Compton Petroleum Corporation and Darian Resources Ltd.

Section 39 and 40 Review of Seven Well Licences, Two Pipeline Licences, and One Facility Licence Ensign, Parkland Northeast, and Vulcan Fields

March 1, 2011

Energy Resources Conservation Board

ENERGY RESOURCES CONSERVATION BOARD
2011 ABERCB 008: Compton Petroleum Corporation and Darian Resources Ltd., Section 39 and 40 Review of Seven Well Licences, Two Pipeline Licences, and One Facility Licence, Ensign, Parkland Northeast, and Vulcan Fields

March 1, 2011

Published by

Energy Resources Conservation Board
250 – 5 Street SW
Calgary, Alberta
T2P 0R4

Telephone: 403-297-8311
Fax: 403-297-7040
E-mail: infoservices@ercb.ca
Web site: www.ercb.ca

CONTENTS

Decision 1

Introduction 1
- Background 1
- The Review Applicants 2
- Subject Areas 2
- The Licence Applications 2
- Hearing 4

Issues 4

Production Operations 4
- Evidence 4
- Findings 5

Emissions 6
- Evidence 6
- Findings 7

Health Effects 8
- Evidence 8

The Board's findings 11

Future Development in the Vulcan Area 12

Appendix 1 Hearing Participants 15

Appendix 2 The Requests for Review Hearings and Preliminary Matters 16

Appendix 3 Project Area MAP 26

Appendix 4 Original Review applications 27

Appendix 5 Revised review applications 28

ENERGY RESOURCES CONSERVATION BOARD

Calgary Alberta

COMPTON PETROLEUM CORPORATION AND DARIAN RESOURCES LTD.
SECTION 39 AND 40 REVIEW OF
SEVEN WELL LICENCES, TWO PIPELINE LICENCE LICENCES, AND ONE FACILITY
ENSIGN, PARKLAND NORTHEAST, AND VULCAN FIELDS

2011 ABERCB 008
Proceedings No. 1634570, 1634572, 1634573, 1634574, 1634576, 1634580, 1634581, 1634583, and 1634584

DECISION

[1] The Energy Resources Conservation Board (ERCB/Board) has carefully considered the submissions, evidence and argument provided in these proceedings and has decided to confirm the seven well licences, two pipeline licences, and one facility licence, as described in paragraphs 8 through 16 of this decision, held by Compton Petroleum Limited (Compton) or Darian Resources Ltd. (Darian) as being properly issued and in good standing, without any change, alteration, or variance in the terms thereof. The Board also directs Compton to make an application to the ERCB prior to April 1, 2011, to amend Facility Licence No. 36735 to have the licence reflect that routine venting of gas will take place at that facility. A list of persons who appeared in the hearing can be found in Appendix 1.

INTRODUCTION

Background

[2] This hearing was unique for the Board, both in terms of the number and variety of facilities that were considered by the Board and in the course the proceedings took after the review hearing was granted by the Board. The facility licences considered in these proceedings were originally issued without hearings. After the licences were issued, the Board received several requests from Barbara Graff, Larry Graff, and Darrell Graff (collectively referred to as the Graffs) for review hearings pursuant to Sections 39 and 40 of the *Energy Resources Conservation Act* (*ERCA*). In their review applications, the Graffs submitted that they are special needs individuals as they have enhanced susceptibility to emissions from oil and gas facilities, and that given their enhanced susceptibility they have been and will be directly and adversely affected by Board decisions approving facilities for locations both near their residence and as much as tens of kilometres from lands they own or lease. In granting their requests for review hearings, the Board accepted that the information about the Graffs' special needs due to enhanced sensitivities to emissions was new and was not available to the Board at the time the facility applications were originally approved.

[3] In December 2009, the Board decided that the Graffs had met the test for a review hearing in relation to each of the upstream oil and gas (UOG) facilities considered in these proceedings, and it decided to consider all of the reviews in one omnibus review hearing. Before and immediately upon the beginning of the hearing, the Board received several motions from the Graffs for adjournments, accommodation, and other rulings relating to the hearing. On the second day of the hearing, the Board granted a request from the Graffs to withdraw their

participation and evidence from the hearing. Notwithstanding the withdrawal of those individuals, the Board then conducted the review hearing on its own behalf, as provided in Section 39 of the *ERCA*, with the participation of Compton, Darian, Questerre Energy Corporation, and one intervener, the Alston Freeholders. Additional information about the process leading to the review hearing and about the preliminary matters considered by the Board is provided in Appendix 2 of this decision report.

The Review Applicants

[4] In accordance with the Board's normal practice in review hearings, Compton and Darian were considered to be the applicants in this hearing and all other participants were considered to be interveners. Before the hearing began, Crescent Point Energy Ltd. (Crescent Point) acquired Darian. During the hearing, witnesses from Crescent Point and Darian explained that Darian exists as a wholly-owned subsidiary of Crescent Point and remains the operator of the facilities that were the subject of the Board's review. The Board confirms that Crescent Point is now the licensee named in the licences that were previously held by Darian and that were within the scope of these proceedings. As such, this decision report will refer to Darian and Crescent Point appropriately according to context.

Subject Areas

[5] Compton and Darian's evidence referred to two study areas, one of which comprised a region 10 kilometres (km) in radius around the northwest of Section 17, Township 16, Range 25, West of the 4th Meridian (NW of 17), and the other a region 10 km in radius around the east half of 24-16-24W4M (E ½ of 24). "The subject areas" in this decision refer to the lands within those radii. A map of the subject areas is attached as Appendix 3, with NW of 17 as subject area 1 and E ½ of 24 as subject area 2.

The Licence Applications

Apache Canada Ltd.

[6] **Proceeding No. 1634570**: Apache Canada Ltd. (Apache) received approval to drill a well at Legal Subdivision (LSD) 11, Section 13, Township 16, Range 26, West of the 4th Meridian (11-13), and was issued Licence No. 0361969 in accordance with Section 2.020 of the *Oil and Gas Conservation Regulations* (*OGCR*). The purpose of the well is to produce gas with no hydrogen sulphide (H_2S) from the Sunburst Sands Formation.

[7] Before the start of the hearing, but after the hearing notice was issued, Apache indicated its intent to abandon the 11-13 well and requested that the well licence application be removed from the review proceedings. The Board granted Apache's request, and the review of Licence No. 0361969 was removed. Apache abandoned the well on November 18, 2010.

Compton Petroleum Corporation

[8] **Proceedings No. 1634572 and 1634573**: Compton is the licensee of Well Licences No. 0364810 and 0630212 and Facility Licence No. 36735, originally issued to a predecessor licensee in accordance with Sections 2.020 and 7.001 of the *OGCR* and subsequently transferred to Compton.

[9] Licence No. 0364810 was issued to drill a well at LSD 12-9-16-25W4M (12-9) to produce gas from the Sunburst Sands Formation. This well was drilled and cased but has not been placed on production. There is no H_2S associated with this well. The 12-9 well is about 1.7 km from the NW of 17 and 15.2 km from the E ½ of 24 properties.

[10] Licence No. 0360212 was issued to drill a well at LSD 11-30-15-25W4M (11-30) to produce crude oil from the Sunburst Sands Formation. This well is currently producing, and there is no H_2S associated with this well. The 11-30 well is about 6.5 km from the NW of 17 and 19.1 km from the E ½ of 24 properties.

[11] Facility Licence No. 36735 was issued for an associated multiwell oil battery at LSD 9-29-15-25W4M (9-29). This facility is currently operating, and there is no H_2S associated with this facility. The 9-29 facility is about 6 km from the NW of 17 and 17.1 km from the E ½ of 24 properties.

[12] **Proceeding No. 1634574**: In accordance with Section 2.020 of the *OGCR*, Compton applied to drill a well at LSD 6-12-16-25W4M (6-12) through the Mannville and Upper Mannville formations. Well Licence No. 0374329 was issued to produce gas from the Sunburst Sands Formation. This well was applied for as an ERCB category C well because the Sunburst Sands Formation has the potential to have H_2S content. This well was drilled and cased but is not producing, and the sour zone has been abandoned. The 6-12 well is about 6.4 km from the NW of 17 and 10.2 km from the E ½ of 24 properties.

[13] **Proceedings No. 1634576 and 1634580**: In accordance with Section 2.020 of the *OGCR*, Compton applied to drill wells at LSD 5-4-17-25W4M (5-4) and LSD 14-24-16-24W4M (14-24). Well Licences No. 0378837 and 0375593 were issued to produce gas from the Belly River Formation. Both wells were drilled and cased but never completed, and there is no H_2S associated with these wells. The 5-4 well is about 5.3 km from the NW of 17 and 15.5 km from the E ½ of 24 properties. The 14-24 well is about 15.7 km from the NW of 17 and 0.3 km from the E ½ of 24 properties.

Darian Resources Ltd.

[14] **Proceeding No. 1634581**: Crescent Point is the licensee of Pipeline Licence No. 46187, which was originally issued to a predecessor licensee in accordance with Part 4 of the *Pipeline Act* and was subsequently transferred to Crescent Point. Pipeline Segment No. 29 is about 1.03 km long, has no associated H_2S, and is approved to transport natural gas from LSD 2-29-16-25W4M. Pipeline Segment No. 35 is about 3.81 km long, has no associated H_2S, and is approved to transport natural gas from LSD 14-34-16-26W4M. Pipeline Segment No. 29 is about 2 km from the NW of 17 and 15.9 km from the E ½ of 24 properties. Pipeline Segment No. 35 is about 7.5 km from the NW of 17 and 23 km from the E ½ of 24 properties.

[15] **Proceeding No. 1634583**: Crescent Point is the current licensee of Well Licence No. 0387460, which was originally issued to a predecessor licensee in accordance with Section 2.020 of the *OGCR* and was subsequently transferred to Crescent Point. The licence was issued to drill a well at LSD 16-36-15-26W4M (16-36) to produce gas from the Sunburst Sands, Glauconitic Sandstone, and Judith River formations. This well is currently producing with no associated H_2S. The 16-36 well is about 4.9 km from the NW of 17 and 19.6 km from the E ½ of 24 properties.

[16] **Proceeding No. 1634584**: Crescent Point is the licensee of Well Licence No. 0410256, which was originally issued to a predecessor licensee in accordance with Section 2.020 of the *OGCR* and was subsequently transferred to Crescent Point. The licence was issued to drill a well at LSD 2-29-15-25W4M (2-29) to produce crude oil from the Sunburst Sands Formation. The licence was subsequently amended to change the terminating formation of the well to the Rierdon Formation. This well was completed and producing into an associated pipeline, but is currently shut-in. There is no H_2S associated with this well. The 2-29 well is about 7.3 km from the NW of 17 and 17 km from the E ½ of 24 properties.

Hearing

[17] The Board held a public hearing in High River, Alberta, beginning November 30, 2010, and ending December 7, 2010, before Board members Brad McManus, Q.C. (presiding member) and Theresa Watson, P. Eng. and acting Board member Tom McGee. The Board also conducted a site visit on Thursday, October 14, 2010. At the close of the hearing, Compton and Darian were required to complete a number of undertakings. The undertakings were completed on December 14, 2010, and the Board considers the hearing to have been closed on that date.

ISSUES

[18] The Board considered the issues relevant to the review of the licences to be

- production operations,
- emissions, and
- health effects.

[19] In reaching the determinations contained in this decision, the Board considered all relevant materials constituting the record of these proceedings, including the evidence and argument of the hearing participants. Accordingly, references in this decision to specific parts of the record are intended to help the reader understand the Board's reasoning about a particular matter and should not be taken as an indication that the Board did not consider all portions of the record with respect to that matter.

PRODUCTION OPERATIONS

Evidence

[20] The Board considers the subject licences of this review proceeding to be typical of the upstream oil and gas facilities found in the Vulcan area and notes that there is nothing exceptional or unusual about the notification, application, construction, or operation of these facilities. The Board accepts the assertions of Compton and Darian that at the time that they were issued the licences under review in these proceedings, they met all notification and application process requirements of ERCB *Directive 056: Energy Development Applications and Schedules*.

[21] The facility and each of the wells in this review were inspected by ERCB field inspectors before the start of the hearing. The 9-29 facility was inspected in 2007 and in September 2010

and received satisfactory inspection results. The 5-4 well was inspected in September 2010 and was issued a low-risk enforcement related to wellhead visibility. Corrective action was taken, and the well site is now in compliance.

[22] The 14-24 well site was inspected in September 2010 and found to be satisfactory. Before the 14-24 inspection, Compton's facilities were the subject of a province-wide assessment, conducted by the ERCB. This assessment found that Compton had inactive wells that were not in compliance with the ERCB's suspension requirements. At the time of the September inspection, Compton was in the process of bringing its inactive wells into compliance as a result of direction given during that assessment review. As such, the noncompliance issues respecting suspension of the 14-24 well were not included in the September 2010 inspection and the 14-24 well site was given a satisfactory status.

[23] The 16-36 site was inspected in October 2010 and was issued a low-risk noncompliance for not meeting ERCB equipment spacing requirements. An application for an exemption from spacing requirements has since been submitted to the ERCB. The 2-29 well received satisfactory inspections in both July and September 2010.

[24] The Board understands that the 9-29 facility licence currently indicates that routine flaring will take place. The Board also understands that Compton has been reporting venting volumes since it has been the licensee of the facility, although the licence has not been amended to reflect that the facility is venting continuously.

[25] During day-to-day routine operations, the 9-29 facility vents the solution gas emitted from the on-site tanks. The volume of this gas, estimated to be a maximum of 300 m^3 per day, falls below the generally accepted threshold of about 500 m^3 per day required to sustain stable combustion. Installing an igniter on the flare stack, as Compton has done, does not mean that there is the potential to routinely flare this gas, and in the ERCB's opinion the volume vented does not meet the regulatory requirement for the gas to be flared. A flare may, however, be practical during a blowdown of the compressor, during an upset, or for maintenance where a greater volume of gas emitted over a shorter period of time (about five minutes) could support combustion.

Findings

[26] The Board believes that for the 9-29 site, venting is generally more appropriate than flaring because additional fuel gas must be added to the flare to sustain combustion. The potential venting volumes are well below the maximum permissible venting levels outlined in ERCB *Directive 060: Upstream Petroleum Industry Flaring, Incinerating, and Venting*. The Board therefore directs Compton to amend the 9-29 facility licence to reflect the fact that routine venting is taking place.

[27] The Board notes that Compton had a number of low-risk noncompliance items that were either self-disclosed or identified through ERCB inspections. The Board is satisfied that these items have been rectified or are in the process of coming into compliance.

EMISSIONS

Evidence

[28] Compton and Darian selected a study area consisting of two overlapping circles, each with a 10 km radius, centred on the NW of 17 and the E ½ of 24, which they felt was both technically appropriate and sufficient to capture contributions from all relevant UOG sources in the region. The Board notes that two different guidance documents assisted with Compton and Darian's decision to use a 10 km radius: the Alberta Environment *Air Quality Model Guideline* (*AQMG*), which suggests a minimum 5 km distance, and the ERCB's *Directive 060*, which suggests a minimum 7 km distance.

[29] The Board notes that an Alberta Environment (AENV)-approved dispersion model was used for the air quality assessment, and that Compton and Darian's assessment followed the *AQMG* published by AENV for making technical dispersion modelling decisions, as well as using it to inform general methodologies used in the assessment.

[30] The emissions inventory for this review hearing included all combustion, venting, and fugitive sources as calculated from typical UOG installations and facilities based on production, fuel use, and venting data from the Petroleum Registry of Alberta. The assessment included all producing facilities and wells in the subject area.

[31] Compton and Darian stated that all of the emissions sources were modelled as continuous area sources because most of the emissions were attributable to fugitive sources. The UOG installation point sources, such as stacks and vents, were combined with the fugitive area sources. The release height for each of the facilities used in the air assessment corresponded to the height required to include the tallest fugitive emissions source, such as tanks or buildings. Compton and Darian's expert, David Chadder of RWDI Air Inc. (RWDI), expressed the view that this approach was still conservative and, in the absence of site-specific engineering information, was reasonable.

[32] Mr. Chadder stated that specific to the 9-29 multi-well crude oil battery, the fact that it is located about 8 km from the NW of 17 made the release height immaterial in terms of predicted model impacts. He submitted that the extent of dilution that would occur over that distance would result in similar predicted model concentrations regardless of whether the release height was set to 3 m or 30 m. However, Mr. Chadder also stated that predicted model concentrations would be more of a concern at a closer distance, such as within 1 km of the 9-29 multiwell crude oil battery. In this situation, he argued, the site-specific engineering design specifications allow the model to account for physical effects of plume rise and buoyancy in order to determine predicted concentrations at nearby receptors.

[33] Compton and Darian provided a Supplementary Air Quality Assessment in order to address concerns about well testing in the Vulcan area. Recent well testing results provided by Compton and Darian for three sweet wells that were either flared, vented or incinerated showed that the worst-case modelled predictions occurred because of flaring from the 2-29 well. The assessment showed the maximum one-hour predictions at maximum flow rates to be well below the Alberta Ambient Air Quality Objectives (AAAQO) for several compounds, including benzene. The maximum one-hour prediction for benzene due to flaring at maximum flow rates was less than

0.006 micrograms per cubic metre ($\mu g/m^3$). In contrast, the one-hour AAAQO for benzene is 30 $\mu g/m^3$.

[34] Compton and Darian collected three three-minute grab samples of ambient air in order to provide context to the air assessment. They noted that the ambient samples showed higher results than the one-hour model predictions. Mr. Chadder said that the three-minute ambient samples are representative of background conditions, making comparison to the one-hour objective possible. The ambient sampling results indicate that contributions from the UOG facilities, although important, are not the sole source of anthropogenic emissions in the region. It is apparent that regional emissions levels are a result of contributions from a number of sources, including confined feeding operations, vehicular traffic, and communities, as well as UOG facilities.

[35] Compton and Darian stated that the generic concentration profiles were created in order to assist the panel to assess the impact of various types of UOG facilities without the need to complete an additional air assessment each time. The intent was to provide a tool by which monitoring or refined modelling results could be added to generic profiles in order to determine the cumulative impact of any new UOG wells or facilities. Compton and Darian also noted that all of the profiles complied with relevant AAAQOs at *Directive 056* personal consultation and notification distances and at the centre of the subject areas, at which point the incremental contributions of those UOG facilities diminished to virtually zero.

[36] The Alston Freeholders' witness, Gordon Meuller, said that he has lived in the Alston area, in close proximity to the UOG facilities in question, for the last four or five years. To his knowledge, no ill effects have been experienced by any permanent residents of the Alston community. Mr. Mueller explained that regulatory delays in receiving licences to drill were causing petroleum companies to leave the area, and it was difficult to find a company interested in leasing his mineral rights. Mr. Mueller said that he has not had any problems with the UOG facilities under review.

[37] Mr. Mueller said that he personally had not experienced any livestock health effects or animal deaths while ranching in close proximity to UOG facilities over the years. He said that he found the facilities in question at these proceedings to be very well maintained and that there were very few days in which odours from UOG facilities could be detected by area residents. Mr. Mueller said that, overall, the air quality was very good in the area, a fact that he was quite proud of. He said that he detects odours from the Little Bow Colony more often than he detects odours from the oil and gas industry. Mr. Mueller estimated that he could detect odours from the UOG facilities about once a year, whereas he could detect odours from other sources about once every two weeks.

Findings

[38] The Board notes the frustration expressed by Mr. Mueller over the reviews of the UOG facilities in the area and the effect on the Alston Freeholders' ability to lease out their mineral rights.

[39] The Board finds that the selection of the subject areas and the methods Compton and Darian used in gathering their data were reasonable and provided evidence that fairly represented UOG activity in the area as well as associated air quality and emissions information. The Board

believes the data presented provides an accurate picture of the impact of emissions from UOG facility development in the Vulcan area.

[40] The Board notes the approach taken by Compton and Darian to model all emissions as area sources and to set the release height for the air assessment to the height that encompasses the tallest fugitive emissions source. The Board accepts the position that in the context of the subject properties, emissions from a facility such as the 9-29 multiwell crude oil battery (about 8 km away) would be substantially diluted. The Board agrees with Mr. Chadder that where distances from a receptor to sources are 1 km or less, attention needs to be paid to site-specific facility engineering specifications that may need to be incorporated into assessments.

[41] The Board found the generic concentration profiles created by Compton and Darian to be insightful and instructive.

[42] The Board notes that the emissions contributions from well drilling and servicing were not included in the original RWDI air assessment because of their intermittent and controlled nature. However, the Board finds the supplementary assessment of recent flaring and incineration events in the Vulcan area to be relevant as it informs the Board of the level of contributions that may be expected from these types of intermittent activities.

[43] The Board notes the ambient air samples that Compton and Darian collected are useful as they provide a snapshot of what may be considered typical air quality conditions that residents experience because of contributions from all regional anthropogenic emissions sources.

[44] The Board also finds the views put forth by the Alston Freeholders to be helpful as they provide a human experience and context against which to frame the scientific analyses.

HEALTH EFFECTS

Evidence

[45] The Board understands that the dispersion and exposure assessment conducted by RWDI was used by Dr. Don Davies of Intrinsik Environmental Services Inc. (Intrinsik) to conduct a detailed health impact assessment with the objective of identifying and understanding the potential health impacts that could result from exposure to emissions from the UOG facilities and installations in the area. The Board notes the comparisons made between predicted levels and background levels and the consideration given to the possibility that persons within the general population may have heightened sensitivities to chemical exposures.

[46] Dr. Davies concluded that the predicted concentrations were consistently below exposure limits and that the margins of safety were substantial. Several examples were identified where the margins of safety exceeded one million fold. The potential for synergistic (or at least additive) effects of mixtures was discussed during questioning. Dr. Davies addressed this concern and explained that at environmentally relevant concentrations, metabolic detoxification systems would not be saturated, and at most one may observe an additive effect. Risk quotients of mixtures were only examined in a preliminary manner.

[47] When questioned about the AAAQO and how protective the standards in those objectives are of sensitive individuals, Dr. Davies explained that Alberta Environment recognizes the need to protect sensitive individuals when setting air quality objectives. Dr. Davies explained that Alberta Environment would consider the weight of evidence in relation to the health effects that each chemical can cause, and it would consider other end points as well, such as odour or corrosivity, and then on the basis of the weight of evidence it would benchmark to the most sensitive health effect in the most sensitive species. He added that using this calculation as the beginning point, Alberta Environment would add uncertainty factors to accommodate differences in sensitivity both within and between species to arrive at an objective that is intended to be protective of the general public, which includes subpopulations who might be more susceptible to chemical exposures such as infants, the elderly and people with compromised health.

[48] Dr. Davies also conducted a preliminary analysis of the odour thresholds for the 37 chemicals or groups of chemicals considered in the health impact assessment. After comparing the predicted concentrations against the odour thresholds reported in the literature he reviewed, Dr. Davies found that the predicted concentrations were well below the odour thresholds.

[49] The Board recognizes the assessment of Dr. Tee Guidotti of Medical Advisory Services in determining whether there was any evidence that exposure to emissions associated with near-term oil and gas development would be associated with any potential health effects on people with increased sensitivities. The Board accepts Dr. Guidotti's conclusions that the current exposure levels are unremarkable, that there is no evidence indicating that levels of exposure will increase in the near term, that there is no objective basis on which to predict a health risk in the future, and that there is no evidence that future proposed developments will increase public health risks.

[50] The issue of sensitive individuals was discussed at length during the hearing. The Board recognizes that there is a lack of data regarding the effects on sensitive individuals. Although many regulatory agencies, including Alberta Environment, consider the most sensitive or very susceptible when setting benchmarks, guidelines, or objectives, there is still concern that a few individuals may be extremely sensitive and may exhibit symptoms to extremely low concentrations that are well below ambient guidelines. Dr. Guidotti used the phrase "exquisitely sensitive" to describe this portion of the population, and he said that some individuals may exhibit non-specific symptoms, perhaps due to a sub-clinical illness, a behavioural syndrome, or an emotional response to something in the environment.

[51] When asked whether odours can affect health, Dr. Guidotti said they can. He explained that odours are capable of creating both a physiological response such as nausea and a psychological response such as anxiety. Anxiety may result from either a learned (previous) response or a fear of the unknown effects of an odour. It is accepted by sensory neurologists that the sense of smell serves as a protective mechanism against harmful chemicals and poisons. Therefore, if a person is exposed to an unpleasant and particularly an unknown odour, there could be a change in the health status of the individual, so it can be concluded that odours do relate to health.

Findings

[52] The Board has considered the information provided in the reports, presentations, and opinions of Clearstone, RWDI, Intrinsik, and Dr. Guidotti. The Board recognizes that the AAAQO are protective of those individuals who may be more susceptible to chemical exposures

than the general population. The Board finds that there is no evidence that exposure to the emissions generated by current UOG facilities is associated with an increased health risk to residents in the area, and that proposed future developments would not likely increase these risks. The Board finds Dr. Davies' conclusion regarding exposure limits reasonable and accepts his statement about the margins of safety.

[53] The Board accepts the opinion of Dr. Davies that any mixtures of emissions from the UOG facilities would be below any level of risk to individuals, particularly given the large margins of safety identified by Dr. Davies when he looked at the difference between the predicted concentrations (including under the worst-case scenarios) and known exposure limits for any given constituent. The Board is of the view that such mixtures would be below the threshold of any health effects on individuals.

[54] The Board notes that the limits selected for comparisons in the assessments were health-based, and endpoints such as odour were not considered. The Board finds that some residents may experience adverse health effects if they have an enhanced susceptibility to environmental factors; however, no evidence was presented to indicate a definitive explanation for these potential responses.

[55] The Board understands from Dr. Guidotti's evidence that odours may affect the health of an individual as a result of the individual's response to an odour. Some odours are so repugnant that they will cause a physiological response in almost everyone. These reactions are often transient and subside without lasting effect when the odour disappears. Other odours may be associated by an individual with past experiences so that exposure causes a reaction or feeling that is unpleasant for the individual. This reaction is more a learned response related to anxiety or fear over what the odour represents for that individual than an indication of an actual danger to the person. In that case the potential for the individual to suffer harm associated with the odour may be negligible, but the odour nevertheless creates an unpleasant experience for the individual.

[56] Dr. Guidotti's evidence also indicated that an individual's reaction to an odour is sometimes unique and is often subjective. An individual may react adversely to an odour that does not affect most people, or may react when exposed to odours at concentrations well below accepted thresholds. The Board has requirements intended to prevent odours from certain UOG facilities and activities from migrating off-lease, i.e., from leaving the boundaries of an operator's facility and encroaching on areas that are not restricted to the operator's personnel. For odours that do not involve H_2S or other specified substances (exposure to which may pose an immediate health hazard), the ERCB considers such odours that migrate off-lease to be pollutants that pose a nuisance to the public but that are not necessarily a health hazard. However, the Board in this case accepts that an exposure to any odour may, for the reasons given by Dr. Guidotti, cause an individual to react in a way that impacts their health or well-being—whether momentarily while the exposure is ongoing or for a more prolonged period.

[57] The Board finds that it is feasible that odours from UOG facilities in the Vulcan area may induce intensified reactions in those who are exceptionally sensitive. However, UOG facilities are not the only source of emissions in the area, and the contributions of other facilities or activities must also be considered when deciding if UOG facilities pose a significant enough health risk to warrant restricting development in an entire area. In addition, the Board cannot be tasked with ensuring that no individual ever suffers an unpleasant experience as a result of being

exposed to odours from a facility regulated by the Board. Living in a modern, industrial society necessarily entails exposure to unpleasant stimuli. Even in rural locations one is exposed from time to time to sights, sounds, and odours that are unpleasant, sometimes to the point of eliciting a physiological response. Not all these experiences can be or should be prevented by unduly restricting what is otherwise beneficial development or activity. The Board finds there is no indication that odours from oil and gas facilities and activities in the Vulcan area pose an unacceptable health risk to individuals in the area.

THE BOARD'S FINDINGS

[58] The initial purpose of these review proceedings was to consider the potential that emissions from the facilities being reviewed could impact the health of the review applicants. In very general terms, that required an understanding of the behaviour of emissions most likely to originate from the subject facilities and the potential for those emissions to impact a person with enhanced sensitivity to such substances. As a result of the Graffs withdrawing from the proceedings and withdrawing their medical information, it was not possible for the Board or the parties to explore the extent of the Graffs' sensitivity to emissions. The Board was, however, able to obtain substantial information about the behaviour of emissions from the facilities, including: what substances may originate from the facilities; the likely concentrations of those substances at locations near to and further from the facilities; and how those concentrations relate to established standards for human exposure and predicted health effects.

[59] The Board's mandate includes the conservation of oil and gas resources and the economic, orderly, and efficient development in the public interest of oil and gas resources in Alberta. The Board is of the view that as long as the oil and gas resources in the Vulcan area can be developed in a safe manner, there is benefit to the public in allowing the subject UOG facilities to continue to operate. Not only do Albertans benefit from the royalties paid by Compton and Darian to the province, but mineral rights owners in the area, such as Mr. Mueller, benefit by leasing out their mineral rights to these companies. Oil and gas operations also provide employment in the area and contribute tax revenues.

[60] As indicated in the preceding portions of this decision report, the Board is satisfied that the air emissions and dispersion analysis conducted by Compton and Darian can be relied upon to provide a reasonable assessment of the behaviour of emissions from UOG facilities in the Vulcan area. Their analysis incorporated conservative assumptions and methods that predicted with a substantial margin of safety the conditions under which individuals would be exposed to emissions at levels known to have, or suspected of having, potential to impact human health. The Board is satisfied that the standards used or adopted by Compton and Darian, including those of the AAAQO, to predict human health effects are also conservative in that the levels at which impacts are suspected or predicted to occur account for individuals who are sensitive to exposure and not just the mainstream population.

[61] As a result, the Board is able to make a number of general conclusions about the contribution of UOG facilities in the Vulcan area to exposure levels that may result in impacts on human health, including the health of sensitive individuals who are more likely than the general population to be affected by exposure to such substances. The Board concludes the following:

- Air quality in the Vulcan area is as good as or better than the air quality in many other areas of the province, as indicated by the ambient air sampling undertaken by Compton and Darian and confirmed by Mr. Mueller's experience living and working in the area.

- Emissions from UOG facilities are only one of many anthropogenic sources of emissions affecting air quality and in fact are not the main contributors to emissions that area residents experience. Vehicles, livestock operations, and human communities in the area combine to contribute a greater effect on ambient air quality.

- Emission concentrations from the subject facilities reviewed diminish significantly as distance from the emission source increases. This, combined with relatively low source volumes, indicates that the potential for individuals to be affected by emissions from the facilities under review is not significant at distances greater than 1 km from any such facility.

[62] Based on the foregoing, the Board has decided to confirm each of the facility licences that was considered in this proceeding without any variation in the licence terms.

FUTURE DEVELOPMENT IN THE VULCAN AREA

[63] During the hearing, Compton and Darian expressed what they understand is the purpose of the ERCB's consultation and notification requirements. They said that the purpose of notification is to let people know, as a matter of courtesy, what is happening in their own backyards. It gives residents an opportunity to make decisions or act in response to upcoming industry activity. Compton and Darian stated that the ERCB's consultation requirements ensure that people who may be directly and adversely affected by proposed development have sufficient information to object to an application. It also provides a means to keep a dialogue going between industry and the community and helps operators maintain their responsiveness to the concerns of the community. Based on the evidence presented in the hearing, Compton and Darian said that the ERCB's consultation radii for the facilities reviewed in the hearing were very, very protective and would encompass virtually the entire population that may be adversely affected by such facilities.

[64] Section 2.3.1 of ERCB *Directive 056: Energy Development Applications and Schedules* (*Directive 056*) states that personal consultation is intended to inform parties whose rights may be directly and adversely affected by the nature and extent of the proposed application. Through the information exchanged and the discussion that occurs during personal consultation, potentially affected parties are able to make an informed decision about objecting to proposed development. The various personal consultation radii established by the Board are intended to identify all persons for whom there is a reasonable prospect of direct and adverse effect from the proposed development or activity, including individuals with heightened sensitivities. The Board is inclined to agree with Compton and Darian that notification, on the other hand, is generally provided as a courtesy between neighbours so that the public is kept informed of developments or activities that will be taking place in the community. A notification obligation on the part of an applicant does not normally imply any right on the part of the recipient, other than the right to the notification itself. More specifically, a right to notification is not an acknowledgement that the recipient may be directly and adversely affected. Given the different purposes that are served by consultation and notification, it follows that an applicant's personal consultation obligations are more onerous than what is required for notification. For example, notification can be done

through written correspondence and confirmation of non-objection is not required, while personal consultation requires a face-to-face meeting or a telephone discussion and in most cases confirmation of non-objection must be obtained before an application can be filed as routine.

[65] The Board finds that the personal consultation radii prescribed by *Directive 056* for the kinds of facilities that were reviewed in these proceedings (i.e., gas and oil wells, pipelines, and batteries containing no H_2S) are sufficiently protective to ensure that even an individual with enhanced sensitivity to emissions will be appropriately consulted about proposed development or activity. The Board is confident that the personal consultation radii are not only appropriate, they are sufficiently conservative to ensure that all individuals for whom there is any reasonable prospect of direct and adverse effect are provided with an opportunity to be properly informed of the development or activity.

[66] The Board notes that *Directive 056* indicates that persons with special needs or concerns who reside beyond the prescribed radii should be included in both consultation and notification. Specifically, Section 2.2.1(4) of *Directive 056* states:

> The applicant must also include those people that it is aware of who have special needs or concerns and reside beyond the consultation and notification radius indicated in Tables 5.1, 6.1, and 7.1.

[67] *Directive 056* defines special needs as "those persons for whom early actions must be taken for reasons such as requiring evacuation assistance, requiring early notification, not having telephones, requiring transportation assistance, or experiencing a language barrier." The Board is of the view that the "special needs" provision operates primarily to identify individuals who may require assistance to evacuate or take other protective action if an incident occurs at an UOG facility.

[68] Whether "special needs" exist in relation to a proposed development or activity depends on all of the circumstances, but in each case there must be a nexus between the proposed activity or development and the circumstances of the special needs individual. The essential element of a special needs situation is that the Board's normal requirements for evacuation may not be sufficiently protective of the special needs individual because of his or her condition or circumstances. In that case an applicant has an obligation to notify or consult those individuals even though they may be located beyond the minimum requirements indicated in the Board's consultation and notification radii. The underlying purpose of this requirement is to ensure that the unique circumstances for the evacuation of the special needs individual are identified, considered, and appropriately addressed by the applicant and the Board.

[69] As previously stated in this decision report, the special need asserted by the review applicants at the time they requested review hearings relates to their increased susceptibility to emissions from UOG facilities. The facilities reviewed in this proceeding do not contain H_2S, and exposure to CO_2 is also not a concern in the event of an incident at one of the facilities. In case of evacuation due to an incident at any of the subject facilities, such evacuation would not occur beyond the areas identified in the *Directive 056* radii.

[70] The Board has found in this proceeding that emissions from the facilities in question are not likely to exist in concentrations that would affect human health, even for highly sensitive individuals, at distances beyond the consultation and notification radii stipulated in *Directive 056*. In these circumstances, the review applicants do not fall within the "special needs" category

because the Board's normal consultation and notification requirements, for the facilities that were reviewed in this proceeding, are sufficiently protective of the review applicants even though they may have a heightened sensitivity to emissions from those facilities.

[71] In conclusion, the Board finds that the evidence in this proceeding indicates that there would not be "special needs" individuals, as that term is defined in *Directive 056*, in relation to any of the subject UOG facilities. The ERCB's public consultation and notification radii extend to a distance that would include all residents and occupants who may need to be evacuated in the event of an incident at one of the facilities.

[72] The Board notes that it currently has several other review applications and objections to new applications that raise the same issues as, or issues similar to, what the Board considered in these proceedings. The Board expects that the evidence provided in these proceedings and the findings in this decision report can help industry, the public, and the Board itself to better understand what the potential is for emissions from upstream oil and gas facilities to affect individuals living or working in the Vulcan area.

Dated in Calgary, Alberta, on March 1, 2011.

ENERGY RESOURCES CONSERVATION BOARD

<original signed by>

B. T. McManus, Q.C.
Presiding Member

<original signed by>

T. L. Watson, P.Eng.
Board Member

<original signed by>

T. M. McGee
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives (Abbreviations used in report)	Witnesses
Compton Petroleum Corporation and Darian Resources Ltd. L. H. Olthafer, P.Eng.	C. Lowes, of EQA Project Consulting Inc. C. Larson, of Crescent Point Energy Ltd. M. Mrochuk, of Compton Petroleum Corporation G. Collin, of Compton Petroleum Corporation D. Picard, of Clearstone Engineering Ltd. D. Chadder, of RWDI Air Inc. D. Davies, Ph.D, of Intrinsik Environmental Sciences Inc. T. L. Guidotti, MD, MPH of Medical Advisory Services
Questerre Energy D. Farmer	
Alston Freeholders G. Mueller B. Graff D. Graff L. Graff	G. Mueller
Energy Resources Conservation Board staff G. Perkins, Board Counsel B. Kapel Holden, Board Counsel K. Stillwell, Board Counsel A. Allum A. Taksas R. Cabot M. Czibi J. Fulford E. Rahn S. Roth	

APPENDIX 2 THE REQUESTS FOR REVIEW HEARINGS AND PRELIMINARY MATTERS

[1] The Graffs filed a number of review applications concerning facilities in the Vulcan area, including the nine review applications (the review applications) that were ultimately considered by the Board in these proceedings. A list of these applications is found as Appendix 4 to this decision. The review applications had been filed under either Section 39 or Section 40 of the *ERCA*. In their review applications, the Graffs submitted that they have enhanced susceptibility to emissions from oil and gas facilities, and that therefore they have been and will be directly and adversely affected by Board decisions approving facilities for locations both near their residence and as much as tens of kilometres from lands they own or lease.

[2] In support of their review applications, the Graffs filed certain personal health and medical information (personal information) with the Board. The ERCB is required by the rules of procedural fairness to provide personal information submitted in connection with an application or proceeding to the other side of that proceeding. Section 13 of the *Energy Resources Conservation Board Rules of Practice* (*Rules of Practice*) states that all information submitted in relation to an application or proceeding must be placed on the public file.

[3] In a letter dated December 8, 2008, Mr. Darrell Graff agreed that his personal information could be filed on the Board's public record for the review applications. Mr. Larry Graff and Mrs. Graff were informed that in order for the Board to consider their personal information, either Mr. or Mrs. Graff would have to place the material on the Board's public record or apply for a confidentiality order under Section 13 of the *Rules of Practice*. Mr. and Mrs. Graff applied for confidentiality of the personal information under Section 13. The Board granted confidentiality of the personal information on certain conditions. Mr. and Mrs. Graff indicated that the conditions were not acceptable, and they proposed amendments to the Board's conditions. These amendments to the Board's conditions were not acceptable to the ERCB. Subsequently, Mr. and Mrs. Graff requested a review of the Board's Section 13 decisions.

[4] In a letter dated December 26, 2008, Mr. Larry Graff and Mrs. Graff consented to their personal information being placed on the public record. Mr. and Mrs. Graff confirmed that they still wanted the Board to continue processing their review application regarding the original Section 13 decisions. On March 31, 2009, the Board denied Mr. and Mrs. Graff's review application.

[5] When the Board receives an application under Section 39 or 40 of the *ERCA* for a review hearing, it must first decide the preliminary question whether the original order, decision, or direction made by it should be reviewed. Section 48(5) of the *Rules of Practice* states that the Board may decide the preliminary question with or without a hearing. Sections 48(6)(a) and (b) of the *Rules of Practice* require the Board to grant an application for review if

> (i) in the case of a Section 39 review wherein the applicant has alleged an error of law or jurisdiction or an error of fact, the applicant raises a substantial doubt as to the correctness of the Board's order, decision, or direction;
>
> (ii) in the case of a Section 39 review wherein the applicant alleges new facts, a change in circumstances, or facts not previously placed in evidence, the applicant raises a

> reasonable possibility that those new facts, change of circumstances or facts not previously placed in evidence could lead the Board to materially vary or rescind its previous order, decision or direction; or
>
> (iii) in the case of a Section 40 review, the Board is of the opinion that the order, decision, or direction made by it on the initial application may directly and adversely affect the applicant's rights.

[6] In a letter dated December 16, 2009, the Board stated that it had decided to grant the nine review applications and that review hearings should be held. The Board was of the opinion that information provided in a number of the review applications concerning the health and medical condition of the review applicant(s) constituted new information that was not available to or considered by the Board at the time it made its original decisions to approve the facilities, and that the new information may lead the Board to materially vary or rescind its original approvals. The Board was also of the opinion that this new information indicated that the Board's original decision to approve the facilities may directly and adversely affect the applicant's rights.

[7] Having determined that review hearings were in order for each of the nine applications listed in Attachment A, the Board also stated that the most efficient and appropriate process for those hearings was a single, omnibus review hearing. In the omnibus hearing, the review applicants' evidence concerning their susceptibility to oil and gas facilities would be received in a record that is common to all the reviews. The licensees involved would each have an opportunity to give direct evidence concerning their particular facilities.

[8] Pursuant to Section 33 of the *Rules of Practice*, the Board directed the parties to participate in a technical meeting with Board counsel and staff. The technical meeting was held February 11, 2010, with counsel and representatives for Darian, Compton, and Apache in attendance. The Graffs also attended with their legal counsel. Following the technical meeting, all parties were asked to indicate "blackout" dates during which they would not be available for the hearing. The Board received comments from Apache, Darian, and Compton with respect to their availability. No comments were received from the Graffs' legal counsel.

[9] On March 2, 2010, the Graffs requested that three separate review hearings be held instead of one omnibus hearing. After considering the fairness to all parties, the Board denied the Graffs' request on the basis that an omnibus hearing was the most efficient and appropriate process for the reviews. In their review applications, the Graffs requested expediency for the holding of a review hearing, and the Board found that such expediency would be significantly compromised by a more prolonged process of three separate hearings. Furthermore, the Graffs' concerns about exposure to emissions from oil and gas facilities were common to the three operators participating in these proceedings, and requiring the Graffs to give the same evidence in three different proceedings would be repetitious and more onerous for the parties involved, including the Graffs.

[10] On March 3, 2010, the Graffs' requested that the ERCB suspend the licences that were the subject of the review hearing. The Graffs did not identify under what authority they were asking the Board to suspend the licences. Of the nine review applications filed by the Graffs, three applications were filed under Section 39 of the *ERCA*. The Board has no statutory authority under Section 39 of the *ERCA* to suspend an approval, licence, or permit. With respect to the

remaining six licences, the Board considered the suspension requests under Section 40(4) of the *ERCA*. The Board denied the Graffs' suspension request on the basis that it considered that the information provided by the Graffs regarding their susceptibility to emissions did not establish a strong prima facie case that would require a change to the status quo. Given the information provided to that point in the proceedings, the Board was also unable to conclude that the Graffs could suffer irreparable harm if the suspension request was refused.

[11] The Board issued a Notice of Hearing dated April 23, 2010, providing that the omnibus review hearing would commence September 21, 2010, at the Highwood Memorial Centre in High River.

[12] On May 15, 2010, the Board received a letter directly from Mr. Darrell Graff requesting a date change from September 21, 2010, to an earlier date, given the demands of his farming operations in September and October as well as his concerns that the venue would be heated with natural gas in September. The Board also received two letters directly from Mr. Larry Graff and Mrs. Graff similarly requesting that the hearing be rescheduled to a new date because of their concern that natural gas heating may be used during the hearing. They also expressed concern about a potential conflict with their farming activities in September.

[13] On June 1, 2010, Board counsel wrote to the Graffs' legal counsel asking for confirmation that he was aware of the Graffs' rescheduling request as the Graffs' letters did not appear to have been copied to him. No response was received from the Graffs' legal counsel.

[14] On June 7, 2010, the Board was notified by Michael Sawyer of Hayduke & Associates Ltd. that the Graffs' legal counsel had withdrawn from the matter because of conflicting time commitments and Mr. Sawyer was now representing the Graffs in the review proceedings. Mr. Sawyer requested a short extension for the filing of the Graffs' submissions. Mr. Sawyer also advised that he would forthwith be filing with the Board an advance funding request on behalf of the Graffs. On June 9, 2010, the Board granted the Graffs' filing extension request.

[15] On June 22, 2010, the Board was informed by Mr. Sawyer that one of the Graffs' intended witnesses had become ill. In a letter dated June 28, 2010, Mr. Sawyer requested a further filing extension for the Graffs' submissions.

[16] In a letter dated June 29, 2010, the Board responded to the three letters from the Graffs requesting that the Board reschedule the hearing, as well as Mr. Sawyer's letter reporting that one of the Graffs' witnesses was ill. After considering all the circumstances, the Board was of the view that it would be prudent to reschedule the hearing to a later date that did not conflict with the Graffs' farming activities and that allowed their witness adequate time to fully recover. The Board determined that a November 30, 2010, hearing date was appropriate, with submission deadlines being adjusted accordingly. With respect to the Graffs' concerns about natural gas heating at the hearing venue, the Board considered that it was an unavoidable reality of living and working in Alberta. The Board stated that it was prepared to make reasonable accommodations in its normal hearing process to address concerns about the Graffs' participation in the hearing. The Board was not, however, in a position to secure a hearing venue that was not heated or otherwise did not have minimum requirements for power, HVAC, restrooms, and other basic necessities. The Board also stated it was not prepared to change its normal practice of holding the hearing in the same community the facilities were located so that

members of the community could attend or participate in the hearing. By the date of the Graffs' request to move the hearing the Alston Freeholders, whose members resided in the community, had indicated their intention to participate as an intervener.

[17] Before the hearing began, the Board received five formal requests from the Graffs or their representative regarding their concerns about the venue being heated by natural gas. The Board responded to each of the requests separately. The Graffs suggested that the hearing be moved to the University of Calgary. The Board was not assured that the University of Calgary venue would be more accommodating of the Graff's sensitivities. Furthermore, the request was contrary to the Board's long-standing practice of holding its hearings in or near the community in which the development was proposed in order to allow community residents to attend and participate.

[18] Given the Graffs' concerns about natural gas heating at the venue, in a letter to the Graffs dated October 8, 2010, the Board provided the Graffs with three options for participating in the hearing: written evidence given by Mrs. Graff and Mr. Darrell Graff, video conferencing, and teleconferencing. In a subsequent letter, the Board asked the Graffs that if there were other means of providing reasonable accommodations for Mrs. Graff and Mr. Darrell Graff to participate in the hearing, then Mr. Sawyer should make those suggestions at the next scheduled technical meeting. The second technical meeting was held on October 14, 2010, and although other hearing participants provided accommodation options, the Graffs' representative did not make any tangible suggestions. Mr. Sawyer did state that the Graffs had instructed him to not proceed with questioning of witnesses unless all three Graff family members were present at the hearing. Other than repeated requests for a venue change, the Board did not receive any recommendations from the Graffs as to how their sensitivities might be accommodated to permit a fair and efficient hearing process for all participants.

[19] On August 23, 2010, the Board issued a Notice of Rescheduling and Amendment of Review Hearing providing the rescheduled hearing date. The hearing notice was amended in order to remove the review of pipeline Application No. 1493722 from the review proceedings. The pipeline segment that was approved through Application No. 1493722 and was to be reviewed as part of Proceeding No. 1634580 was not constructed, and Licence No. 46320 was cancelled.

[20] A further amendment to the proceedings was the addition of the review of pipeline Application No. 1622603, which was added to Proceeding No. 1634581. On July 13, 2010, the Board granted the Graffs a review hearing of pipeline segment No. 35 (Licence No. 46187, Application No. 1622603), pursuant to Section 39 of the *ERCA*, and directed that the review be heard together with the other matters already scheduled for a review hearing. A revised list of review applications is attached to this decision as Appendix 5.

[21] On September 21, 2010, the Board was notified by Apache that it had decided to abandon its well at LSD 11-13-16-26 W4M and therefore did not intend to participate in the hearing. Apache's well was abandoned on November 18, 2010. The Board removed Apache's well licence from the review hearing.

[22] On September 17, 2010, Mr. Sawyer, on the Graffs' behalf, submitted an application under Section 28 of the *ERCA* for an advance payment of local intervener costs in the amount of

$56 113.00. The Graffs submitted that the Board's decision to conduct the review was an indication that the Graffs may be directly and adversely affected by the applications and that therefore they should be considered local interveners.

[23] In its decision responding to the request for advance funding, the Board explained that the granting of a review hearing under Sections 39 or 40 of the *ERCA*, or for that matter a hearing under Section 26 of the *ERCA*, does not automatically equate to a finding of potential for direct and adverse effect, nor does it necessarily qualify an interested party as a local intervener under Section 28. The tests under each section are different, and they determine different entitlements. A person who is claiming local intervener status and applying for payment of hearing-related costs must establish the requisite interest in, or right to occupy, land, and provide reasonable grounds for believing that such land may be directly and adversely affected by the Board's decision on the application in question.

[24] In its decision on the Graff's advance-of-costs application, the Board noted that the concerns raised by the Graffs in the proceedings were health related and that the Board had decided to conduct the licence reviews because there was new information about the Graffs' health and medical conditions that was not previously considered by the Board. The evidence before the Board clearly indicated that the Graffs have an interest in and occupy certain lands. However, there was no evidence before the Board that, as a result of the Board's decision in the proceedings, there could be a direct and adverse effect on lands that the Graffs have an interest in, or occupy, or are entitled to occupy. As such, the Board found that the Graffs were not local interveners pursuant to Section 28(1) of the *ERCA* and were not entitled to an award of advance costs associated with their participation in the proceedings.

[25] The Board was mindful that the proceedings involved issues of significant interest to the public, industry, and the Board itself, respecting the potential impact of exploration, processing, and development of energy resources in the vicinity of the Graffs' residence and lands. Given the numerous issues and concerns involved in the proceedings and their significance to operators and residents in the Vulcan area, including the new and untested medical information relied upon by the Graffs, it was likely that the Board would have initiated its own review of the subject licences under Section 39 of the *ERCA*. This was especially so in light of Compton's and Darian's submissions that the Board has, in effect, imposed a moratorium on development in an area surrounding the Graffs' lands as a result of its decision to conduct the review.

[26] Given the extraordinary and unique circumstances of this case and the significance of the proceedings to the ERCB, Vulcan area residents, and the industry, the Board was prepared to provide the Graffs with an *ex gratia* payment of advance costs of $20 000.00 from its own hearing budget, to be used to by the Graffs to assist in the preparation of their evidence and submissions in connection with the proceedings. Furthermore, following the conclusion of the hearing, the Graffs could request a second *ex gratia* payment from the Board for the balance of costs incurred by them for their participation in the proceeding, to a maximum of $40 000.00. The total of all *ex gratia* payments from the Board was not to exceed $60 000. The Board's *ex gratia* payments would be subject to Part 5 of the *Rules of Practice* and the Board's scale of costs as they would if the Graffs had been awarded an advance of costs under Section 28 of the *ERCA*.

[27] In a letter dated November 1, 2010, the Board stated that, provided the Graffs gave their written acceptance of the requirements relating to the *ex gratia* costs payment, the Board was prepared to issue a cheque of $20 000.00 payable to the Graffs. No such written acceptance was received from the Graffs. The Graffs subsequently filed an application for a review of the Board's decision that the Graffs' did not meet the definition of a "local intervener." On November 29, 2010, the full Board (excluding the Board members who made the original decision) denied the Graffs' review application.

[28] On November 15, 2010, the Graffs submitted notice to the Board that they intended to raise questions of constitutional law at the hearing. In their notice, the Graffs asked the following questions:

1) Did the Energy Resources Conservation Board discriminate against Darrell Graff and Barbara Graff on the basis of their disability of sensitivity to many chemicals and neurological impairment when approving the licence applications, which are part of the these proceedings, contrary to section 15 of the *Canadian Charter of Rights and Freedoms*, Part 1 of the *Constitution Act, 1982*?
2) Did the Energy Resources Conservation Board infringe on Larry Graff's, Barbara Graff's and Darrell Graff's right to life, liberty, and security, contrary to Section 7 of the *Canadian Charter of Rights and Freedoms*, Part 1 of the *Constitution Act 1982*, by licensing the wells, pipeline and facilities that are part of these proceedings and allowing those wells, pipelines and facilities to operate?
3) If so, is the infringement within only such reasonable limits prescribed by laws as can be demonstrably justified in a free and democratic society?

The Graffs' notice stated that they intended to seek the following relief:

1) Invalidation of the Energy Resources Conservation Board decisions to grant licences and allow activity at the locations associated with these proceeding, and
2) Adequate reparation for the circumstances imposed upon them.

[29] On November 22, 2010, the Board received notification from Mr. Sawyer that he was no longer representing the Graffs in the hearing. The Board subsequently received correspondence from the Graffs that Mrs. Graff and Mr. Darrell Graff would be representing their family's interests at the hearing.

Preliminary Matters and the Graffs' Withdrawal

[30] The hearing opened on November 30, 2010, at the Highwood Memorial Centre in High River. The Board registered the parties for the hearing and then asked for preliminary matters to be addressed. Mrs. Graff asked the Board what was the reason for the hearing. The Board replied that the hearing was to review the approvals issued for the facilities that were the subject of the Graffs' review requests. Mrs. Graff then questioned why the Board had refused the Graffs' application for an advance of local intervener costs even though the Board accepted in December 2009 that the Graffs' had provided information indicating they may be directly and adversely affected by the facilities being reviewed in the hearing. She stated that since December, 2009, Board counsel had, on their own accord or at the Board's direction, decided to change what the

Board's December 16, 2009, letter inferred. The Board clarified for the Graffs that the test of directly and adversely affected under Sections 26(2) and 40 of the *ERCA* is not the same as the test for local intervener status under Section 28 of the *ERCA*. The Board also reviewed in detail with the Graffs the process that had resulted in the Board offering to advance the Graffs up to $60 000 to cover their hearing-related costs. Mrs. Graff then asked the Board whether the Graffs would be heard in the proceeding if they continued without local intervener status. The Board responded that the Graffs were entitled to participate fully in the hearing and that this decision, which was made in December, 2009, was independent of and not affected by any decision on the Graffs' eligibility for a local intervener cost award under Section 28 of the *ERCA*. Mrs. Graff responded by stating that she was not really concerned about the funding; she was concerned about the right to participate.

[31] Mrs. Graff then made submissions that the Graffs had not received material relating to the hearing that they had requested, or been promised, as early as February 2010. She stated it was contrary to the principles of fundamental justice for the hearing to proceed and made a motion for an adjournment of the hearing. Counsel for Compton and Darian advised the Board that all information that was to be provided by the operators had been provided to the Graffs' counsel (when he was acting for them) or to their subsequent representative, Mr. Sawyer. Board staff stated that in the normal course the Graffs would have received a computer disk containing the material filed in the proceeding by them and by other parties; however, because the Graffs do not have or use computers, a disk was not provided to them. Instead, Board staff printed copies of this material, excluding certain application material and the submissions that were exchanged between the parties including the Graffs, and forwarded the paper copies to the Graffs' post office address. Board staff also brought a set of those printed materials to the hearing and provided it to the Graffs before the start of the hearing.

[32] The Board requested that Board counsel and the hearing participants work with the Graffs during the course of the hearing to identify any hearing material that had not been passed from the Graffs' representatives to the Graffs. Mrs. Graff stated that she objected to the Board proceeding on that basis and restated her concerns about the lack of local intervener funding. She then referred to a letter that Board counsel Gary Perkins wrote to the Graffs in 2005, and stated that Mr. Perkins was hostile towards the Graffs and that the problems their representatives encountered in this proceeding stemmed from that. Mrs. Graff stated that Mr. Perkins had in the past demonstrated a prejudice and bias against the Graffs, and then she made a motion that he be removed from the hearing. The Board considered the request and noted the differences between the role Board counsel plays and the role that the Board members play in the hearing. The Board decided that it would not grant the motion to exclude Mr. Perkins from the hearing.

[33] Mrs. Graff then stated that on August 25, 2010, an ERCB vehicle was "caught" sitting on the public roadway outside the Graffs' residence. She stated that Board counsel Barbara Kapel Holden was identified as the driver of the vehicle, which sped away when approached. She stated that it crosses the line when Board counsel sits outside the Graffs' residence and spies on them. She made a motion that Ms. Kapel Holden be removed from the hearing. Ms. Kapel Holden advised the Board that she was in Calgary on that date. The Board decided that it would not remove Ms. Kapel Holden from the hearing. After that ruling, Mrs. Graff and Mr. Darrell Graff continued to raise the question of the ERCB vehicle on the public roadway in front of their residence. The Board was then advised by Board staff that the ERCB vehicle that was encountered by the Graffs was driven by Facilities Applications staff members who were in the

process of planning the Board's site visit, which eventually took place on October 14, 2010. The Board then took its mid-morning hearing break.

[34] Following the break, the Board was advised by its staff that arrangements had been made for the Graffs to receive same-day transcripts of the hearing, to be made available to them approximately three hours after each hearing day ends. The ERCB would pay the costs of providing the transcripts to the Graffs. The Board indicated this was a further measure to accommodate the Graffs and their potential inability to sit in the hearing at all times. Mrs. Graff then asked for the second time what the purpose of the hearing was—specifically, was it to consider the Graffs' medical information as part of a decision to revoke the licences for the wells? She said that the Graffs' medical information had only been provided to the ERCB for that purpose, and that any other use or disclosure (including its distribution to the "gossips of the community") was contrary to privacy legislation. She asked the Board for assurance that the Graffs' medical information would be held in confidence, including that the Board would retrieve the medical information that she knew was in the possession of members of the community.

[35] After further discussion that included the Board panel and counsel for Compton and Darian, Mrs. Graff then said that the Graff family was requesting that all of their medical information that had been filed in the proceeding be removed from the hearing record. She stated that the request was made because the hostility and prejudice of the ERCB, including the Board hearing panel, caused the Graffs to not trust the ERCB with their sensitive personal information.

[36] The Board then raised the question of if and how the hearing would continue if the Graffs' medical information was removed from the record. The Board first asked the Graffs to respond to that question, and in the course of responding, Mr. Darrell Graff again raised the matter of the Board not accommodating the Graffs in the hearing, specifically by refusing to move the hearing to the University of Calgary as they had requested. Mrs. Graff then again raised the matter of hearing material that had not been provided to the Graffs, and Mr. Darrell Graff made additional submissions about the unfairness of the situation. Eventually, the discussion returned to the question of the Graffs' filed medical information, which Mrs. Graff stated was given through a process in 2008 during which the ERCB's general counsel "blackmailed" the Graffs into providing the information. Further discussion ensued, following which the Board stated that it intended to adjourn the hearing for a lunch break and that after the break it intended to ask all hearing participants and Board counsel for advice on what the effect would be if the Board were to grant the Graffs' request to remove all their medical information from the record of the proceeding and how the Board might give effect to the request. The Board also asked the Graffs to very carefully consider the request they were making to have their medical information removed from the hearing, and said that this would be a very significant step in the proceeding.

[37] Upon the Graffs' return to the hearing room after the lunch break and before the hearing resumed, Mrs. Graff indicated to those present that she smelled natural gas. The Graffs left the hearing room and did not return. Board staff told the Board what had transpired, and that the fire department and ATCO Gas were responding to Board staff's call about the reported gas smell. Although the Graffs remained in or very near to the building, there was no initial indication from them if or when they may return to the hearing room. The Board decided to proceed to receive the other parties' and Board counsel's oral submissions on what the effect may be if the Graffs' medical information was removed from the hearing record and how to best agree to the Graffs'

request to retract the material. The Board stated that the Graffs would have the benefit of reading those submissions in the transcript that evening, so as to be better able the following day to make an informed choice about the removal of their medical information. At one point during those submissions, Mr. Darrell Graff appeared and asked that the hearing be adjourned for the day. The Board advised Mr. Darrell Graff that it would continue to hear submissions from other parties on the effect of the Graffs' request, and that the Board would resume the hearing at 10:00 a.m. the following morning to hear more from the Graffs on their motion after they had an opportunity to review the transcripts.

[38] When the hearing resumed on December 1, the Board asked the Graffs to address the motion for the return of their personal information, which they had made the previous day. Mrs. Graff indicated that they had not yet read the transcripts from the previous day, and were not able to make an informed decision about whether to proceed with the motion. Instead, she made a motion that the hearing be adjourned until a more appropriate venue was secured, and she again suggested MacEwan Hall at the University of Calgary. The Board responded that the very same matter had already been canvassed a number of times and that the Board was not prepared to move the hearing to the University of Calgary. The Board then asked if the Graffs wished to have a 45-minute break to review the transcript of the submissions that were made in the afternoon of November 30. Mrs. Graff responded that "new information" had come to light, namely that the notice of question of constitutional law that was filed by the Graffs in the hearing had been made available in the hearing room with other hearing-related documents. Mrs. Graff said that this caused additional concerns about the Graffs' personal medical information being available in the community, and she made a motion that the hearing be adjourned so that the Graffs could get legal counsel to assist them with the matter. After further submissions from Mr. Darrell Graff concerning the Graffs' personal medical information, the Board adjourned briefly to consider the matters brought forward by the Graffs since the hearing resumed that morning.

[39] The Board resumed the hearing and delivered the following decisions. The Board did not grant the most recent motion to adjourn the hearing to a new venue. On the motion for an adjournment to allow the Graffs to obtain new counsel, the Board did not grant that request. The Board noted that the Graffs had twice previously had representation in the proceedings and had most recently indicated their intention to represent themselves. The Board stated that notice of the hearing had originally been issued in April 2010 and that the Graffs had ample time and notice to obtain counsel. The Board acknowledged that other parties had raised concerns about fairness and abuse of process by the Graffs, in particular about the Graffs' numerous, repetitive preliminary motions. Finally, with respect to the Graffs' motion for the return of their medical information, the Board stated that it assumed the Graffs were reserving their decision to proceed with that request. The Board indicated that it intended to move forward with Compton and Darian's evidence in the hearing and that the Graffs were free at any time to revive their request for the removal of their medical information from the hearing record.

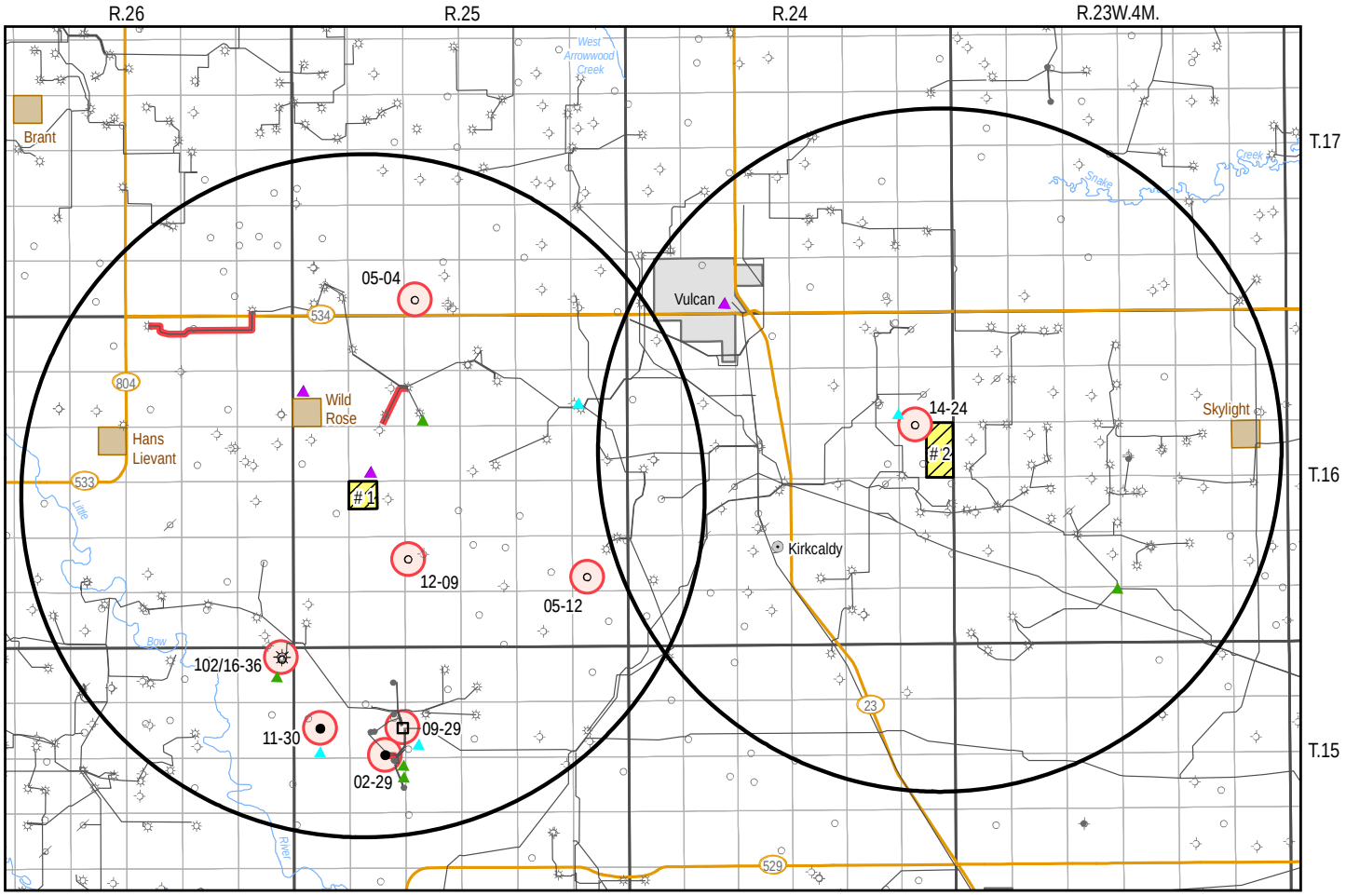
[40] At that point Mr. Darrell Graff expressed concerns that he did not know exactly what constituted the hearing record; in particular, how far back in time did the material on the hearing record reach? He also asked whether the Board's earlier decision that the Graffs did not qualify as local interveners under Section 28 of the *ERCA* took into consideration all the information he had provided over time to the Board regarding his interests in Section 17-16-25W4M. There was further discussion on that matter, including that the list of exhibits circulated by Board staff prior to the hearing listed in point form all the material filed in the proceedings. When that discussion

ended, Mr. Darrell Graff said again that personal information had been put on the Board's hearing record and was thereby made available to the public. The Board asked Mr. Darrell Graff if he wanted to revive the motion to remove the Graffs' medical information from the hearing record. When Mr. Darrell Graff could not decide if he wished to pursue that, the Board indicated that it would take its lunch break and then begin hearing the evidence of Compton and Darian's witnesses immediately after the break.

[41] When the hearing resumed after the lunch break, Mrs. Graff advised the Board that based on the advice of her physician given to her the previous evening, she was not prepared to continue in the hearing in any capacity. She said that the closed-mindedness of the Board and its complete pre-determination of the outcome of the hearing contributed to her decision to withdraw from the proceeding. Mrs. Graff submitted that the hearing environment was not the best place for her and her family to try to address the challenges posed by development in the area of their home and other lands, and she proposed that mediation or another form of more amicable dispute resolution be attempted.

[42] The Board adjourned the hearing to consider the Graffs' request to withdraw and returned about one hour later to deliver its decision. The Board stated that given Mrs. Graff's representation about the impact of the hearing on her, the Board had no choice but to grant the Graffs' request to withdraw from the hearing. The Board said that it would continue with its review of the licences that were the subject of the hearing, but that the hearing itself would proceed without the Graffs' participation and without reference to or consideration of the material they filed. The evidentiary portion of the hearing then began with evidence from Compton's and Darian's witnesses.

APPENDIX 3 PROJECT AREA MAP



APPENDIX 4 ORIGINAL REVIEW APPLICATIONS

Review Application	Licensee	Description	Type of Facility
1505306 Proceeding No. 1634570	Apache	S. 39 review request by Darrell Graff on Apache Canada Application No. 1468621, Approval No. 0361969 at LSD 11-13-16-26W4M	B140 gas well
1484993 Proceeding No. 1634572	Compton Petroleum	S. 40 review and variance request by Larry and Barbara and Darrell Graff on Stylus Energy Inc. Application No. 1483627, Approval No. 0364810 at LSD 12-9-16-25W4M	B140 gas well
1558026 Proceeding No. 1634573	Compton Petroleum	S. 39 review and variance request by Larry, Barbara, and Darrell Graff on Stylus Energy Inc. Application No. 1470460, Approval No. 0360212 at LSD 11-30-15-25W4M, and Application No. 1470829, Approval No. 36735 at LSD 9-29-15-25W4M	B140 gas well and B030 facility
1505316 Proceeding No. 1634574	Compton Petroleum	S. 40 Review Request by Larry, Barbara, and Darrell Graff on Compton Petroleum Application No. 1502725, Approval No. 0374329 at LSD 6-12-16-25W4M	C360 gas well
1519671 Proceeding No. 1634576	Compton Petroleum	S. 40 review request by Larry, Barbara, and Darrell Graff on Compton Petroleum Application No. 1516932, Approval No. 0378837 at LSD 5-4-17-25W4M	B140 gas well
1508597 Proceeding No. 1634580	Compton Petroleum	S. 40 review request by Larry and Barbara Graff on Compton Petroleum Application No. 1493722, Pipeline Approval No. 46320 at LSD 14-24-16-24W4M, and Application No. 1493757, Approval No. 0375593 for a well at LSD 14-24-16-24W4M.	B140 gas well and a B100 pipeline
1500232 Proceeding No. 1634581	Darian Resources	S. 39 review request by Larry, Barbara, and Darrell Graff on Application No. 1462770, Pipeline Approval No. 46187 at LSD 2-29-16-25W4M	B100 pipeline
1552219 Proceeding No. 1634583	Darian Resources	S. 39 and 40 review request by Darrell Graff and a Section 39 review request by Larry and Barbara Graff on EnCana Corporation Application No. 1521086, Approval No. 0387460 at LSD 16-36-15-26W4M	B140 gas well
1614328 Proceeding No. 1634584	Darian Resources	S. 40 review request by Larry and Barbara Graff on Darian Resources Ltd. Application No. 1598300, Approval No. 0410256 at LSD 2-29-15-25W4M, and Application No. 1613335, Approval No. 0410256 at LSD 2-29-15-25W4M	B140 crude oil well

APPENDIX 5 REVISED REVIEW APPLICATIONS

Review Application	Licensee	Description	Type of Facility
1484993 Proceeding No. 1634572	Compton Petroleum	S. 40 review and variance request by Larry and Barbara and Darrell Graff on Stylus Energy Inc. Application No. 1483627, Approval No. 0364810 at LSD 12-9-16-25W4M	B140 gas well
1558026 Proceeding No. 1634573	Compton Petroleum	S. 39 review and variance request by Larry, Barbara, and Darrell Graff on Stylus Energy Inc. Application No. 1470460, Approval No. 0360212 at LSD 11-30-15-25W4M and Application No. 1470829, Approval No. 36735 at LSD 9-29-15-25W4M	B140 gas well and B030 facility
1505316 Proceeding No. 1634574	Compton Petroleum	S. 40 review request by Larry, Barbara, and Darrell Graff on Compton Petroleum Application No. 1502725, Approval No. 0374329 at LSD 6-12-16-25W4M	C360 gas well
1519671 Proceeding No. 1634576	Compton Petroleum	S. 40 review request by Larry, Barbara, and Darrell Graff on Compton Petroleum Application No. 1516932, Approval No. 0378837, at LSD 5-4-17-25W4M	B140 gas well
1508597 Proceeding No. 1634580	Compton Petroleum	S. 40 review request by Larry and Barbara Graff on Compton Petroleum Application No. 1493757, Approval No. 0375593 for a well at LSD 14-24-16-24W4M.	B140 gas well
1500232 Proceeding No. 1634581	Darian Resources	S. 39 review request by Larry, Barbara, and Darrell Graff on Application No. 1462770, Pipeline Approval No. 46187 at LSD 2-29-16-25W4M and Application No. 1622603, Pipeline Approval No. 46187 at LSD 14-34-16-26W4M	B100 pipelines
1552219 Proceeding No. 1634583	Darian Resources	S. 39 and 40 review request by Darrell Graff and a Section 39 review request by Larry and Barbara Graff on EnCana Corporation Application No. 1521086, Approval No. 0387460 at LSD 16-36-15-26W4M	B140 gas well
1614328 Proceeding No. 1634584	Darian Resources	S. 40 review request by Larry and Barbara Graff on Darian Resources Ltd. Application No. 1598300, Approval No. 0410256 at LSD 2-29-15-25W4M and Application No. 1613335, Approval No. 0410256 at LSD 2-29-15-25W4M	B140 crude oil wells