Alberta Energy Regulator

Value Creation Inc.

Applications to Amend the Heartland Upgrader Project Approvals

Alberta's Industrial Heartland Area

May 8, 2018

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Decision 2018 ABAER 003: Value Creation Inc., Applications to Amend the Heartland Upgrader Project Approvals, Alberta's Industrial Heartland Area

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Applications 1861615 and 005-203303

Decision

[1] The Alberta Energy Regulator (AER) approves the applications made under the *Oil Sands Conservation Act* (1861615) and *Environmental Protection and Enhancement Act* (005-203303) to amend, respectively, approvals 10330A and 203303-01-00 subject to the conditions in appendix 2.

The Applications

[2] On June 17, 2016, Value Creation Inc. (VCI) applied under the *Oil Sands Conservation Act* (*OSCA*) and the *Environmental Protection and Enhancement Act* (*EPEA*) to amend its existing AER approvals for the Heartland Upgrader Project, a three-phase oil sands processing plant (i.e., bitumen upgrader). The project is located 15 kilometres (km) northeast of Fort Saskatchewan, Alberta in the southeast and southwest quarters of Section 10, Township 56, Range 21, West of the 4th Meridian.

Background

[3] The Heartland Upgrader Project was initiated by applications filed by BA Energy Inc. in 2004. Those applications underwent a full environmental impact assessment that regulators reviewed and considered. Heartland Upgrader Project applications were subsequently approved by the Alberta Energy and Utilities Board (EUB; predecessor to the AER) and Alberta Environment in 2005:

- *OSCA* approval No. 10330, issued by the Alberta Energy and Utilities Board in September 2005
- *EPEA* Approval No. 203303-00-00, issued by Alberta Environment in August, 2005

[4] These approvals authorized BA Energy Inc. to construct the Heartland Upgrader Project in three phases. The first phase of the project was scheduled for completion by late 2006. However, the project did not proceed on that schedule.

[5] In 2009, BA Energy Inc. notified the Energy Resources Conservation Board (predecessor to the AER) of its plans to suspend the Heartland Upgrader Project. The board advised BA Energy Inc. that approval 10330 would remain in effect until BA Energy Inc. was restructured and the investment climate was more favourable.

[6] In 2014, BA Energy Inc. applied to the AER under the *OSCA* and the *EPEA* to amend its approvals for the Heartland Upgrader Project.

[7] In February 2015, BA Energy Inc. amalgamated with VCI under the *Business Corporations Act*. The amalgamation included VCI taking ownership of the Heartland Upgrader Project. The AER approved an application to transfer approval 10330 from BA Energy Inc. to VCI and revised approval 203303-00-00 to show VCI as the approval holder. The amendments applied for by BA Energy Inc. in 2014 were subsequently approved for VCI:

- *OSCA* amendment approval 10330A issued in March 2015 by the AER
- *EPEA* amendment approval 203303-00-01 issued in March 2015 by the AER

[8] In July 2015, VCI applied under the *EPEA* to renew approval 203303-00-00. In July 2016, the AER renewed the *EPEA* approval as 203303-01-00 for VCI's project. As a result of renewing the approval, previous *EPEA* approvals were cancelled.

[9] In June 2016, VCI applied under the *OSCA* and the *EPEA* to amend the project. These are the applications that are the subject of this hearing.

[10] The current applications propose to amend the Heartland Upgrader Project. The amendments propose changing the project design to produce ultralow sulphur diesel, hydrotreated naphtha, and premium synthetic crude oil. The amendments also propose removing one of the three phases of the project and adding a Clean Oil Refining unit to each of the remaining two phases. The applications initially proposed reducing the project's processing capacity from 41 400 cubic metres per stream day (m^3/sd; 260 400 barrels per stream day [bbl/sd]) to 27 601 m^3/sd (173 600 bbl/sd) of diluted bitumen. In a subsequent hearing submission, VCI revised the proposed processing capacity to 29 948 m^3/sd (188 373 bbl/sd) of diluted bitumen. The name of the project is to be changed to the Heartland Processing Plant.

The Hearing

[11] The AER decided to hold a hearing to consider the applications. The hearing was held before hearing commissioners C. Chiasson (presiding), R. C. McManus, and L. J. Ternes.

[12] The AER issued an initial notice of hearing on September 26, 2017, which set deadlines for filing requests to participate. On September 26, George and Barbara Percy were advised in a letter that the hearing panel would accept a previously filed letter as their official request to participate in the hearing. The AER received no other requests to participate. Those who took part in the hearing are listed in appendix 1.

[13] This was an oral hearing, and parties were advised on participation, scope, the submission schedule, and the hearing date in a letter dated October 31, 2017. The hearing was set to begin in Sherwood Park, Alberta on February 6, 2018, and was scheduled for two days.

[14] The hearing began on February 6 and was closed following oral arguments on February 7, 2018.

[15] The hearing focused on the proposed amendments' impacts on the environment, economics, social factors, and landowners. If granted, the amendments would enable VCI to modify its upgrading facility and diversify its production by adding refining capability. The applications would reduce the project's processing capacity but increase the amount of sulphur produced because more sulphur would be removed from bitumen as more refined products are produced. The project footprint and water use would remain the same, and noise levels would be reduced.

[16] The Percys did not object specifically to the proposed amendments. Their position was that they no longer want to live in this area due to the extent of industrial development and because few other residents live in the area. The focus of their submissions was on being bought out; they also raised concerns about potential effects on their water well and about emergency planning and response.

Legal and Decision Frameworks

[17] As set out in section 2(1) of the *Responsible Energy Development Act* (*REDA*), the AER's mandate is to provide for the efficient, safe, orderly, and environmentally responsible development of energy resources in Alberta.

[18] In making this decision, section 15 of *REDA* requires the panel to consider any factor prescribed by the regulation, including the interests of landowners. Section 3 of the *REDA General Regulation* lists the following factors that the panel must consider:

- The social and economic effects of the energy resource activity
- The effects of the energy resource activity on the environment
- The impacts on a landowner as a result of the use of the land on which the energy resource activity is or will be located

[19] The decision must be consistent with the purpose and provisions of the *OSCA* as set out in section 3, which includes the following:

- To ensure orderly, efficient and economical development in the public interest of the oil sands resources of Alberta, and
- To ensure the observance, in the public interest, of safe and efficient practices in the exploration for and the recovery, storing, processing and transporting of oil sands, discard, crude bitumen, derivatives of crude bitumen and oil sands products.

[20] The decision must be consistent with *EPEA* requirements, which include ensuring that an amended project meets *Alberta Ambient Air Quality Objectives and Guidelines* (*AAAQO*). Project sulphur recovery must meet *Interim Directive ID 2001-03: Sulphur Recovery Guidelines for the Province of*

Alberta (EUB 2001), and nitrogen dioxide emissions must meet requirements set out in the federal *Multi-Sector Air Pollutants Regulations* (SOR/2016-151).

[21] The decision must also be consistent with requirements of AER *Directive 023: Guidelines Respecting an Application for a Commercial Crude Bitumen Recovery and Upgrading Project* and *Directive 038: Noise Control*.

[22] In reaching our decision, we have considered all relevant materials constituting the record of this proceeding, including the evidence and arguments provided by each party. Accordingly, references in this decision to specific parts of the record are intended to 1) help the reader understand the AER's reasoning on a particular matter and 2) do not mean that the AER did not consider all relevant portions of the record with respect to that matter.

[23] Based on the legislative framework above and on the evidence of the parties, the panel has determined that the following are the key issues and questions:

- What are the potential environmental effects of the proposed amendments to the project as approved in 2015, and can they be adequately mitigated?
- What are the potential economic effects of the proposed amendments to the project as approved in 2015, and can they be adequately mitigated?
- What are the potential social effects of the proposed amendments to the project as approved in 2015, and can they be adequately mitigated?
- If the proposed amendments are approved, can the project plant as amended be operated in a manner that protects the safety of surrounding landowners and residents?
- If the proposed amendments are approved, would this project still be in the public interest?

Potential Environmental Effects

Environmental Issues

[24] For these applications, the hearing panel will address the following environmental matters:

- Air
- Nitrogen
- Sulphur
- Groundwater

Air

[25] The proposed amendments to the project would result in more sulphur dioxide and less nitrogen dioxide emitted than would have been emitted for the project as approved in 2015. Changes to the refining process would increase the amount of sulphur removed from the raw bitumen (therefore increasing sulphur dioxide emissions) and would reduce the amount of nitrogen dioxide emitted from the amended project.

Context & Background

[26] In Alberta, ambient air quality standards are set in the *AAAQO*. Industrial operators must design and operate their facilities to ensure that ambient air quality remains below the air quality objectives. Regulators use the *AAAQO* to assess facility design and performance.

[27] This project is located in Alberta's Industrial Heartland (AIH), a region zoned “heavy industrial” by four municipalities to facilitate industrial development and operations. There is extensive industrial activity in this region, primarily focused on hydrocarbon processing.

[28] The region, including the project location, falls under the *Capital Region Air Quality Management Framework* (*Capital Region Framework*). The *Capital Region Framework* addresses air contaminants of concern, including sulphur dioxide and nitrogen dioxide, as part of its mandate to manage ambient air quality in the Capital Region, which includes AIH.

[29] The *Capital Region Framework* sets threshold levels for these contaminants. These levels, if exceeded, act as a warning and trigger to initiate air quality management actions and avoid reaching regulated air quality limits. For nitrogen dioxide and sulphur dioxide, the threshold levels are linked to the standards set in the *AAAQO*.

[30] VCI's application proposes to change its project by removing one of three approved upgrading phases and adding a Clean Oil Refining unit to each of the remaining two phases. Removal of one upgrading phase will reduce the project's total processing capacity from 41 400 m^3/sd (260 400 bbl/sd) of diluted bitumen to 29 948 m^3/sd (188 373 bbl/sd). The footprint of the project will not change. VCI would further refine product from the two upgrading phases into ultralow sulphur diesel, hydrotreated naphtha, and premium synthetic crude oil. The amended project would generate more sulphur due to refining of diluted bitumen to lower sulphur products.

[31] In its evidence, VCI provided two forms of air quality information as part of its application materials. It provided ambient air quality monitoring data from air monitoring stations in the area surrounding the project. This monitoring data records actual air quality levels from existing sources in the area.

[32] VCI also provided predictions based on air quality modelling. VCI's air quality modelling took into account emissions from sources over a 120 km by 120 km area centred over the project location.

[33] Air quality modelling predictions are designed to be quite conservative. Modelling considers the highest anticipated emissions over a modelling area assuming worst case meteorological (wind and weather) conditions from an air quality perspective. Air quality was modelled for several cases, including a baseline case with emissions from all existing sources in the modelling area, and an application case that combines baseline emissions with emissions anticipated to arise from these applications. Modelling was used in these applications to predict both anticipated maximum emissions at the project boundary, and within the larger modelling area.

[34] VCI also presented air quality data from air quality monitoring stations in the region that continuously measure actual air quality parameters. These actual, measured air quality values derived from monitoring are typically less than the predicted levels identified in air quality models.

[35] In heavily developed areas such as the AIH, regional air quality modelling assessments may predict exceedances of ambient air quality objectives. Because these modelling assessments are intended to be predictive and conservative, to balance any conservative bias in the predictions, actual air quality measured over time through ambient air quality monitoring is also considered in regulatory decisions. This monitoring shows whether actual measurements support predictions of exceedances generated by air quality modelling. Regulators also require that ambient air quality be monitored to ensure that exceedances are not occurring and to implement proactive management activities, such as those under the *Capital Region Framework.*

[36] At the hearing, VCI's air quality expert explained the distinction between these forms of air quality information. He said that monitoring data provides a more realistic picture of air quality than modelling results because it measures what is actually happening with air quality levels in an airshed.

Nitrogen

[37] Burning natural gas in this project's boilers and heaters will produce nitrogen dioxide, which is one of the air contaminants covered by the *Capital Region Framework.* It is the contaminant of most concern in the region. It can cause negative respiratory impacts and affect vegetation. Nitrogen dioxide is also a component of smog, which negatively affects health.

[38] VCI's application materials indicate that nitrogen dioxide levels will be less for the amended project than under the current approval. The ambient monitoring data indicated that actual nitrogen dioxide levels in the project's area are below air quality objectives. Its air quality modelling predicted nitrogen dioxide levels below air quality objectives at the project boundary and in the region. The air quality modelling also predicted that these amendments would result in a 0.3 per cent decrease in predicted regional nitrogen dioxide levels as compared to the currently approved project. During the

hearing, VCI indicated that it would comply with new nitrogen dioxide requirements imposed by the federal *Multi-Sector Air Pollutants Regulations*.

[39] The Percys provided no evidence related to nitrogen dioxide or air quality generally, and they did not challenge VCI's evidence on these matters.

[40] The panel notes that air quality modelling indicated that nitrogen dioxide levels expected at the project boundary from these applications will be less than the air quality objectives, and it predicted a small decrease in the regional nitrogen dioxide levels. We also find it significant that these applications would result in lower nitrogen dioxide levels for the project and that VCI has indicated it would comply with the new federal *Multi-Sector Air Pollutants Regulations* requirements ahead of the regulations' transition schedule.

[41] The panel finds that VCI meeting the requirements of the federal *Multi-Sector Air Pollutants Regulations*, as it has agreed to do, will adequately control project emissions of nitrogen dioxide.

Sulphur

[42] More sulphur would be produced under these applications than under the project approved in 2015. The change results from planned refining of diluted bitumen to more refined, lower-sulphur products, which will create more sulphur by-product than the currently approved upgrading process. The greater sulphur production would include projected increases in sulphur dioxide, one of the air contaminants covered by the *Capital Region Framework*. Sulphur dioxide can negatively and directly affect human health and plant life. It is also a component of smog, which negatively affects health.

[43] VCI's application material indicated that the amended project would produce more than three times the sulphur produced under the current approval. Almost all of the sulphur produced will be liquid sulphur, which will be stored onsite temporarily before being shipped offsite to third parties for further processing and sale. The temporary onsite storage will be in a below-ground sulphur pit. This pit will include a degassing compartment. VCI will incinerate any sulphur gases from this compartment.

[44] In the application materials, VCI predicted that sulphur dioxide emissions, based on 98.7 per cent sulphur recovery, would increase from 4.43 tonnes per day to 11.5 tonnes per day. The ambient monitoring data indicated that sulphur dioxide levels in the project area are well below air quality objectives, as table 1 indicates.

Table 1. Ambient monitoring data: sulphur dioxide[1]

Monitoring station	Maximum	99.9th percentile	99th percentile	90th percentile	Median	Mean	AAAQO[2]
	Statistical descriptor[3] (µg/m³/hour)						
Bruderheim	89.1	36.7	18.3	5.2	0.0	2.2	450
Elk Island	70.7	28.8	15.7	2.6	0.0	1.0	
Fort Saskatchewan	68.1	41.9	15.7	2.6	0.0	1.3	
Lamont County	99.5	41.9	23.6	7.9	0.0	2.5	
Average	**81.9**	**37.3**	**18.3**	**4.6**	**0.0**	**1.8**	
	Statistical descriptor (µg/m³/24 hour)						
Monitoring station	**Maximum**	**99.9th percentile**	**99th percentile**	**90th percentile**	**Median**	**Mean**	**AAAQO[2]**
Bruderheim	16.9	16.3	10.8	4.4	1.7	2.2	125
Elk Island	14.0	10.5	6.0	2.6	0.5	1.0	
Fort Saskatchewan	12.4	9.9	7.1	3.5	0.5	1.3	
Lamont County	21.2	18.1	14.5	5.7	1.7	2.5	
Average	**16.1**	**13.7**	**9.6**	**4.1**	**1.1**	**1.8**	
	Statistical descriptor (µg/m³/monthly)						
Monitoring station	**Maximum**	**99.9th percentile**	**99th percentile**	**90th percentile**	**Median**	**Mean**	**AAAQO[2]**
Bruderheim	3.9	3.2	3.2	2.5	2.1	2.2	30
Elk Island	2.7	1.5	1.5	1.4	0.8	1.0	
Fort Saskatchewan	3.3	2.3	2.3	1.6	1.1	1.3	
Lamont County	4.7	3.8	3.8	3.2	2.6	2.5	
Average	**3.6**	**2.7**	**2.7**	**2.2**	**1.7**	**1.8**	
	Statistical descriptor (µg/m³/year)						
Monitoring station	**Maximum**	**99.9th percentile**	**99th percentile**	**90th percentile**	**Median**	**Mean**	**AAAQO[2]**
Bruderheim	2.2	-	-	-	2.2	2.2	20
Elk Island	1.0	-	-	-	1.0	1.0	
Fort Saskatchewan	1.3	-	-	-	1.3	1.3	
Lamont County	2.5	-	-	-	2.5	2.5	
Average	**1.8**	-	-	-	**1.8**	**1.8**	

1. Data are for the calendar year 2015, retrieved from AEMERA data warehouse (AEMERA 2016)
2. *Alberta Ambient Air Quality Objectives and Guidelines Summary* (GoA 2013b)
3. µg: micrograms (1×10^{-6} kilograms) per cubic metre

[45] The air quality modelling predicted that sulphur dioxide levels at the project boundary would be below air quality objectives in both baseline and application cases. In the broader modelling area, the air quality modelling predicted that maximum sulphur dioxide levels would exceed air quality objectives for both baseline and application cases. This is due to another industrial facility four kilometres northwest of this project that has relatively high sulphur dioxide emission levels. VCI said that the sulphur dioxide from these applications would contribute little to regional air quality because other facilities in the area control the maximum sulphur dioxide concentration. VCI's air quality modelling indicated that the amendment applications would increase regional sulphur dioxide emissions by 5.3 per cent.

[46] VCI proposed using Superclaus technology in the project's sulphur recovery units to recover more than 98.7 per cent of the sulphur feeding into the sulphur recovery units and to limit amounts released to the environment. The Superclaus process initiates chemical reactions that break hydrogen sulphide and sulphur dioxide down into liquid sulphur and water. The liquid sulphur would be drained into the sulphur pit and handled as discussed earlier in this section. Any unreacted sulphur gases would be sent to the incinerator.

[47] VCI confirmed that Superclaus technology is capable of recovering as much as 99.2–99.3 per cent of the sulphur. During the hearing, it stated that it could meet that sulphur recovery level for this project, if required by the AER. VCI will ensure redundancy in the sulphur recovery system, and make the sulphur recovery operations more reliable, by having spare critical equipment available.

[48] The Percys provided no evidence about sulphur or sulphur recovery and did not challenge VCI's evidence on this matter.

[49] VCI's proposed sulphur recovery level of 98.7 per cent would comply with AER requirements under *Interim Directive ID 2001-3: Sulphur Recovery Guidelines for the Province of Alberta*. Superclaus sulphur recovery technology is currently considered industry best practice. However, the panel is concerned about air quality modelling predictions that the amended project will add 5.3 per cent to regional sulphur dioxide emission levels and about predicted regional exceedances of sulphur dioxide limits in an area already facing concerns about cumulative effects on air quality.

[50] The *Capital Region Framework* includes guiding principles that emphasize reversing air quality trends and not reaching limits, and it seeks continuous improvement through application of practicable control technology to prevent pollution. This framework encompasses the project's location and deals with sulphur dioxide as a regional air contaminant of concern.

[51] We note that the AER requires other refineries in the region to achieve higher sulphur recovery levels than required by *Interim Directive ID 2001-03*. We also note VCI's confirmation that it would meet the 99.3 per cent recovery level, if required by the AER. AER calculations indicate that a 99.3 per cent sulphur recovery level would result in 5.3 tonnes per day of sulphur dioxide emissions and a 1.1 per cent increase to regional emissions of sulphur dioxide.

[52] Having considered VCI's proposed sulphur recovery measures, Superclaus technology capacities, regional air quality conditions, and the *Capital Region Framework*, the hearing panel finds that the proposed sulphur recovery measures, together with the condition we have imposed on sulphur recovery levels, will adequately address impacts of sulphur production from these applications.

Condition of Approval

[53] VCI shall use a design sulphur recovery criteria of 99.3 per cent and meet a minimum sulphur recovery of 99.0 per cent on a calendar quarter-year basis for all phases of this project.

Groundwater

[54] The Percys are concerned that these applications might affect local groundwater and their water well.

[55] The project's source of process water is the North Saskatchewan River. VCI holds a separate *Water Act* licence, which is not included in these applications, to divert this water from the river. The project's operations recycle water within its processes, and any remaining effluent will be disposed of through deep well injection on site.

[56] These applications do not change the project's water source, water treatment process, or disposal method. VCI's evidence indicated that there would be no change from the current approvals regarding potential groundwater impacts. It indicated that some surficial dewatering on site might be required for construction purposes.

[57] While the Percys raised concern that these applications might adversely affect their water well, they did not provide any specific evidence of potential impacts, nor did they challenge VCI's evidence on water matters. We note that the current approvals for this project include groundwater monitoring requirements that would continue to apply if these applications are approved.

[58] These applications propose no changes to the current approvals for water use and treatment. The panel notes that the Percys provided no evidence to substantiate their concerns about effects on their water well.

[59] The panel finds that because these applications propose no changes to water use or treatment, the applications will not adversely affect water resources, and local and regional surface and groundwater will be adequately protected.

Potential Economic Effects

[60] Under *REDA*, the hearing panel is required to consider the economic effects of these applications. We also need to ensure that our decision is consistent with *OSCA* requirements that Alberta's oil sands resources be developed in an orderly, efficient, and economical way. These applications change, from the current approval, some of this project's economic aspects, particularly the project's capital cost. VCI's evidence indicated that the changes proposed by these applications would increase the project's capital cost by $1 billion, to a total of $3 billion. It anticipates that about 70 per cent of capital expenditures will be within Alberta, and that 75 per cent of the Alberta expenditures will be in the project region.

[61] VCI suggested that these applications would add value to oil sands resources by producing more refined products that can be moved to markets more easily.

[62] The panel accepts VCI's evidence about the anticipated economic benefits of these applications and of the project as a whole. Given the current pipeline transportation constraints for Alberta resources, we find the potential that these applications will produce more refined products and diversify resource marketing will help with continued development of Alberta's oil sands resources. Taking into account the capital expenditures and value-added production that would result from these applications, the panel finds that the applications would contribute positively to the economies of Alberta, AIH, and Strathcona County.

Potential Social Effects

[63] Under *REDA*, the hearing panel is required to consider the social effects of these applications. VCI carried out a new socioeconomic assessment for these applications for the project study region, which included the Edmonton Census Metropolitan Area and the County of Lamont, focusing on workforce impacts, accommodation, traffic, and transportation.

[64] The application materials predicted that the workforce would peak at about 1000 people during phase 1 construction, about 1750 people during phase 2 construction, and 209 people during operations. Given employment rates in the project study region, VCI anticipated that workers who live in the region could largely fill project employment needs. It also indicated that there is excess accommodation capacity within AIH to meet the demands of temporary workers.

[65] VCI estimated that traffic during construction will peak at 1050 two-way trips per day in 2022 and that there will be another 200–250 two-way trips per day of heavy equipment carrying construction materials and equipment. Materials and equipment could also be transported by rail to the project site. VCI anticipated that traffic to the project site would travel along three major routes—highways 15, 16, and 21, and along range roads 213 and 214 and township road 560 closer to the project site. VCI noted that it will require county permits to transport heavy equipment on roads, and it might require additional permits for other routes as needed. It indicated that permits would be acquired as construction plans and detailed engineering are prepared.

[66] During the hearing, VCI indicated that these traffic count estimates assume that all employees will travel by private vehicle and will come from within the region. VCI has not yet developed busing or other transportation strategies to reduce transportation and traffic impacts—it indicated that this would be done as construction plans and detailed engineering are prepared. VCI also noted that it belongs to the Northeast Capital Industry Association, where traffic and other issues are discussed. VCI agreed that it would provide its transportation strategies, including busing plans, to the AER.

[67] The Percys said that the area is currently affected by traffic congestion on roads to industrial sites. However, they did not provide information directly linking congestion to these applications. Detailed discussion of the Percys' access to area roads and their ability to travel in the area follows in the landowner impact section, later in this decision.

[68] With respect to workforce impacts, the panel notes the likelihood that people who already live in the project study region will meet most of the workforce needs arising from these applications.

[69] With respect to traffic and transportation, the panel notes that the project is located in a heavy industrial zone that has been planned with an expectation of significant development and movement of workers and materials. We also note that VCI has ongoing discussions with Strathcona County about road use and access to the project site.

[70] The panel also notes that workforce travel might contribute more air contamination to the regional airshed. Transportation management strategies such as busing and carpooling will help manage the impacts of vehicle emissions on air quality. As a result, the panel expects that VCI will develop and use busing and carpooling strategies for its workforce to limit impacts on air quality, traffic, and road infrastructure in the region.

[71] The panel finds that VCI's workforce, accommodation, traffic, and transportation plans for these applications are reasonable and will minimize the risk of adverse social impacts.

Impacts on Landowners

[72] Section 15 of *REDA* directs the panel to consider, among other things, "…. any factor prescribed by the regulations, including the interest of the landowners." For these applications, the panel must consider how amending an existing approved project affects the Percys' interest.

[73] The scope of this hearing was limited to the impacts, and to the acceptability of the impacts, of the amendment applications. The previous project approved by *EUB 2005-079* as amended in 2015, namely the approval to construct a three-phase oil sands processing plant, remains in effect. This part of our decision will focus on the impacts that the proposed amendments to the existing approvals will have on the Percys' interests as framed in the hearing scope set out in the panel's letter of October 31, 2017. Specifically, we address

- emergency planning and response,
- traffic impacts, and
- impacts on the Percys' property.

Emergency Planning and Response

[74] The Percys expressed concern about their safety and about the project's emergency response. They are concerned that in an emergency, their evacuation might not be possible. Mr. Percy testified that he believes that his options in an emergency are very limited. He has few neighbours left to help evacuate his livestock. In his view, traffic is congested, summer forest fires are becoming common, and road conditions are poor. Mrs. Percy testified that three sets of railroad tracks must be crossed to travel seven kilometres south from their property. Rail traffic is busy and the Percys are concerned that railway and road crossings could be blocked in an emergency. The only way to avoid rail tracks when leaving the Percy property is to travel north over the Vinca Bridge and the Fort Saskatchewan Bridge.

[75] VCI committed to preparing a site-specific emergency response plan (SSERP) to address the Percys' concerns. The SSERP will include all applicable governing regional, municipal, and provincial agencies, and industry entities that provide support during emergencies. The SSERP will include manuals and ongoing "tabletop" emergency scenario exercises to help VCI employees prepare for a potential emergency. A major exercise, including equipment deployment, is scheduled every three years.

[76] VCI calculated that the Emergency Planning Zone (EPZ) for its project is a 2.4 km radius from the main sulphur emission source. It stated that the Percy residence is just outside of the EPZ. However, it committed to include the Percys in the SSERP, including consulting with them as part of the preparation process.

[77] When AER counsel asked whether the Percys would help VCI develop an SSERP, Mr. Percy responded, "It would be out of preservation."

[78] The panel understands that AER *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry* does not apply to upgrader projects. It accepts that VCI's commitment to use *Directive 071* for guidance when preparing its SSERP is voluntary and is not an AER requirement for this project.

[79] The Percys did not present evidence that directly linked their safety concerns to the changes proposed by the amendment applications. Their concerns related more broadly to the project's construction and operation. The panel notes from the Percys' evidence that they appear to have a northern route that would lead them out of the project area in the event of an emergency at the VCI project site.

[80] This panel finds that VCI's commitment to develop an SSERP that complies with *Directive 071* and that is to be submitted to the AER for approval before construction and updated before operations will adequately address the Percys' safety and evacuation concerns.

Condition of Approval

[81] VCI shall provide a site specific emergency response plan (SSERP) to the AER and the Percys that has been deemed technically complete in accordance with *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry* prior to construction. VCI shall also update the SSERP and submit it to the AER for approval and to the Percys for information prior to commencement of operations. The SSERP shall use a modified Emergency Planning Zone that includes the Percys' residence and property.

Traffic Impacts

[82] The Percys said that they had concerns about traffic and dust arising from the project's construction and operation. As discussed above, much of the Percys evidence that traffic will increase during construction and operation focused on the effectiveness of evacuation during an emergency. It also related to general concerns, in their view, with damage to roads and current traffic congestion that has been increasing with recent industrial developments. The impact of traffic in the event of an evacuation incident will be addressed by a VCI SSERP that includes the Percys.

[83] VCI anticipates that traffic will increase during construction and operations and said that the area is designated for industrial development and fluctuating traffic volumes. In its application materials, VCI committed to mitigating traffic impacts during project construction. It plans to work closely with Strathcona County to assess area traffic conditions, and to undertake initiatives that could reduce traffic volume. Such initiatives could include busing during peak construction periods and occasional incentives to carpool to reduce personal vehicle usage. VCI committed to providing a project busing policy and strategy to the AER, after construction plans and detailed engineering are completed.

[84] The panel finds that traffic will increase during construction and also during operations. The panel notes that the area is designated for industrial development in AIH, and as such, municipal infrastructure is designed for fluctuating traffic volumes. We find that the applicant's commitment to work closely with Strathcona County to assess traffic and to undertake initiatives to reduce traffic volume will address the impacts adequately.

Impacts on the Percys' Property Value

[85] Section 15 of *REDA* requires us to consider landowner interests as part of this hearing. Section 3 of the *REDA General Regulation* further requires that we consider the impacts on a landowner as a result of the use of the land on which the energy resource activity is or will be located.

[86] The Percys' main focus in this hearing was on their concerns about the effects of industrial development on their property value and on their desire to be relocated. They own a 12.14 hectare (30.01 acre) rural residential property. Structures on the property are the Percy residence with attached garage, a horse barn and shelters, sheds, and pasture and paddock fencing. The Percys keep horses and donkeys on

their property. Mr. Gettel, an appraiser experienced in the AIH area, provided evidence about, among other things, the Percys' property value. The Gettel appraisal indicated a distance of 0.9 kilometres between the property lines of the Percy property and the VCI property.

[87] One landowner impact is the impact of the proposed amendments on the valuation of the Percys' residence and property. As discussed in the panel's letter of October 31, 2017, we have no authority to enforce a compensation arrangement or alleged agreement between the Percys, other parties, including municipalities, and VCI or predecessor corporations, arising from an earlier approved project (*EUB 2005-79*). We must determine how the current amendment applications will affect the value of the Percys' residence and property. The panel must then decide if the impacts resulting from these proposed amendments are acceptable such that the applications can be approved.

Evidence

[88] Mr. Gettel provided evidence for the Percys that "*Alberta's Industrial Heartland Area Structure Plan* was adopted in 2001 to guide future land use within the four municipalities noted early [sic]." The Percy residence and property are in Strathcona County and are part of AIH. The Heartland Area Structure Plan was used to prepare Strathcona County Land Use Bylaw 3-2016, which was adopted April 5, 2016. The bylaw zones the area that includes the Percys' property as Heavy Industrial Area. This zoning accommodates heavy industry, such as oil and gas refining, and limits residential development in the zone. While it allows the maintenance of existing residences and related structures in that zone, it prohibits new residences and residential subdivisions. The bylaw explicitly acknowledges that limiting residential development in the heavy industrial area will make conflict between industrial and residential activities less likely.

[89] The Percys bought their residence and property in 1981, a full twenty years before *Alberta's Industrial Heartland Area Structure Plan* was adopted.

[90] Mr. Gettel testified that to get the most value for the Percys' property, it must be marketed as rural residential. This would result in a value of $685 000. Mr. Gettel's opinion was that the presence of VCI's project would eliminate this option. He believed that the highest and best use for the Percys' property would then be heavy industrial, with a resulting value of $345 115. He estimated that it would cost $842 755 to replicate the Percys' improvements on vacant land and recreate an identical property in a nonindustrial area.

[91] The panel understands that Mr. Gettel's key proposition is that approval of the amendments and imminent construction would cause a market reaction that would significantly lower the Percys' property value. Mr. Gettel testified as follows:

- He cannot isolate or attest to how much the amendments will change the value of the Percy land, but he is of the opinion that property in AIH has been stigmatized.

- It is irrelevant whether emissions and noise levels are reduced by amendments to the current approvals.
- The 2017 Strathcona County tax assessment for the Percys' rural residential property was $517 000.
- Being next to a major project such as an upgrader instantaneously changes highest and best use of land to industrial.
- The value of $685 000 assumes an area market that is not subject to Strathcona County Bylaw 3-2016. The Percy property could not be marketed at that price today.
- Approval of the amendments and imminent construction of a major project instantaneously changes highest and best use of land to industrial.
- If an approval is in place and the market understands that construction is not imminent, market values will rebalance.
- The market in AIH is volatile.

[92] It was VCI's view that the Percys' property value concerns related to ongoing industrialization in AIH, and that these amendment applications do not significantly affect the Percys' property value. VCI's response to the question of land-value changes linked to the amendment applications is that the cumulative industrialization, facilitated by the 2001 *Alberta's Industrial Heartland Area Structure Plan* implemented by Strathcona County Land Use Bylaw 3-2016, has caused the asserted devaluation.

[93] Mr. Gettel was unable to approximate how much devaluation would be caused by the approval and imminent construction of this project. There was inadequate evidence that the current amendment applications directly caused the Percys' property to devalue and to change from rural residential to industrial.

[94] The panel finds that the steady industrialization of AIH since 2001 has affected the value of the Percys' residence and property. The panel does not accept that this detrimental result has been, or will be, caused by the proposed amendments. It is the panel's opinion that any loss in value arising from the Percy property's highest and best use changing from rural residential to industrial is a result of longstanding and cumulative factors, not a result of the amendment applications.

Jurisdiction to Address the Percys' Relocation Issues

[95] The panel understands that the Percys are asking for one or more of the following:

- Delay approval of the applications pending resolution of the purchase of the Percy property (with or without a relocation component).
- Order an inquiry into resolving the Percys' inability to sell their residence at rural residential values.

[96] Although the panel appreciates the situation the Percys now find themselves in, we do not accept that the approval of the amendment applications would be the primary cause of the change in highest and best use of their land. The panel accepts that negative impact on the Percys' property value has been caused by the cumulative effects of decades of industrialization in AIH. A significant delay (with or without an inquiry) in providing a decision on the applications would be a de facto rejection of the applications.

[97] The panel has no ability to make or enforce an order for VCI to purchase the Percy property at a set price. Similarly, the panel cannot require that the Percys be relocated to their satisfaction. We cannot order or enforce what the Percys are requesting.

[98] The panel does not accept the view of Ms. Bishop, counsel for the Percys, that section 6 of the *OSCA* coupled with section 15 of *REDA* provides the panel with broad authority to grant the orders requested by the Percys. Section 6 of *OSCA* states, "The Regulator, with the approval of the Lieutenant Governor in Council, may make any just and reasonable order or directions that it considers to be necessary to effect the purposes of this Act and that are not otherwise specifically authorized by this Act." Section 15 of *REDA* directs the panel to consider, among other things, "… any factor prescribed by the regulations, including the interest of the landowners." Ms. Bishop advocated the view that the broad and general powers found under section 6 of *OSCA* inform section 15 of *REDA*.

[99] Mr. Muhammad, counsel for VCI, cited *ATCO Gas and Pipelines Ltd. v. Alberta (Energy and Utilities Board)*, 2006 SCC 4, in support of his view that we must interpret broad regulatory powers in a manner that is directly and closely related to the applications before us. The panel accepts Mr. Muhammad's interpretation and disagrees with Ms. Bishop's argument. Section 6 of *OSCA* does not provide us authority to re-examine the cumulative effects of development within the AIH on the Percys' property. Our mandate is to consider how the amendment applications in question might contribute to the cumulative effects on the Percys' interests. Even if Ms. Bishop's position were correct, the panel finds that impacts of the proposed amendments have been addressed either in the applications or by the directions and orders in this decision. The panel notes that the current applications have in many instances reduced the impacts on the Percys of *OSCA* approval 10330A, which is still in effect.

[100] As indicated above, the panel will not interpret its delegated authority to include ordering a relocation or purchase of the Percy property or ordering an inquiry. The panel is of the view that Strathcona County is in the best position to facilitate a resolution of the Percys' dilemma. The Percys have testified how their vibrant community has withered. They are the only resident owners in the area. They testified that local roads are not being maintained properly and that this causes vehicle damage. Mrs. Percy also testified that they contacted their Strathcona County representative (Mr. Paul Smith) several times but were told that the county has no jurisdiction over the matter.

[101] VCI's evidence is that it will provide $400 million in municipal property taxes over the Heartland Processing Plant's operating life. Strathcona County was intimately involved in the original relocation plan addressed in *EUB 2005-079*. If these applications are approved, it will benefit from the construction and operation of the Heartland Processing Plant. Both parties' evidence indicates that VCI initiated discussions with the county to involve it in the resolution of the Percys' concerns. VCI's view is that Strathcona County has a mandate to address the concerns of local residents, and as such VCI reached out to the county for assistance. We agree with VCI and encourage VCI, the Percys, and Strathcona County to continue to engage to facilitate a resolution of the Percys' difficulties.

Public Interest

[102] In considering the proposed amendments to the project that was approved in 2015, we considered the balance between the effects on landowners and the broader interests of Albertans in the responsible development of provincial hydrocarbon resources.

[103] The Percys presented evidence about impacts of industrial development on their property's value and on their quality of life. They spoke of no longer having residential neighbours. They were concerned about limited ability to evacuate in emergency situations due to road and rail constraints.

[104] VCI submitted that impacts on the Percys result from cumulative industrialization in AIH and are not directly attributable to these amendment applications.

[105] VCI presented evidence that the amendments to its project would reduce the environmental footprint of its already approved project and would enhance the project's socioeconomic benefits.

[106] VCI expects the project life to be 30 years, during which it will staff 209 positions. Its applications estimated that over the project life it will pay $7 billion in corporate income taxes and $400 million in municipal property taxes. It also predicted contributions to gross domestic product of $3927 million during construction and $636 million during operations, as well as 14 555 person-years of provincial employment and $2495 million of provincial labour income. It estimated the total regional employment generated by project construction will be 11 070 person-years and labour income will be $2080 million. VCI noted in its applications that the total annual regional effects of the project's operation are expected to be about 2969 person-years of employment and $189 million in labour income.

[107] VCI submitted that the amendments to the project would also enhance the value of Alberta's oil sands production by producing higher-valued products from bitumen. This is consistent with the Government of Alberta's efforts over the years to promote more value-added activities associated with hydrocarbon resource development and processing in the province.

[108] VCI submitted that the refining of bitumen into premium products will help debottleneck pipeline capacity in the province.

[109] VCI also presented evidence that its proprietary decarbonization and Clean Oil Refining technology reduces energy inputs to, and greenhouse gas emissions from, its upgrading processes.

[110] The project is consistent with broad Government of Alberta policy direction. It will provide significant provincial revenues and employment. It will contribute to enhancing the value of Alberta's oil sands resources and will contribute to debottlenecking pipeline transportation capacity.

[111] The panel finds that the amendments to the currently approved project are in the public interest. The applications, together with conditions imposed in this decision, reflect orderly and efficient development by balancing the potential effects on area residents with broader public benefits.

Conclusion

[112] Both parties tendered evidence that was outside of this hearing's scope. We found some of that evidence from the Percys to be helpful in understanding the context of their residence in the area. However, in considering the impacts of these amendment applications on the Percys as landowners, we did not place any weight on evidence tendered by any party that was outside of this hearing's scope.

[113] This hearing considered VCI's applications to amend the *OSCA* and *EPEA* approvals for its oil sands processing plant. These applications propose adding refining capability to this plant and reducing its production capacity, enabling VCI to produce more refined products.

[114] We considered the anticipated effects of the proposed amendments on the environment, economics, social factors, and area landowners. In particular, we considered the likely impacts of the proposed amendments on the Percys and their interests. We determined that implementation of the proposed amendments and the conditions we have imposed are consistent with responsible development of Alberta's oil sands resources and will mitigate any direct impacts of the proposed amendments.

[115] Based on the relevant legislation and the evidence and submissions provided in this hearing, we find that the proposed amendments will support the efficient, safe, orderly, and environmentally responsible development of Alberta's energy resources. We approve VCI's amendment applications, subject to the conditions we have imposed.

[116] Dated in Calgary, Alberta, on May 8, 2018.

Alberta Energy Regulator

< Original signed by >

C. Chiasson
Presiding Hearing Commissioner

< *Original signed by* >

R.C. McManus
Hearing Commissioner

< *Original signed by* >

L.J. Ternes
Hearing Commissioner

Appendix 1 Hearing Participants

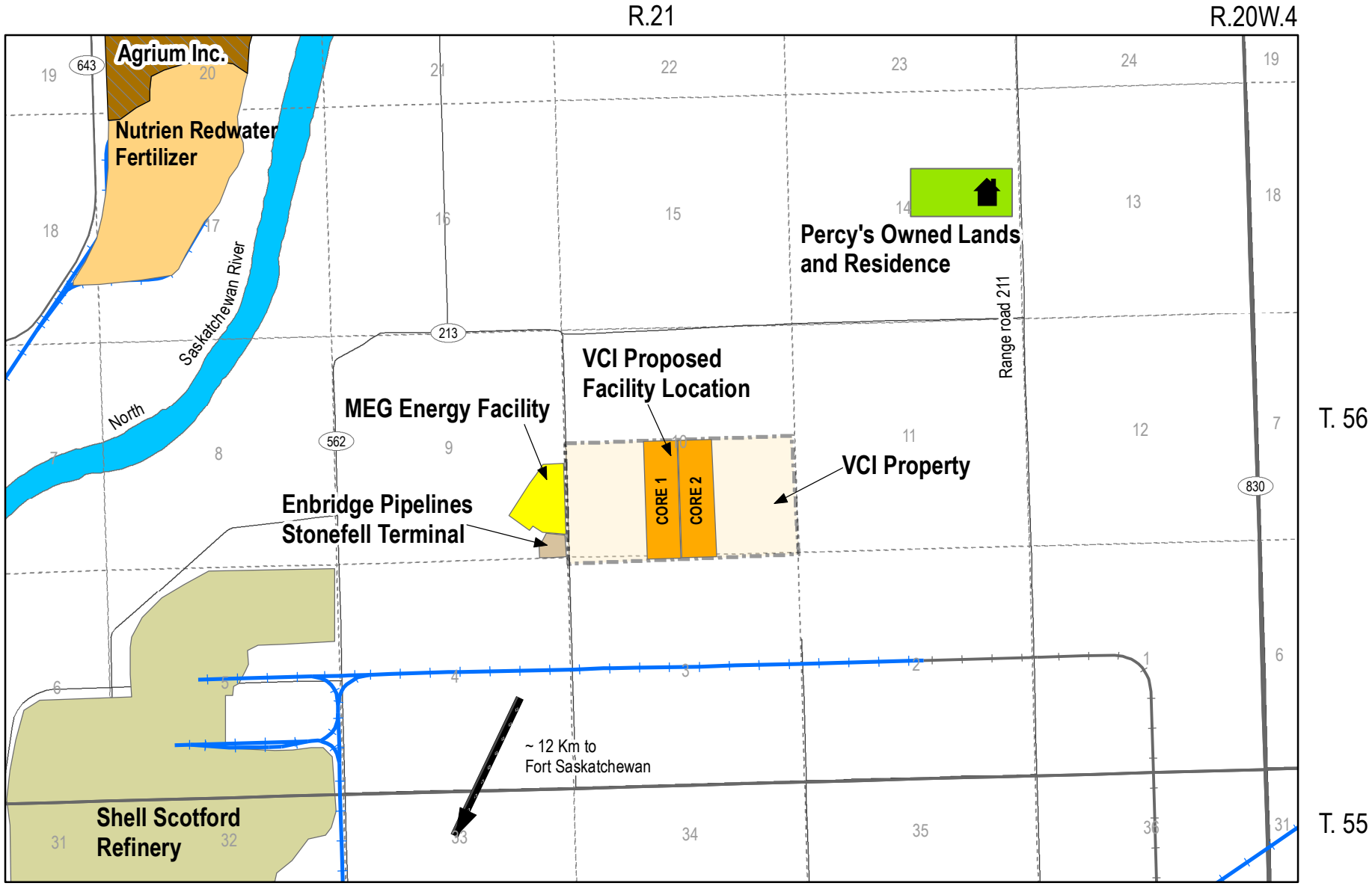
Principals and Representatives	Witnesses
Value Creation Inc. (applicant) Kathy Pawluk (counsel) Nazeef Muhammad (counsel)	Iva Georgieva Liming Liu David Searl Michael Borslein Jason R. Swan Rahul Jain
George and Barbara Percy (participants) Debbie Bishop (counsel)	George Percy Barbara Percy Brian Gettel
Alberta Energy Regulator staff Gary Perkins, AER counsel AER panel Cindy Chiasson (chair) Rob McManus Lorne J. Ternes AER Hearing Services Tara Wheaton Dean Campbell Tammy Turner AER technical staff Adriana Ledi Wally Qiu Julie St. Louis Donna Hovsepian	

Appendix 2 Summary of Conditions

Conditions

VCI shall use a design sulphur recovery criteria of 99.3 per cent and meet a minimum sulphur recovery of 99.0 per cent on a calendar quarter-year basis for all phases of this project.

VCI shall provide a site specific emergency response plan (SSERP) to the AER and the Percys that has been deemed technically complete in accordance with *Directive 071: Emergency Preparedness and Response Requirements for the Petroleum Industry* prior to construction. VCI shall also update the SSERP and submit it to the AER for approval and to the Percys for information prior to commencement of operations. The SSERP shall use a modified Emergency Planning Zone that includes the Percys' residence and property.


R.21
R.20W.4
Agrium Inc.
Nutrien Redwater Fertilizer
Saskatchewan River
North
643
213
562
830
Range road 211
Percy's Owned Lands and Residence
VCI Proposed Facility Location
MEG Energy Facility
VCI Property
CORE 1
CORE 2
Enbridge Pipelines Stonefell Terminal
~ 12 Km to Fort Saskatchewan
Shell Scotford Refinery
T. 56
T. 55
Legend
Abandoned Rail Line
Paved Road
Rail Line