Environmental Law Centre

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Alberta Energy Regulator
Geothermal Regulatory Framework Implementation Team

via Email: GeoThermal@aer.ca

RE: Draft Directive [XXX] Requirements for Geothermal Resource Development

The Environmental Law Centre (ELC) is Alberta's oldest public interest environmental law organization and believes that law is a powerful tool to protect the environment. Since it was founded in 1982, the ELC has been dedicated to providing credible, comprehensive and objective legal information regarding natural resources, energy and environmental law and policy in the Province of Alberta. The ELC's mission is to educate and champion for strong laws and rights so all Albertans can enjoy clean water, clean air and a healthy environment. At the end of 2020, the ELC published *Gaining Steam: A Regulatory and Policy Framework for Geothermal Resource Development in Alberta* which can be downloaded from our website.

We participated in the consultation session on June 2, 2021 and followed up with written submissions dated June 9, 2021. We have had an opportunity to review the Draft Directive [XXX] Requirements for Geothermal Resource Development and our comments thereon follow.

As we noted in our previous comments, the GRDA is modeled on the *Oil and Gas Conservation Act* (OGCA). It is apparent from Draft Directive [XXX] that the AER's rules for geothermal activities are also very similar to those for oil and gas activities. While this makes sense in that the OGCA regulatory framework is well established and familiar, it is problematic in that the OGCA model has resulted in very significant legacy of orphan wells and environmental liabilities. **In our view, Draft Directive [XXX] does not take the necessary steps need to be taken to avoid creation of additional liabilities being borne by the public purse**.

Implement mechanisms to ensure the polluter pays principle is met

In order to ensure that polluter pays principle is met, it is essential to ensure that all licensees are responsible for future clean-up of their wells/facilities. Two key mechanisms to achieve this goal are: (1) requiring payment of up-front security to address future liabilities regardless of licensee capability assessment and (2) imposing strict timelines for the completion of reclamation and remediation activities.

While Draft Directive [XXX] does indicate that security may be required for geothermal activities at the time of license application, amendment or transfer, it is apparent that security will not always be required for all activities. As with oil and gas activities, the decision will be made based on a holistic assessment of the licensee. The ELC is concerned that this approach is simply a somewhat enhanced version of the historic approach which has resulted in significant environmental liabilities being borne by the public purse rather than the responsible licensees. In our view, an universal requirement for up-front security would be more effective and

administratively simple than attempts to monitor licensee financial health through the holistic assessment approach.

In addition, as with oil and gas wells, there are no timelines set out in Draft Directive [XXX] for completing abandonment, remediation, and reclamation of a geothermal well. In our view, the lack of timelines is problematic as it allows well to languish on the landscape indefinitely. An alternative to timelines may be mandatory insurance schemes (see Nigel Bankes, Green Regs and Ham: Some Thoughts on Contaminated Sites, the *Redwater* Decision and the Principle of Intergenerational Equity, October 5, 2017 and Benjamin Dachis and Blake Schaffer, *All's Well that Ends Well: Addressing End-of-Life Liabilities for Oil and Gas Wells* (Calgary: 2017, C.D. Howe Institute).

Develop a process for pre-transfer inspection and assessment of well/facilities

Where a transfer is contemplated for conversion of an oil or gas well/facility to a geothermal well/facility, there should be a process for inspection and assessment prior to transfer. Recognizing that there might be limited information pertaining to the actual condition of the well/facility, the object of the pre-transfer inspection and assessment is to provide a snapshot of the condition of the well/facility, the subsurface and the surface. Any outstanding issues would need to be addressed prior to transfer.

This a process beyond the AER's process for assessing the financial capacity of a company to hold a licence. Section 3.4.6 which addresses conversion of an oil or gas well to a geothermal well does not impose such a process. The only process is the holistic licensee assessment for license transfer (if any) at which time a site-specific assessment and/or security deposit may be required. This is not sufficient to assess the actual condition of the site before conversion.

The pre-transfer inspection and assessment process would be a physical, on-the-ground process looking at the actual condition of the well/facility that meets the Phase 2 standards set by the *Alberta Environmental Site Assessment Standard*. The ELC recommends that site-specific liability assessments be mandatory for all proposed transfers of oil and gas wells/facilities. Our recommendation in this regard differs from the approach to requiring site-specific liability assessment under Draft Directive [XXX] and Directive 001. Any outstanding issues – including incomplete or failed remediation efforts regardless of the prior issuance of a remediation certificate - would have to be addressed by the oil or gas operation prior to transfer. If there are any risk management conditions arising from the reclamation or remediation processes, then these must be included as conditions in any licenses, approvals or other authorizations issued to the transferee.

Require information and data sharing

Given the nascent stage of the industry to assist with technical and knowledge development, information and data should be made publicly accessible. Some jurisdictions have placed timelines for release of information and data to balance competitive needs with public needs (e.g. Netherlands). Other information with potential environmental and human health impacts - such as substances injected into wells and reservoirs – should be made immediately publicly available.

The ELC notes that Draft Directive [XXX] indicates that certain information will be released after one year (unless extended in exceptional circumstances): fluid analysis data; routine pressure, temperature and flow test data; any log data, drillstem test data, worldliness formation test data, and completion details; core analysis data; hours on production and injection; and drill cuttings and core analysis data. It would be helpful for Draft

Directive [XXX] to set out what would be considered "exceptional circumstances" allowing an extension and maximum times for extension.

We also note that certain information will not be confidential: the surface and bottomhole locations, elevation, current depth, drilling status and casing and cementing data; monthly totals of each type of fluid injected into injection wells and produced from production wells; and information about hydraulic fracturing fluids used in geothermal operations. We agree that this information should not be kept confidential.

The Draft Directive [XXX] should also be clear that annual reporting requirements outlined in section 7.3.3 – such as surface deformation information – will be publicly available. It is also important that all public information be made easily accessible to the public.

Address environmental matters associated with development of and access to geothermal resources

Draft Directive [XXX] does address some environmental matters associated with geothermal activity, often by referencing other directives developed for oil and gas operations. For instance, setback requirements and measures to protect water bodies are those set out in Directive 056, air emission requirements are those set out in Directive 060, and water management requirements are those set out in Directives 050 and 058. However, there are still some significant gaps in addressing environmental matters.

Environmental screening and assessment of all activities prior to approval is a key requirement of implementing the geothermal regulation framework. Screening would be done to identify any potential impacts on species at risk, water resources, habitat and so forth. Ideally, screening would occur prior to issuance of tenure to any Crown resources but we realize this is outside the AER's jurisdiction. In the face of significant environmental impacts, approvals should not be issued.

Another important environmental matter which is not addressed by Draft Directive [XXX] is consideration of impacts on thermophiles within geothermal reservoirs/waters (this is a regulatory feature in Iceland).

If proposals involve multiple extraction activities at one site (e.g. oil and gas/geothermal/solar/mineral), these projects should be addressed as a whole to properly assess and review cumulative impacts of the entire development (not on a disparate, project by project basis). This will require development of joint processes between the AER and other regulatory bodies. Public participation will be essential to any such process. We do encourage the approach of multiple extraction activities to minimize surface disturbance and footprints; however, scrutiny is still required to avoid significant environmental impacts and to address cumulative impacts.

AER should seek policy direction from the GOA

We understand that the jurisdiction of the Alberta Energy Regulator (AER) is limited to that granted via the *Responsible Energy Development Act*, the *Geothermal Resources Development Act* (GRDA) and other pieces of energy legislation. As such, we recommend that the AER seek policy direction from the Government of Alberta (GOA) on certain matters to inform its development of the geothermal regulatory framework. Firstly, the AER should seek direction from the GOA for resolution of potential subsurface conflicts between oil and gas, geothermal, water and mineral (such as lithium) resources. Some questions to be answered include: Is recovery or use of certain resources intended to have priority over others? How are matters of incidental recovery to be addressed? On the last question, we recognize that measurement and reporting of incidental

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production of hydrocarbons are addressed by Directives 017 and 007; however, the AER and industry would benefit from additional guidance on resolving conflicts.

Secondly, the AER should seek direction from the GOA on the appropriate allocation of future liability in the case of reworking oil and gas well/facilities into geothermal wells/facilities, or in the case of multiple activities at one site (oil and gas/geothermal/solar/mineral). To some extent, this will be determined by striking the balance between encouraging a nascent industry and conversion of unproductive wells/facilities (liabilities) into production wells/facilities (assets), and ensuring one industry is not responsible for the liabilities created by another. Ultimately, the goal should be avoidance of placing additional burdens on the public purse.

Thank you for the opportunity to make written submissions on Draft Directive [XXX] Requirements for Geothermal Resource Development. Please feel free to contact the undersigned with any questions or for further discussion.

Yours truly,

Brenda Heelan Powell
Staff Counsel
bhpowell@elc.ab.ca