ALBERTA
ENVIRONMENTAL APPEALS BOARD

Erratum

Erratum – March 8, 2019

IN THE MATTER OF sections 91, 92, 94, 97, and 99 of the Environmental Protection and Enhancement Act, R.S.A. 2000, c. E-12;

-and-

IN THE MATTER OF appeals filed by Cherokee Canada Inc., 1510837 Alberta Ltd., and Domtar Inc. with respect to the decisions of the Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks, to issue EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR, Amendment No. 1 to EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR, EPEA Enforcement Order No. EPEA-EO-2018/02-RDNSR, EPEA Enforcement Order No. EPEA-EO-2018/03-RDNSR, EPEA Enforcement Order No. EPEA-EO-2018/04-RDNSR, Amendment No. 2 to EPEA-EO-2018/02-RDNSR, and EPEA Enforcement Order No. EPEA-EO-2018/06-RDNSR to Cherokee Canada Inc., 1510837 Alberta Ltd., and Domtar Inc.

Erratum for: *Cherokee Canada Inc. et al.* v. *Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks* (26 February 2019), Appeal Nos. 16-055-056, 17-073-084, and 18-005-010-R (A.E.A.B.).

Cite as: Erratum: *Cherokee Canada Inc. et al.* v. *Director, Red Deer-North Saskatchewan Region, Alberta Environment and Parks* (8 March 2018), Appeal Nos. 16-055-056, 17-073-084, and 18-005-010-E (A.E.A.B.). 2019 ABAEB 2

ERRATUM

[1] This is an Erratum of the Environmental Appeals Board's (the "Board") Report and Recommendations in *Cherokee Canada Inc. et al*. v. *Director, Red Deer-North Saskatchewan Region, Alberta Environment and Parks* (26 February 2018), Appeal Nos. 16-055-056, 17-073-084, and 18-005- 010-R (A.E.A.B.).

[2] The Erratum includes deletions, where the character, word, or phrase has been crossed out as follows: ~~deletion~~. The Erratum also includes additions, where the character, word, or phrase has been underlined as follows: <u>addition</u>.

[3] The Board has published a consolidated version of the Report and Recommendations with the same date as the original decision, being February 26, 2018. The consolidated version includes the changes detailed in the Erratum incorporated into the Report and Recommendations. The consolidated version of the Report and Recommendations is now the official version of the Board's Report and Recommendations. Reference should be made to this corrected version of the Report and Recommendations as the official version of the Board's Report and Recommendations.

2019 AEAB 1 **Appeal Nos. 16-055-056, 17-073-084, and 18-005-010-R**

ALBERTA
ENVIRONMENTAL APPEALS BOARD

Report and Recommendations

Date of Report and Recommendations – February 26, 2019

IN THE MATTER OF sections 91, 92, 94 , 97, and 99 of the Environmental Protection and Enhancement Act, R.S.A. 2000, c. E-12;

-and-

IN THE MATTER OF appeals filed by Cherokee Canada Inc., 1510837 Alberta Ltd. , and Domtar Inc. with respect to the decisions of the Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks, to issue EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR, Amendment No. 1 to EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR, EPEA Enforcement Order No. EPEA-EO-2018/02-RDNSR, EPEA Enforcement Order No. EPEA-EO-2018/03-RDNSR, EPEA Enforcement Order No. EPEA-EO-2018/04-RDNSR, Amendment No. 2 to EPEA-EO-2018/02-RDNSR, and EPEA Enforcement Order No. EPEA-EO-2018/06-RDNSR to Cherokee Canada Inc., 1510837 Alberta Ltd. , and Domtar Inc.

Cite as: *Cherokee Canada Inc. et al.* v. *Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks* (26

February 2019), Appeal Nos. 16-055-056, 17-073-084, and 18-005-010-R (A.E.A.B.).

BEFORE: Ms. Meg Barker, Panel Chair; Dr. Nick Tywoniuk, Board Member; and Mr. Dave McGee, Board Member.

SUBMISSIONS BY:

Appellants: Cherokee Canada Inc. and 1510837 Alberta Ltd. , represented by Mr. Ron Kruhlak, Q.C., Mr. Sean Parker, and Mr. Stuart Chambers, McLennan Ross LLP.

Domtar Inc., represented by Mr. Gary Letcher and Ms. Andrea Akelaitis, Letcher Akelaitis LLP, Mr. Curtis Marble, Walsh LLP, and Mr. Micah Clark, Aldridge & Rosling, LLP.

Director: Mr. Michael Aiton, Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks, represented by Mr. Wally Braul, Mr. Josh Jantzi, and Mr. Mark Youden, Gowlings WLG (Canada) LLP.

Intervenors: City of Edmonton, represented by Mr. Michael Gunther and Mr. Stephen Ho, City of Edmonton Law Branch.

Alberta Health Services, represented by Ms. Jennifer Jackson and Ms. Linda Svob, Alberta Health Services Law Branch.

WITNESSES:

Cherokee Canada Inc. and 1510837 Alberta Ltd. : Mr. John Dill, Director, Cherokee Canada Inc.; Mr. Jim Phimister, Director, 1510837 Alberta Ltd.; Dr. Court Sandau, Principal and Senior Scientist, Chemistry Matters; Dr. Mark Harris, Managing Principal Scientist, ToxStrategies Inc.; Mr. Craig Campbell, Senior Environmental Engineer, Thurber Engineering; Dr. Theresa Phillips, National Risk Assessment Lead, Environmental Due Diligence and Remediation, Pinchin; Mr. Travis Tan, Team Lead Remediation, EXP Services Inc.; Ms. Carla Reynolds, Manager, Environmental Services, EXP Services Inc.

Domtar Inc.: Mr. Guy Patrick, Senior Contaminant Hydrogeologist, Patrick Consulting Inc.; Mr. Bart Koppe, Senior Scientist, Intrinsik Corp.; Dr. Glenn

Ferguson, Vice President and Senior Environmental Health Scientist, Intrinsik Corp.; Dr. Stanley Feenstra, Groundwater Contamination and Remediation Consultant, Applied Groundwater Research Ltd.; and Mr. Marcel Sylvestre, formerly Director, Soil Rehabilitation, Domtar Inc. .

Director: Mr. Michael Aiton, Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Mr. Mark Adams, Environmental Protection Officer, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Mr. Rick Berkenbosch, Waste Management Specialist, Policy and Planning Division, Alberta Environment and Parks; Ms. Angela Brown, Environmental Protection Officer, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Dr. Qunli Dai, Hydrogeologist, Regional Resource Management, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Mr. Gordon Dinwoodie, Land Reclamation Policy Specialist, Planning and Policy Division, Alberta Environment and Parks; Dr. Claire McGuigan, Risk Assessment and Contaminated Sites Specialist, Regional Resource Management, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Dr. Lekan Olatuyi, Soil and Contaminated Site Specialist, Regional Resource Management, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Mr. Bill Pelech, Senior Soil and Contaminated Sites Specialist, Regional Resource Management, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks; Ms. Jillian Mitton, Senior Environmental Engineer, Golder Associates; Dr. Deena Hinshaw, Acting Deputy Chief Medical Officer of Health, Alberta Health; and Dr. Nina Wang, Environmental Public Health Scientist, Alberta Health.

City of Edmonton: Mr. David Hales, Branch Manager, Development Services, City of Edmonton.

Alberta Health Services: Mr. Darcy Garchinski, Zone Director, Environmental

Public Health; and Dr. Chris Sikora, Associate Zone Medical Director, Zone Lead Medical Officer of Health, Edmonton Zone.

EXECUTIVE SUMMARY

Cherokee Canada Inc. , 1510837 Alberta Ltd. , and Domtar Inc.[*] have appealed five enforcement orders, and two significant amendments to these orders, which were issued by the Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks (the Director). The orders were issued under the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12, (EPEA). The Director is a statutory decision-maker employed by Alberta Environment and Parks, responsible for enforcement under EPEA. Upon receiving these appeals, the Board is required to hold a hearing regarding the orders and provide a report and recommendations to the Minister of Environment and Parks (the Minister), who can confirm, reverse, or vary the Director's decisions to issue the orders. The Minister can substitute her decision for the decision of the Director and make any other direction she considers necessary.

[*] 1510837 Alberta Ltd. is a subsidiary of Cherokee Canada Inc. Cherokee Canada Inc. and 1510837 Alberta Ltd. are collectively referred to as Cherokee. Domtar Inc. is referred to as Domtar.

The Site

The orders relate to a former wood products manufacturing plant in northeast Edmonton. The plant manufactured "treated" wood products such as railway ties and telephone poles. The wood products were treated with chemical preservatives, such as creosote, to prolong their lifespan. Domtar owned and operated the plant from 1924 to 1987 in, what was, a rural area. In part because of the less stringent environmental standards during that time, soils on the site became contaminated. Domtar closed the plant in 1987, undertook some cleanup work and then left the site vacant.[**] It was approximately at this time when homes began to be built on the land surrounding the site.

In 2010, Cherokee purchased most of the site from Domtar and began undertaking further cleanup work. The work Cherokee is doing is known as brownfield redevelopment. Cherokee is cleaning up the site so it can be sold for residential purposes. Part of the site, the Verte Homesteader Community, was approved for residential use, and a number of homes have already been built on this part of the site. Residential neighbourhoods have also been developed adjacent to the site to the north, east, and west.

The Orders

In 2015, an approval engineer from Alberta Environment and Parks contacted the Director and advised that Cherokee may be in contravention of its regulatory approval by constructing a berm without proper authorization. The Director commenced an investigation, and in late 2016, the Director issued his initial order. Following the issuance of the order regarding the unauthorized

[**] To be clear, the Board is not suggesting Domtar has done anything different than many industrial operators. Historical operating practices often resulted in site contamination. The practice of closing a plant, undertaking some cleanup work, and allowing the site to remain effectively vacant or abandoned has been a relatively common practice. Usually, this is because, at the time the plant closed, the cost of cleaning up the site outweighs the resale value of the land. This practice has allowed some sites in Alberta to remain vacant or abandoned and unused for decades. While not discussed at the hearing, the Board notes the Government of Alberta has recently introduced changes to the regulations under EPEA to address this environmental, social, and economic problem. These changes were not yet in force at the time of the hearing and were not considered by the Board for the purpose of preparing this Report and Recommendations.

The Site has four parts: Parcel X (a berm and an undeveloped area to the south of the western part of the Homesteader Community); Parcel C (the Verte Homesteader Community, consisting of a residential area and a berm); Parcel Y (the main part of the former Domtar site , consisting of a proposed residential area and a berm); and the Greenbelt (located to the south of the Overlanders Community).

berm, the Director began investigating the entire site, and eventually issued a total of five enforcement orders, and two significant amendments.

Most notably, the orders required Cherokee and Domtar to develop and implement plans for the immediate removal of effectively all contaminated material from the site. Cherokee and Domtar have appealed because the removal of this material is inconsistent with their plans to manage the contamination on the site (which is a common approach to brownfield redevelopment) and because of the very significant cost of removing and disposing of the contaminated material, which they estimate to be at least $52,000,000.

Protecting Residents

The Board's primary concern in these appeals is ensuring that the residents in these communities and the other people who use the area are safe. Based on the evidence presented at the hearing of these appeals, the Board has determined there is no immediate risk to these residents and other people. More work is required to complete the delineation and remediation of certain areas of the site. More work is also required to complete the delineation and remediation of certain areas of concern in the adjacent Verte Homesteader and Overlanders Communities. This work needs to be done as soon as practicable, but none of this work is an emergency as suggested by the Director.

The Director's demand to immediately remove the contaminated material from the site caused the Board significant concern. The Director's requirement for immediate removal would have resulted in trucking potentially very large amounts of the contaminated material through the residential communities and on public highways to a landfill. In the Board's view, disturbing the material on the site, which has been present for over 30 years, and trucking the material off the site would have posed a greater risk, particularly to the residents, than leaving it in place and taking the time to develop a well-considered plan and properly execute the plan to deal with the site. This potential for an increased risk to the residents is why the Board issued stays of the orders.

The Director's View

The Director believes the historical contamination on the site poses a risk to the environment and, most importantly, the people living on and around the site. The chemical preservatives used to treat the wood products are persistent in the environment and, in the right circumstances, can pose a human health risk. While the Director is concerned about contamination of the site in general, the contaminants of particular concern are naphthalene, dioxins, and furans.

Following the issuance of the first of the orders, the Director began an unprecedented investigation of the site through borehole drilling and sampling. Based on the sampling results, which were received over time, the Director proceeded to issue the subsequent orders.

The Director has based his decisions to issue the enforcement orders on four grounds: (1) Cherokee breached their regulatory approval for the site by building a berm without the required authorization; (2) the material used to build the berm is hazardous waste and, therefore, must be removed from the site and disposed of in a hazardous waste landfill; (3) the contaminated material on the site is migrating, and therefore has the potential to cause an adverse effect by impacting the residential areas around the site, and (4) the contaminated material on the site exceeds the criteria specified in the Alberta Tier 1 Soil and Groundwater Remediation Guidelines (the Tier 1 Guidelines) and the criteria specified in Provisional Guidance Documents created by the Director's staff. According to the Director, contaminated material that exceeds these criteria has the potential to cause an adverse effect on the residential areas around the site and cannot be managed on-site.

The Board's View

The Board does not accept these arguments.

The Board determined that Cherokee legitimately believed they had obtained the required authorization under their approval to build the berm. Therefore, the Director was incorrect and unreasonable to use the "lack" of authorization as the foundation for the enforcement orders.

The Board determined that the Director was incorrect and unreasonable in concluding the contaminated material on the site and in the berm was hazardous waste, because of the misinterpretation of the definitions of waste and hazardous waste under EPEA. The definition

of waste requires an intention to dispose of the contaminated material before it becomes waste. Cherokee did not intend to dispose of the contaminated material; the contaminated material was used as part of the reclamation and remediation plan. Specifically, Cherokee intended to use the contaminated material as a building material for the berms . As the contaminated material is not waste, it cannot be hazardous waste. The Board is particularly concerned with this incorrect interpretation of the definition of waste for two reasons.

First, if this interpretation were accepted, it would mean that the moment the owner of a site moved contaminated material on the site, it would become waste, and if the material contains chemicals with certain characteristics, it would be hazardous waste. Further, if it is hazardous waste, the material would have to be removed to a hazardous waste landfill and could no longer be kept on the site.

Second, if this interpretation were accepted, it would be virtually impossible to undertake brownfield redevelopment. This is because of the setback requirements that would result when waste or hazardous waste is kept on the site. Under the Director's interpretation, keeping waste on the site would require approval as a landfill and the effect of this would prevent any development within at least 300 m. In the Board's view, brownfield redevelopment is an essential tool to deal with vacant former industrial sites in Alberta.

The Director also based the enforcement orders on his view that the chemicals of concern, including naphthalene, dioxins, and furans, which are from the wood preserving chemicals such as creosote and pole treating oil, were migrating on the site and therefore, had the potential to cause an adverse effect. The Board determined that the likelihood of the chemicals of concern migrating within the soils on the site in any meaningful way is very low. This is, in part, because no new contamination has been added to the site since some time in 1987, and therefore, the original source of the contamination has been eliminated. The Board accepts the argument there is no "drive mechanism" to cause the migration of the chemicals on the site. The Director's independent experts agreed with this conclusion for chemicals such as creosote.

The Board also heard evidence that no conceptual site model that incorporated all the available data of the site was developed. Therefore, the Director was making assumptions as to the location and potential mobility of contaminants based mainly on new sampling data, without the

benefit of previous sampling data that was available. In the Board's view, the Director's "new" sampling data reconfirmed the presence of known contamination that has been in place for decades, which had been sampled previously, and was not the discovery of new contamination.

Finally, the Director's concern is that the naphthalene, dioxins, and furans are present on the site in amounts that exceed the Tier 1 Guidelines and "acute exposure limits." The acute exposure limits were developed by the Director's staff and incorporated into two Provisional Guidance Documents. An acute limit is an amount of a chemical that may cause an adverse health impact as the result of a one-time exposure. (An acute limit contrasts with a chronic limit, where the health impacts occur as the result of exposure over an extended period of time.) Until the Director's staff developed the Provisional Guidance Documents, there was no acute limit for naphthalene or dioxins and furans in Alberta. Given how these chemicals affect human health, only chronic limits have been developed. Based on the evidence presented at the hearing, the Board is of the view the Provisional Guidance Documents are flawed, and therefore an unreasonable and incorrect foundation upon which to issue the enforcement orders. (For example, for dioxins and furans, the World Health Organization concluded: "In view of the long half-lives of [dioxins and furans], the Committee concluded that it would not be appropriate to establish an acute reference dose for these compounds."[***]) In addition, the Tier 1 Guidelines criteria the Director included in the enforcement orders applies to the end state of a site cleaned up for residential use. With respect to the main part of the site, referred to as Parcel Y, while Cherokee may be planning to develop this parcel into a residential property, at the moment it remains zoned as an industrial site. While Cherokee's stated goal is to develop Parcel Y to a residential standard, it is doing so as part of a brownfield redevelopment, and in the Board's view, it is not appropriate to impose the Tier 1 Guidelines criteria, on the Site in the middle of the remediation work. As a result, in the Board's view, it was incorrect and unreasonable for the Director to include these Tier 1 Guidelines criteria in the enforcement orders with respect to Parcel X, Parcel Y, and the Greenbelt.

[***] See: Exhibit 71, Tab 17. "Evaluation of Certain Food Additives and Contaminants. Fifty-Seventh Report of the Joint FAO/WHO Expert Committee on Food Additives."

Verte Homesteader and Overlanders Communities

Further, with respect to the Verte Homesteader Community (Parcel C) and Overlanders Community (north of the Greenbelt), more work needs to be done, and it should be done as soon as practicable, but it is not an emergency such that immediate removal is an appropriate course of action. In the Verte Homesteader Community some samples show exceedances of the Tier 1 Guidelines with respect to dioxins and furans, but within the community itself, there are only two samples exceeding the screening levels used by Alberta Health. A screening level is an indication that more investigation is required; a screening level does not in and of itself require immediate cleanup.

The presence of dioxins and furans in the Verte Homesteader Community was unexpected. Cherokee received permission from Alberta Environment and Parks to use a "proxy" to detect dioxins and furans on the site. A "proxy" uses one chemical to detect the presence of another chemical. Unfortunately, the use of the proxy was not effective. Cherokee agrees that the presence of dioxins and furans in the Verte Homesteader Community needs to be properly delineated, and Cherokee has indicated it will do the work necessary to deal with the dioxins and furans here and elsewhere on the site.

The Board agrees that this work needs to be done. However, in the Board's view, the Director's approach of immediate removal would likely create a greater risk and significantly greater disruption to the residents than developing a well-considered and properly executed plan to address the concerns. Therefore, in the Board's view, the Director's decision to issue the enforcement orders with respect to the Verte Homesteader Community was both incorrect and unreasonable. The necessary work can be assured by way of the Minister's Order and the environmental protection orders the Board is recommending, through the use of exposure control, on-site treatment, and removal of material where necessary.

With respect to the Overlanders Community, the Board is concerned about potential data gaps. Considerable sampling has been done with respect to the Greenbelt and the Overlanders Community. However, the Board notes there may have been insufficient sampling done to confirm whether there is a likelihood that naphthalene vapour is present, such that it could enter the basements of homes on the south side of the Overlanders Community. Given that vapour

sampling was conducted in one of the homes adjacent to the Greenbelt, and no naphthalene vapours were found, the likelihood of there being a concern is very low. However, one of the experts for Domtar and one of the Director's witnesses both commented that further delineation around locations with elevated hydrocarbon levels on the Greenbelt warrant further sampling to confirm whether naphthalene vapours present a concern to the Overlanders Community. The Board wants to ensure this issue is addressed. At the same time, the Board wants Domtar to review all the data that is available for dioxins and furans on the Greenbelt and in the Overlanders Community to ensure there is not a concern with these chemicals. If there are any potential concerns, action should be taken to address these chemicals of concern as well.

Board's Recommendations

As there was no basis for issuing the enforcement orders, the Board has recommended the Minister of Environment and Parks (the "Minister") reverse the enforcement orders. The Board has recommended the project be returned to one of the Approvals Groups within Alberta Environment and Parks as a brownfield redevelopment. In particular, the Board has recommended that the Minister issue a Ministerial Order with a detailed series of steps to move this matter forward as a brownfield redevelopment. To ensure the required work in the Verte Homesteader and Overlanders Communities is completed, the Board is recommending that the Minister issue two environmental protection orders: one to Cherokee for the Verte Homesteader Community, and one to Domtar for the Overlanders Community.

TABLE OF CONTENTS

I. INTRODUCTION

[1] This is the Environmental Appeals Board's (the "Board") Report and Recommendation to the Minister of Environment and Parks (the "Minister") dealing with appeals of five enforcement orders, and two significant amendments to these orders, issued under the *Environmental Protection and Enhancement Act*, R.S.A. 2000, c. E-12 ("EPEA"). The orders relate to historical contamination on a former industrial site in northeast Edmonton (the "Site").[1] The Board is authorized by EPEA to hear appeals of these orders,[2] following which the Board must prepare a report and make recommendations to the Minister,[3] who is the final decision-maker for such appeals.[4]

[2] The Board's primary concern in these appeals has been the safety of the residents who live in the communities on and around the Site. Based on the evidence presented at the hearing, the Board has concluded that the historical contamination remaining on the Site does not pose a danger to the residents and other people who use the area. Most of the contaminated

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[1] The Site is located at 44 Street NW and 127 Avenue NW in the City of Edmonton, Alberta. Attached as an Appendix to this Report and Recommendation is an aerial photograph of the Site. The Site has four parts: Parcel X - Plan 4677CL, Parcel X (a berm and an undeveloped area to the south of the western part of the Homesteader Community); Parcel C - Plan 1012AY, Block C (the Verte Homesteader Community, consisting of a residential area and a berm); Parcel Y - Plan 1321679, Block 1, Lot 1 (the main part of the former Domtar Site, consisting of a proposed residential area and a berm); and the Greenbelt – portions of NW/SW-18-53-23-W4M - (located to the south of the Overlanders Community). Hermitage Road and the Homesteader Community are immediately north of the Site.

[2] Section 91(1) of EPEA provides:

> "A notice of appeal may be submitted to the Board by the following persons in the following circumstances: …
>
> (e) the Director issues an enforcement order under section 210(1)(a), (b) or (c), the person to whom the order is directed may submit a notice of appeal…."

[3] Section 99(1) of EPEA provides:

> "In the case of a notice of appeal referred to in section 91(1)(a) to (m) of this Act … the Board shall within 30 days after the completion of the hearing of the appeal submit a report to the Minister, including its recommendations and the representations or a summary of the representations that were made to it."

[4] Section 110(1) of EPEA provides:

> "On receiving the report of the Board, the Minister may, by order,
>
> (a) confirm, reverse or vary the decision appealed and make any decision that the person whose decision was appealed could make, … and
>
> (c) make any further order that the Minister considers necessary for the purpose of carrying out the decision."

material on the Site is buried in and beneath berms, which prevents the contamination from posing a risk. There is certainly more cleanup and remedial work that needs to be done on the Site and it should be done as soon as practicable. However, it is not an emergency such that the immediate removal work required by the Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks (the "Director") is an appropriate course of action.

[3] The Board had serious concerns with the requirements in the orders to "immediately" remove the contaminated materials, most of which form the core of the engineered berms on the Site. The Director's requirement for immediate removal would result in disturbing the contaminated material in the berms, which were designed to keep the material isolated at a considerable depth. The Director's requirement for immediate removal would also result in trucking potentially very large amounts of the material through the residential communities and on public highways to a landfill. In the Board's view, disturbing the material on the Site, which has been present for over 30 years, and trucking the material off the Site would pose a greater risk, particularly to the residents, than leaving it in place and taking the time to develop and execute a well-considered plan to deal with the Site. The potential danger of creating "exposure pathways" - ways people could come into direct contact with the contaminated material - by excavating the material and trucking it through the residential communities to a landfill, resulted in the Board issuing stays of each of the orders issued by the Director.[5]

[4] Based on the evidence and arguments presented at the hearing of the appeals, the Board has concluded that the enforcement orders are incorrect and unreasonable, and the Board recommends the Minister reverse the decisions to issue these orders. In place of the enforcement orders, the Board is recommending the Minister issue further directions to deal with the Site as a brownfield redevelopment, and issue two new environmental protection orders to ensure any

[5] In the Board's review, removal of material from a Site like this should only be considered where a well-considered plan is developed, to ensure it can be done safely.

additional delineation and remediation work needed in the Verte Homesteader and Overlanders Communities adjacent to the Site is completed.[6]

II. BACKGROUND

[5] From 1924 to 1987, Domtar Inc. ("Domtar") used the Site to manufacture treated wood products, such as telephone poles and railway ties. The wood products were treated with chemical preservatives, such as creosote, to extend their lifespan. By design, these chemicals do not easily break down in the environment and are a concern because they are now known to be a danger to human health. Due to historical environmental practices, the Site became contaminated.

[6] In 1987, Domtar closed the wood products manufacturing plant, the Site was cleaned up to the standard of the day, and then left vacant.[7] Since Domtar closed the wood products manufacturing plant, residential neighbourhoods - the Overlanders Community to the east, immediately north of the Greenbelt, and the Homesteader Community to the north and west, immediately adjacent to the rest of the Site - have been built around the Site. The proximity of these residential neighbourhoods is a concern because of the historical contamination. However, based on the evidence presented at the hearing, the Board finds that the historical contamination is not mobile and therefore does not pose a danger to the people who live in the neighbouring communities and use these areas.[8] Furthermore, the Board heard

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[6] To issue an enforcement order, the Director must find the recipient of the order contravened EPEA. An environmental protection order directs the recipient to respond to an environmental concern, without the Director having to find the recipient contravened EPEA.

[7] The Board is not suggesting Domtar has done anything different than many industrial operators in Alberta. The practice of closing a plant, undertaking some cleanup work, and then allowing the site to remain effectively vacant or abandoned has been a common practice in Alberta. Usually, this is because, at the time the plant is closed, the cost of fully cleaning up the site outweighs the resale value of the land. The effect of this practice has allowed some sites in Alberta to remain vacant or abandoned and unused for decades. While not discussed at the hearing, the Board notes the Government of Alberta has recently introduced changes to the regulations under EPEA to address this environmental, social, and economic problem. These changes were not yet in force at the time of the hearing and have not been considered by the Board for the purpose of preparing this Report and Recommendations. These regulations came into force on January 1, 2019. (See: *Remediation Regulation*, A.R. 154/2009, as amended by A.R. 9/2018.) The Board also note Domtar undertook cleanup and reclamation work on the site in the 1990s.

[8] At the hearing, a witness for Cherokee discussed how the soils immediately surrounding utility poles throughout the province have greater levels of dioxins and furans than soils found across the Site, except for certain localized areas that will be addressed as part of further remediation work. Hearing Transcript: volume 1, pages 187

compelling evidence that there is little risk to the neighbouring communities and users of the area related to the "chemicals of concern"[9] associated with the historical contamination. This is because the contaminated materials are buried at a significant depth, and as a result, there are no "exposure pathways." This means there is no way for people to come into direct contact with the chemicals of concern in the contaminated materials.

[7] In 2010, Cherokee Canada Inc. and its subsidiary, 1510837 Alberta Ltd. , bought most of the Site from Domtar.[10] The EPEA Approval for the Site, Approval 9724-04-00 (the "Approval"), was transferred to Cherokee on April 26, 2010. Cherokee is in the business of brownfield redevelopment, which involves purchasing vacant industrial sites, undertaking further cleanup, and once the cleanup is acceptable to environmental and municipal authorities, selling the property for residential and commercial use.

[8] Brownfield redevelopment is usually done in stages, where one part of the site is cleaned up and then sold to finance the cleanup of the remaining part of the site. Further, brownfield redevelopment often involves managing the contaminated material on-site by using the material, such as in this case, to construct a berm. Managing and using the contaminated material on-site is often the only way the redevelopment can be made economically feasible. Brownfield redevelopment is a valuable tool to deal with vacant former industrial sites, but it must be done safely.

[9] Cherokee has been working on the Site since buying it from Domtar. In 2013, Cherokee obtained approval from Alberta Environment and Parks ("AEP") and the City of Edmonton to develop Parcel C.[11] Parcel C has since been developed into the residential neighbourhood known as the Verte Homesteader Community, half of which is now occupied by homes. The part of Parcel C that is occupied by homes is protected from the Canadian National

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to 189. See: Dr. Sandau's Letter Report, dated July 23, 2018, included in Cherokee's Supplemental Submissions, dated July 23, 2018.

9 The chemicals of concern on the Site are most notably naphthalene, dioxin, and furans, but include creosote, polycyclic aromatic hydrocarbons, pentachlorophenol, volatile organic compounds, and non-aqueous phase liquids.

10 Cherokee Canada Inc. and subsidiary 1510837 Alberta Ltd. are collectively "Cherokee." Cherokee Canada Inc. , 1510837 Alberta Ltd. , and Domtar Inc. are collectively the "Appellants."

11 Cherokee obtained Remediation Certificate 325870-00-00.

Railway's Mainline and Yellowhead Trail/Highway 16 by an engineered berm that was also constructed on the southern part of Parcel C. Evidence presented at the hearing indicated unexpected chemicals of concern had been found on Parcel C, which needs to be evaluated and addressed.[12] However, based on the evidence presented at the hearing, the Board finds this additional contamination does not pose an immediate danger to the people who live in and use these areas. In the Board's view, the time should be taken to develop a well-considered plan to complete the additional work in the Verte Homesteader Community.

[10] After obtaining approval to develop Parcel C, Cherokee then began working on the main part of the Site, referred to as Parcel Y, immediately to the east of Parcel C. The work on Parcel Y included the construction of an engineered berm, referred to as the Parcel Y Berm, using the contaminated material from this part of the Site. The Parcel Y Berm is being used to manage and contain the contaminated material on the Site and to provide noise protection and a safety barrier between the proposed residential development on Parcel Y and the Canadian National Railway's main line and Yellowhead Trail/Highway 16, which are immediately to the south of the Site.

[11] In 2015, the project came to the attention of the Director. The Director is the statutory-decision maker under EPEA, responsible for ensuring compliance with the legislation.[13] In the Director's view, Cherokee contravened EPEA by using the contaminated material, which he believes to be waste, to construct the Parcel Y Berm, which the Director argues is an illegal landfill. According to the Director, Domtar contravened EPEA as the original "polluter" by releasing the contamination into the environment.

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[12] The chemicals of concern in the Verte Homesteader Community are dioxins and furans. While there are many samples in the residential part of the community that likely exceed there required cleanup criteria of 4 ng/kg, the sample – with the exception of two - are below the Alberta Health screening level of 50 ng/kg. Background levels for dioxins and furans in cities range from 23 ng/kg to 186 ng/kg. Transcript, Volume 1, Page 212.

[13] For regulatory purposes, AEP is divided into two parts: Approvals and Compliance. There is an Approvals Group and a Compliance Group within each of the six regions. There are separate Directors – statutory decision-makers – in each of these Approvals Groups and Compliance Groups. In this Report and Recommendations, the Compliance Director who issues the orders that are being appealed is referred to as the "Director," and the Approval Director, whose job is to decide whether to issue approvals under EPEA, is referred to the "Approval Director."

[12] Between December 2016 and July 2018, the Director issued five enforcement orders and two significant amendments to these orders (collectively, the "Orders"),[14] directing Cherokee and Domtar to undertake certain actions, the most notable of which is the immediate removal of contaminated material from the Site. The initial order focused on the Parcel Y Berm, but over time, the Director expanded his investigation to consider the entire Site. The subsequent orders were based on an unprecedented site sampling program undertaken by the Director.[15] The site sampling program included drilling hundreds of boreholes and taking hundreds of samples, testing for the main chemicals of concern, which are naphthalene, dioxins, and furans.[16] The Board has never seen a Director undertake a sampling program of this magnitude.

[13] Cherokee and Domtar have appealed the Orders for a number of reasons, including because the actions ordered by the Director are inconsistent with Cherokee's brownfield redevelopment plan, which is based on the contaminated material being managed on the Site, which Cherokee believes was previously approved by AEP, and because of the very significant cost of removing the material from the Site, which is estimated at approximately $52,000,000.[17] Further, Domtar appealed the Orders because it believes no further remedial work needs to be carried out on the Greenbelt and because it sold the majority of the Site to Cherokee. According to Domtar, it is therefore not involved with the work being done on Parcel C and Parcel Y.

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[14] The Director issued: EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR ("EO-2016/03"), Amendment No. 1 to EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR ("Amendment No. 1"), EPEA Enforcement Order No. EPEA-EO-2018/02-RDNSR ("EO-2018/02"), EPEA Enforcement Order No. EPEA-EO 2018/03-RDNSR ("EO-2018/03"), EPEA Enforcement Order No. EPEA-EO-2018/04-RDNSR ("EO-2018/04"), Amendment No. 2 to EPEA Enforcement Order No. EPEA-EO-2018/02-RDNSR ("Amendment No. 2"), and EPEA Enforcement Order No. EPEA-EO-2018/06-RDNSR ("EO-2018/06"). The Director also issued an environmental protection order on December 20, 2016, but this order was cancelled on May 18, 2018.

[15] See: Amendment No. 1, Page 5. "AEP Compliance Investigation Sampling Program."

[16] Naphthalene is a polycyclic aromatic hydrocarbon, which is found in coal tar. Naphthalene is the chemical found in mothballs, which gives mothballs their distinctive smell. Dioxins and furans are a class of chlorinated organic chemicals that are by-products of certain industrial process. However, they can also be produced by certain natural processes such as forest fires. There are 210 different dioxins and furans, each of which has a different degree of toxicity.

[17] "Approximate Contaminated Soil Volumes at 4439 127th Avenue, Edmonton, Alberta," dated June 25, 2018, by Mr. Travis Tan of EXP (Engineering). See: Cherokee's Initial Expert Reports, filed June 25, 2018.

[14] In the Board's view, many of the Director's conclusions that form the basis of the Orders are flawed. Most notably, the Director has been treating Parcel Y as a residential property. This is the cornerstone of many of the requirements the Director has imposed. While this may be Cherokee's end goal, Parcel Y is currently zoned as an industrial site and is not residential. As a result, it is not appropriate that Parcel Y should currently be expected to meet residential standards. Parcel Y will only become a residential development if and when Cherokee is able to meet the applicable standards. If for some reason, Cherokee is not able to meet the residential standards, then it will have to make a business decision and use the land for some other purpose, such as a commercial development.

III. STANDARD OF REVIEW

[15] The first matter the Board must address is the standard of review to be applied by the Board to the Director's decisions. The Director argues the standard of review is reasonableness and therefore, his decisions are entitled to deference. The Appellants argue the standard of review is correctness and therefore, the Board – or more correctly the Minister – is entitled to make substitute decisions in place of the decisions of the Director. As discussed below, the Board agrees with the Appellants; the proper standard of review is correctness. In any event, the Board has concluded that the Director's decisions to issue the Orders are both incorrect and unreasonable.

[16] As the Board discussed in *Brookman*,[18] the courts have identified three different situations where the standard of review must be determined. Each of these three different situations has different rules for determining the standard of review, and it is important not to confuse them. The leading case law in Alberta, which discusses these three situations, is the decision of the Court of Appeal in *Newton*.[19]

[17] The standard of review relevant to this case is the one the Board applies to the decision of the Director. This standard of review will either be reasonableness or correctness.

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[18] *Brookman and Tulick* v. *Director, South Saskatchewan Region, Alberta Environment and Parks*, re: *KGL Constructors, A Partnership* (24 November 2017), Appeal Nos. 17-047 and 17-050-R (A.E.A.B.) at paragraphs 153 to 202.

[19] *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399 ("*Newton*").

This standard of review is different from the standard of review the Court of Queen's Bench applies to a review of the Board's decision in a judicial review.[20] It is also different from the standard of review the Court of Appeal applies to the decision of the Court of Queen's Bench where the decision of the Court of Queen's Bench in a judicial review is appealed to the Court of Appeal.[21] This is where the Director's argument on the standard of review fails. The Director's argument and the authorities cited by the Director, mistake the standard of review the Court of Queen's Bench applies to the Board, for the standard of review the Board is to apply to the Director.

[18] With respect to determining the standard of review to be used by an appellate statutory decision-maker (here the Board) when reviewing the statutory decision-maker of first

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[20] With respect to the standard of review to be applied by the Court of Queen's Bench in a juridical review, the *Newton* decision provides:

> "The standard of review analysis respecting the relationship between superior courts [(Queen's Bench)] and administrative tribunals [(the LERB in the *Newton* case, or if Board it were being subject to a judicial review)] is found in *Dunsmuir* v. *New Brunswick*, … building on the platform laid down in *Pushpanathan* v. *Canada (Minister of Citizenship and Immigration)* …. *Dunsmuir* summarized the standards used at [paragraph] 51:
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> > '... questions of fact, discretion and policy as well as questions where the legal issues cannot be easily separated from the factual issues generally attract a standard of reasonableness while many legal issues attract a standard of correctness. Some legal issues, however, attract the more deferential standard of reasonableness.'" *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 32, quoting *Dunsmuir* v. *New Brunswick*, 2008 SCC 9 ("*Dunsmuir*") and referencing *Pushpanathan* v. *Canada* (*Minister of Citizenship and Immigration*, 1988 SCC 778.

The Court in *Newton* continued:

> "The standard of review applied by the superior courts to decisions of administrative tribunals. recognizes the purely supervisory role of the superior courts. Judicial review has a constitutional foundation related to the rule of law.
>
> > 'The function of judicial review is therefore to ensure the legality, the reasonableness and the fairness of the administrative process and its outcomes [(*Dunsmuir* at paragraph 28.)].'" *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 33.

[21] With respect to the standard of review to be applied by the Court of Appeal on an appeal from the Court of Queen's Bench, the *Newton* decision provides, "the standard of review analysis respecting appellate superior courts [(the Court of Appeal)] and trial courts [(Court of Queen's Bench)] was definitively stated in *Housen* v. *Nikolaisen*, … 2002 SCC 33." *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 30.

As stated in the *Newton* decision, "…an appellant superior court reviews the decisions of the trial courts on questions of law for correctness. Errors of fact, mixed errors of fact and law, and inferences to be drawn from the facts are generally reviewed for palpable and overriding error." *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 30.

instance (here the Director), the Court of Appeal in *Newton* stated: "The central issue in this appeal is the respective roles of the presiding officers [(the statutory decision-maker of first instance)] and the [Law Enforcement Review] Board [("LERB")] in the police disciplinary process in Alberta."[22] This is the standard of review that is relevant in this case, and the standard of review will be either reasonableness or correctness.

[19] The Court of Appeal in *Newton* stated the primary factor in setting the standard of review is to examine the respective roles of the tribunal of first instance (here the Director) and the appellate administrative tribunal (here the Board).[23] The respective roles of the reviewing (the Board) and reviewed tribunal (the Director) are first and foremost a question of statutory interpretation.[24] This position is supported by the recent decision from the Saskatchewan Court of Appeal in *City Centre Equities Inc.* v. *Regina (City)* ("City Centre").[25] In the City Centre case, the Court undertook a cross-jurisdictional survey of the approaches taken to determine the appropriate approach to the standard of review.[26] In applying the findings of their cross-jurisdictional survey, the Saskatchewan Court of Appeal affirmed *Newto*n and summarized the central theme for determining the appropriate standard as being: "What role did the Legislature intend the appellate tribunal to play?"[27]

[20] In *Pelech* v. *Alberta (Law Enforcement Review Board),*[28] the Alberta Court of Appeal clarified that not all the *Newton* factors are in play in every analysis of standard of review. According to the Court of Appeal in *Pelech*, the respective roles of the decision-makers as determined through statutory interpretation will always be the ultimate determiner of what standard of review an appellate tribunal should apply.

[21] Therefore, the structure of EPEA is the vital consideration. As discussed, the Director is an official within Alberta Environment and Parks. Ordinarily, but for this appeal

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22 *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 27.

23 *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 57.

24 *Newton* v. *Criminal Trial Lawyers' Association*, 2010 ABCA 399, at paragraph 57.

25 *City Centre Equities Inc.* v. *Regina (City)*, 2018 SKCA 43.

26 *City Centre Equities Inc.* v. *Regina (City),* 2018 SKCA 43, at paragraphs 30 to 59.

27 *City Centre Equities Inc.* v. *Regina (City),* 2018 SKCA 43, at paragraph 43.

28 *Pelech* v. *Alberta (Law Enforcement Review Board)*, 2010 ABCA 400 ("*Pelech* ") at paragraph 22.

process, the Minister would be the Minister accountable for the activities of her officials, including the Director. The Legislature, when it created EPEA in 1993, replacing eight historical environmental statutes, and created the Board, introduced "due process" enhancements into the legislation. The scheme of EPEA allows for appeals that are eventually presented to the Minister for her final decision, but EPEA enhances the fairness and openness of the system in certain important ways.

[22] First, the appellants and respondents in an appeal are afforded a fuller and more open hearing before the Board than that afforded at the Director's level.[29] Second, the evidence from such hearings is assessed by an independent and expert tribunal. The Board's appeal panels are presumed to be and are in fact experts within the fields involved in environmental protection. The panels are able to provide the Minister not just with advice based on the submissions of the hearing participants, but advice on the subject matters of the appeal assessed through collectively "expert eyes."

[23] The Board is not the final decision maker. As the Supreme Court of Canada has recognized, the decisions in cases such as this are heavily laden with political – public good – considerations which the Minister herself is best placed to make.[30] As the Alberta Court of

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[29] At the hearing, while the Director's record plays a key role in the proceeding, the parties to an appeal are entitled to provide *de novo* evidence – new evidence that was not before the Director at the time he made his decision. It is very common for all the parties to file new technical reports and call experts. In preparation for the hearing, the Director may undertake additional technical work, including site visits and further reviews of technical information. The importance of accepting new evidence was discussed by the Board in *Document Production: Maga et al*. v. *Director, Northern Region, Regional Services, Alberta Environment* re: *Inland Cement Limited* (13 February 2002), Appeal Nos. 02-023,024, 026, 029, 037, 047, and 074-ID3 (A.E.A.B.). At paragraph 60, the Board stated:

> "Several judicial decisions have informed the Board that our hearing is *de novo*, and the Director and Approval Holder conceded this. Thus, the Board should look at additional evidence that the Director did not have when he made his decision to issue the Approval. Further, when the Board provides recommendations to the Minister, the Minister has the power to confirm, reverse or vary the decision of the Director, and therefore, it is prudent upon the Board to hear all relevant information to enable it to present a thorough and balanced report to the Minister." (Footnotes not included.)

[30] In *Imperial Oil Ltd.* v. *Quebec (Minister of the Environment)*, 2003 SCC 58, the Supreme Court of Canada stated at paragraphs 38:

> "The Minister was performing a mainly political role which involved his authority, and his duty, to choose the best course of action, from the standpoint of the public interest, in order to achieve the objectives of the environmental protection legislation.

Queen's Bench has described, the legislation allows the Minister to bring "… knowledge of the political pressures to bear on the final decision. Balancing the wide and often conflicting interests as are set out in the purpose of the Act is a decision for which a Minister has qualifications and expertise by virtue of his or her position."[31] The structure of the legislation, with a report and recommendations, is not the type of judicial review where the statute, read as a whole, indicates a legislative intent for the director to be the final decision maker, which is the justification for deference on judicial review. That justification is not present here. Rather, when a party files an appeal, the heavily administrative process of the director gives way to an appeal to the Minister, but it is an appeal where the Minister is acting on the advice of an expert tribunal. This suggests to the Board that no deference to the director is intended where the Minister is convinced after considering the Board's process and analysis, of the need to reverse or vary the orders made within AEP .

[24] There is no presumption that the officials within AEP , all no doubt with expertise in their specific fields, will have sufficient legal expertise to make final rulings on the statutory interpretation of the Act. However, the Court has repeatedly recognized the Board's expertise in this area. There is no basis for a deferential standard given the Board's expertise, something that distinguishes the judicial review standard.

[25] This same conclusion is supported by the broad scope of the authority given to the Minister following her receipt and analysis of the Board's Report and Recommendation. She is free to replace the Director's action with whatever she believes, after receiving the Board's advice, that the Director ought to have done. There is no indication in EPEA that the responsible Minister should, as a matter of law, give deference to her officials. She may choose to do so, but it is not a presumption upon which the Board should temper the recommendations it provides.

[26] Considering these roles, the proper standard of review to apply to the Director's decision in the circumstances of this case is correctness, with no deference to the Director. The role of the Board is to provide the Minister with the best possible advice to support exercising her broad jurisdiction under EPEA. The Minister uses the Board's advice to make a better

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[31] *Imperial Oil Limited and Devon Estates Limited* v. *HMQ and the City of Calgary*, 2003 ABQB 388 at paragraph 37.

decision than the Director, which can consider a broader range of considerations than the Director.

IV. ANALYSIS

[27] As stated, based on the evidence and arguments presented at the hearing of the appeals, the Board has concluded that the Orders are without foundation, and the Board recommends the Minister reverse the Director's decisions to issue these Orders. The Board has concluded that the Director's approach to this matter has been both incorrect and unreasonable.

[28] Based on the evidence and arguments presented at the hearing, and the Board's review of the Orders, the Board needs to address the following matters in its Report and Recommendations:

(1) the Director's view that the Parcel Y Berm was constructed without proper authorization (Unauthorized Berm Construction);

(2) the Director's view that the Parcel Y and Parcel C Berms were constructed with hazardous waste and, therefore, their construction constitutes unauthorized disposal of waste, and more specifically, the berms are unauthorized hazardous waste landfills (Hazardous Waste);

(3) the Director's view that the contaminants present on the Site are not-soil bound and are mobile (Contaminant Mobility);

(4) the Director's view that there are soils containing contaminants (naphthalene, dioxins, and furans) on the Site that exceed :

   (a) the Alberta Tier 1 Soil and Groundwater Remediation Guidelines, 2016, (the "Tier 1 Guidelines"), and

   (b) acute criteria established in two Provisional Guidance Documents[32] developed by the Director's staff,

[32] See: Exhibits 10 and 11. "Provisional Guidance – Acute Exposure Criteria Derivation: Naphthalene, March 13, 2018" and "Provisional Guidance – Acute Exposure Criteria Derivation: Dioxins and Furans, March 13, 2018."

and, as a result, that these soils are not suitable to be managed in-place (Criteria); and

(5) the additional work that needs to be done to ensure the safety of the residents in Parcel C, known as the Verte Homesteader Community, and the area north of the Greenbelt, known as the Overlanders Community (Environmental Protection Orders).

The Board also set six specific issues that also need to be addressed. The Board will address each of these matters in turn.

A. UNAUTHORIZED BERM CONSTRUCTION

[29] The Site came to the attention of the Director in 2015, when a member of the Approvals Group referred the matter to the Director, expressing concern Cherokee had constructed the Parcel Y Berm without "written authorization." According to the Director, Cherokee's Approval required the Approval Director's written authorization before Cherokee could construct the Parcel Y Berm, and by constructing the Parcel Y Berm without this written authorization , Cherokee contravened its Approval. According to the Director, this contravention of the Approval provides the basis for issuing the Orders.

[30] The Director based this conclusion on sections 5.2.2 and 5.3.2 of Cherokee's Approval. These sections provide:

> "5.2.2 The approval holder shall implement the Decommissioning plan as authorized in writing by the Director. …
>
> 5.3.2 The approval holder shall implement the Land Reclamation plan as authorized in writing by the Director."

These provisions are common in many approvals that have come before the Board, and in response to these provisions, the Approval Director normally issues a standard letter allowing the specified work to proceed. All parties agree that the Approval Director did not issue a standard letter in this case.

[31] While the Board understands the Director's argument, the Board finds that Cherokee believed they had the required authorization. The Board is of this view because: (1)

poor wording in the Approval makes it unclear when written authorization is required;[33] (2) Cherokee presented evidence, that was not refuted, that it had met with and otherwise communicated with AEP on numerous occasions regarding its plans to construct a berm using contaminated material from the Site, and Cherokee had a letter from a senior official from AEP approving the use of the Parcel Y Berm as the method for on-site management of the contaminated material;[34] and (3) representatives from AEP visited the Site while the Parcel Y Berm was being constructed and did not object to the construction taking place. The Board notes a member of the Director's staff came to the same conclusion when she undertook an initial review of the construction of the Parcel Y Berm.

[32] Reviewing the wording of the Approval, the Director is correct that sections 5.2.2 and 5.3.2 of Cherokee's Approval indicates written authorization is required of a Decommissioning plan and a Land Reclamation plan. These sections provide:

> "5.2.2 The approval holder shall implement the Decommissioning plan as authorized in writing by the Director. …
>
> 5.3.2 The approval holder shall implement the Land Reclamation plan as authorized in writing by the Director."

However, sections 5.1.1 and 5.1.2 of the Approval provide :

> "5.1.1 The approval holder shall provide a new Decommissioning and Land Reclamation Plan to the Director by no later than December 31, 2010 unless otherwise authorized in writing by the Director. …
>
> 5.1.2 The approval holder shall implement the Decommissioning and Land Reclamation Plan as authorized by the Director."

The wording in the Approval creates confusion, first because sections 5.1.1 and 5.1.2 do not include the requirement for the authorizations to be in writing, whereas it is specifically required in 5.2.2 and 5.3.2. Second , the Approval does not use consistent names for the required plans. Specifically, 5.1.1 and 5.1.2 refer to a Decommissioning and Land Reclamation Plan, while 5.2.2 and 5.3.2 refer to a Decommissioning plan and a Land Reclamation plan, respectively. It is

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[33] Condition 5.1.2 of Approval, provides: "The approval holder shall implement the Decommissioning and Land Reclamation Plan as authorized by the Director." This condition does not include the requirement for the authorization to be in writing.

[34] Cherokee had a letter from Rick Brown, who at the time was the Executive Director of the Northern Region, AEP, which subsequently became the Red Deer-North Saskatchewan Region, AEP.

unclear from the Approval whether one plan is required or whether three plans are required. However, based on the Board's review of the Director's Record, AEP appears to believe only one plan – the Decommissioning and Land Reclamation Plan – may be required.

[33] The evidence presented at the hearing was that Cherokee initially believed it had filed the Decommissioning and Land Reclamation Plan, dated June 26, 2009,[35] when it was provided to Mr. Rick Brown. At the time, Mr. Brown was the Executive Director of the Northern Region of Alberta Environment.[36] In response to this Decommissioning and Land Reclamation Plan, Mr. Brown responded with a letter dated August 10, 2009.[37] The letter stated:

> "Alberta Environment (AENV) has reviewed the [Remedial Action Plan (the 'RAP')] relative to the *Environmental Protection and Enhancement Act* (EPEA). The RAP provides a general approach to soil and groundwater issues at the site. In principle, [Alberta Environment] has no objection to the key components of the plan as outlined in the RAP. It is [Alberta Environment's] understanding that the overall objective of the RAP is attainment of site-specific soil and groundwater remediation objectives at the Domtar property…." (The Board notes Alberta Environment or AENV is one of the predecessors of AEP.)

It was not until sometime in early 2011, when AEP contacted Cherokee and advised that the document provided to Mr. Brown had not been considered the Decommissioning and Land Reclamation Plan required under the Approval. In response, Cherokee filed the same document with AEP, but dated March 21, 2011.[38]

[34] In the Board's view, the poor wording of the Approval, combined with the letter from Mr. Brown supports Cherokee's view that it had authorization to proceed with implementing its remediation plan, which included constructing the Parcel Y Berm. Further, while not expressly discussed during the hearing, it appears to the Board, based on comments

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[35] See: Exhibit 3, Tab 1. Letter Report from Barenco Environmental Engineering and Site Remediation Services, dated June 26, 2009.

[36] The Northern Region of Alberta Environment eventually became the Red Deer-North Saskatchewan Region of Alberta Environment and Parks.

[37] See: Exhibit 3, Tab 3. Letter from R.L. (Rick) Brown, Regional Director, Northern Region, to Mr. Marcel Sylvestre, Director, Soil Rehabilitation, Domtar Inc., dated August 10, 2009. In August 2009, Domtar still held the Approval.

[38] See: Exhibit 3, Tab 6. Letter Report from Barenco Environmental Engineering and Site Remediation Services, dated March 21, 2011.

made by Cherokee's corporate witnesses, Cherokee may have confused Mr. Brown's role as an Executive Director, with the role of the statutory "directors" under EPEA. The statutory directors are referred to as "managers" in AEP's organizational chart. The title of "Executive Director" is an organizational title within AEP, not a statutory designation. In the Board's view, this potential for confusion also supports Cherokee's belief it had the authorization from a "director."

[35] In the written submissions filed on behalf of Cherokee,[39] there is an extensive record of senior officials confirming that Cherokee's brownfield redevelopment was acceptable to AEP. One example is a letter from Mr. Randall Barrett. Mr. Barrett, who succeeded Mr. Brown as Executive Director of the Red Deer-North Saskatchewan Region, AEP, wrote to the City of Edmonton on July 5, 2013, confirming that the project was acceptable to AEP. Again, this supports the view that Cherokee thought they had authorization to proceed with their work.

[36] Further, on October 9, 2014, a number of representatives from AEP, including Dr. Qunli Dai and Dr. Claire McGuigan, both of whom appeared at the hearing as witnesses for the Director, visited the Site. They noted the Parcel Y Berm was 70 to 80 percent constructed. Despite having concerns whether there may be contraventions of the Approval, at no time did they advise Cherokee to stop construction of the Parcel Y Berm. In the Board's view, if the AEP staff had these concerns, they should have advised Cherokee to stop the work they were undertaking.

[37] Finally, when the Director became aware of the Approvals Group's concerns that construction of the Parcel Y Berm may have been undertaken without the "required" authorization, the Director asked one of his Investigators to undertake a file review. On March 16, 2015, the Investigator wrote to the Director, advising that in her view the Parcel Y Berm was approved either "implicitly or explicitly." The Investigator also indicated AEP had been

[39] See: Cherokee's Initial Hearing Submission, dated July 6, 2018, and Cherokee's Initial Closing Submission, dated October 29, 2018.

working with Cherokee to implement a Decommissioning and Land Reclamation Plan that had been submitted in 2011.[40]

[38] In the Board's view, Cherokee's belief that they had authorization to implement their Decommissioning and Land Reclamation Plan, which included the construction of the Parcel Y Berm, using contaminated material from the Site to construct the Berm, was reasonable. The evidence shows that communications and interactions between AEP and Cherokee contributed to Cherokee's understanding that it had obtained the necessary authorization. As a result, the Board is of the view it was both unreasonable and incorrect to issue the Orders on the basis that Cherokee contravened its Approval by undertaking the work on the Site and, in particular, the construction of the Parcel Y Berm.

B. HAZARDOUS WASTE

[39] The Director issued the Orders, in part, because he believed Cherokee contravened EPEA by illegally disposing of hazardous waste. In the Director's view, when Cherokee moved the contaminated material from one place to another on the Site, and then used the contaminated material to build the Parcel Y Berm, the contaminated material became waste. Further, according to the Director, in building the Parcel Y Berm using the contaminated material, Cherokee built an unauthorized landfill. Finally, according to the Director, because the contaminated material meets certain requirements of the *Waste Control Regulation*, A.R. 192/1996, the contaminated material is hazardous waste and the Parcel Y Berm is an unauthorized hazardous waste landfill.[41]

[40] The Board does not accept the Director's interpretation of EPEA that the contaminated material used to construct the Parcel Y Berm is waste.[42] The consequence of the

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[40] See: Exhibit 67, Tab 4. Letter from Angela Brown, Investigator to Michael Aiton, Regional Compliance Manager and John Collins, Compliance Manager, dated March 16, 2015.

[41] Section 1(v) of EPEA defines hazardous waste as, "… waste that has one or more of the properties described in Schedule 1, but does not include those wastes listed in Schedule 2…." Therefore, to be hazardous waste, a material must first be waste.

[42] The Board notes in *Alberta (Director, Environmental Service, Prairie Region)* v. *Alberta (Environmental Appeal Board)*, 263 AR 55, which is a case where the Director filed a judicial review against the Board, it was determined the Board has the jurisdiction to determine questions of law:

Board's view is that the contaminated material is not hazardous waste. Therefore, the Orders cannot be based on "illegally disposing of hazardous waste." Further, the Parcel Y Berm is neither a landfill, nor a hazardous waste landfill.

[41] In the Board's view, the Director's interpretation is both unreasonable and incorrect. EPEA does not define waste, but waste is defined in the *Waste Control Regulation*. Under the *Waste Control Regulation*, for material - even contaminated material - to be waste there must be an "intention" to dispose of the material. The *Waste Control Regulation* defines waste as "…any solid or liquid material or product or combination of them that is intended to be treated or disposed of or that is intended to be stored and then treated or disposed of…."[43] (Emphasis added.) Neither Cherokee, nor Domtar intended to dispose of the contaminated material present on Parcel Y or in the Parcel Y Berm. First, the Parcel Y Berm forms part of the reclamation and remediation design chosen by Cherokee for the Site. The contaminated material

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"[20] The result of the pragmatic and functional analysis leads to the conclusion that the Board does have the jurisdiction to consider and recommend to the Minister whether or not the Director acted within his jurisdiction …. [EPEA] gives the Board broad powers on appeal which are not specifically limited. The Board is an expert tribunal established to consider appeals …. The Legislature has signalled its intention for the Board and the Minister to deal with these issues through the strong privative clause. …

[21] The comments of Madam Justice L'Heureux-Dubé in *R.* v. *Consolidated Maybrun Mines Ltd. et al.*, … [1998 SCC 820], after reviewing the administrative appeal process in Ontario's equivalent to [EPEA] question here, are apropos:

> 'In establishing this process, the legislature clearly intended to set up a complete procedure, independent of any right to apply to a superior court for review, in order to ensure that there would be a rapid and effective means to resolve any disputes that might arise between the Director and the persons to whom an order is directed. The decision to establish a specialized tribunal reflects the complex and technical nature of questions that might be raised regarding the nature and extent of contamination and the appropriate action to take. In this respect, the Board plays a role that is essential if the system is to be effective, while at the same time ensuring a balance between the conflicting interests involved in environmental protection.' [At paragraph 57.]

[22] … In *Gulf Canada Resources Ltd.* v. *Alberta (Minister of Environmental Protection)*, … [42 Alta LR (3d) 336], Madam Justice Kenny held, on a judicial review of the Board's determination on a notice of [appeal], that the Board was not limited to a review of whether or not the decision of a reclamation inspector was reasonable in light of the reclamation criteria and whether or not that criteria was satisfied. Rather, when deciding an appeal, Her Ladyship held that the Board may review the matter and determine that the Reclamation Certificate should not have been issued at all. Furthermore, in *Chem-Security (Alberta) Ltd.* v. *Environmental Appeal Board (Alta.)* [1997] A.J. No. 738 (Q.B.), and *Kostuch* v. *Environmental Appeal Board (Alta.)*, 182 A.R. 384 (Q.B.), it was held that the Board does have jurisdiction to decide questions of law."

[43] See: Section 1(ll) of the *Waste Control Regulation*.

was not removed from the Site. Second, Cherokee used the contaminated material as a construction material for the Parcel Y Berm and kept the material on the Site. The Parcel Y Berm is intended to act as a barrier to protect the proposed residential development in the main part of Parcel Y from the Canadian National Railway Mainline and Yellowhead Trail/Highway 16. The Parcel Y Berm is an essential element of the project. In the Board's view, Cherokee clearly intended to use the contaminated material, not dispose of it, and therefore it is not waste.

[42] The Director argued that by placing the contaminated material in its final resting place – meaning within the Parcel Y Berm - Cherokee intended to dispose of it. The Director gets the concept of placing material in its final resting place from the definition of "dispose" in the *Waste Control Regulation*. Section 1(p) of the *Waste Control Regulation* defines dispose as "…when used with respect to waste at a landfill or by deepwell injection, means the intentional placement of waste on or in land as its final resting place…." The significant part of this definition is that it only applies with respect to landfills and deepwells used for injection; it is not a general definition of dispose. In the Board's view, it is incorrect and unreasonable to import part of the definition of dispose into the definition of waste.

[43] The Board is also concerned about the Director's interpretation of the definition of waste, and more specifically hazardous waste, with respect to the use of landfills in Alberta. If the Director's interpretation is correct, then very large quantities of the contaminated material from this Site will have to be taken to a hazardous waste landfill – also referred to as a Class 1 Landfill. If the same interpretation of waste is applied to all the other former industrial sites in Alberta, the volume of material that would have to be transported on public roads and disposed of at hazardous waste landfills would be completely unprecedented. In the Board's view, the transportation of these wastes could result in unnecessary risks. Further, there are comparatively few hazardous waste landfills in Alberta, and the space in these landfills is very valuable, not only from a monetary perspective, but also from an environmental perspective. Using up this valuable landfill space to deal with contaminated materials that could be safely and responsibly managed on-site makes it clear the Director's interpretation of the definition of waste and hazardous waste is both incorrect and unreasonable.

C. CONTAMINANT MOBILITY

[44] The Director issued the Orders in part because he believes the chemicals of concern are moving on the Site and, therefore, have the potential to cause an adverse effect by impacting the communities surrounding the Site. In the Director's view, both Cherokee and Domtar are responsible for addressing this concern. As a result, the potential for and the degree to which chemicals of concern, particularly hydrocarbons, naphthalene, dioxins, and furans, can move laterally and vertically on the Site was a significant factor in these appeals. Specifically, the Board considered:

1. the potential for the lateral movement of chemicals of concern in the subsurface from the berms and the Greenbelt towards the residential communities,
2. the potential for the downward movement of chemicals of concern toward groundwater,
3. the potential for the upward and lateral movement of naphthalene vapours towards nearby homes, particularly from the Greenbelt, and
4. the potential for the transmission of chemicals of concern, in particular dioxins and furans, by dust.

In considering these issues, it is important to understand the source of the contamination – the use of wood preservatives on the Site – has been eliminated. The last time wood preservatives were used on the Site was sometime in 1987, over 30 years ago. This means the Site has likely reached a form of equilibrium, such that the likelihood of chemicals moving any significant distance on the Site is low. Based on the evidence presented at the hearing, the Board has concluded it is highly unlikely the chemicals of concern on the Site are moving through the soil in such a way as to pose a danger to the residents who live in the area, the people who use the area, or the environment. However, as discussed below, the Board will be recommending that more delineation be done to ensure that the Site and surrounding areas are safe.

1. NAPL[44]

[45] The Board notes that throughout the hearing there were a variety of terms used, seemingly interchangeably, for the hydrocarbon contamination found on the Site. These terms included "non-aqueous phase liquids," "NAPL," "free-phase hydrocarbons," "free-phase hydrocarbon liquids," and "free product." Mr. Guy Patrick, a witness for Domtar, indicated his understanding was that the phrase "free-phase" used in the Orders and some other documents indicates the presence of NAPL.[45] Mr. Patrick explained "free-phase" does not mean it is free to move or that it is mobile. The Director's expert witness, Ms. Jillian Mitton, agreed and confirmed that although these different terms are often used interchangeably sometime incorrectly, in the reality they all mean the same thing: NAPL.[46]

[46] In the Board's view, the use of these various terms created significant concerns with the Director's analysis. In a number of cases, the incorrect use of these terms led to the incorrect conclusion that hydrocarbons were moving on the Site . For example, when reviewing old sampling data, the Director's staff interpreted entries identifying free-phase hydrocarbons as being hydrocarbons that were mobile and capable of moving through the soils on the Site. In another example, the Director's staff compared old sampling data with new sampling data, and because some of the entries indicated "free-phase hydrocarbons," the data were interpreted as hydrocarbons moving from one sampling location to another sampling location . These conclusions were incorrect.

2. Mobility of NAPL

[47] Creosote, one of the main wood preservatives used at the Site, is an oily liquid composed mainly of polycyclic aromatic hydrocarbons (referred to as "PAHs"). Creosote does not mix with water and remains in a separate or non-aqueous phase, which can commonly be

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[44] NAPL, or non-aqueous phase liquids, are liquid contaminants, which do not easily dissolve in or mix with water. Creosote is an example of NAPL.

[45] See: Transcript Volume 2, Page 486.

[46] In this Report and Recommendations, the Board will use the term "NAPL" to refer to all these terms.

seen as a separate layer in a water column. Creosote is one type of non-aqueous phase liquid or NAPL.[47]

[48] NAPL is slightly heavier than water, and as a result, sinks to the bottom of a water column. NAPL can enter the spaces in soil, referred to pores, fractures, and fissures, but only when the weight of the NAPL creates a pressure greater than the pore entry pressure of the soil.[48] Therefore, NAPL will migrate through soil when there is sufficient pressure to overcome the soil pore entry pressure.

[49] Once the original source of the contamination is removed, and creosote (NAPL) is no longer being released into the soil, the weight of the NAPL and the corresponding pressure diminishes such that it can no longer overcome the pore entry pressures in the soil and the movement of creosote through the soil stops. Residual NAPL is left behind, captured within the soil by capillary forces. Deposits of immobile but potentially recoverable NAPL can be found in pockets or areas where NAPL is captured within the soil, that can occur at the boundaries between different soil types. In other words, the NAPL is captured in and is bound by soils of different composition and permeability.

[50] Mr. Patrick explained that unfractured fine-grained soils such as clays, silts, and clay tills will not physically allow NAPL (creosote) to migrate through them. NAPL cannot migrate through these soils because the pore entry pressure of these soils is much greater than the pressure created by the weight of the NAPL (creosote). In the absence of root holes or significant soil fractures, these soils can be very effective natural barriers to the migration of NAPL (creosote). The Board notes these are the types of soils that are found under the Parcel Y Berm and that are also used as cover material for the Parcel Y Berm. As a result, it is highly unlikely that NAPL is migrating from the Parcel Y Berm.

[51] No evidence was presented at the hearing to refute Mr. Patrick's evidence regarding the physical characteristics, properties, or flow patterns of NAPL (creosote) in the soil

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[47] See: Exhibit 13, Tab 4.

[48] Pore entry pressure is a form of capillary action, which prevents a liquid from entering into the spaces between soils. The liquid will not enter the pore until the weight of the liquid, or the pressure exerted by the liquid, is greater than the pore entry pressure.

on the Site. Ms. Mitton corroborated Mr. Patrick's explanation of NAPL becoming captured in soil pore spaces and reaching an equilibrium. According to Ms. Mitton, "NAPL won't move forever."[49]

[52] Mr. Patrick explained it is possible to see "oil" in a monitoring well that has intercepted a pocket of NAPL captured within stratigraphic contact (the boundaries between layers of soil).[50] In these cases, NAPL would be considered potentially mobile, but it does not mean the NAPL is moving through the soil.

[53] At the hearing, the Director's staff appeared to be of the opinion that the presence of hydrocarbons in monitoring wells meant the NAPL within the berms and Greenbelt are mobile. However, no evidence was presented by the Director to explain the drive mechanism for this "movement" of NAPL, or how it is physically possible for isolated pockets of NAPL to move within the compacted clay-rich soils found in the berm and in the soils that make up the majority of the Site, including the area under the Parcel Y Berm, especially considering the source of the contamination had been "cut-off" over 30 years ago.

[54] Ms. Mitton explained she would not expect the NAPL encountered at the Site to move any substantial distance, such as in the order of hundreds of metres.[51] She indicated there may be downward or lateral movement "in the order of a couple of centimetres or couple of feet," due to the presence of fractures or permeable sand lenses, and would be limited by the heterogeneity of the soil on the Site.[52]

[55] Ms. Mitton also explained that the downward flow gradients on the Site were significantly greater than the lateral flow gradients.[53] The Board understands this to mean that if contaminants were to enter the water table (a zone of soil saturated with water), the contaminants would be much more likely to travel down rather than laterally across the Site.

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49 See: Transcript Volume 4, Page 1235.

50 See: Transcript Volume 2, Pages 486.

51 See: Transcript Volume 4, Page 1238.

52 See: Transcript, Volume 4, Page 1239.

53 See: Transcript, Volume 7, Pages 2056 to 2058.

This also indicates to the Board there is no migrating plume of contamination from Parcel X towards Parcel C as suggested by the Director's staff.

[56] Further, according to Ms. Mitton, the dominant groundwater flow direction in underlying formations is to the east and southeast, toward the North Saskatchewan River.[54] This is important because it is away from the residential neighbourhoods. Despite the dominant groundwater flow direction being towards the river, the contamination is extremely unlikely to ever get near the river.

[57] Taking this into account, along with the other evidence presented at the hearing, the Board is of the opinion there is no potential for the NAPL found at the Site to be mobile to such a degree that would impact nearby residents or other users of the area. In the Board's view, the Director's conclusions regarding the mobility of NAPL on the Site are both incorrect and unreasonable. As a result, the Director's concerns regarding NAPL do not form a valid basis for issuing the Orders.

3. Mobility of Dioxins and Furans

[58] With respect to the potential for mobility of dioxins and furans in the soils, the Director's witness, Dr. Lekan Olatuyi, presented an overview of an article he had reviewed regarding the potential for dioxins and furans to bind to soil particles and be transported via groundwater flow.[55] Upon questioning from the Board, Dr. Olatuyi confirmed his evaluation did not involve any transmissivity or permeability studies of the soils comprising the berms or other areas of the Site . In the Board's opinion, the fact that the berms at the Site were constructed in compacted lifts, as an engineered structure, and are comprised of a mixture of different soils and materials from the Site (being mainly clays and tills), indicates that these factors would need to be considered to estimate the potential for contaminant mobility. Therefore, the Board places little weight on Dr. Olatuyi's evidence regarding the potential for mobility of dioxins and furans in and below the Berms.

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[54] See: Transcript, Volume 4, Pages 1181 to 1183.

[55] See: Dr. Lekan Olatuyi Draft Opinion "Review of Potential Mobility of Dioxins and Furans in Parcel C Berm – Domtar Site, Undated." Exhibit 55.

[59] As indicated above, Ms. Mitton explained that the dominant groundwater flow directions are to the east and southeast, which is away from the adjacent communities, and that the dominant flow gradient on-site is downward, rather than lateral.

[60] Therefore, based on the above and the evidence presented, the Board finds that there was insufficient evidence to demonstrate mobility of dioxins and furans, through groundwater in the subsurface, to the degree that would impact nearby residents, users of the area, or the environment.

[61] Evidence was presented regarding the potential for dioxins and furans in dust particles to be transported by wind. However, the Board notes that dust suppression tactics are being employed on the Site. Ms. Mitton explained air monitors to detect dioxins and furans were installed around the perimeter of Parcel Y when delineation drilling activities were being conducted. Upon questioning by the Board, Ms. Mitton confirmed, at the time, the monitors did not detect dioxins and furans in the air, thereby indicating that dust suppression techniques, including wetting exposed soil and providing vegetation for ground cover, appeared to be effective in preventing dust that could contain dioxins and furans, from being carried offsite by wind.[56] In the Board's view, it is important that comprehensive dust suppression techniques continue to be employed on the Site while any work is being undertaken. In order to ensure that the Board's concern regarding dust is addressed, the Board will be recommending that the Minister include the requirement dust control measures, both short-term and long-term, be required in her Ministerial Order and in the environmental protection orders.

4. Naphthalene Vapours

[62] The potential for mobility of naphthalene vapours was discussed at the hearing with regards to the potential impacts on homes adjacent to the Greenbelt, in the Overlanders Community. The potential for mobility of naphthalene vapours from the berms was not discussed or considered a concern because naphthalene vapours, if any were present, would disperse into open atmosphere and not create a hazard.

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[56] See: Transcript, Volume 9, Page 2765.

[63] Several of Domtar's expert witnesses explained that the properties of the clay-rich soils in the Greenbelt, the heterogeneity of the soil materials, as well as the compaction of the materials, all contributed to low permeability and, therefore, there is a low likelihood for naphthalene vapours to be released. Nevertheless, there is a concern that naphthalene vapours could migrate through fractures and pore spaces into the basement of a few of the homes adjacent to the Greenbelt. Evidence was presented at the hearing regarding sampling that had been conducted in the 1990s to test for the presence of naphthalene vapours in the subsurface and in homes adjacent to the Greenbelt, as well as modelling done to estimate the potential for naphthalene vapours to be released from the Greenbelt and migrating into people's homes.[57] The results from these studies showed little or no potential for naphthalene vapours to migrate from considerable depths under the Greenbelt, to the adjacent homes, and then enter the homes. No evidence was presented by the Director or his staff to refute the study that had been conducted. However, Domtar did agree it would be appropriate to conduct additional sampling to confirm whether a potential for seasonal variations could exist, as this may not have been adequately addressed by the sampling conducted as part of the study.

[64] Based on the evidence presented at the hearing, it does not appear that dioxins and furans are a concern with respect to the Greenbelt and the Overlanders Community. However, because of the Board's concern with data gaps relating to the Greenbelt and the failure of the proxy that was used to detect dioxins and furans elsewhere on the Site, the Board will be recommending that along with the work required for naphthalene, more work should be done respecting dioxins and furans. The Board will be recommending to the Minister that Domtar review all the data available for dioxins and furans on the Greenbelt and in the Overlanders Community to ensure there is not a concern with these contaminants. Where warranted, additional delineation for dioxins and furans should take place, and if there are any potential concerns, remedial action should be taken to address these chemicals of concern as well.

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[57] Given that this testing was done in the 1990s, the Board will be recommending that additional delineation be undertaken to confirm this evidence is correct.

D. CRITERIA

[65] The Director issued the Orders in part because he believes the chemicals of concern exceed certain criteria and, therefore, have the potential to cause an adverse effect by impacting the communities surrounding the Site. In the Director's view, both Cherokee and Domtar are responsible for addressing this concern.

[66] Specifically, the Director is of the view that there are soils on the Site containing contaminants (naphthalene, dioxins, and furans) that exceed :

a. the Tier 1 Guidelines, and

b. acute criteria established in two Provisional Guidance Documents developed by the Director's staff.

Further, as a result of exceeding these criteria, the Director is of the view these soils are not suitable to be managed in-place, which is the basis of the reclamation and remediation plan for Cherokee's brownfield redevelopment.

1. Tier 1 and Tier 2 Guidelines

[67] The Government of Alberta has established two sets of criteria that are used to deal with the remediation of sites that are contaminated: the Tier 1 Guidelines and the Alberta Tier 2 Soil and Groundwater Remediation Guidelines (the "Tier 2 Guidelines").[58] As described in the evidence at the hearing, the Tier 1 Guidelines provides the "default" criteria that allows the land, once remediated to these criteria, to be used for any purpose without restriction. The Tier 2 Guidelines allow for the modification of the Tier 1 Guidelines to accommodate site-specific conditions. Tier 2 Guidelines allows the land to be remediated with certain conditions that may limit future use. For example, the Tier 2 Guidelines would permit contaminated soils to be managed in place if certain conditions (i.e. exposure control) are met.

[68] It is important to note the Tier 1 and Tier 2 Guidelines have been updated over time. For example, the remediation certificate issued to Cherokee in 2013 was issued under the

[58] Collectively, the Tier 1 Guidelines and the Tier 2 Guidelines are referred to as the Tier 1 and Tier 2 Guidelines.

2010 versions of the Tier 1 and Tier 2 Guidelines. The Tier 1 and Tier 2 Guidelines that were in place during the hearing were issued in 2016. Further, in January 2019, the Tier 1 and Tier 2 Guidelines were updated again. The versions of the Tier 1 and Tier 2 Guidelines the Board considered for the purpose of this Report and its recommendations are the 2016 versions, since the 2016 versions were in place at the time of the hearing. However, the Board understands the specific criteria in the Tier 1 and Tier 2 Guidelines for the chemicals of concern on the Site have not changed in any appreciable way in the 2019 versions of the Guidelines.

[69] According to the Director, the Tier 1 and Tier 2 Guidelines are the "law" in Alberta, and, therefore, Cherokee and Domtar must comply with them. The Director is correct the Tier 1 and Tier 2 Guidelines have been incorporated into the *Remediation Regulation*, A.R. 154/2009.[59] Specifically, the *Remediation Regulation* provides:

> "2(1) The following Guidelines are adopted pursuant to section 38 of the Act and form part of this Regulation:
>
> (a) the Alberta Tier 1 Soil and Groundwater Remediation Guidelines published by the Department on June 21, 2007, as amended or replaced from time to time; [and]
>
> (b) the Alberta Tier 2 Soil and Groundwater Remediation Guidelines published by the Department on June 21, 2007, as amended or replaced from time to time; …."

However, the purpose of the *Remediation Regulation* is to govern the issuance of remediation certificates. Just because a site exceeds the Tier 1 or Tier 2 Guidelines at a particular point in time does not mean the site is non-compliant with EPEA. A site must only be cleaned up to either the Tier 1 or Tier 2 Guidelines to get a remediation certificate. The *Remediation Regulation* (up to December 31, 2018) was not intended to describe a cleanup criteria for any other propose. In particular, the regulation and the Tier 1 Guidelines do not prescribe the cleanup criteria to be used for an industrial site that is in the middle of a brownfield redevelopment. As a result, the Board is of the view the Director's requirements in the Orders to cleanup the Site to the Tier 1 Guidelines was incorrect and unreasonable.

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[59] The Tier 1 and Tier 2 Guidelines have also been incorporated into a number of Codes of Practice issued under EPEA, but these Codes of Practice are not relevant to this matter. It is important to note that the applicable version of the Regulation is the version in force up to and including December 31, 2018. The Regulation was amended by A.R. 9/2018, which comes into force on January 1, 2019.

2. Provisional Guidance Documents

[70] The Director issued the Orders because he is concerned that naphthalene, dioxins, and furans are present on the Site in amounts that exceed "acute exposure limits." In the Orders, the Director required that all contaminated materials that exceed these acute exposure limits must be removed from the Site. This meant that a very significant amount of the contaminated material on the Site, including the contaminated material buried in the berms at significant depth, would have to be removed and take to a hazardous waste landfill. These acute exposure limits were developed by the Director's staff and incorporated into two Provisional Guidance Documents: Provisional Guidance – Acute Exposure Criteria Derivation: Naphthalene, March 13, 2018, and Provisional Guidance – Acute Exposure Criteria Derivation: Dioxins and Furans, March 13, 2018.[60] The acute exposure limits in the Provisional Guidance Document for naphthalene is 2000 mg/kg and for dioxins and furans is 230 ng/kg.[61] The Board notes the Provisional Guidance Documents are the first of their kind ever developed by AEP.

[71] An acute exposure limit is an amount of a chemical that may cause an adverse health impact as the result of a one-time exposure. An acute exposure limit is in contrast with a chronic exposure limit, where health impacts may occur as the result of exposure over an extended period of time.

[72] Until the Director's staff developed the Provisional Guidance Documents, there were no acute exposure limits for naphthalene or dioxins and furans in Alberta. Given how these chemicals impact human health, only chronic exposure limits had been formally developed in Alberta. This is consistent with many other jurisdictions. In particular, the Board notes the World Health Organization concluded: "In view of the long half-lives of [dioxins and furans], the Committee concluded that it would not be appropriate to establish an acute reference dose for these compounds."[62]

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60 See: Exhibits 10 and 11.

61 See: Exhibits 10 and 11.

62 See: Exhibit 71, Tab 17. "Evaluation of Certain Food Additives and Contaminants. Fifty-Seventh Report of the Joint FAO/WHO Expert Committee on Food Additives."

[73] At the hearing, the Director argued the Provisional Guidance Documents were formal policies of AEP, and as a result, it was not the Board's place to "look behind them." In the Board's view, the Provisional Guidance Documents are not formal policies of AEP. The Provisional Guidance Documents were not developed in the way policy is normally developed within AEP, and there was no evidence they have been officially sanctioned.

[74] AEP is divided into several major groups, including the Operations Division and the Policy and Planning Division. The Operations Division delivers AEP's programs such as granting approvals and undertaking compliance. The Policy and Planning Division is responsible for, among other matters, developing policy. While it is possible for the development of policy to begin in the Operations Division, to be a formal policy, it would have to involve the Policy and Planning Division at some point. There was no evidence the Policy and Planning Division was involved in the development of the Provisional Guidance Documents in any meaningful way.

[75] Further, where a policy like the Provisional Guidance Documents is developed, the Board would expect there to be consultation with the other compliance groups within AEP. The evidence before the Board is that there was no meaningful consultation outside of the Director's compliance group.

[76] Finally, formal policies are normally approved or signed-off by a senior official from AEP. No evidence was presented that the Provisional Guidance Documents were approved or signed-off by a senior official from AEP. Therefore, in the Board's view, the Provisional Guidance Documents are not formal policies of AEP and are, at best, advice to the Director.

[77] Turning to the Provisional Guidance Documents themselves, the Board has significant concerns with how the Provisional Guidance Documents were developed. The Provisional Guidance Documents suggest they were developed as generic documents to deal with naphthalene and dioxins and furans on residential land and parkland. In fact, upon reviewing the Provisional Guidance Documents and considering the evidence at the hearing, it is clear to the Board these documents were developed specifically for the Site. Further, the Provisional Guidance Documents were prepared on an expedited basis at the request of the

Director, based on a brief "casual" conversation between a member of the Director's staff and a member of the Scientific Working Group on Contaminated Sites in Alberta (the "SWGCSA").

[78] On their face, the Provisional Guidance Documents suggest they were developed by a subcommittee of the SWGCSA; this subcommittee was two of the members of SWGCA – an employee of AEP, who effectively worked for the Director, and a representative of Alberta Health. It was suggested that the other members of the SWGCA conducted a "peer-review" of the Provisional Guidance Documents. However, the Board believes that, at best, the other members may have reviewed the Provisional Guidance Documents, but the documents were certainly not subject to a rigorous peer-review in the ordinary meaning of the phrase, which among other things requires the reviewers to be independent. This is one of the Board's most significant concerns with the Provisional Guidance Documents. One of the reasons a rigorous , independent peer-review of the Provisional Guidance Documents is important is that the conclusions are based on a number of assumptions that require testing and significant judgement to be exercised. An independent peer-review is important to test the assumptions objectively. This is particularly true given the significant impact of these judgments on Cherokee and Domtar.

[79] The criteria in the Provisional Guidance Documents are determined based on the most significant exposure pathway, which the Director's staff determined is the exposure of a child to the contaminated material. The suggested exposure pathway includes the child coming into physical contact with contaminated soil (dermal contact) and the child consuming contaminated soil (referred to as pica behaviour).

[80] The Board has a fundamental problem with this exposure pathway. Cherokee's plan for the Site is that all the contaminated material will be buried within berms, at a considerable depth, with a minimum one-metre cap of clean soil over top of the contaminated material. Further, as discussed by the Board, the likelihood of any of the chemicals of concern migrating from within the berm is very low. Therefore, the Board believes the likelihood that this exposure pathway will actually occur is very low. The Director counters that the exposure pathway is based on the exposure controls failing. As one of the witnesses at the hearing stated, if the exposure controls fail because someone digs a hole in the berm, the much more serious risk

to the child is falling down the hole. If exposure limits are determined on the basis that exposure control measures will fail, then it would never be possible to undertake brownfield redevelopment or manage risks in any meaningful way.

[81] Further, with respect to the calculation of the exposure limits, the calculations are extremely conservative, and minor changes to the calculation can have significant effects. For example, the calculations for the exposure limits for both naphthalene and dioxins and furans is based on the child consuming 5 grams of soil within a 24-hour period. According to the United States Environmental Protection Agency, a child exhibiting pica behaviour can consume between 1 gram and 5 grams of soil. The effect of this range of pica behaviour means the exposure limits can range from 2000 mg/kg to 9000 mg/kg for naphthalene (a 4.5 fold increase) and 230 ng/kg to 1150 ng/kg for dioxins and furans (a 5 fold increase). Under the Orders, an increase in the exposure limit means that less contaminated material would have to be removed from the Site. As discussed below, when the exposure limit criteria were calculated for the Osmose site – which is a former wood preservative site now owned by the Government of Alberta – the exposure pathway involving a child exhibiting pica behaviour was not considered.

[82] The Board heard from experts in the field of toxicology and risk assessment that minor changes in the input parameters can result in vastly different values for the exposure limits that can be derived from the formulas used in the Provisional Guidance Documents, and the range of values can be so great as to render the final outcome of the formula meaningless. The multiple-fold "safety factors" included in the calculations in the Provisional Guidance Documents serve no purpose if they are not based in fact and represent true actual potential scenarios. Dr. Deena Hinshaw, the Acting Chief Medical Officer of Health, explained that the ingestion rates associated with the pica behaviour of a child can vary considerably, between 1 and 5 grams, and does not reflect definitive criteria.[63] Dr. Nina Wang explained the Provisional Guidance Documents were developed using an ingestion rate of what they felt was the high end of the range, but was also a mid-range ingestion value, when compared to other studies, in order

63 See: Transcript, Volume 10, Pages 3056 to 3058.

to calculate the acute exposure limit in the Provisional Guidance Document.[64] The Board also heard evidence from Cherokee's and Domtar's experts who explained that a minor change in certain parameters would result in vastly different, and potentially overly conservative, exposure limit criteria, so as to be essentially meaningless. The Board notes no evidence was provided to support why the particular ingestion values were selected for the calculation of the acute exposure criteria for dioxins and furans.

[83] Further, the Board is also concerned that the acute exposure criteria determined by the Director's staff and incorporated into the Provisional Guidance Documents are not realistic. As discussed earlier, an assessment by the World Health Organization concluded that developing acute criteria was not meaningful. What is also important about the World Health Organization's assessment, with respect to the calculations made in the Provisional Guidance Documents is the World Health Organization's conclusion were made with respect to the presence of dioxins and furans in food. Therefore, The Board cannot correlate the use of the pica behaviour in the Provisional Guidance Documents, with the observations of the World Health Organization. As a result, in the Board's view, the use of pica behaviour in the Provisional Guidance Documents seems inappropriate.

[84] Further, to put the acute exposure criteria developed by the Director's staff in context, the Board heard evidence that background levels for dioxins and furans is 23 ng/kg in many urban areas and up to 186 ng/kg in large cities.[65] Evidence was also presented that dioxins and furans are present in mother's milk, consumed by infants, in levels as high as 240 ng/kg in larger cities and there are no known health impacts.[66] As the Board has previously stated, evidence was also presented that soils around wooden utility poles located throughout the province, in close proximity to homes and urban parks, have higher levels of dioxins and furans than the acute exposure limits prescribed in the Provisional Guidance Documents. Finally, Dr. Mark Harris, a witness for Cherokee, provided evidence that under the United States Environmental Protection Agency, the cleanup guideline for dioxins and furans on former

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64 See: Transcript, Volume 10, Pages 3058 to 5059.

65 See: Transcript, Volume 1, Page 212.

66 See: Transcript, Volume 1, Page 196.

contaminated sites for use as residential properties has been 1000 ng/kg.[67] In the Board's opinion, this is a very significant factor regarding the context for the contamination at the Site, as compared to other commonly encountered situations.

[85] The Board also heard evidence regarding two other former treated wood products manufacturing plants. Evidence was presented about the successful brownfield redevelopment in Cochrane, Alberta; specifically, the Investicare Seniors Housing Corporation development, that the Board understands was part of the Springwood Development site. Evidence was also presented about the Osmose site, near Faust, Alberta. The Osmose site is a former treated wood products manufacturing plant that the Government of Alberta has taken over. The cleanup criteria that was determined for that site was significantly higher than determined in the Provisional Guidance Documents. Specifically, on the Osmose site the exposure limit criteria for dioxins and furans are 600 ng/kg at surface in the parkland areas and 50,000 ng/kg in areas where exposure control is being implemented, meaning the material has been buried. The Board notes that in calculating these exposure limit criteria, a child with pica behaviour was not considered as a potential exposure pathway. The Director explained the difference in the exposure criteria is based on the fact that the Site is in an urban setting, and the Osmose site is in a rural setting. While the Board understands there are differences between the two locations, the Board does not believe this difference can properly account for the difference in the exposure criteria determined for the two locations. In the Board's view, the information and rational used at the Osmose site should also have been taken into account in developing the Provisional Guidance Documents.

[86] Given the Board's significant concerns with the Provisional Guidance Documents, it was incorrect and unreasonable to use the Provisional Guidance Documents as the foundation for the Orders.

E. ENVIRONMENTAL PROTECTION ORDERS

[87] Based on the evidence presented at the hearing, the Board has concluded that the historical contamination remaining on the Site does not pose an immediate danger to the

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[67] See: Transcript, Volume 9, Page 2771.

residents and other people who use the area. However, there is more cleanup and remediation work that needs to be done on the Site and this work needs to be done as soon as practicable, but it is not an emergency as suggested by the Director. Work also needs to be done in Parcel C (the Verte Homesteader Community) and adjacent to the Greenbelt in the Overlanders Community, which will be addressed through the issuance of two new environmental protection orders, discussed in further detail below. The work required in the new environmental protection orders, discussed below, is in addition to the other work required on the Site.

[88] Dioxins and furans were unexpectedly found in both the residential part of Parcel C and in the Parcel C Berm. In undertaking the remediation work on Parcel C - before the remediation certificate was issued and the land was sold to developers - AEP and Cherokee agreed to use a "proxy" to check for dioxins and furans. A proxy is where one chemical is used to detect another chemical. Unfortunately, the proxy did not work as expected and, as a result, the dioxins and furans on Parcel C were not detected until sampling work was undertaken by the Director. The Board heard evidence that given the age of the Site, the proxy probably degraded with time, whereas the dioxins and furans - which are long-lived in the environment – remained.

[89] Based on this sampling work, it appears there are a large number of locations in Parcel C that exceeds 4 ng/kg of dioxins and furans, which is the cleanup criteria provided for in the Tier 1 Guidelines. This is the criteria that must be met to obtain a remediation certificate. Fortunately, there were only two samples in the residential part of Parcel C that exceeds 50 ng/kg, which is the Alberta Health screening level. A screening level is the level that would normally trigger further investigation on a site.[68] Sampling results that reach a screening level do not require the site to immediately be cleaned up, but it does require more investigative work to be done. In the Board's view, the levels of dioxins and furans on Parcel C do <u>not</u> pose an immediate or acute risk to the residents who live in the Verte Homesteader Community.

[68] At the hearing, Mr. Gordon Dinwoodie, a witness for the Director, explained the difference between screening levels and trigger or regulatory levels. Mr. Dinwoodie explained that under the Tier 2 Guidelines the owner of a site can develop site-specific guidelines, and these guidelines would become the trigger levels, where any materials that exceed these guidelines would trigger a cleanup. (Transcript, Volume 10, pages 2891 to 2894.) Further, under cross-examination by Mr. Letcher, Counsel for Domtar, Mr. Dinwoodie confirmed that screening levels only trigger more investigation on a site, and do not necessarily trigger a cleanup. (Transcript, Volume 10, Pages 2901 to 2908.) Mr. Dinwoodie's understanding regarding screening levels was corroborated by Ms. Mitton. (Transcript, Volume 10, Page 2934.)

However, the levels that are present need to be further investigated and addressed to avoid any potential long-term health impacts.

[90] Since the dioxins and furans were discovered, Cherokee has agreed the extent of the dioxins and furans needs to be determined, and Cherokee has indicated it will undertake the necessary work to deal with the presence of dioxins and furans in the Verte Homesteader Community and elsewhere on the site. To ensure the work on the Verte Homesteader Community gets done, the Board is recommending to the Minister that she issue an environmental protection order to Cherokee. The Board wants to ensure the appropriate level of delineation for dioxins and furans are completed, and the presence of dioxins and furans are addressed through exposure control, on-site treatment, and removal of material as necessary.

[91] With respect to the Greenbelt and the Overlanders Community, the Board does not believe there are any immediate concerns for public health. The Board's concern pertains to a number of data gaps. Significant work has been done to characterize the Greenbelt and a number of locations along the boundary between the Greenbelt and the Overlanders Community. The Board heard evidence from Cherokee's and Domtar's expert witnesses that a significant amount of sampling had been conducted throughout the Overlanders Community prior to the homes being constructed, but that the Director did not consider this information. The Board believes all the sampling data (both recent and historical) needs to be reviewed to ensure no data gaps, and it may be necessary to undertake sampling further into the community to ensure the delineation was complete. To ensure this work gets done, the Board is recommending to the Minister that she issue an environmental protection order to Domtar.

[92] The Minister could include the requirements to do this work in her Ministerial Order. However, issuing environmental protection orders will allow for the proper access and completion of this work. Given that both the Verte Homesteader Community and the Overlanders Community are occupied, it may be necessary to undertake work on private property. If such work is necessary, EPEA provides a mechanism for the recipient of the environmental protection order to access private property.[69]

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[69] See: Sections 250, 251, and 252 of EPEA.

F. ISSUES

[93] In preparation for the hearing, the Board set six issues to be considered. Based on the evidence presented at the hearing and the considerations above, the Board provides the following response to these issues, which in part reflects the reasons discussed above.

1. What is the standard of review the Board should apply in these appeals?

[94] As discussed, the Board has determined that the appropriate standard of review is correctness. With respect to an enforcement order, the Board's role is to provide a report and recommendations to the Minister and recommend that the Minister confirm, reverse, or vary the Director's decision to issue the order. Given this role and the fact that the Minister can substitute her decision for that of the Director, the proper standard of review is correctness. In any event, the Board has concluded that the Director's decisions to issue the Orders were neither reasonable, nor correct.

2. Did the Director appropriately conclude each of the Appellants contravened *EPEA* and, therefore, had jurisdiction to issue the Orders?

[95] The Board finds the Director lacked the jurisdiction to issue the Orders. For the Director to issue an enforcement order, there must be a contravention of EPEA. The Director advanced four basic arguments to demonstrate that EPEA has been contravened. The Director alleged that Cherokee contravened EPEA by constructing the Parcel Y Berm without the authorization required by its Approval. The Director also alleged that Cherokee contravened EPEA by constructing the Parcel Y Berm with hazardous waste. Further, the Director alleged that Cherokee and Domtar are contravening EPEA because the contamination on the Site is migrating, thereby causing a potential adverse effect. Finally, the Director alleged that Cherokee and Domtar are contravening EPEA because the contamination on the Site exceeds the limits prescribed by the Tier 1 Guideline or the Provisional Guidance Documents. In each case, the Board rejects the Director's allegations. In the Board's view, the Director's conclusions are both incorrect and unreasonable. There has been no contravention of EPEA that warrants issuing an enforcement order and, therefore, the Director was without jurisdiction to issue the Orders. In

the Board's view, the Site should have continued to be managed as a brownfield redevelopment by an Approval Group within the Operations Division, AEP.

3. Are the terms and conditions of the Orders appropriate with respect to each of the Appellants?

[96] As discussed above, the Board has found that the Orders were issued without a proper technical and scientific foundation, and the Board is recommending that the Minister reverse the Orders. As a result, the Board need not consider the specific terms and conditions of the Orders.

3(a) Is the requirement for further sampling and delineation appropriate?

[97] As the Board has found the Orders were issued without a proper technical and scientific foundation, and the Board is recommending that the Minister reverse the Orders, the Board need not consider the terms in the Orders relating to sampling and delineation. However, as part of the brownfield redevelopment of the Site, further sampling and delineation will likely be required.

3(b) Is the requirement for further human health risk assessment work appropriate?

[98] As the Board has found the Orders were issued without a proper technical and scientific foundation, and the Board is recommending that the Minister reverse the Orders, the Board need not consider terms in the Orders relating to human health risk assessment work. However, as part of the brownfield redevelopment of the Site, further human health risk assessment work will be required.

3(c) Is the requirement for the removal of substances from the site appropriate?

[99] The Board is of the view the requirement to immediately remove the substances (the contaminated material) from the Site and the general requirement to remove the substances (the contaminated material) from the Site was neither correct nor reasonable. The Board is of the view the direction in the Orders to immediately remove the contaminated material from the Site was inappropriate because excavating the material that is buried at a considerable depth would have created an exposure pathway that would not otherwise exist and could pose an unnecessary

risk to the local residents and the general public. No evidence was presented at the hearing to indicate there was an immediate threat to public safety that warranted the immediate removal of the contaminated material from the Site, or the use of an incinerator on-site, that would cause such a significant level of disturbance and risk to the local residents.[70]

[100] Most of the contaminated material on the Site forms the core of the Parcel Y Berm. This berm is an engineered berm, meaning the material has been compacted into lifts, capped by a layer of fabric and then a one-metre thick soil barrier on top . In some areas of the Site, contaminated material remains in place beneath the berms. In those locations, the berms themselves act as a type of barrier or cap. Overall, this means most of the contaminated material on the Site is within and beneath the berms and the Greenbelt and is buried at significant depth such that it does not pose an immediate risk. With the exception of certain localized areas, the contamination on the remainder of the Site is at levels that do not pose an immediate risk. At the hearing, one of the witnesses for Cherokee discussed how soils immediately surrounding wooden utility poles found throughout the Province have greater levels of dioxins and furans than most of the soil found on the Site.[71] In the Board's view, undertaking a considered review of the evidence available for the Site, before deciding whether removal of the contaminated material from the Site is necessary, is the best course of action.

[101] With respect to removal of the contaminated material from the Site as the long-term solution , there was corroborating evidence presented by both Cherokee and Domtar, and the Director's expert witness Ms. Jillian Mitton, that the contaminated materials can be safely and effectively managed in place, through the use of risk management. In the Board's view, the Director presented no compelling evidence to the contrary. Consequently, the Board finds the requirement for immediate removal of the contaminated material and the general requirement to remove the contaminated material from the Site was neither correct nor reasonable.

3(d) Is the sequencing and timing of the various requirements under the Orders appropriate?

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70 The Orders provided the option of dealing with the contaminated material by treating it on-site.

71 See: Transcript, Volume 1, Pages 187 to 189. See: Dr. Court Sandau's Letter Report, dated July 23, 2018, included in Cherokee's Supplemental Submission, dated July 23, 2018.

[102] As discussed above, with respect to the immediate removal requirement of the Orders, the Board is of the view the sequence and timing of the requirements under the Orders were neither reasonable nor correct. In the Board's view, the appropriate course of action is to take a considered approach to evaluating the Site and developing an appropriate course of action to deal with the Site as a brownfield redevelopment.

3(e) Do the terms and conditions of the Orders appropriately take into account Government of Alberta policy?

[103] In the Board's view, the Director has not properly applied Government of Alberta Policy. First, with respect to the Tier 1 and Tier 2 Guidelines, the Director has improperly applied these guidelines to the Site. The purpose of the Tier 1 and Tier 2 Guidelines is to provide the cleanup criteria to obtain a remediation certificate. The Tier 1 and Tier 2 Guidelines are not intended to be used in an Order with respect to an industrial site that is still in the process of being cleaned up and has not yet reached the stage of applying for a remediation certificate.

[104] Second, the Director attempted to create policy in the form of two Provisional Guidance Documents. The Director directed his staff to develop, in an ad hoc manner, acute exposure criteria for naphthalene and dioxins and furans. In the Board's view, these documents are not valid policies of the Government of Alberta or Alberta Environment and Parks. They were not developed and adopted in the proper way , i.e. through a formal request , including parameters, or terms of reference. In addition, the documents were neither formally peer-reviewed, nor officially sanctioned as government policy. At best, these documents are merely advice provided to the Director. In addition, as discussed, the Board has determined the conclusions reached in the Provisional Guidance Documents are flawed. As a result, it was both incorrect and unreasonable to use them as the foundation for the Orders.

4(a) Is the Appellants' position that the remediation/reclamation of the site is being done by way of risk management as a brownfield redevelopment a relevant factor for the Director to take into account in issuing the Orders?

4(b) If so, in issuing the Orders, did the Director appropriately take into consideration the Appellants' position that the reclamation/remediation of

this site is being done by way of risk management as a brownfield redevelopment?

[105] In the Board's view, the fact the reclamation and remediation of the Site is being undertaken as a brownfield redevelopment is a relevant consideration that the Director should have taken into account. Specifically, as explained previously, the Director unilaterally deciding that on-site management of contaminated materials is not allowed at this Site goes against the principles of brownfield redevelopment. In addition, in the Board's view, the Director did not consider that the Parcel C and Parcel Y Berms are an integral part of the redevelopment of the Site because they act as safety and sound attenuation barriers between the Canadian National Railway Mainline, and the proposed and current residential communities. In the Board's view, it was neither correct nor reasonable, as part of an enforcement action, to impose an immediate cleanup of this nature on a brownfields redevelopment.

5. Did the Director exceed his jurisdiction, take into account irrelevant considerations, or fail to take into account relevant considerations in issuing the Orders? Was it appropriate for the Director to issue Amendment No. 1 and the 2018 EOs (EO-2018/02, EO-2018/03 and EO-2018/04) given the existing appeals of EO 2016/03 and the stay that was in place?

[106] As the Board has found that the Orders were issued without a proper legal, technical, or scientific foundation, and the Board is recommending that the Minister reverse the Orders, the Board did not need to address these issues.

6. What recommendations, if any, should the Board provide to the Minister in respect of this site?

[107] The Board's observations (comments about the regulatory process generally) and recommendations to the Minister are detailed below.

V. CONCLUSIONS

[108] The Director is empowered to issue an enforcement order where there has been a contravention of EPEA. The Director has advanced four basic arguments to support issuing the Orders. The first argument is that Cherokee contravened their Approval when it constructed the

Parcel Y Berm because it was "unauthorized." The second argument is that Cherokee contravened EPEA when it used contaminated material from Parcel Y to construct the Parcel Y Berm because the contaminated material is hazardous waste. The third argument is that the chemicals of concern in the contaminated material on the Site are mobile and, as a result, have the potential to cause an adverse effect. The final argument is that there are chemicals of concern on the Site that exceed certain criteria and, as a result, have the potential to cause an adverse effect. In the Director's view, Cherokee and Domtar are responsible for these potential adverse effects and have, therefore, violated EPEA. As has been discussed above, the Board finds these arguments are both incorrect and unreasonable.

[109] Based on these findings, the Board is of the view the Orders should never have been issued. Instead, the project should have continued to have been managed under the EPEA approval process by an Approval Director. Therefore, in the Board's view, the Orders should be cancelled, and Cherokee should be allowed to complete the brownfield redevelopment of the Site under the management of an Approval Director. The Board's recommendations provide a mechanism to move the project forward to completion as a brownfield redevelopment.

[110] The Board's recommendations have two main focuses. The first focus is to ensure the health and safety of the local residents who live in the area and the people who use the area. As a result, the Board is recommending the Minister issue environmental protection orders to Cherokee to ensure any outstanding delineation and remediation issues in the Verte Homesteader Community are addressed and to Domtar to ensure any outstanding delineation and remediation issues in the Overlanders Community are addressed. While the Board does not believe there are any immediate health risks in either of these communities, the Board wants to make sure that any outstanding work is completed. Further, the environmental protection orders ensure that Cherokee and Domtar can access private property if necessary. EPEA provides a specific mechanism for the persons to whom an environmental protection order is issued to access private property.[72]

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[72] See: Sections 250, 251, and 252 of EPEA.

[111] The second focus is to provide a series of "checks and balances" to ensure the project moves forward in a constructive way. The two main mechanisms the Board has recommended to provide these checks and balances are a Referee and a scientific and technical Committee composed of a variety of members. The role of the Referee is to oversee the regulatory approval process, provide advice to the Approval Director, and resolve disputes and ensure effective communication between the Approval Director, Cherokee, and Domtar. The role of the Committee is to provide technical and scientific advice to the Approval Director, provide guidance with respect to any remaining delineation that is required, and determine the site-specific remediation criteria that will be used to develop the final reclamation and remediation plans for the Site. The Referee can also be called upon to make the final decision on specific issues if the Committee is ever unable to reach an agreement.

[112] While the Board is hopeful that the detailed recommendations it is making will ensure that the project moves forward successfully, the Board has not ruled out the possibility that it may be necessary for AEP to take some form of enforcement action against Cherokee or Domtar regarding the Site at some point in the future. If it were to be necessary to take enforcement action, the Board is of the view it would not be appropriate for this Director to be involved. Given the level of animosity that has developed, the Board is concerned there may be a perception of bias if this Director were to be involved in the future.

[113] Finally, with respect to brownfield redevelopment, while the Board believes the legislation is clear with respect to the definition of waste, one of the effects of the Director's interpretation of the legislation is that brownfield redevelopment would not be possible in Alberta. In the Board's view, brownfield redevelopment is an essential tool to deal with historical contamination on former industrial sites. As this Site demonstrates, there are many older industrial sites throughout Alberta that have been closed and left vacant. Many of these sites have been left vacant because the cost of cleaning up the site by conventional means exceeds the value of the site. The brownfield redevelopment approach, which has been successfully used in Ontario, British Columbia, and in some places in Alberta,[73] allows the

[73] See: The Osmose site, near Faust, Alberta, and the Springwood Development site and the Investicare Seniors Housing Corporation (Grande Avenue Village) site, in Cochrane, Alberta.

contaminated material to be managed on-site. By managing the material on-site and putting sufficient protection in place to prevent exposure pathways, the cleanup becomes economically viable.

VI. OBSERVATIONS

[114] The Board's observations are not intended to be incorporated into the Minister's decision with respect to these specific appeals. The Board's observations are based on the evidence and arguments heard at the hearing of these appeals. The observations are intended for the consideration of the Minister, AEP, and the Director with respect to the general operation of the regulatory scheme.

A. HAZARDOUS WASTE CRITERIA FOR NAPHTHALENE

[115] The Board suggests the hazardous waste criteria for naphthalene be reconsidered. This criterion is found in Table 2 of the "Alberta User Guide for Waste Managers, 1996," which is incorporated by reference into the definition of hazardous waste by Schedule 1 of the *Waste Control Regulation*.[74] The current criterion for naphthalene is 0.5 mg/L. This means any substance that, when mixed with water, produces a leachate (the water portion of the mixture) with 0.5 mg/L of naphthalene or greater is hazardous waste. In the Board's view, this criterion does not make sense, given water containing 0.47 mg/L of naphthalene is suitable as drinking water, and meets the Tier 1 Guidelines.[75] In the Board's view, it is unreasonable to conclude that an increase of 0.03 mg/L, which is the difference between the 0.5 mg/L and the 0.47 mg/L, changes drinking water into hazardous waste. The Board notes a recommendation to change the

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[74] The *Waste Control Regulation* defines hazardous waste in section 1(b) as "…waste that has one or more of the properties described in Schedule 1, but does not include those wastes listed in Schedule 2…."

Section 1(g)(ii) of Schedule 1 of the *Waste Control Regulation* incorporates Table 2 of the "Alberta User Guide for Waste Managers, 1996" into the definition of hazardous waste as follows:

> "Waste is hazardous … if, when tested according to a test method set out in the Alberta User Guide for Waste Managers, 1996, published by the Department, … (g) it is a toxic leachate because it is in a dispersible form and …. (ii) its leachate contains any substance listed in Table 2 of the Schedule to the Alberta User Guide for Waste Managers, published by the Department, … in excess of the concentrations listed in that Table…."

[75] "Alberta Tier 1 Soil and Groundwater Remediation Guidelines, 2016." See: Table C-11, Surface Water Quality Guideline, Drinking Water, Page 192.

criterion for naphthalene from 0.5 mg/L to 5.0 mg/L was made in 2006, by AEP's Hazardous Waste Technical Committee.[76]

B. DEFINITION OF WASTE

[116] As explained at length above, the Board is of the view there has been an misinterpretation of the definitions of waste and hazardous waste under the *Waste Control Regulation*. The Board suggests AEP review its approach to dealing with contaminated soils ensure this misinterpretation has not been carried forward or misapplied at other locations.

[117] It is of concern to the Board that this misinterpretation of the definition of waste, if not corrected, could have far-reaching and serious implications for redevelopment of brownfield sites elsewhere in Alberta.

C. PROVISIONAL GUIDANCE DOCUMENTS

[118] As explained above, the Board has significant concerns with the Provisional Guidance Documents developed by the Director's staff. Despite the representations by the Director, these documents are not Government of Alberta or AEP policies. At best, these documents are advice to the Director, and as such, they are subject to review by the Board. In the Board's view, the Provisional Guidance Documents should not be considered in dealing with these appeals and should not be used for any other purpose. In the future, any similar documents should be developed through a formal process established by Alberta Environment and Parks as a whole, and any similar document should be subject to a proper, formal peer-review.

D. GREENBELT

[119] With respect to the various orders issued by Alberta Health Services, the Board sees no reason to continue excluding the public from using the Greenbelt, south of the Overlanders Community, for recreational purposes as they have in the past. However, this decision is ultimately up to Alberta Health Services.

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[76] See: Exhibit 63, Tab 5, page 66, Recommendation 24. "Final Report: Updating Alberta's Hazardous Waste Regulatory Framework, 2006."

VII. RECOMMENDATIONS

[120] The Board has considered several approaches to making its recommendations to the Minister. The simplest option would be to recommend reversing the Orders and issuing new environmental protection orders to complete the work in the Verte Homesteader and Overlanders Communities. The project would then be returned to an Approval Director within the Operations Division of AEP to be dealt with as a brownfield redevelopment. Given the animosity that has developed between the Director and the Appellants, the Board does not believe returning the project to the Director would work; it would likely result in further conflict and would not move the project forward. Instead, the Board is recommending that the project be returned to different director; an Approval Director.

[121] Therefore, the Board has decided to make more specific recommendations to ensure the project moves forward with as little conflict as possible. The starting point for the Board's recommendations is to have all regulatory decisions, relating to the brownfield redevelopment, made by an Approval Director, rather than the Director. Further, the Board is recommending that a referee (the "Referee") be appointed and that the Referee appoint a scientific and technical committee (the "Committee") to advise the Approval Director. The Board believes the Referee and the Committee will provide "checks and balances" to ensure the project will move forward, under the regulatory authority of the Approval Director, in a productive way.

[122] The core of the Board's recommendations is to require Cherokee and Domtar to develop the background information necessary to support the reclamation and remediation work that needs to be done on the Site. This background information needs to be developed in a sequenced manner, as one part of the information builds on another. The first step is to complete any necessary delineation. The completed delineation will allow for the development of a conceptual site model. The second step is to develop human health risk assessments and site-specific risk assessments for the Site. The third step is to use this information to develop site-specific remediation criteria for the site. Finally, all this information supports the development

of risk management plans and plans to carry out any further reclamation work and remediation work that is necessary.[77]

[123] The final part of the Board's recommendations is to ensure that any remaining delineation and remediation work that needs to be done in the Verte Homesteader and Overlanders Communities is completed. While the Board does not believe that there is an immediate danger to the residents in these communities, more work needs to be done to ensure that any outstanding issues are addressed. Further, this work needs to be done as soon as practicable. Therefore, the Board is recommending that the Minister issue environmental protection orders to Cherokee and Domtar to ensure this remaining delineation and remediation work is completed in a timely manner, and to ensure that Cherokee and Domtar can access private property, to conduct the necessary work, if needed.

[124] Specifically, the Board makes the following recommendations to the Minister of Environment and Parks:

Orders Should be Reversed

1. the Director's decisions to issue the Orders should be reversed, specifically,
    a. EPEA Enforcement Order No. EPEA-EO-2016/03-RDNSR,
    b. EPEA Enforcement Order No. EPEA-EO-2018/02-RDNSR,
    c. EPEA Enforcement Order No. EPEA-EO 2018/03-RDNSR,
    d. EPEA Enforcement Order No. EPEA-EO-2018/04-RDNSR,
    e. EPEA Enforcement Order No. EPEA-EO-2018/06-RDNSR, and
    f. all amendments to these orders,

    and replaced with the two environmental protection orders detailed below;

Approval Director

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[77] See: Exhibits 96 and 97, which include mapping of naphthalene, dioxins, and furans.

2. the Site should be managed as a brownfield redevelopment under the EPEA regulatory approval process, managed by an Approval Director from an Approvals Group in the Operations Division of AEP, who is appointed by the Deputy Minister;

Referee

3. the Deputy Minister should appoint a Referee, who reports to and is paid for by the Deputy Minister, to oversee the EPEA regulatory approval process for the Site, provide advice to the Approval Director with respect to the Site, resolve disputes between the Approval Director, Cherokee, and Domtar, and ensure effective communication between the Approval Director, Cherokee, and Domtar, but the Referee should not have any regulatory decision-making authority;

Committee

4. the Referee should establish a scientific and technical committee (the "Committee") to provide technical support to the Approval Director, and the Referee should determine the membership and operation of the Committee, ensure effective communication between the members, and resolve disputes among members, including making the final decision if the members are unable to reach an agreement;

5. the Committee should include:

   a. representatives of Cherokee, Domtar, AEP, Alberta Health, Alberta Health Services, and the City of Edmonton, and

   b. should include at least two additional scientific experts, external to government, with directly applicable experience and qualifications, paid for by Cherokee;

6. the Approval Director should consider the advice of the Referee and the Committee in making decisions respecting this matter;

7. the Committee should determine the appropriate site-specific remediation criteria for the Site in accordance with the Tier 2 Guidelines, subject to the approval of the Approval Director;[78]

8. the Committee should consider the work done on other former wood preservative sites in Alberta, such as the Osmose site, near Faust, Alberta, and the Springwood Development site and the Investicare Seniors Housing Corporation site,[79] in Cochrane, Alberta;

9. the Committee should not consider the two Provisional Guidance Documents;

Dust Control

10. Cherokee should develop and implement a temporary dust control program for the Site, excluding the Greenbelt, until the Approval Director has been appointed;

11. Domtar should develop and implement a temporary dust control program for the Greenbelt, until the Approval Director has been appointed;

12. Cherokee should develop and implement an interim dust control program for the Site, excluding the Greenbelt, until the Reclamation and Remediation Plan has been started, to the satisfaction of the Approval Director;

13. Domtar should develop and implement an interim dust control program for the Greenbelt, until the Reclamation and Remediation Plan has been started, to the satisfaction of the Approval Director;

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[78] The Alberta Tier 2 Soil and Groundwater Remediation Guideline, 2016 is the version of this guideline in place at the Board held the hearing into these appeals. The Board notes a new version of this guideline came into force in January 2019. No arguments were presented before the Board as to which versions of the Tier 1 and Tier 2 Guidelines should be applied. As no arguments were presented to the Board about the 2019 Tier 1 and Tier 2 Guidelines, the Board can only recommend that the 2016 guideline should apply. Given when the work will be done, it is possible the 2019 guidelines will apply.

[79] The Investicare Seniors Housing Corporation site is now known as the Grande Avenue Village owned by Golden Life Management Ltd.

Site Delineation

14. Cherokee should complete the delineation of the Site, excluding the Greenbelt, in accordance with the recommendations of the Committee, to the satisfaction of the Approval Director;

15. Domtar should complete the delineation of the Greenbelt, in accordance with the recommendations of the Committee, to the satisfaction of the Approval Director;

Conceptual Site Model

16. once Cherokee and Domtar have completed the necessary delineation work, Cherokee and Domtar should develop a Conceptual Site Model, including a map and accompanying database showing all the data from the sampling done on the Site, including with respect to the Verte Homesteader Community and the Overlanders Community, both historical and recent, to clearly define the presence of contaminants on the Site, to the satisfaction of the Approval Director;

17. Cherokee and Domtar may agree to develop separate Conceptual Site Models, including accompanying maps and databases, with Cherokee developing the Conceptual Site Model for the Site, including the Verte Homesteader Community, excluding the Greenbelt, and Domtar developing the Conceptual Site Model for the Greenbelt, including the Overlanders Community;

Risk Assessments

18. Cherokee should complete a Human Health Risk Assessment for the Site, excluding the Greenbelt, to the satisfaction of the Approval Director;

19. Domtar should complete a Human Health Risk Assessment for the Greenbelt, to the satisfaction of the Approval Director;

20. Cherokee should complete a Site-Specific Risk Assessment for the Site, excluding the Greenbelt, to the satisfaction of the Approval Director;

21. Domtar should complete a Site-Specific Risk Assessment for the Greenbelt, to the satisfaction of the Approval Director;

Risk Management Plans and Reclamation and Remediation Plans

22. Cherokee should use the site-specific remediation criteria, established by the Committee, to develop a risk management plan to manage the contaminated material on the Site, excluding the Greenbelt, recognizing some contaminated material may need to be treated on the Site, excluding the Greenbelt, or removed from the Site, excluding the Greenbelt;

23. taking into account this risk management plan, Cherokee should develop and implement a Remediation and Reclamation Plan for the Site, excluding the Greenbelt, based on the site-specific remediation criteria, to the satisfaction of the Approval Director;

24. Domtar should use the site-specific remediation criteria, established by the Committee, to develop a risk management plan to manage the contaminated material on the Greenbelt, recognizing some contaminated material may need to be treated on the Greenbelt or removed from the Greenbelt;

25. taking into account this risk management plan, Domtar should develop and implement a Remediation and Reclamation Plan for the Greenbelt, based on the site-specific remediation criteria, to the satisfaction of the Approval Director;

26. the Remediation and Reclamation Plans should include a dust control program to be implemented while the remediation and reclamation work is being carried out, and the Remediation and Reclamation Plans should address the long-term management of dust;

Monitoring Plans

27. Cherokee should develop and implement a long-term monitoring plan for the Site, excluding the Greenbelt, to the satisfaction of the Approval Director;

28. Domtar should develop and implement a long-term monitoring plan for the Greenbelt, to the satisfaction of the Approval Director;

Cherokee – Environmental Protection Order

29. Cherokee should undertake further delineation for dioxins and furans, along the northern boundary of the Parcel C Berm and in Parcel C (the Verte Homesteader Community), to the satisfaction of the Approval Director;

30. based on the site-specific remediation criteria established by the Committee, Cherokee should develop and implement a plan to address the presence of dioxins and furans along the northern boundary of the Parcel C Berm and in Parcel C (the Verte Homesteader Community), to the satisfaction of the Approval Director;

31. to facilitate Cherokee's work along the northern boundary of the Parcel C Berm and within Parcel C (the Verte Homesteader Community) and to ensure Cherokee can access privately held land if necessary, the Minister should issue an environmental protection order to Cherokee with respect to this work;

Domtar – Environmental Protection Order

32. Domtar should undertake further delineation for naphthalene, dioxins, and furans, along the northern boundary of the Greenbelt and in the Overlanders Community to the satisfaction of the Approval Director;

33. based on the site-specific remediation criteria established by the Committee, Domtar should develop and implement a plan to address the presence of naphthalene, dioxins, and furans along the northern boundary

of the Greenbelt and in the Overlanders Community to the satisfaction of the Approval Director;

34. to facilitate Domtar's work along the northern boundary of the Greenbelt and within the Overlanders Community and to ensure Domtar can access privately held land if necessary, the Minister should issue an environmental protection order to Domtar with respect to this work; and

Communications

35. Cherokee and Domtar should implement a means of regular communications with the neighbouring communities, such as bi-monthly reports placed on a community website, to keep them advised of the work being conducted on the site and the progress to date.

VIII. CLOSING

[125] With respect to sections 100(2) and 103 of EPEA, the Board recommends copies of this Report and Recommendations, and the decision of the Minister, be sent to the following:

1. Mr. Ron Kruhlak, Q.C., Mr. Sean Parker, and Mr. Stuart Chambers, McLennan Ross LLP, representing Cherokee Canada Inc. and 1510837 Alberta Ltd. ;
2. Mr. Gary Letcher and Ms. Andrea Akelaitis, Letcher Akelaitis LLP, Mr. Curtis Marble, Walsh LLP, and Mr. Micah Clark, Aldridge & Rosling, LLP, representing Domtar Inc.;
3. Mr. Wally Braul, Mr. Josh Jantzi, and Mr. Mark Youden, Gowlings WLG (Canada) LLP, representing Mr. Michael Aiton, Director, Regional Compliance, Red Deer-North Saskatchewan Region, Operations Division, Alberta Environment and Parks;
4. Mr. Michael Gunther and Mr. Stephen Ho, City of Edmonton Law Branch, representing the City of Edmonton;
5. Ms. Jennifer Jackson and Ms. Linda Svob, Alberta Health Services Law Branch, representing Alberta Health Services; and
6. Ms. Erin L. Keedian and Ms. Janet Patterson, Alberta Justice and Solicitor General, representing Alberta Health.

[126] The Board notes Cherokee, Domtar, and the Director reserved their right to ask for costs. A process for any costs application will be established after the Minister makes her decision in these appeals.

Dated on February 26, 2019, at Edmonton, Alberta.

- original signed by –

Meg Barker
Panel Chair

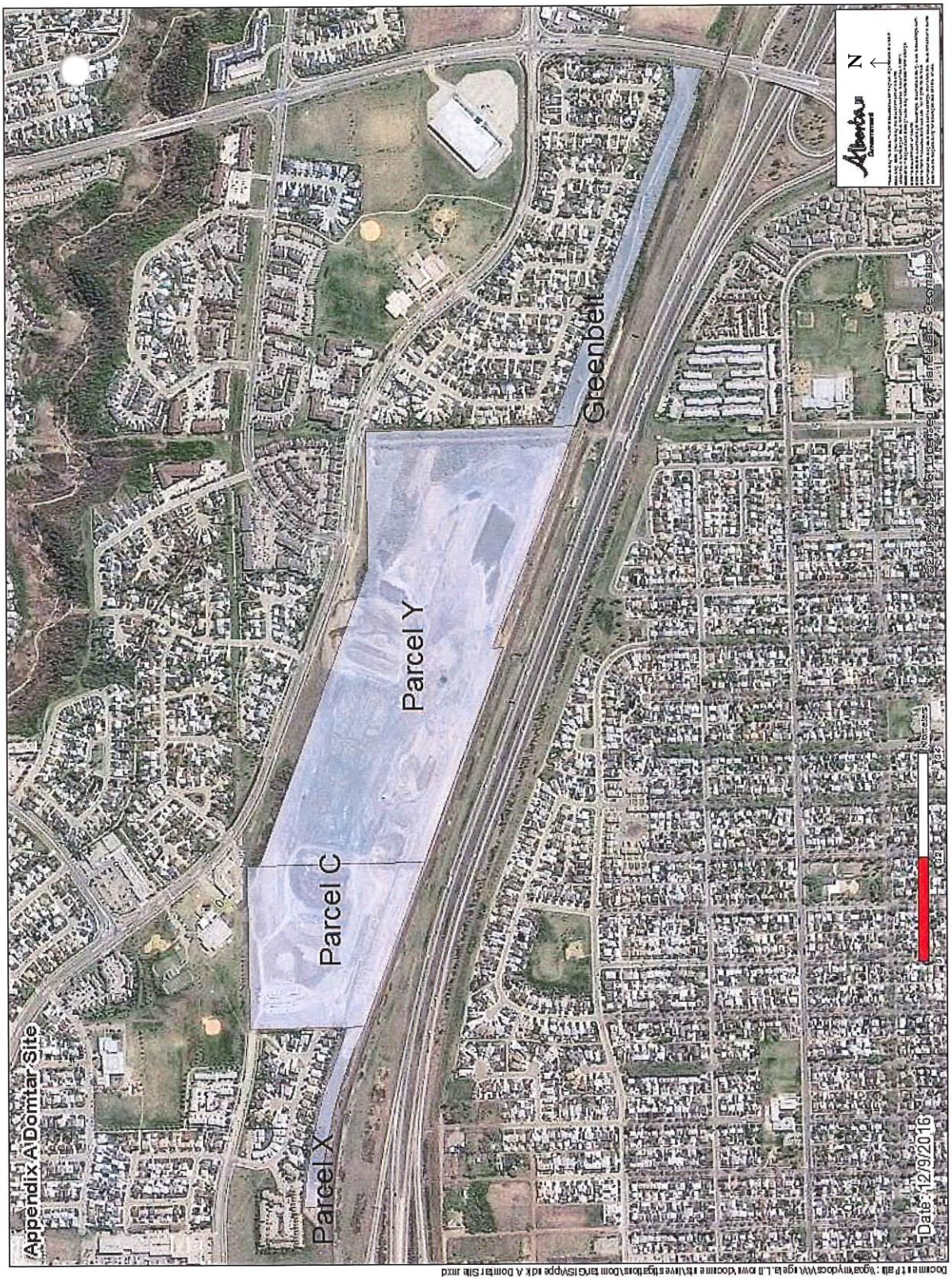
- original signed by –

Nick Tywoniuk
Board Member

- original signed by –

Dave McGee
Board Member

Appendix


Appendix A Domtar Site
Parcel X
Parcel C
Parcel Y
Greenbelt
N
Date: 12/9/2016