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Hydraulic Fracturing in BC and Natural Resource Damage Assessments: Abstract

North Eastern British Columbia contains large reserves of "unconventional" natural gas locked in shale deposits. The development of these shale gas resources through hydraulic fracturing ("fracking") has become one of the most divisive and consuming energy issues facing residents of the province. With the controversy over fracking has come an increasingly complex system of regulations.

At the same time, the province is considering the viability of a Natural Resource Damage Assessments ("NRDA"), as part of the creation of an improved land-based spill response regime. NRDAs offer a general tool for the province to recover the cost of environmental damage from industry operators. Despite being contemplated as part of a spill response regime, NRDAs could have a significant impact on the regulation of fracking in BC – as a tool for the province to recoup the costs of any environmental impact of the quasi-experimental process.

This abstract is adapted from a paper written for Professor Tollefson of the University of Victoria Faculty of Law, entitled "Fractured Oversight: Hydraulic Fracturing Regulation, Natural Resource Damage Assessments, and the Tragedy of the Regulatory Commons." It is intended to (a) briefly set out the fracking regulatory regime in BC, (b) give a short overview of NRDAs, and (c) to evaluate the potential benefits and difficulties of NRDAs as a component of that regime.

BC Hydraulic Fracturing Regulation in Brief

No single agency is responsible for the regulation of deep shale natural gas hydraulic fracturing in BC. The jurisdiction of multiple regulatory bodies, acting under the auspices of several Acts, overlaps to cover fracking. Federal and provincial oversight exists concurrently.

The abundance and complexity of fracking regulation in BC has created a situation that has been described as the "tragedy of the regulatory commons." In essence, this situation occurs where multiple government agencies exert jurisdiction over one area and the transaction costs of strong coordination, differing internal incentives of each agency, loss of autonomy, and other collective action challenges overwhelm attempts at coordination. Thus, agencies either inefficiently expend resources regulating the same operations, or free ride, counting on other agencies to do their part, leading to ineffective combined oversight.

Federal regulation of unconventional shale gas extraction is largely limited to regulatory oversight of the chemicals used in the fracking process. Under the Canadian *Environmental Protection Act*, Health Canada and Environment Canada share the responsibility to assess the toxicity of substances used in Canada to human health or the environment, and develop control measures for substances that are

toxic or considered capable of becoming toxic. In addition, the National Energy Board governs the international and inter-provincial aspects of energy production and distribution, such as pipelines.

Provincially, the key regulatory bodies are the Oil and Gas Commission ("**OGC**"), established under the *Oil and Gas Activities Act* ("**OGAA**"), and the Ministry of the Environment ("**MOE**"). Together with its recently-enacted *Drilling and Production Regulation*, the *OGAA* sets out requirements that are specifically applicable to fracking proponents. Though the *OGAA* is by far the most influential piece of legislation, many other provincial Acts are incorporated in one way or another into the regulation of shale gas development. The *OGAA* specifically states that requirements under the *Environmental Management Act* ("**EMA**") must be met, and authorizes the Lieutenant Governor to make regulations that govern the Ministers responsible for the *Water Act*, the *Fish Protection Act*, the *Forest and Ranges Practices Act*, the *Wildlife Act*, and the *Land Act*. In addition to the Acts referentially incorporated into the *OGAA* the *Transport of Dangerous Goods Act* has the potential to exert ancillary regulatory authority over fracking operations.

Cost recovery mechanisms for environmental damage exist under the EMA and the OGAA. Under the EMA, the Minister can impose administrative penalties for contraventions of provisions of the Act or permits issued under the act, prosecute offences for contraventions of specific sections of the Act, and recover the cost of orphan site or spill remediation from operators. Under the *OGAA*, the OGC can also impose administrative penalties, prosecute offences, and recover the costs of remediation.

Despite the regulatory options, BC struggles with a significant cost recovery gap. Three major reasons for this gap have been identified. The first is a lack of human and financial resources. Simply put, the organizations responsible for recovering the costs of spills through administrative penalties or offence prosecutions do not have the money or manpower to pursue every incident of environmental effect. In addition, provincial regulatory organizations cannot feasibly exercise their authority to remediate spills or orphaned sites and collect the costs from industry later. The second reason is the structure of the cost recovery mechanisms themselves. Since both prosecutions and administrative penalties carry a penal stigma they can require costly judicial and quasi-judicial proceedings, and are often robustly defended by responsible parties. In addition, pursuant to MOE guidelines, administrative penalties may not be pursued where the actions of the offender were not willful, or where the damage was minimal. The third reason is coordination. Since multiple agencies exert authority over cost recovery mechanisms, lack of precise coordination can lead to incidents of environmental damage simply slipping through the cracks.

What is an NRDA?

A Natural Resource Damage Assessment is a monetary quantum representing the value of loss resulting from an incident of environmental damage, which the party responsible for the damage must pay.[1] It is a mechanism for assessing the monetary value of the difference between an area of land before and after natural resource development or extraction. Once an NRDA has been assessed, the bill is presented to the responsible party. The funds received can be used at the discretion of the governing ministry to rehabilitate specific damaged areas, or added to funds earmarked for environmental management and rehabilitation.

[1] Allison Edgar, "Implementing a Simplified Compensation Scheme to Recover the Cost of Restoration and the Loss to the Environment After a Fuel Spill in British Columbia" Prepared for the University of Victoria Environmental Law Centre (April 20, 2012) at 10.

There is no strict structural definition of an NRDA. Across the many jurisdictions that employ or debate the use of NRDAs, the structure and administration of the systems differ significantly. However, as mechanisms for remedying the problems with cost recovery in BC's fracking regulation, there are three critical features of NRDAs: (a) lack of penal stigma, (b) procedural efficiency, and (c) certainty.

(a) Lack of penal stigma

NRDAs are purely mechanisms for compensating for the detrimental effects of industrial operations. Unlike prosecutions and administrative penalties, where part of the rationale is to ensure compliance, NRDAs do not attach a penal stigma to environmental impact. In effect, the damage assessment scheme *assumes* that there will be some detrimental environmental consequences associated with resource extraction, and simply places the cost of those consequences with the industry operator.

(b) Procedural efficiency

Like most administrative penalties, the damage assessments under an NRDA system are intended never to rise to the level of a penal sanction. Since the goal is not to deter or punish non-compliance, assessments should not vary at all from the exact amount calculated to represent the detrimental environmental effect. Consequently, NRDAs can be assessed without the need for judicial or quasi-judicial proceedings. A person or organization with statutory authority could simply assess the damage, according to a designated calculation, and issue the bill to the operator.

(c) Certainty

Since the goal of an NRDA is only to equal the monetary value of the environmental damage caused by resource operations, there is no need to consider how much should be paid to express social disapproval or deter future damage. The value of the environment can be expressed by a uniform formula, which can be applied in each case to determine the amount of compensation owed. Such a formula means that industry operators, as well as stakeholders and other provincial taxpayers, can be reasonably sure in advance what the cost of a predictable type of environmental effect will be.

In addition, most NRDA schemes are, like administrative penalties, structured as absolute liability offences. Absolute liability allows for no defences, liability flows from the mere existence of the offence. This has been held not to violate the *Charter*, as long as there is no possibility of loss of liberty flowing from the offence. The cumulative effect of a predictable formula and absolute liability is a system that calculates and enforces liability with maximum efficiency.

Examples in Other Jurisdictions

There are currently no jurisdictions in Canada that have NRDA regimes, though several (including BC) employ closely-related administrative penalties. In the USA, several States and the Federal government use NRDAs as part of their environmental management regimes. Between those jurisdictions, the administration of and justification for NRDA schemes differs.

(i) Washington[2]

NRDAs exist as one of several options for state-directed cost recovery (along with civil penalties and repaying state remediation costs). For oil and petroleum products, Washington's NRDA regime sets out

[2] *For further information, see: http://www.ecy.wa.gov/programs/spills/restoration/index.html*

compensation tables that pre-determine the calculation of assessment amounts. Proceeds from NRDAs flow into several specified environmental rehabilitation funds.

(ii) California[3]

The California Department of Fish and Game and Office of Spill Prevention and Response are mandated to work in tandem with federal authorities to collect data during and after a spill. Damages are quantified in terms of the area of habitat impacted, the degree of the impact, and the time until recovery. The California Department of Fish and Wildlife reports that settlements with responsible parties are usually reached without resort to judicial review

(iii) Florida[4]

NRDAs from offshore spills are evaluated by a simplified mathematical formula. Recovered funds go to the Florida Coastal Protection Fund. Florida relies uniquely on the principle contractual liability and liquidated damages as the foundation of its NRDA scheme. Spills are deemed to be breaches of contract, which are *prima facie* actionable. This principle helps to "solidify and quantify" the assessments which are often based on damages that are intangible or difficult to demonstrate because of their aquatic location.

NRDAs as part of BC's Fracking Regulation

As part of the BC Ministry of the Environment's current land based spill regime policy development, the ministry is seeking to "review industry funded options for strengthening B.C.'s spill preparedness and response policies and capacity."[5] Specifically, the MOE intends to develop a NRDA policy "to both establish a predetermined formula to assess damages to the environment for the majority of hazardous material spills and to establish a more in-depth research based process (that either the province or the spiller can elect) for assessing costs of more significant spills."

If established, an NRDA regime would inevitably affect the regulation of fracking operations. First, because damage assessments would likely not be limited to spill damage. Any environmental damage from resource activity (including fracking operations) could be the subject of a damage assessment, whether the result of a spill or an intentional part of the extraction process. Second, because the definition of "polluting substance" that constitutes a spill under the EMA is so broad that it may encompass even intentional fracking byproducts. The Act describes such substances as:[6]

> *…any substance, whether gaseous, liquid or solid that, in the opinion of the minister, is capable of causing pollution if it were to*
>
> *(a) escape into the air,*
> *(b) be spilled onto any land or into any body of water, or*
> *(c) escape onto any land or into any body of water.*

[3] *For further information, see: http://www.dfg.ca.gov/ospr/nrda/NRDA_process.aspx*
[4] *For further information, see: http://www.dep.state.fl.us/deepwaterhorizon/nrda.htm*
[5] BC Ministry of the Environment "Land Based Spill Preparedness and Response" *Policy Intentions Paper for Consultation* (2013) < http://env.gov.bc.ca/epd/codes/spr_eep/pdf/spill_preparedness_response_ip.pdf>
[6] SBC 2003, c. 53, s. 79.

(a) Potential benefits

An NRDA scheme would not prevent environmental damage from fracking operations, but it could help to substantially shift the cost of that damage from residents of the province to industry proponents. The streamlined NRDA process could significantly relieve stress on the Province's human and financial resources. Regulatory agencies would not be limited to recovering the costs of environmental damage by imposing fines for infractions on specific licenses or applying to recover the costs of remediation undertaken on the Province's initiative. Since NRDAs carry absolute liability, operators would be left with no room to haggle over whether environmental damage was intentional, negligent, or innocent. The regulatory agency would simply apply a pre-determined formula, and present the bill to the operator.

The value of NRDAs is as a tool for allocating the financial risk of natural resource enterprise. Residents of the province would continue to bear a portion of the risk: by allowing resource extraction operation in the province, residents understand that a certain amount of environmental damage is inevitable. On the other hand, it would be understood by industry operators that any detrimental environmental impact would be swiftly invoiced to the responsible operators, regardless of fault. The cost would be calculable, based on a readily available formula. Resource development companies could incorporate a calculation of those costs into their project budget. For companies engaged in hydraulic fracturing, the costs of detrimental effects to surface and groundwater supplies could be calculated as an inevitable expense of enterprise.

(b) Potential problems

Two major issues may arise in the context of NRDAs and the fracking regulatory regime. One stems from inherent problems in the structure of NRDAs themselves. The other is an exacerbation of the existing problem of the regulatory commons.

(i) Calculation

The most contentious issue across the various jurisdictions employing or considering NRDA regimes is the form of the calculation with which environmental impact is valued. In terms of procedural efficiency, some jurisdictions "opt to use simplified methods that are inexpensive and can be carried out by personnel with little specialized training."[7] However, even the simplest NRDA calculation incorporates controversial valuations. The traditional approach was a simple calculation of "the market value of the injured natural resources, or where market value was inappropriate or unavailable, the cost to restore or replace the resources."[8] As NRDA schemes have evolved, valuation methods have emerged to account for non-resource values, such as habitat and cultural value. Those methods are bitterly contested, especially by those who favour resource development. They are criticized as arbitrary, vague, and even penal. The creation and justification of an NRDA calculation that is efficient while representing the non-resource values of the environment would be a major challenge for BC.

[7] Amy Ando, Madhu Khanna, Amy Wildermuth and Suzanne Vig, "Natural Resource Damage Assessments: Methods and Cases," *Illinios Department of Natural Resources Waste Management and Research Centre Reports* (July 2004) <http://www.wmrc.uiuc.edu> at 2.

[8] James Peck, "Measuring Justice for Nature: Issues in Evaluating and Litigating Natural Resource Damages," *Journal of Land Use and Environmental Law* (1999) 14 J. Land Use & Envtl. L. 298.

(ii) Extra Complexity

Despite carrying absolute liability, and being engineered to carry minimum stigma and provoke minimum industry pushback, damage assessments would be subject to the principles of administrative fairness. The requirements of procedural fairness dictate that every person must have notice of the case to be met, an opportunity to be heard, and an independent and impartial decision-maker.[9] Since fairness concerns are particularly potent when an individual's rights, reputation, or livelihood are on the line,[10] NRDAs would likely not be held to the strictest standards of procedural fairness. However, even relaxed administrative standards would require that the NRDA system be endowed with some formality and structure, which would mean further investment of human and financial resources that are already in scarce supply in BCs environmental regulatory regime. Furthermore, since NRDAs would likely come with a right to appeal, strong industry resistance could threaten to turn the scheme into just one more strand in a regulatory web already causing problems for the effective oversight of resource development.

[9] *Baker v Canada (Minister of Citizenship and Immigration),* [1999] s SCR 817.
[10] *Ibid*, at para 25.