel bar at Stuart's Rapids should minimum flow be delivered through the powerhouse.	Xeneca has proposed to operate largely within existing conditions in areas downstream of the Misema confluence including Stuart's Rapids. Hence a significant impact on the gravel bar is not anticipated. In addition, Xeneca has committed to stringent operating conditions during critical habitat periods (i.e., run of river during spawning) (refer to Table 6 and Appendix 2 of the Operating Plan, in Annex I of the ER).	Marter Pre-Submissions Consultation Meeting	Annex I (Table 6)

Minimum Flows	1/17/2013	Will there be fish passage at limited turbine flow?	Xeneca has committed to largely operate within existing conditions downstream of the Misema confluence. A significant impact on fish passage at Stuart's Rapids is not expected due to proposed project operations.	Marter Pre-Submissions Consultation Meeting	Annex I
Cumulative Effects	1/17/2013	How is Xeneca proposing to establish communication between facilities	There are two options available; the preferred option is that Xeneca will enter into a data sharing agreement with the Misema facility. If this option is not available, Xeneca will install its own monitor in the tailrace of Misema facility to detect operations. If the data from either of these options is not available at any one time, the Marter operations will go run-of-river during the data outage. This operating commitment is in the Operating Plan (Annex I) in Table 6 (Item #5.)	Marter Pre-Submissions Consultation Meeting	Annex I (Table 6, Item 5)
Cumulative Effects	1/17/2013	Require assurances that both facilities will indeed operate collaboratively. Xeneca to submit formal proposal to MNR/MOE/DFO demonstrating how Marter GS operation will work around Misema GS operation.	The May 9, 2013 Memorandum from ORTECH was forwarded to MNR, MOE and DFO on May 9, 2013. This is also in Annex I of the final ER.	Marter Pre-Submissions Consultation Meeting	Annex I; Appendix C
Minimum Flows	1/17/2013	Draft ER failed to establish direct links in how the downstream habitat sections would change subsequent to minimum flows. Document failed to establish direct links in how key downstream habitat sections would change subsequent to minimum flows. ORMG to confirm key habitats with MNR and DFO. Xeneca to model effects of different flows.	Hydraulic modelling was carried out between the proposed Marter project and Englehart confluence. The modelling shows significant attenuation of level fluctuations with distance. ORMG characterized the habitat between the proposed Marter project and Misema confluence and the effects assessment can be found in Annex III. From the Misema confluence to Englehart confluence, the project will largely operate within existing conditions. Within this reach only critical habitat was assessed (example - Stuart's Rapids) in detail (see Annex III), the remainder of the reach was characterized more limited basis. Given the limited alteration in flows and levels downstream of the Misema confluence, the degree of habitat assessment is sufficient to assess potential effects. In addition, operational restrictions have been committed to (see Table 6 and Appendix 2 of the Operating Plan, in Annex I of the ER) to further mitigate any potential residual effects downstream during critical habitat periods (spawning).	Marter Pre-Submissions Consultation Meeting	Annex III; Annex I (Table 6)
Public Consultation	1/17/2013	Questions asked regarding the ONR bridge upstream	The potential impacts to the ONR bridge was assessed by an independent professional engineer and it was concluded that there will be no impact to the bridge (see the April 9, 2013 CPL report in Annex I of the ER). This information has been shared with ONR for comment and Xeneca has received no response.	Marter Pre-Submissions Consultation Meeting	Appendix D; Annex I
Fish Habitat	3/26/2013	Potential erosion/sedimentation issues resulting from construction and operation of the proposed hydro dam/facility appear to represent a low risk to fish/fish habitat.	Agreed.	Marter Twp Geomorphology Report	Section 7.3 (Identified Potential Ecological Effects)
Operations	4/11/2013	Discussion regarding intermittent operation	Intermittent operations are proposed for low flow conditions between Qea (1 or 2 m3/s depending on the season) and 16 m3/s (design capacity of the turbines). During the spawning season the facility will operate as Run-of-River. Please refer to the Operating Plan in Annex I.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I

operating plan	4/11/2013	Xeneca to provide additional information to other agencies describing the operating plan during various flow conditions.	The Operating Plan (Annex I) provides analysis of flows on a monthly basis. In addition, the May 9, 2013 ORTECH Memorandum (Annex I) illustrates the downstream flow variability of the coordinated operations of the Marter and Misema facilities.		Annex I
operating plan	4/11/2013	Agencies noted that the most recent Operating Plan they had was dated July 2012, and that the spawning tables needed updating from that version.	This has been updated. Please refer to the Operating Plan in Annex I.	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I
Minimum Flows	4/11/2013	Discussion regarding minimum flows	Marter will be operated as a run-of-river facility during important annual cycles such as spawning and incubation periods. The precise nature of the operational conditions is currently under discussion. Spawning tables will be included in Table 6 of the Operating Plan (Annex I).	Final Minutes Marter Operating Plan Meeting April 11, 2013	Annex I (Table 6)

GENERAL AGENCY COMMENTS & XENECA RESPONSES

Theme	Date	Comment	Xeneca Response	Report Reference	
				Report	Section
Flow Information	7/20/2012	Xeneca to arrange follow up meeting or call to discuss minimum flows with ORMG, MNR and DFO.	Minimum flows were discussed on agency conference calls on July 5th (call was continued July 15th) and September 19, 2013.	Marter Twp EA Meeting Minutes	Appendix C
Minimum Flows	1/17/2013	ORMG to set up follow up call in next two weeks to discuss downstream minimum flow issues, zooming in on hydraulic effects occurring where habitat values have been identified and river cross section information has been developed.	The Marter Operating Plan needed to be updated before this call could occur. This call occurred on September 19th, 2013 (Marter Biological Effects Call.)	Marter Pre-Submissions Consultation Meeting	Appendix C
Minimum Flows	1/17/2013	Revised hydraulic modelling to be distributed (revised to reflect agency comments during previous discussions).	Updated HEC-RAS information regarding Stuart's Rapids was sent to MNR, MOE and DFO on January 25, 2013.	Marter Pre-Submissions Consultation Meeting	Appendix C
Minimum Flows	1/17/2013	MNR to provide minimum flow numbers in order that they can be modelled along with what is being proposed by Xeneca.	Subsequent minimum flow discussions resulted in a proposal by Xeneca to operate largely within existing conditions and to provide minimum similar to existing conditions (greater than 2.3 m ³ /s at the Water Survey of Canada 02JC008.)	Marter Pre-Submissions Consultation Meeting	Annex I Section 5.4 Section 6.3.2 Section 10
Erosion & Sedimentation	1/17/2013	Agencies requested one week to review Parish Geomorphology Study. Xeneca to set up subsequent meeting.	Subsequent geomorphology/sedimentation conference calls were held (including John Parish from Parish Geomorphic) on April 12 and May 7, 2013.	Marter Pre-Submissions Consultation Meeting	Appendix C
Erosion & Sedimentation	4/12/2013	Another meeting to follow up on the discussion is to occur the week of May 6, 2013.	The follow-up geomorphology conference called occurred on May 7, 2013.	Marter Sedimentation Meeting	Appendix C
Minimum Flows	5/9/2013	Xeneca to check flow graph and verify if it's correct. Modify if needed.	ORTECH explained graphs to agencies (See Marter Twp April 11, 2013 Meeting Follow up)	Marter Twp April 11, 2013 Meeting Follow-up	Appendix C
operating plan	5/9/2013	Xeneca to draft OP and pick out a couple of medium/low flow scenarios and see if it is analogous with the conditions that occur at the Water Survey of Canada station	See ORTECH memo "Re: Follow Up Information: Marter Operating Plan/ Krugerdorf Rapids DZOI/Consultation April 11, 2013." This was distributed to agencies on May 9, 2013 and discussed on the May 13, 2013 conference call.	Marter Twp April 11, 2013 Meeting Follow-up	Appendix C

operating plan	5/9/2013	Xeneca to include in OP that Marter can operate as ROR if Xeneca experiences operating problems.	This has been done and is included in the Operating Plan in Annex I (see Table 6 for special restrictions in the Operating Plan)	Marter Twp April 11, 2013 Meeting Follow-up	Annex I
Cumulative Effects	8/7/2013	Additional days of operation represent additional alteration and the cumulative effect must be rationalized	The additional days of operation have been recognized and analysis completed in Annex I (ORTECH memo dated August 22, 2013). The cumulative effect was then specifically addressed in the biological effects assessment report (Annex III). The cumulative effects on all other aspects of the ER were addressed in the Memo from Xeneca to the MNR dated August 7, 2013 (See DZOI - Marter Project letter to MNR, dated August 7, 2013 in Appendix C)	DZOI - Marter Project letter to MOE, Aug 7, 2013	Annex I Annex III Appendix C
Operating Plan	8/7/2013	Xeneca needs to demonstrate how it plans to operate such that it does not result in two daily cycles, rather than one under existing conditions.	The concern about two operating cycles per day can be adequately addressed with operational measures as proposed (See DZOI - Marter Project letter to MNR, dated August 7, 2013 in Annex I). The Operating Plan was updated accordingly.	DZOI - Marter Project letter to MOE, Aug 7, 2013	Annex I
Habitat Impacts	8/7/2013	Xeneca needs to rationalize what, if any, additional habitat analysis or monitoring is required to assess any impacts or effects from the additional flow alteration.	Given the assessments carried out within the DZOI, the limited impacts identified and the significant habitat work done (Section 2.9 of the ER), it is not unreasonable to conclude that the study effort has been adequate (See DZOI - Marter Project letter to MOE, dated August 7, 2013 in Appendix A).	DZOI - Marter Project letter to MOE, Aug 7, 2013	Section 2.9 Annex I