



Advantage Oil & Gas Ltd.

Applications for a Multiwell Oil Battery Licence
and Two Multiwell Oil Satellite Licences
Chip Lake Field

February 7, 2006

ALBERTA ENERGY AND UTILITIES BOARD

Decision 2006-007: Advantage Oil & Gas Ltd., Applications for a Multiwell Oil Battery Licence and Two Multiwell Oil Satellite Licences, Chip Lake Field

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ALBERTA ENERGY AND UTILITIES BOARD

Calgary Alberta

**ADVANTAGE OIL & GAS LTD.
APPLICATIONS FOR A MULTIWELL OIL
BATTERY LICENCE AND TWO MULTIWELL
OIL SATELLITE LICENCES
CHIP LAKE FIELD**

**Decision 2006-07
Applications No. 1428608,
1428443, and 1428444**

1 DECISION

Having carefully considered all of the evidence, the Alberta Energy and Utilities Board (EUB/Board) denies Application 1428608 for a multiwell oil battery without prejudice to a new application.

The Board recognizes that the interveners removed their objections to Applications 1428443 and 1428444 for multiwell oil satellites. However, the Board denies these applications without prejudice to new applications, as there is no need for these facilities without the multiwell oil battery licence.

2 BACKGROUND

Significant landowner concerns about the subject applications began when Defiant Energy Corporation (Defiant), the corporate predecessor to Advantage Oil & Gas Ltd. (Advantage) began to drill wells and construct pipelines in 2002. Concerns about Defiant's operation cited by the interveners included flaring, odours, clearing of trees without permission, unfulfilled commitments for dust control, lack of notification when rigs moved into the area, and no personal consultation with landowners or the community about existing or proposed activities. As a result, some members of the community stated that one of their major concerns was Defiant's lack of respect. Consequently, they had no confidence or trust in any company operating facilities in the community.

In July 2004, the EUB was notified by the neighbouring landowners that a multiwell oil battery at Legal Subdivision (LSD) 5 of Section 13, Township 53, Range 10, West of the 5th Meridian (5-13 site) appeared to be operating. The EUB audited the multiwell gas battery approval (Licence No. F-28064) at the 5-13 site and identified serious deficiencies, including failure to complete all participant involvement requirements prior to filing an application and construction of a facility without having acquired the necessary facility licence. The EUB implemented enforcement actions,¹ and as a result of the audit, the EUB issued Notices of Suspension dated October 7 and 19, 2004, for the equipment that Defiant had installed at the 5-13, LSD 16-11-53-10W5M (16-11 site), and LSD 3-12-53-10W5M (3-12 site) sites without the necessary licences.

¹ With respect to the 5-13 multiwell oil battery, Defiant received Major Level 2 enforcement for constructing this facility without acquiring the necessary facility licence and for failing to meet participant involvement requirements. With respect to the 16-11 and 3-12 satellites, Defiant received Serious Level 3 enforcement for constructing these facilities without acquiring the necessary licences and for failure to conduct the required participant involvement program.

The October 19, 2004, Notice of Suspension allowed the 5-13 site to operate as a sweet single oil well battery with a 67 kilowatt (kW) compressor on site in order to continue with gas conservation. The 16-11 and 3-12 sites were allowed to operate as sweet single oil well batteries. In accordance with *Directive 056*,² operation of sweet single well oil batteries and operation of a compressor with a power rating less than 75 kW are exempt activities that do not require licences.

The November 5, 2004, Notification of Enforcement Actions confirmed the above suspensions and directed Defiant to bring the 5-13 licence and the 16-11 and 3-12 sites into compliance by applying to the EUB for the appropriate approvals for the unlicensed equipment at these sites. Defiant applied for a sour multiwell oil battery at the 5-13 site on November 9, 2004. On December 2, 2004, Defiant applied for sour multiwell oil satellites at the 16-11 and 3-12 sites.

Defiant was amalgamated into Advantage on January 1, 2005. On November 7, 2005, Advantage submitted new facility applications in accordance with *Directive 056* in order to be compatible with EUB system updates and new application schedules.

3 APPLICATIONS, INTERVENTIONS, AND HEARING

Advantage applied, in accordance with Section 7.001 of the *Oil and Gas Conservation Regulations (OGCR)*, for approval to allow operation of a multiwell oil battery at LSD 5-13-53-10W5M (multiwell oil battery) and two existing multiwell oil satellites at LSD 16-11-53-10W5M (16-11 satellite) and LSD 3-12-53-10W5M (3-12 satellite). The multiwell oil battery would consist of a group inlet separator building, two test separator buildings, an oil treating vessel, five 400-barrel oil storage tanks, one 400-barrel water tank, a 67 kW compressor, a nonregenerative gas sweetening system, an electric 22 kW water disposal pump, a vapour recovery compressor package, and a flare system. The purpose of the multiwell oil battery would be to separate and measure area production for multiple wells, collect the production for storage and transportation to market or injection, and gather the gas for sweetening and conservation. The equipment at both of the satellites would consist of a multiwell valve manifold and a test separator package. The purpose of both satellites would be to measure area production from multiple wells. All three facilities would be licensed for a maximum hydrogen sulphide (H₂S) content of 0.75 moles per kilomole (mol/kmol) (0.075 per cent).

The facilities would be located about 8.6 kilometres (km) southwest of Wildwood, Alberta.

The Board received interventions to the application from several landowners. Appendix 1 lists the interveners who were represented by L. Vankosky and Grand Chief M. Gros-Louis. Figures 1 and 2 show the interveners' residences and land holdings. In letters that date between June 10 and November 22, 2004, the parties expressed concerns with respect to pollution, health, safety, flaring, location, property value, traffic, dust, life expectancy, and possible future expansion of the multiwell oil battery.

² *Energy Development Applications and Schedules* (formerly known as *Guide 56*; revised and reissued as *Directive 056*).

Figure 1 also shows the locations of the proposed facilities, existing wells and pipelines, the notification zones required by *Directive 056*, and certain features of the area. In addition, Figure 2 shows the emergency planning zones (EPZ) adopted by Advantage.

The Board considered the applications and interventions at a public hearing in Wildwood, Alberta, on November 23 and 24, 2005, before Board Member J. D. Dilay, P.Eng. (Presiding Member) and Acting Board Members F. Rahnama, Ph.D., and W. G. Remmer, P.Eng. The Board Members and EUB staff conducted a site visit on November 22, 2005. Those who appeared at the hearing are listed in Appendix 1.

At the close of the hearing, Advantage and the interveners were required to complete a number of undertakings. The Board received the final undertaking on December 6, 2005, and therefore, considers the record to have been closed on that date.

The Board notes that in the course of the hearing, the interveners removed their objections to the satellites. Thus, this decision report focuses on the multiwell oil battery.

4 ISSUES

The Board considers the issues respecting the multiwell oil battery application to be

- participant involvement
- need for the multiwell oil battery
- location and associated impacts of the multiwell oil battery

5 PARTICIPANT INVOLVEMENT

Participant involvement is the term used in *Directive 056* to describe requirements and expectations for applicants with respect to planning and implementing a notification and personal consultation program, including the EUB's expectation for the applicant to deal with public and landowner concerns. Applying *Directive 056* to the subject application, personal consultations must be held with all residents within 1.5 km and notification must take place with all landowners within 2.0 km.

5.1 Views of the Applicant

Advantage submitted that after it acquired Defiant, it sent a letter of introduction on January 28, 2005, to all the interveners identified by Defiant and the EUB. This letter contained information on Advantage's field staff, indicated that the company was aware of the issues related to the battery application, and invited the parties to participate in the Appropriate Dispute Resolution (ADR) process. In addition, on March 1, 2005, Advantage distributed notice of an open house, which was held on March 12, 2005. Advantage stated that from March 23 to April 7, 2005, it renotified residents within 1.5 km, landowners and occupants within 2.0 km, and some landowners outside of the 2.0 km radius for the purpose of reconfirmation that they did not object to the multiwell oil battery. At the hearing, Advantage confirmed that it would follow the commitments outlined in its project notification letters. Advantage submitted that on April 8, 2005, it distributed a summary of the discussions, as well as answers to questions, from the open

house. In addition, on April 14, 2005, Advantage sent a letter to interveners again inviting them to participate in the ADR process.

Advantage explained that after contact with concerned parties in April 2005, it made no further attempts at ADR because the interveners had no interest in this process. Advantage maintained that ADR was rejected by the interveners because the parties' views had become so polarized prior to Advantage's involvement. In addition, Advantage submitted that the concerns contained in the letters of objection were of a general nature and that the interveners' November 9, 2005, submission did not provide additional detail on these concerns. Advantage emphasized that when discussions come to a point where further efforts to communicate with people are no longer productive, the next step is to proceed to a hearing. Advantage submitted that further progress with communication and consultation would not be possible until the Board rendered a decision on the subject application. Advantage stated that trust and respect would be established as matters moved forward and the parties were able to communicate with each other.

Advantage indicated that its contact with the landowners, other than at the March 12, 2005, open house, was mainly through written correspondence. In addition, Advantage indicated that all interveners did not attend the open house, but stated that it followed up with all interveners with its April 8, 2005, letter. Advantage indicated that it was aware of the landowners' general issues but did not know specific details of individual interveners' concerns. Advantage considered its approach to be appropriate and consistent with the EUB's requirements. It said that it understood the difference between notification and personal consultation, as prescribed by *Directive 056*, and that it must make an effort to understand the concerns of all parties. Advantage maintained that if parties did not agree on the best location of the multiwell oil battery, this did not indicate that personal consultation had not occurred. Advantage stated that it took the concerns of local landowners and interveners into consideration in the technical design of the multiwell oil battery.

5.2 Views of the Intervenors

The interveners stated that their lack of trust in oil and gas operators first arose as a result of Defendant's activities and attitude of disrespect. In addition, the interveners expressed concerns with regard to companies failing to follow through on commitments that they had made. The interveners also expressed frustration regarding change of ownership of facilities, which they claimed had resulted in commitments made by the previous operators not being followed by the successor companies.

The interveners expressed frustration with regard to the amount of respect afforded to them by Advantage. They said that Advantage had not addressed their concerns and had proceeded with the multiwell oil battery application without their input. The interveners stated that the discussions at the open house centred only on the 5-13 location for the multiwell oil battery and its operation and that Advantage had rejected a discussion regarding alternative locations. The interveners said that they did not wish to impede progress, but wanted to discuss alternative sites.

The interveners stated that they did not want to live within the 1.5 km or 2 km radiuses of the 5-13 facility because they interpreted those to be zones requiring evacuation in the event of an emergency. This desire not to live in an evacuation area, along with other factors, resulted in the interveners proposing that the multiwell oil battery be located on Crown lands about 6 km south of the 5-13 site at LSD 11-25-52-10W5M (the proposed 11-25 site). The interveners emphasized that they attempted to understand the issues at hand, but did not receive adequate personal

consultation from Advantage. The interveners submitted that it was the responsibility of the applicant to engage the community in discussions regarding possibilities for how all parties could work together cooperatively. The interveners further stated that they did not agree to participate in ADR because they did not want to discuss only the 5-13 location for the multiwell oil battery.

The interveners maintained that Advantage pursued a flawed application and process, which resulted in the reluctance of the community to be involved in this application. The interveners stated that primarily written notice was provided to the community, along with an open house. D. Simonar, the interveners' expert witness, stated that Advantage should have made further attempts to communicate with all parties. He explained that this communication should have been on a personal consultation basis in order to determine the concerns of the interveners. Mr. Simonar stated that in his experience, he would send out the appropriate people to have a dialogue with concerned parties in order to resolve their concerns. He agreed that it was necessary to try to accommodate landowners' concerns.

The interveners said that they were not aware of Advantage's future plans in the area. In closing argument, the interveners requested that Advantage make an effort towards direct personal communication with the public in the future. They stated that this involvement was necessary to aid the public in understanding development and to gather their input on development in the area. The interveners requested that Advantage hold open houses in the future in order to inform the public about new development in the Chip Lake area. The interveners requested that the Board direct Advantage to file a comprehensive proposal to the EUB with respect to its consultative obligations within their community.

5.3 Views of the Board

The Board notes that *Directive 056* contains minimum requirements with respect to notification and personal consultation with potentially impacted parties. The Board emphasizes that it expects companies to meet or exceed the participant involvement requirements in *Directive 056*. The Board notes that Section 2.1 of *Directive 056* requires industry to develop and implement a participant involvement program prior to the filing of an application, which includes responding to questions and concerns and discussing alternatives. In addition, the Board notes that the public is strongly encouraged to participate in ongoing issue identification, problem solving, and planning with respect to local energy developments. The Board notes that early involvement by the public in informal discussions with industry may lead to greater influence on project planning and mitigation of impacts.

The Board believes that Advantage met notification requirements but failed to meet personal consultation requirements. Notification is the distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development. Personal consultation may include phone calls but usually includes face-to-face dialogue, so that all parties can understand each other's concerns, needs, and the reasons behind them. The seriousness of this deficient personal consultation is amply demonstrated by the interveners' incorrect understanding that the evacuation zone was 1.5 or 2 km, rather than the 100 m EPZ adopted by Advantage (see Figure 2), which appears to have resulted in the interveners basing their alternative location partly on this misunderstanding. In addition, it is also demonstrated by the interveners' limited understanding of an EPZ and the fact that no residences were located

within the 100 m EPZ proposed by Advantage. The Board wishes to clarify that the EPZ is a priority area surrounding a well, pipeline, or facility where plans for immediate response actions are required in the event of an emergency. Thus, the EPZ, the personal consultation radius, and the notification radius are areas where the applicant or operator has very different duties at different times in the life of a project.

The Board believes that Advantage did not put sufficient effort into understanding and addressing the concerns of the interveners. Given the history of how the interveners have been treated, the Board can understand why the interveners were not prepared to enter into ADR, especially given the apparent reluctance of Advantage to discuss alternative locations for the multiwell oil battery. The evidence indicates that Advantage restricted its dealings with the interveners to supporting the approval at the 5-13 location and it did not investigate the rationale behind the interveners' request to move the multiwell oil battery into Crown lands.

The Board notes that the interveners stated throughout the hearing that they did not want to impede development and were willing to discuss existing and future activities with Advantage. Given the above, and given that both Advantage and the interveners acknowledged the communication challenges, the Board strongly encourages Advantage to set up mechanisms for ongoing dialogue with the community with emphasis on communications at the local level.

The Board expects Advantage to engage in clear and transparent personal consultation with the public. The Board also expects Advantage to review and improve on internal procedures to ensure that the planning and implementation of its participant involvement programs properly include both notification and personal consultation at the early stage and throughout the lifetime of any proposed development.

6 NEED FOR THE MULTIWELL OIL BATTERY

6.1 Views of the Applicant

Advantage stated that a central multiwell oil battery was needed to eliminate the hauling of oil and water from the individual well sites. A multiwell oil battery would allow the emulsion from each well to be separated into oil, gas, and water at one location. The gas and oil would be delivered to market and the water would be injected back into the reservoir, thereby increasing overall recovery of reserves. Advantage also indicated that there would be a number of benefits to the community and the environment, including removal of tankage at the individual well sites, reduced potential for fugitive emissions in the area, a reduction of overall truck traffic, and improved safety of residents and operators.

6.2 Views of the Intervenors

The intervenors recognized the benefits of a multiwell oil battery and did not dispute the need for such a facility. The intervenors were concerned about its location in the centre of their community.

6.3 Views of the Board

The Board notes that there was no opposition to the need for a multiwell oil battery. The Board agrees that a multiwell oil battery would be beneficial, as there would be reduced trucking, better control over fugitive emissions, and secondary recovery of reserves through water injection. However, the Board recognizes that there are options to produce the well fluids, provided that gas conservation is in place. This could include continuing with the current process of collecting the gas at the 5-13 site and trucking the fluids from each well site. Therefore, providing that a suitable location can be found and the impact can be mitigated to an appropriate level, the Board agrees that a multiwell oil battery could be approved if all regulatory requirements are met in the future.

7 LOCATION AND ASSOCIATED IMPACTS OF THE MULTIWELL OIL BATTERY

The rationale and associated impacts for the 5-13 site and the interveners' alternative site are outlined below, first in terms of the rationale for location and then in terms of impacts in order of safety, traffic, noise, emissions, aesthetics, land value, and economic life.

7.1 Views of the Applicant

Location

Advantage proposed that the multiwell oil battery be located at the 5-13 site. Advantage maintained that this was the best location for the multiwell oil battery and that there must be actual significant impacts to warrant constructing it at some other location. In addition, Advantage stated that the design of the multiwell oil battery incorporated design features that addressed the concerns of area landowners.

Advantage stated that it did not know the reasons Defiant chose the 5-13 site but indicated that it likely was because it was a central location in relation to existing wells and its operations. As a result of this central location, pipeline length would be minimized. Advantage further explained that this multiwell oil battery would use an existing lease site and would be located on the site of an operating multiwell gas battery. Advantage claimed that the 5-13 site would be the only site at which electrical power and telephone lines would be readily available to reliably operate the control system and the electrically driven equipment.

Advantage testified that the interveners' submission did not contain any potential concerns related to the multiwell oil battery, and that the main premise of this document was to move this multiwell oil battery south to the proposed 11-25 site on Crown lands. Advantage indicated that it did not thoroughly investigate the interveners' request to relocate the multiwell oil battery to the proposed 11-25 site. Advantage stated that this relocation would result in impacts on the environment and traffic, as well as in significant financial costs to Advantage. The environmental impacts would include land disturbance to construct pipelines, a new lease site, new roads, and new utility systems.

Safety

Advantage indicated that a site-specific sour production facility emergency response plan (ERP) was not required by *Directive 071*³ for the multiwell oil battery. Notwithstanding, Advantage first calculated a 42 m EPZ radius based on the advice of its emergency planning consultant. However, it decided to adopt a larger 100 m EPZ radius for all wells, pipelines, and facilities for its Chip Lake operations. It did so to address the concerns expressed about safety and based on the regulated 100 m setback distance associated with level-1 production operations. Advantage therefore believed that it had adopted a very conservative EPZ. Advantage submitted its corporate ERP and supplemented it with technical data for the Chip Lake area, including the 100 m EPZ that it had adopted. Advantage called this its ERP safety protocol.

Advantage believed that its corporate ERP had previously been approved by the EUB, based on an approval issued for its Gadsby area ERP. Advantage acknowledged that it had not yet conducted personal consultation and, therefore, the ERP safety protocol did not yet contain specific resident information. Recognizing that the ERP safety protocol could not be considered a specific sour production facility ERP, it believed that all EUB requirements had been met. Advantage further acknowledged that it would have to update the ERP safety protocol to include resident information for those who wanted to be included in the protocol. Advantage stated that it would complete personal consultation and information gathering relative to the ERP as early as possible in 2006. Advantage stated that as ERPs are works in progress, it is not uncommon for companies to obtain personal contact information prior to commencement of operations.

Traffic

Advantage stated that centralization of tanks at the multiwell oil battery would reduce truck traffic in the area. In addition, Advantage stated that oil truck traffic would access the multiwell oil battery from Highway 16 to minimize the number of residences impacted. Hauling of oil and water from individual well sites would be eliminated, as tanks would be removed from these sites. In addition, Advantage stated that if the water injection scheme were approved along with the multiwell oil battery, water would not have to be trucked to disposal facilities. Advantage further explained that there would be a reduction in the operating and service vehicle traffic to individual well sites, which would decrease the need for maintenance of the roads. Advantage did not comment on measures to mitigate problems with dust or mud on area roads.

Advantage submitted that residents would be impacted by additional traffic due to relocation and construction of the multiwell oil battery to the proposed 11-25 site. Advantage submitted that local residents would encounter a similar amount of truck traffic if the multiwell oil battery were moved to the proposed 11-25 location.

Noise

Based on the noise impact assessment conducted, Advantage stated that the daytime permissible sound level (PSL) and the nighttime PSL at the multiwell oil battery would be 50 and 40 decibels (dBA) respectively and that the predicted noise level from the multiwell oil battery to the nearest

³ *Emergency Preparedness and Response Requirements for the Upstream Petroleum Industry* (formerly known as *Guide 71*; reissued as *Directive 071*).

residence would be 37.3 dBA. Advantage stated that it had upgraded the original compressor muffler and added acoustical treatment to the compressor building in order to ensure compliance with EUB regulations. Advantage noted that the upgrades to the compressor building were not operational, because the necessary electrical supply had not yet been connected to the multiwell oil battery. In addition, Advantage noted that the proposed water injection component at the multiwell oil battery would be electrically driven to reduce noise levels.

Advantage stated that its area operator would investigate any noise complaint at the multiwell oil battery and would then attempt to address the landowner's concerns. Advantage indicated that it would employ a noise consultant to conduct a field assessment and recommend solutions to decrease the noise level in the event that the actual noise levels at the multiwell oil battery exceeded the PSL.

Emissions

Advantage stated that a vapour recovery unit would be used at the multiwell oil battery in order to collect fugitive emissions. It explained that there would be no continuous flaring, but that flaring would occur only in emergency situations or during maintenance and would be in accordance with *Directive 060*.⁴ Advantage stated that there would be a continuous flare system pilot light. It submitted the air dispersion modelling study, which found that during an emergency flare situation ground-level concentrations of sulphur dioxide would be within Alberta Environment standards. Advantage also stated that the only continuous emissions from the multiwell oil battery would be from the engine exhaust on the compressor.

Advantage stated that the multiwell oil battery would have secondary containment in compliance with *Directive 055*.⁵ This secondary containment would prevent the release of oil and produced water in the case of a storage system failure, in order to protect surface and shallow groundwater.

Advantage stated that although the interveners did not request specific monitoring systems, it would consider implementing monitoring systems for water wells and for air emissions. Advantage stated that if there were a water well complaint, it would investigate the matter, determine the cause of the problem, and attempt to rectify the situation if Advantage were found to be the source of the problem. Similarly, Advantage stated that if there were a complaint related to emissions and odours, it would investigate and communicate with the resident.

Advantage submitted that responses to complaints would be handled by its field supervisor or local operator for the area. In addition to the field telephone number, a corporate office number would be available to which responses could also be directed.

Aesthetics and Land Value

Advantage stated that the residents directly to the west of the multiwell oil battery would be the only parties able to see the facility. It added that one tank would be visible under the operations, as currently allowed. If the application for the multiwell oil battery were approved, this would be increased to six, as is currently on the 5-13 site.

⁴ *Upstream Petroleum Industry Flaring Guide* (formerly *Guide 60*).

⁵ *Storage Requirements for the Upstream Petroleum Industry*.

Advantage pointed out that the Board has indicated in its decisions that it requires site-specific information regarding diminution of land value caused by facilities, and Advantage stated that the interveners had presented no evidence to demonstrate that the multiwell oil battery would result in property devaluation.

Advantage did not comment on the effect the multiwell oil battery would have on area residents' future land use.

Economic Life

Advantage stated that it could not determine the exact life expectancy of the multiwell oil battery, but that it could be ten years or more.

7.2 Views of the Intervenors

Location

The interveners stated that there would be unacceptable impacts from the multiwell oil battery if it were located at the 5-13 site. The interveners proposed that the multiwell oil battery be located at 11-25, approximately 6 km south of the 5-13 location in Crown land and outside of their community, in order to minimize the impacts on the community.

They selected a site about 2 km into Crown land (see Figure 1), because they believed no one would be located within what they believed to be the evacuation zone. The interveners indicated that they believed the evacuation zone was 1.5 or 2.0 km. They emphasized that their ongoing concerns should cause Advantage to locate the multiwell oil battery elsewhere. The interveners' expert witness, Mr. Simonar, reviewed the adequacy of the multiwell oil battery and the feasibility and cost to move it to the proposed 11-25 site.

Mr. Simonar explained that in order to choose a facility site, he might initially determine ten different locations for a facility. He would then reduce the number of locations based on numerous factors, including conversations with landowners. He agreed that he would typically try to locate a facility on or near an existing site, such as a well site. He stated that generally the objective of operators was to locate facilities central to their wells and pipelines within the field. However, Mr. Simonar stated that due to landowner concerns, under certain circumstances, a company might not always locate its facility at the most central location.

Mr. Simonar explained that to the extent that he analyzed the EUB's regulatory documents and correspondence, he believed that Licence No. F-28064 for a multiwell gas battery should not have been granted. As a result, he proposed that all equipment associated with the multiwell oil battery be moved to the proposed 11-25 site.

Mr. Simonar further explained that if the multiwell oil battery were moved to the proposed 11-25 location, a multiwell sour oil satellite would remain at the 5-13 site. Mr. Simonar stated that based on personal experience, relocating the multiwell oil battery to the proposed 11-25 location would create a faster approval process for Advantage, as there would be no private land within a 2 km radius. He explained that at this location on Crown land, the personal consultation and notification process for the battery would not be as lengthy. However, Mr. Simonar agreed that Advantage would have to obtain landowner approval for the associated pipelines; otherwise a

hearing might be required. Mr. Simonar confirmed that additional roads, power lines, and 12.3 km of 88.9 mm diameter pipeline and 7.3 km of 114.3 mm diameter pipeline would have to be constructed to the proposed 11-25 site. Mr. Simonar further explained that a single-phase power line would need to be run parallel to the upgraded road, which would necessitate some clearing of timber. Mr. Simonar agreed that moving the multiwell oil battery to the proposed 11-25 site could possibly put the economic viability of this project in jeopardy. However, he noted that moving the multiwell oil battery closer to the wells while remaining on Crown land would substantially reduce relocation costs.

Safety

The interveners believed that in the event of an accidental release of sour gas, all residents within the 1.5 or 2 km radius would be evacuated. The interveners noted that there were numerous residents within 2 km of the multiwell oil battery, including a family with five small children that lived across from the facility. In addition, the interveners noted that a school bus travelled past the multiwell oil battery on a daily basis. The interveners stated that they did not want to reside in an evacuation zone if alternative locations could be considered. They expressed concerns about how Advantage would provide a safe environment in an evacuation zone and also discussed concerns regarding lack of personal consultation, safety, and having limited knowledge of H₂S, EPZs, and ERP requirements. Mr. Simonar believed that this lack of understanding was a direct result of Advantage not completing personal consultation with the residents in the area.

The interveners understood that there were a significant number of sour gas sites in the province with ERPs, but did not agree with Advantage that this was a benign facility. Mr. Simonar agreed that there would be no need to evacuate anyone, as no residences would be located inside the EPZ. He agreed that if the multiwell oil battery were relocated, some equipment and pipelines would remain such that there would be no change in the adopted EPZ of 100 m for the 5-13 site.

The interveners felt strongly that Advantage should engage in a two-way dialogue to communicate more detailed information regarding an ERP, rather than in written format. Grand Chief M. Gros-Louis noted that Advantage and the community should engage in communication and work together on large projects.

Traffic

The interveners initially stated that if the multiwell oil battery were located at their proposed 11-25 site, there would be less traffic impacting local residents and they would not be able to hear the noise of trucks stopping, starting, and shifting gears. Mr. Simonar stated that in order to access the proposed 11-25 site, some existing roads would have to be made into high grade roads and new roads would have to be constructed. However, in response to questioning at the hearing, the interveners agreed that given the existing road infrastructure, truck traffic would still travel north to Highway 16 such that the trucking impact would continue to exist. Mr. Simonar stated that, alternatively, Township Road 530 could be extended to the west and linked to the Cynthia Highway. However, he noted that after Range Road 95, Township Road 530 does not exist, and a large amount of timber would need to be cleared to construct this road. Mr. Simonar also stated that if an extension of Township Road 530 were used, traffic would not travel past any residences.

The interveners expressed concerns with respect to the disruptive nature of truck traffic and dust. Mr. Simonar stated that if the multiwell oil battery were approved, traffic levels would increase on the access roads to the site, as this would be a central location for operators. However, Mr. Simonar agreed that there would be less water trucking if the water disposal portion of the multiwell oil battery were approved. In addition, he noted that trucks would be loading and unloading at the multiwell oil battery. He explained that heavy equipment could degrade roads and create muddy roads. Mr. Simonar suggested that it would be good operator practice to mitigate dust problems on roads. Mr. Simonar also noted the danger of trucks turning out into traffic.

Noise

The interveners submitted that if the multiwell oil battery were located at the proposed 11-25 site, area residents would not be able to hear the noise from the facility.

Mr. Simonar stated that the noise impact assessment found that the noise level at the multiwell oil battery would be 40.1 dBA, which is above the maximum allowable limit of 40 dBA. He acknowledged that Advantage chose to put a better muffler on the compressor at the multiwell oil battery and was currently waiting for the electricity to be connected so that electric fans could be put in place. Mr. Simonar agreed that in the absence of a complaint, Advantage's adoption of the two recommendations in the noise impact assessment to reduce the noise levels to 37.3 dBA would be better than the minimum EUB requirements of 40 dBA.

Mr. Simonar recognized that the 67 kW compressor did not require a licence on its own and, given the spectrum of compressor powers currently in the field, would not be as likely as larger compressors to cause noise problems. In addition, Mr. Simonar explained that the fan motor in compressors was usually the largest noise source. Mr. Simonar suggested that Advantage investigate putting a shield or guard in front of the fan motor. The interveners did not make specific requests regarding the action they would wish Advantage to take in the event of a noise complaint.

Emissions

The interveners stated that if the multiwell oil battery were located at the proposed 11-25 site, wind coming predominantly from the northwest would direct emissions away from area residents.

The interveners expressed concerns regarding flaring and emissions at the multiwell oil battery. The interveners testified that two area residents had health sensitivities related to emissions from facilities. In addition, the interveners expressed concerns regarding the harmful effect of sour emissions on livestock. They recognized that there were no plans to flare at the multiwell oil battery, except in an emergency situation or for maintenance purposes. However, the interveners remained concerned about the difference between what Advantage stated were going to be operational procedures and what might actually occur.

Mr. Simonar noted that Advantage was planning to have the best available technology in place to ensure that this was a zero-emission multiwell oil battery. However, he noted that zero emissions were difficult to ensure in practice due to possible upset conditions, such as overpressurization and flares going out. Mr. Simonar did not contest the findings of the air dispersion modelling

study. He stated that vapour recovery compressors commonly had operational difficulties, resulting in emissions. Mr. Simonar agreed that if Advantage were to follow all guidelines and install all equipment as it had committed to doing, this multiwell oil battery could be operated in a safe manner with minimal risks.

Ms. Vankosky stated that she had an artesian well on the northeast quarter of section 13-53-10W5M, as did many of the area landowners for their residences and cattle operations. The interveners requested that Advantage test artesian water wells prior to doing work. They also requested that if the multiwell oil battery were approved, there be discussion between parties regarding the best available technology with respect to air, water, and noise monitoring and mitigation.

Aesthetics and Land Value

The interveners explained that the residents would be able to see the multiwell oil battery from a number of locations.

The interveners expressed concerns with respect to the possibility of future expansion of the multiwell oil battery and the effect it would have on land values. Mr. Simonar maintained that people would be less likely to buy property near a sour facility.

Ms. Vankosky stated that her children planned to build a home on the northeast quarter of section 13-53-10W5M. She also stated that she had a summer trailer on this section and had family gatherings there. She stated that her future plans for land use might have to be reconsidered if the multiwell oil battery were approved, as it would disrupt her enjoyment of the land.

Economic Life

The interveners expressed concerns with respect to the life expectancy of the multiwell oil battery and the possible future expansion to become a custom processing facility that would process oil and gas from other companies. In addition, the interveners stated concerns regarding the possible increase in H₂S levels of the multiwell oil battery over time. However, they recognized that expansion or increase in H₂S content would not occur without EUB approval.

7.3 Views of the Board

Location

The Board recognizes the interveners' request not to approve a multiwell oil battery at the 5-13 location. The Board also recognizes that the interveners believed certain impacts, such as noise, traffic, aesthetics, and emissions, would be eliminated or minimized by moving the multiwell oil battery to the proposed 11-25 site.

However, the Board believes that the interveners' rationale to move the multiwell oil battery about 2 km into Crown land is based in part on their incorrect understanding that there would be a 1.5 to 2 km evacuation zone around the multiwell oil battery. Using the interveners' criteria that they do not want to be in an evacuation zone, the multiwell oil battery could be located on any existing well or satellite location in the field. The Board agrees with the interveners' expert

that where practical, a multiwell oil battery should be constructed within the boundary defined by existing wells. In addition, if possible, a multiwell oil battery should be located on or adjacent to existing sites to minimize the overall footprint and reduce the impacts and costs of installing associated pipelines and infrastructure. Therefore, the Board finds that the proposed 11-25 site or any location farther than the boundary defined by existing wells is not a viable option for the location of this multiwell oil battery.

Further, the Board notes that Advantage made no effort to evaluate alternative sites. The Board believes that this might have been based on Advantage's view that the gas conservation operations at the 5-13 site were allowed under the multiwell gas battery Licence No. F-28064. The Board understands that Advantage believed that the existence of this licence would lead to approval of the multiwell oil battery. However, the Board notes that at the time of the hearing, the multiwell gas battery Licence No. F-28064 was suspended pursuant to the Notice of Suspension dated October 19, 2004. This notice confirmed that only a sweet single-well oil battery with compression for gas conservation may continue to be operated at the 5-13 site. Accordingly, the Board believes that Advantage did not evaluate alternative locations, because it inappropriately relied on the notion that there was an existing multiwell gas battery at the 5-13 location with a licence in good standing and that only minor modifications were necessary to convert it into a multiwell oil battery.

The Board notes that Advantage believed that it understood the concerns of the community and had made a number of changes to the unlicensed equipment installed by Defiant to address their concerns. In addition, Advantage made a number of commitments to further reduce the impact of the multiwell oil battery on the community, which the Board expects it to fulfill. However, as discussed previously and expressed by the interveners' expert witness, Advantage failed to enter into a meaningful consultation about available options, as required in Section 2 of *Directive 056*. The Board believes that if all affected parties had made reasonable efforts to work together to examine the need for and impacts of alternative locations, the feasibility of various locations could have been fully evaluated. This may have included evaluating the use of other existing infrastructure, including the 5-13 location and the 16-11 and 3-12 satellite locations.

In circumstances like this, where various alternatives to a proposed project exist that may differ in potential impacts and benefits, the Board expects that an applicant will provide an evaluation of all reasonable alternatives. Applicants must address outstanding concerns, which may include issues related to noise, traffic, dust, property value, aesthetics, the environment, flaring, health, safety, and location, providing complete and credible alternatives for consideration by the local community, affected residents, and the Board. In the Board's experience, collaboration among all parties results in the selection of the best alternative for a project. Similarly, if applicants claim that a proposed course of action will provide significant benefit over another, the Board expects substantiating evidence. In making decisions based on such information, it is not necessarily the option with the least surface impact or greatest economic value that will be viewed by the Board as in the public interest.

Notwithstanding, the Board has the responsibility to rule on Application 1428608 based on the evidence before it. In the balance of this section of the report, the Board considers the impacts of the multiwell oil battery to evaluate its appropriateness.

Safety

The Board notes that the requirements for emergency response planning are set out in *Directive 071*. The directive requires that a corporate-level ERP must be in place for all sour production operations. Under certain circumstances, as set out by *Directive 071*, a site-specific ERP is required. While corporate-level ERPs do not require EUB approval, they must meet the requirements set out in *Directive 071* and are subject to audit upon request. Where required, site-specific ERPs must be submitted to the EUB for review and approval prior to commencement of operations. With respect to the multiwell oil battery, the Board notes that although no site-specific ERP is required under *Directive 071* because of the low H₂S content and potential release volumes, Advantage chose to develop an ERP safety protocol, a step that exceeds the EUB's requirements. Since there are no surface developments within the EPZ, the Advantage ERP safety protocol is not required to be submitted to the EUB for review and approval.

The Board acknowledges the interveners' concerns with respect to public safety. However, the Board notes that there is an apparent lack of understanding on the part of the interveners with respect to emergency response requirements. The Board also notes that there is some confusion by the interveners with respect to the difference between EPZs and personal consultation and notification distances. The EPZ is a priority area surrounding a well, pipeline, or facility where immediate response actions are required in the event of an emergency. Notification is the distribution of project-specific information to participants that may be directly and adversely affected by the proposed energy development. Personal consultation may include phone calls, but usually includes face-to-face dialogue, so that all parties can understand each other's concerns, needs, and the reasons behind them. Thus, the EPZ, the personal consultation radius, and the notification radius are areas where the applicant or operator has very different duties at different times in the life of a project. The Board notes that in the case of the proposed multiwell oil battery, the H₂S concentration of the gas and the maximum potential H₂S release volume are so low that no EPZ is required by *Directive 071*. While the Board recognizes that the public is concerned about any release of sour gas, it is confident that due to the low levels of H₂S associated with these operations, public safety would be assured. The Board notes that Advantage has chosen to adopt a 100 m EPZ. Accordingly, an accidental release of gas from the multiwell oil battery would not necessitate evacuation of any residents, as there are no surface developments within the adopted radius.

While the Board believes that it is primarily the responsibility of an applicant to initiate, develop, and maintain effective communication with the community it works within, it also expects landowners and other members of the public to participate actively in consultation programs. To facilitate this understanding, the Board expects Advantage to convey technical information in a manner that is understandable to persons not fully familiar with the operations of the energy industry. The Board believes that there is a need for Advantage to work with the community to provide information about emergency response planning matters relative to its operations and to clarify any misunderstandings that the community may have. As such, Advantage is expected to include in its ERP safety protocol specific resident information for those who expressed interest and finalize its public response protocols accordingly.

Traffic

The Board notes that centralizing production equipment at a multiwell oil battery would eliminate the need to haul oil and water from individual well sites, thereby significantly reducing truck traffic from these sites. Recognizing the interveners' concern that there would be increased traffic levels at the centralized multiwell oil battery, the Board believes that steps can be taken to minimize the impacts through a careful examination of the best routing and timing of truck traffic.

The Board notes that at the close of the hearing, the interveners recommended that the oil from their proposed 11-25 location be transported on Township Road 530. However, to do so would involve significant road construction and upgrading of existing roads. The Board does not believe that this is a viable option at the present time and that existing road infrastructure should be used. Regarding the trucking of oil and the layout of existing infrastructure, the Board agrees with Advantage that the interveners would see little change in the volume of traffic passing their residences regardless of the location of the multiwell oil battery.

Given the concerns of the interveners about the impacts of trucking, the Board expects Advantage to work with the community in determining appropriate mitigative measures. These measures could include methods for trucks accessing the multiwell oil battery and minimizing truck noise and related impacts on area residents. However, the Board recognizes that traffic results from not only oil and gas industry activities, but also from other activities.

Noise

The Board believes that noise from the multiwell oil battery would meet the EUB's noise regulations in *Interim Directive (ID) 99-8*⁶ and *Directive 038*,⁷ provided that Advantage follows through with its plan to install electrical hookups for the upgrades on the compressor building. The Board notes that Advantage indicated that given the sensitivity and community concerns, a noise survey would be a good idea.

The Board agrees with the interveners that alternative sites may reduce the noise level at certain residences; however, it may also increase noise at other residences depending on the particular location. The Board believes that the philosophy and guidelines set out in *ID 99-8* and *Directive 038* are appropriate for the proposed project regardless of location, as they provide a reasonable and balanced approach to dealing with energy industry noise.

The Board notes Advantage's commitment to respond appropriately to any noise complaints. The EUB would require Advantage to make whatever adjustments were necessary if the EUB's noise guidelines were not being met.

Emissions

The Board notes that Advantage would use a vapour recovery unit at the multiwell oil battery in order to collect vapours and minimize fugitive emissions. The Board notes that this would be a closed system, with flaring only during emergencies or for maintenance. Provided that

⁶ *Noise Control Directive*.

⁷ *Noise Control Directive—User Guide* (formerly *Guide 38*).

Advantage installs all equipment, as it has committed, the Board believes that this multiwell oil battery can be operated in a safe manner. The Board notes that Advantage said that it would adhere to flaring requirements set out in *Directive 060*. The Board notes that ground-level concentrations of sulphur dioxide would be within Alberta Environment regulations.

The Board notes the interveners' concerns regarding flaring and fugitive emissions from a multiwell oil battery in their community. The Board also notes the interveners' desire to move the multiwell oil battery out of their area so that any emissions will travel with the prevailing winds away from any residence. However, the Board agrees with Advantage and the interveners' expert that there is a very low probability of releases from the closed system. It therefore believes that the 5-13 location for the multiwell oil battery is suitable in regard to air emissions. However, the Board recognizes that while the intent of the design is for "zero emissions," such facilities may result in occasional nuisance odours. In that respect, the Board expects Advantage to be extremely diligent in carrying out its operations to keep such nuisance odours to a minimum.

The Board notes that the interveners did not request specific air and water monitoring systems. The Board also notes that Advantage was willing to discuss monitoring with the community and encourages these discussions.

Aesthetics and Land Value

Since the multiwell oil battery had been installed, the Board was able to determine the locations from which this facility could be seen during its site visit. The Board agrees with the interveners that the multiwell oil battery is visible from many locations within the community, given the elevated location and the number of tanks present. The Board believes that the visual impact for a central battery at 5-13 is greater than that of a single-well facility with one tank and a small 67 kW compressor. Although the Board did not receive detailed evidence respecting aesthetic impact, based on its observations from its site visit, it believes that Advantage can take steps to reduce such impact. Therefore, the Board expects Advantage to seriously consider means by which the visual impact can be reduced and to discuss options and innovations with its neighbours.

With respect to the interveners' concern about the possible impact on land value, the Board did not receive any evidence from the parties. The Board is of the view that a site-specific analysis of any impact on property values is necessary, as location and distance of the proposed facility in relation to the properties in question are essential in the determination of impacts. Without site-specific data on property value impacts, the Board cannot conclude that the proposed multiwell oil battery would have an impact on the property values within the Chip Lake area.

In addition, the Board notes that no evidence was presented by the interveners regarding development permits or the status of their own development proposals on surrounding land.

Economic Life

The Board notes that if the level of H₂S increases or additional equipment is required beyond what current approvals allow, Advantage would be required to apply for a licence amendment, pursuant to *Directive 056*, in order to obtain the necessary approvals.

8 CONCLUSIONS

In the face of significant concern and opposition by its neighbours, Advantage chose to apply for the multiwell oil battery at the 5-13 location and to not assess any alternative locations that might have allowed a comparison to the applied-for site. The Board concludes that Advantage has not conducted adequate personal consultations with the interveners and the community regarding the best location for the multiwell oil battery and why certain locations are preferred over others. This is because of past actions, including the construction of the multiwell oil battery without prior approval. It was not appropriate for Advantage to conclude that it could rely on the multiwell gas battery Licence No. F-28064 as the basis for a multiwell oil battery. Advantage should have seriously evaluated other sites within the field to address the concerns raised by the interveners and entered into serious discussions with them in this regard. It could be that a detailed comparison of alternative sites would demonstrate that the 5-13 location is the most appropriate location in the circumstances. However, based on the evidence before it, the Board is unable to conclude whether or not the 5-13 site is the most appropriate site for the multiwell oil battery. Accordingly, the Board denies the application for the multiwell oil battery without prejudice.

The Board recognizes that the interveners removed their objections to the multiwell oil satellite applications. However, the Board denies these applications without prejudice to new applications, as there is no need for these facilities without the multiwell oil battery licence.

The Board believes that the planned design of the multiwell oil battery is appropriate in regard to safety, emergency response, noise, and emissions control. The Board also believes that although overall traffic would be reduced if a multiwell oil battery were in use, traffic impacts will not be significantly different between various potential battery locations within the community. The Board expects Advantage to consider in detail means to reduce the impact from trucking as much as possible and to work with the community on this matter in any future applications.

The Board is also very concerned about the interveners' serious misunderstanding of the differences in distances for notification, personal consultation, evacuation, and emergency response planning. The Board believes that this misunderstanding results primarily from the failed effort by Defiant initially and later by Advantage with respect to participant involvement. The Board concludes that Advantage failed to take the necessary steps to understand the interveners' concerns in sufficient detail and to take account of them in its application. The Board expects Advantage to review and improve on internal procedures to ensure that the planning and implementation of their participant involvement programs properly include both notification and personal consultation at an early stage, prior to filing an application, and throughout the lifetime of any proposed development.

Recognizing that the equipment is not operating and has been in place for a lengthy period of time, the Board is prepared to allow the continued storage of the equipment on the 5-13, 16-11, and 3-12 sites, providing that applications are submitted by no later than October 2, 2006; otherwise the equipment must be removed by October 2, 2006. The equipment related to the multiwell oil battery that must be removed includes four oil storage tanks, the water injection component, the group treater, and the group separator. Regarding the 16-11 and 3-12 satellites, the test separator must be removed from each site by October 2, 2006. Should it be necessary, the appropriate EUB group will pursue removal of equipment and confirmation of the appropriate

licences and operations at the Chip Lake facilities. In the interim, in accordance with the EUB's letters dated October 7, 19, and November 5, 2004, the 5-13 site may only be operated as a sweet single-well oil battery, with compression to conserve the solution gas. In addition, the satellites may only be operated as sweet single-well batteries. In accordance with *Directive 056*, operation of sweet single-well oil batteries and operation of a compressor with a power rating less than 75 kW are exempt activities that do not require licences.

The Board notes that future applications for the multiwell oil battery and satellites will be considered on their own merits and all applicable issues will be considered by the Board at that time.

Dated in Calgary, Alberta, on February 7, 2006.

ALBERTA ENERGY AND UTILITIES BOARD

J. D. Dilay, P.Eng.
Presiding Member

F. Rahnama, Ph.D.
Acting Board Member

W. G. Remmer, P.Eng.
Acting Board Member

APPENDIX 1 HEARING PARTICIPANTS

Principals and Representatives

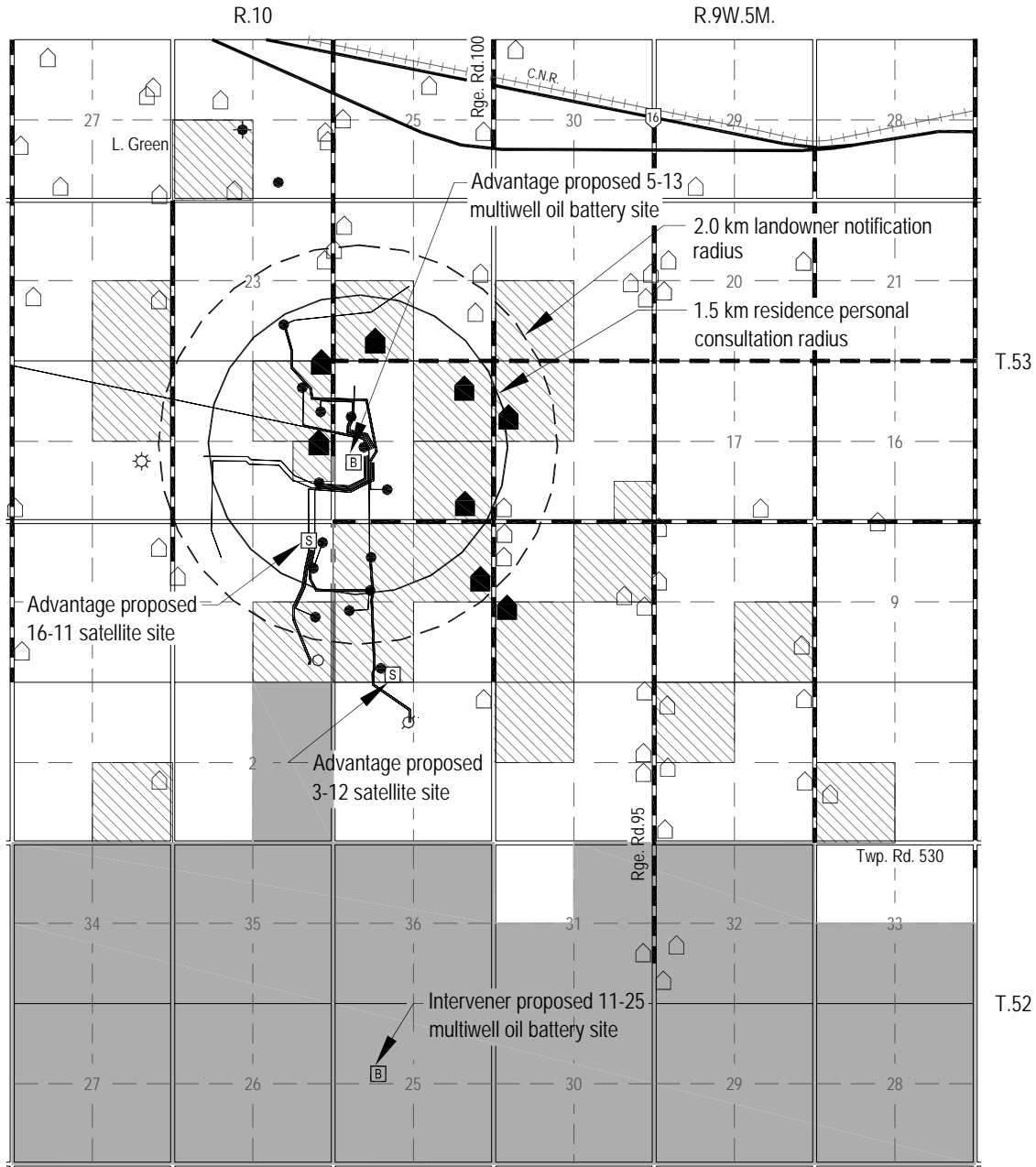
(Abbreviations used in report)

Witnesses

Advantage Oil & Gas Ltd. (Advantage)
K. Miller, CounselR. Mazurkewich, P.Eng.
T. Sacha
D. Vaughn, P.Eng.
J. Carss, P.Geol.J. and J. Adamache
D. Anderson
A. Devrees
A. Doege
L. Green
A. Gros-Louis
Grand Chief M. Gros-Louis
J. Hay
R. and M. Hermann
J. and S. Kudera
S. Nikolayuk
S. and S. Otway
S. Roga
L. and J. Shaw
L. Vankosky
B. and D. Winfield
T. Winfield
O. and E. York
B. McElhanneyL. Vankosky
Grand Chief M. Gros-Louis
D. Simonar, P.Eng.

Alberta Energy and Utilities Board staff

T. Bews, Board Counsel
S. MacDonald
G. McClenaghan, P.Eng.
K. Mather
J. Wilkes
M. Steinmeyer



Legend

- | | | | |
|-----------------|-------------|-------------------------|--------------------|
| ☼ Gas well | ⊙ Suspended | ○ Drilled and cased | ▨ Intervener lands |
| ● Oil well | ⊠ Battery | 🏠 Intervener residences | — High grade roads |
| ◆ Abandoned oil | ⊡ Satellite | 🏠 Area residences | ■ Crown land |

J. and J. Adamache SE 22-53-10W5M & NE 15-53-10W5M.
 D. Anderson SW 7-53-9W5M & NW 6-53-9W5M.
 A. Devrees NW 5-53-9W5M.
 A. Doege SW 4-53-9W5M
 L. Green SW 26-53-10W5M.
 A. Gros-Louis N & SW 12-53-10W5M.
 M. Gros-Louis NE 13-53-10W5M & SE 11-53-10W5M.
 J. Hay SE 3-53-10W5M.
 R. and M. Hermann NW 18-53-9W5M SW 19-53-10W5M.

J. and S. Kudera NE 7-53-9W5M.
 S. Nikolayuk SE corner of SE 18-53-9W5M.
 S. and S. Otway SW 24-53-10W5M.
 S. Roga SW 7-53-9W5M & NW 6-53-9W5M.
 L. and J. Shaw NE corner of SE14-53-10W5M.
 L. Vankosky SE 13-53-10W5M.
 D. and B. Winfield NE 14-53-10W5M.
 T. Winfield SW 24-53-10W5M.
 O. and E. York SE 8-53-9W5M

Figure 1. Proposed facility locations and intervener lands and residences

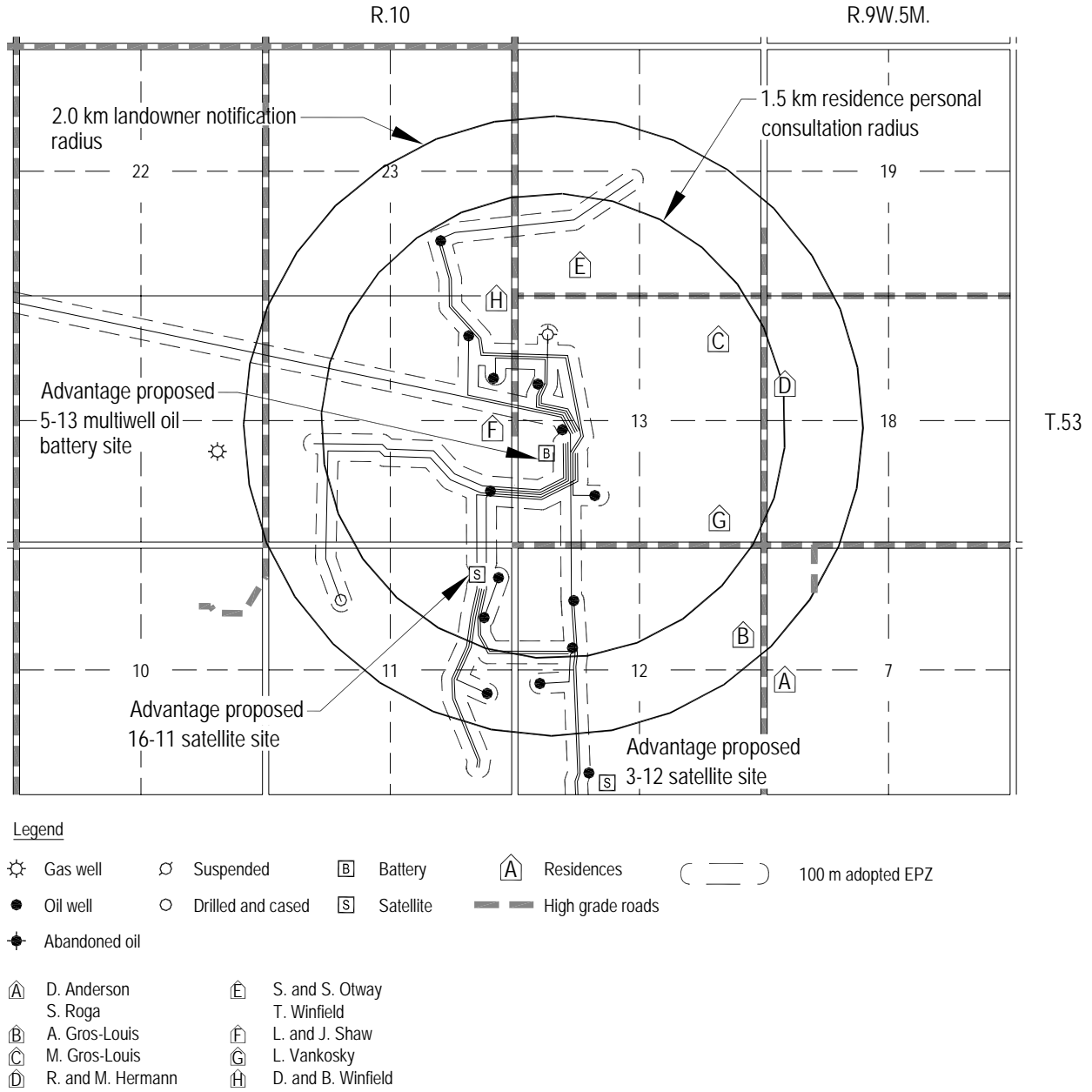


Figure 2. EPZ, personal consultation, and notification radiuses