

ALBERTA ENVIRONMENTAL APPEALS BOARD

Decision

Date of Decision – October 6, 2014

IN THE MATTER OF sections 91, 92, 93, and 95 of the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, and the *Water Act*, R.S.A. 2000, c. W-3;

-and-

IN THE MATTER OF an appeal filed by Colin Bussiere with respect to *Water Act* Approval No. 00328026-00-00 issued to 541466 Alberta Ltd. (JLG Ball Enterprises) by the Director, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Sustainable Resource Development.

Cite as: *Bussiere v. Director, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Sustainable Resource Development, re: 541466 Alberta Ltd. (JLG Ball Enterprises)* (06 October 2014), Appeal No. 13-011-ID1 (A.E.A.B).

BEFORE:

Justice Delmar W. Perras (Ret.), Board Chair.

SUBMISSIONS BY:

Appellant: Mr. Colin Bussiere.

Approval Holder: 541466 Alberta Ltd. (JGL Ball Enterprises),
represented by Ms. Lisa G. Ball.

Director: Mr. Patrick Marriott,* Director, Red Deer-
North Saskatchewan Region, Operations
Division, Alberta Environment and Sustainable
Resource Development, represented by Ms.
Jodie Hierlmeier, Alberta Justice and Solicitor
General.

* At the time the decision was made, Mr. Patrick Marriott was the Director. Since the decision was made, Mr. Marriott left Alberta Environment and Sustainable Resource Development. The Director now working on the file is Mr. Neil Hollands.

EXECUTIVE SUMMARY

On July 7 2014, Alberta Environment and Sustainable Resource Development issued an approval under the *Water Act* to 541466 Alberta Ltd. (JLG Ball Enterprises) for the dewatering of aggregate extraction pits in a gravel extraction operation near Long Lake.

Mr. Colin Bussiere appealed the Approval.

The Board received and considered the submissions provided by the parties on what issues are properly before the Board in this appeal.

In order for the Board to hear arguments on specific concerns, the issues must be included in the Notice of Appeal, be related to the approval being appealed, and be within the Board's jurisdiction.

After reviewing the submissions from the parties as well as the Notice of Appeal filed by Mr. Bussiere, the Board determined the issues for the hearing will be:

1. Are the monitoring requirements in the Approval adequate to ensure the protection of the environment, including groundwater sources and Long Lake, while the dewatering of the extraction pits is taking place?
2. Do the other terms and conditions in the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits?

Mr. Bussiere's concerns regarding the end pit lake were found to be outside the Board's jurisdiction. Reclamation of the site, including the construction and maintenance of the end pit lake, are authorized under the approval issued by Public Lands, not the Approval being appealed.

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I. INTRODUCTION

[1] This is the Environmental Appeals Board's decision regarding the issues to be heard at the hearing of the appeal filed by Mr. Colin Bussiere (the "Appellant").

[2] Alberta Environment and Sustainable Resource Development ("AESRD") issued an approval under the *Water Act*, R.S.A. 2000, c. W-3, to JLG Ball Enterprises (the "Approval Holder") authorizing the drainage of groundwater from aggregate extraction pits.

[3] The Environmental Appeals Board (the "Board") received and reviewed submissions from the Appellant, AESRD, and the Approval Holder, and reviewed the Appellant's Notice of Appeal to determine the issues for the hearing. In order for the issue to be properly before the Board, it must be raised in the Notice of Appeal, relate to the approval being appealed, and be within the Board's jurisdiction.

[4] The Board determined the following issues will be heard at the hearing:

1. Are the monitoring requirements in the Approval adequate to ensure the protection of the environment, including groundwater sources and Long Lake, while the dewatering of the extraction pits is taking place?
2. Do the other terms and conditions in the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits?

II. BACKGROUND

[5] On July 30, 2013, the Director, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Sustainable Resource Development (the "Director"), issued Approval No. 00328026-00-00 under the *Water Act* (the "Approval") to the Approval Holder authorizing the drainage of groundwater from aggregate extraction pits in SW-36-63-19-W4M near Long Lake, Alberta in Thorhild County.

[6] On August 9 and 16, 2013, the Board received Notices of Appeal from Ms. Bodil Jelhof Jensen¹ and Mr. Colin Brussiere, respectively, appealing the Approval.

¹ Ms. Bodil Jelhof Jensen filed an appeal with respect to the Approval (Appeal No. 13-010). Her appeal was resolved at the mediation meeting held on November 14, 2013. See: Board's letter, dated November 15, 2013.

[7] On August 22, 2013, the Board acknowledged the appeal and notified the Approval Holder and Director of the appeal.

[8] On October 1, 2013, the Board received a copy of the Director's Record. The Board provided copies of the Record to the Appellant and Approval Holder on October 3, 2013.

[9] A mediation meeting was held on November 14, 2013, with a follow-up mediation meeting on July 29, 2014, in Edmonton. No resolution was reached.²

[10] On July 31, 2014, the Board requested the Appellant, Approval Holder, and Director (collectively, the "Parties") provide any preliminary motions and to specify the issues for the hearing.

[11] The Board received responses from the Parties between August 8 and August 20, 2014.

[12] On August 29, 2014, the Board notified the Parties the issues for the hearing will be:

1. Are the monitoring requirements in the Approval adequate to ensure the protection of the environment, including groundwater sources and Long Lake, while the dewatering of the extraction pits is taking place?
2. Do the other terms and conditions in the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits?

III. SUBMISSIONS

A. Appellant

[13] The Appellant stated the Director's decision focused on the short term impact during the mining operation but did not address long term risks related to the development.

[14] The Appellant argued the decision was made without quantifiable, numeric data that proved the changes to the groundwater distribution in the development area would not permanently alter the aquifer or hydraulically alter the stress within the remaining land. He

² Only Ms. Jensen's appeal (Appeal No. 13-010) was resolved at the mediation meeting.

added that no soil mechanics in the riparian zone were studied to ensure it would be able to hold back the man-made lake and that any groundwater change would not result in slope failure.

[15] The Appellant stated there was insufficient hydrological modelling to quantify the consequences of the changes to the groundwater. The Appellant noted that terms such as “negligible” were used. The Appellant stated that if the changes were not quantified, then the effects of 10 year or 100 year flood events may not have been considered.

[16] The Appellant noted the groundwater in the development area contains heavy metals in concentrations up to 10 times greater than that found in Long Lake. The Appellant said there is a possibility that sand bed filtering can remove the heavy metals, so if 1.5 million cubic metres of aggregate are removed, there could be a permanent increase in the rate that heavy metals enter the lake.

[17] The Appellant asked that the Approval Holder be required to prove through numeric modelling that long term, permanent changes resulting from the project will have a negligible impact to Long Lake and the surrounding groundwater. He also asked the Approval Holder study how the soil mechanics will be altered and to quantifiably prove the slope stability will not be impacted.

[18] The Appellant stated the effects of flood years and other stresses need to be quantified, especially the impacts to the hydrology and soil mechanics to ensure the low lying regions of the riparian zone will not fail and cause the contents of the man-made lake to enter Long Lake “...in a rapid wave of water, soil and trees.”³ The Appellant said the worst case hydraulic stress should be quantified to determine if there are long term risks of an environmental disaster resulting from manmade changes in groundwater distribution and slope failure. The Appellant stated it would be prudent to prove the long term environmental safety of the project.

[19] The Appellant questioned which criteria, the Surface Water Quality Guideline or the Alberta Tier I Aquatic Life criteria, will be used to evaluate the water discharged into Long

³ Appellant’s Notice of Appeal, dated August 16, 2014, at page 4.

Lake and if the discharge water will have harmful substances in concentrations greater than what is currently in the lake water.

[20] The Appellant questioned whether air quality monitoring equipment would be required to ensure the dust suppression systems are effective given the possibility the handling of the water and aggregates may cause harmful substances, such as cadmium, to become airborne. He asked if dust levels would be continuously monitored in high risk areas, such as the rock crushing area and the area where aggregates are conveyed, to ensure dust management measures effectively remove the risk of heavy metal poisoning through inhalation.

[21] The Appellant expressed concern regarding the advertisement for the dewatering application. He noted the advertisement was in the Athabasca Advocate, but the majority of the Albertans affected by the decision do not live in the Athabasca area. The Appellant stated the stakeholders who may be exposed to the outflow containing harmful substances should also be notified, including the users of Amisk Lake and the Beaver River basin.

[22] The Appellant noted the heavy metal substances found in the piezometer wells varied in concentration and over time. He asked the dewatering not start until the reason for the in-situ change in concentration was proven, or else the consequences of removing the sand and gravel may not be known until years of accumulated damage to the lake after the project is over. The Appellant noted the concentration of the heavy metals such as cadmium decrease in concentration as the test wells get closer to Long Lake. The Appellant stated test wells and water sampling are needed where the water leaves the aquifer and enters the lake.

[23] The Appellant questioned how there would be no significant change in the flow when an 18.5 ha land mass is to be reduced down to 7.3 ha. He stated a finite element analysis or hydrologic simulation where the before and after conditions are modelled to determine the long term impacts to the groundwater flowing through the development are required. The Appellant noted drawings provided indicate groundwater level will be permanently reduced at the end of the project.

[24] The Appellant questioned if the dewatering would stop if periodic sampling indicated heavy metals exceeded the acceptable limits. The Appellant also questioned whether

the reclamation plan includes the removal of any soil contaminated with heavy metal precipitates in the settling pond or channel.

[25] The Appellant stated the Groundwater Review provided by the Approval Holder indicated the flow out of Long Lake to Amisk Lake and the rest of the Beaver River basin will carry heavy metals so concentrations will not increase to unacceptable levels in Long Lake. The Appellant questioned why Amisk Lake and the rest of the Beaver River basin were not considered in the area of study.

[26] The Appellant questioned whether the excavation will create a localized increase in hydraulic gradient and cause more seepage into the excavation that will have to ultimately be pumped into the lake.

[27] The Appellant stated that, based on the reduced land mass because of the end pit lake, there will be an increased gradient which will increase the flow from the aquifer into the lake.

B. Approval Holder

[28] The Approval Holder stated it wanted the Board to determine the Approval Holder had complied with the conditions of the Approval, and the Approval Holder has implemented all reasonable assessment methods to ensure the dewatering of the aggregate mining site does not adversely impact the water quality of the water wells in the area or Long Lake.

[29] The Approval Holder said the issue that should be heard is:

Did the Approval Holder apply a rigorous program to monitor dewatering discharge to the natural channel that flows to Long Lake?

C. Director

[30] The Director recommended the following issues be heard:

1. What are the risks to the aquatic environment from dewatering (i.e. draining the groundwater from the aggregate extraction pits)?

2. Do the terms and conditions of the Approval for dewatering reasonably mitigate those risks?

[31] The Director agreed the Appellant's concerns regarding groundwater movement and potential impacts to Long Lake are within scope, provided they relate to dewatering as authorized under the Approval.

[32] The Director noted the Appellant's concerns related to the extraction of gravel, the long term effects the extraction may have on the environment, and the design of the end pit lakes as to how they may transmit water and impact Long Lake. The Director noted the extraction of gravel and the reclamation design of the pits are authorized under the Surface Mineral Lease, which was granted under the *Public Lands Act*, R.S.A. 2000, c. P-40, and which has its own appeal mechanism.

[33] The Director stated the Appellant cannot use the Approval as a means to appeal the requirements of the Surface Mineral Lease.

[34] The Director acknowledged the Surface Mineral Lease Conservation and Reclamation Business Plan is incorporated into condition 3.1 of the Approval, but this was only done to set out the Dewatering Methodology at section 7.7 of the Business Plan and drawings 3 and 7, which were intended to clarify where the dewatering would occur and the steps to mitigate erosion. The Director stated the rest of the Surface Mineral Lease Conservation and Reclamation Business Plan is not within the scope of this hearing. The Director said this hearing is about his decision to authorize dewatering from a certain location, at a certain rate, and a certain volume per year, whether his decision created risks to the aquatic environment, and whether the Approval reasonably mitigates those risks.

[35] The Director noted the Appellant bears the onus of proving both the risks to the aquatic environment and whether the Approval reasonably mitigates those risks.

D. Appellant's Rebuttal Submission

[36] The Appellant referred to section 38 of the *Water Act* and noted the *Water Act* covers more than risks to the aquatic environment.⁴

[37] The Appellant stated his issues focus on the long term potential and cumulative effects which were missed in the Approval and are within the jurisdiction of the *Water Act*. He said there was no consideration for the fact the aquifer will be exposed by a 400 metre long manmade pit lake that will provide an easy path for water to flow within 50 metres of Long Lake.

[38] The Appellant argued the modification to the aquifer and the pit lake are a form of dewatering that was overlooked from the perspective of addressing the responsibilities listed in Section 38 of the *Water Act* and from the perspective of assessing water quality monitoring after the project is complete to determine remediation measures if problems develop.

[39] The Appellant stated that taking a narrow focus and considering only the short term dewatering neglects the hydrogeological changes being made that can introduce dewatering by other means over the long term. The Appellant argued such a narrow focus goes against the environmental appeal process that allows those who are directly affected an opportunity to have their issues heard. The Appellant stated a project proponent could avoid the difficult issues by

⁴ Section 38 of the *Water Act* provides:

- “(1) Subject to section 34, the Director may issue or refuse to issue an approval to an applicant to commence or continue an activity.
- (2) In making a decision under this section, the Director
 - (a) must consider, with respect to the applicable area of the Province, the matters and factors that must be considered in issuing an approval, as specified in an applicable approved water management plan,
 - (b) may consider any existing, potential or cumulative
 - (i) effects on the aquatic environment,
 - (ii) hydraulic, hydrological and hydrogeological effects, and
 - (iii) effects on household users, licensees and traditional agriculture users, that result or may result from the activity, and
 - (c) may consider
 - (i) effects on public safety, and
 - (ii) any other matters applicable to the approval that, in the opinion of the Director, are relevant.
- (3) The Director may issue an approval subject to any terms and conditions that the Director considers appropriate....”

applying for approval of only a small part of the overall impact, as in this case, the short dewatering of the extraction pit.

[40] The Appellant said his issues relate to the overall long term hydrological system which includes the pit lake.

[41] The Appellant argued the Approval Holder had not studied the hydrogeological effects brought on by the large scale excavation and modification to the groundwater. The Appellant stated a risk is created due to the changes in the distribution of the groundwater gradient that forces a greater gradient across the 50 metre setback to Long Lake. He said the increased gradient has hydraulic and hydrogeological significance and is, therefore, applicable to the Approval.

[42] The Appellant stated the excavation activities below the water table will result in the end pit lake which is a man-made reservoir. The Appellant noted the water table is five to seven metres above Long Lake at the north end of the development. The Appellant argued allowing an unmanaged and poorly understood man-made reservoir which is elevated from a recreational lake puts the public safety at risk. The Appellant said the risk is exacerbated by neglecting to assess the consequences of a flood year. The Appellant stated a reservoir is the accumulation of potential energy over a period of time, and if stressed beyond its limit, the energy can be released abruptly, causing irreversible damage.

[43] The Appellant stated the exposed groundwater and formation of a pit lake creates a discharge hazard given the pit lake is higher than Long Lake. He said the risk to public safety brought on by work tied to the Approval is within the jurisdiction of the *Water Act*.

[44] The Appellant said if the pit lake fails, it will likely flow downhill, across the 50 metre buffer zone, and into Long Lake. He stated that if the muskeg in the buffer zone remains intact and the un-engineered and un-monitored pit lake does not breach its bank, the aquifer will still be modified by the pit lake that provides an easy path for water flow to within a 50 metre setback from Long Lake. The Appellant said that, given the potential and cumulative effects on the aquatic environment, there needs to be a consideration of the potential water quality of the pit lake by looking at the groundwater that will create it.

[45] The Appellant noted exceedances in cadmium, selenium, phosphorous, iron, copper, and zinc in water samples taken from piezometers in the area of the gravel pit from 2012 to 2014. The Appellant stated these exceedances raise concerns regarding the cumulative impact on the aquatic environment given the long term, unintended dewatering from the pit lake into Long Lake.

IV. ANALYSIS

[46] Section 95(2) of the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12 (“EPEA”), allows the Board to set the issues that will be heard at the hearing.⁵

[47] In order for an issue to be properly before the Board, it must be: (1) included in the Notice of Appeal; (2) relevant to the approval or licence being appealed; and (3) within the Board’s jurisdiction.

[48] The Appellant raised a number of different concerns which can be categorized as: (1) the end pit lake, including slope stability, potential impacts on groundwater, and hydrological impacts between the end pit lake and Long Lake; (2) water quality entering Long Lake from the dewatering process; (3) impacts on surrounding groundwater resulting from the dewatering; and (4) long term impacts on surrounding groundwater.

[49] The Approval allows for the dewatering of the aggregate pits. Dewatering is the active removal of the water from the excavation pits. That is the only activity the Approval has been issued for. The Approval specifies the volume of water that can enter Long Lake from the dewatering process and the location of the offsite dewatering. In addition, it specifies the requirements for monitoring, including location and number of monitoring wells, and frequency and method of taking the measurements. The Approval also requires the Approval Holder to conduct water analysis of the discharge water and at two points in Long Lake. The rest of the operations and reclamation of the site are authorized under an approval issued by Public Lands.

⁵ Section 95(2) of EPEA states:

“Prior to conducting a hearing of an appeal, the Board may, in accordance with the regulations, determine which matters included in notices of appeal properly before it will be included in the hearing of the appeal....”

The Board only has the authority to consider the Director's decision to issue the Approval; it cannot assess the adequacy of the approval issued by Public Lands.

[50] The Appellant is concerned with the stability of the end pit lake and if the end pit lake will impact groundwater flows in the area and potentially Long Lake. The end pit lake is part of the reclamation plan for the site. The construction and maintenance of the end pit lake fall under the approval issued by Public Lands, not the Director's decision to issue the Approval under the *Water Act*. Therefore, issues related to the end pit lake are not within the Board's jurisdiction and will not be heard at the hearing.

[51] The Board notes the Appellant's concern regarding the end pit lake and the potential impacts resulting from the end pit lake, but none of the terms and conditions in the Approval apply to the end pit lake or any other part of the operations beyond dewatering, and therefore, the Board does not have the jurisdiction to consider the end pit lake or reclamation of the site.

[52] The Appellant raised concerns regarding the potential impacts dewatering could have on Long Lake and the surrounding groundwater. As the potential impacts are related to the dewatering activity, this is a valid issue before the Board. However, long term impacts of the project as a whole are not validly before the Board. After the project is complete, proper reclamation and continued monitoring of the site falls under the Public Lands approval to ensure no unforeseen environmental impacts occur.

[53] The Appellant raised issues related to the quality of the water that will be pumped from the aggregate pits, specifically the level of heavy metals in the water and whether they will increase as a result of the extraction process. The Approval requires the Approval Holder to monitor the volume of water pumped into Long Lake and to conduct chemical analysis and other tests to determine the water quality being removed off-site and into Long Lake. The monitoring requirements also require monitoring of water levels in monitoring wells and a water well to assess impacts on groundwater sources. Therefore, the Appellant's concern regarding the hydrological, hydrogeological, and hydraulic effects of dewatering, including impacts to groundwater sources and Long Lake, are within the Board's jurisdiction. The Board finds the

issue of monitoring during the dewatering process is validly before the Board and will be an issue to be heard at the hearing.

[54] Therefore, the first issue that will be considered by the Board is:

Are the monitoring requirements in the Approval adequate to ensure the protection of the environment, including groundwater sources and Long Lake, while the dewatering of the extraction pits is taking place?

[55] Public safety is a concern with all proposed projects. In this case, the Appellant argued that public safety will be impacted if the end pit lake fails and volumes of untested water will enter Long Lake. The effectiveness of the end pit lake is not a matter under the Approval being appealed. However, the impact to public safety as it relates to the quality of the water entering Long Lake as a result of the dewatering process is relevant to the Approval being appealed and is a valid issue before the Board that is captured in the issue regarding monitoring requirements.

[56] Most projects that receive an approval or licence will have an impact on the environment. The purpose of issuing an approval is to ensure the potential environmental impacts are prevented or mitigated. It is the specific terms and conditions of an approval that specify what the approval holder can do under the approval. Therefore, the Board considers the issue of whether the terms and conditions of the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits as a valid issue.

[57] The second issue that will be heard by the Board is:

Do the other terms and conditions in the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits?

[58] The Appellant raised questions regarding dust suppression on the site. Again, this is part of the operations of the site that fall under the jurisdiction of the Public Lands approval.

[59] The Appellant noted the notice of the application was only published in the local newspaper even though many of those who own properties around Long Lake do not receive the local paper because they do not live in the area. The Board notes that even though the Appellant

would have preferred a broader notification base, the notification that was provided meets the legislative requirements.

[60] The Appellant argued the Approval Holder could bypass contentious matters by applying for an approval of only a small part of the overall impact. When the Director made his decision to issue the Approval, he reviewed all of the information before him, including the information that was also provided to Public Lands when it made its decision to issue an approval. Regardless of who issues an approval, the Approval Holder must comply with the terms and conditions of all of the applicable approvals. If terms and conditions in more than one approval apply to the same thing, the more stringent requirement must be followed.

[61] Therefore, the issues for the hearing are:

1. Are the monitoring requirements in the Approval adequate to ensure the protection of the environment, including groundwater sources and Long Lake, while the dewatering of the extraction pits is taking place?
2. Do the other terms and conditions in the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits?

[62] Under section 95(4) of EPEA, the Board will not hear evidence on any other issues at the hearing.⁶

V. DECISION

[63] The following issues will be heard at the hearing:

1. Are the monitoring requirements in the Approval adequate to ensure the protection of the environment, including groundwater sources and Long Lake, while the dewatering of the extraction pits is taking place?
2. Do the other terms and conditions in the Approval properly mitigate any potential environmental impacts caused by the dewatering of the extraction pits?

[64] The Parties are reminded the Board will not consider any other issues.

⁶ Section 95(4) of EPEA provides:

“Where the Board determines that a matter will not be included in the hearing of an appeal, no representations may be made on that matter at the hearing.”

Dated on October 6, 2014, at Edmonton, Alberta

“original signed by”
D.W. Perras
Board Chair