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Reform of the Mining Law of 1872 (Royalty)
Committee on Energy and Natural Resources
United States Senate
January 24, 2008

Thank you for the opportunity to present my views concerning the issue of royalty considerations to be taken into account with regard to reform of the Mining Law of 1872.

I appear here today as a private citizen, expressing my own views, and not representing any group. I have worked on mining policy, law and fiscal issues for twenty five years. I have assisted many governments in the development of their mining policies, laws, agreements and fiscal systems including many of the world's most important mining nations. Examples of my recent mining taxation related work includes: lead consultant to the Treasury on the bill to introduce royalties in South Africa, mining sector fiscal analysis for the Peruvian government prior to the introduction of royalty, analysis of the mining fiscal systems including royalty in Australia, Bolivia, Egypt, Guinea, Indonesia, Mali, Mongolia, Mozambique, Papua New Guinea, Philippines, Saudi Arabia, Yemen, Zambia, and others. In some cases my mining taxation work is funded directly by the concerned government, other times by multi-lateral agencies like the World Bank, IFC or United Nations, and occasionally by the private sector. My books on the subject of mining laws and mine taxation are considered by some as standard references worldwide. **My most recent co-authored book is titled Mining Royalties and it has been distributed by the World Bank to most mining and finance ministries and departments worldwide.**

In my work for governments who are undertaking mineral sector fiscal reform, I advise that when designing a tax system, law-makers should be aware of the integrated impact that all taxes, royalties and fees can have on mine economics and potential levels of future investment. When determining which types and levels of taxes to apply to the mining sector, policymakers should consider not only ways to achieve individual tax objectives, but also take into account the cumulative impact of all taxes. Such awareness should recognize the importance of each tax type in achieving specific objectives. The overall tax system should be equitable to both the nation and the investor and be globally competitive.

(1) How should a royalty on hardrock minerals produced on Federal lands be structured?

- Should it be net or gross or a combination of the two?

In its simplest forms, a royalty tax liability is calculated based either on a set amount per unit volume (\$/cubic foot) or per unit weight (\$/ton), or is based on a percentage of the value of the mineral commodity being extracted or sold (% x value). In the first instance, unit based royalties, the determination of the royalty liability is straight forward being solely dependent on the physical quantity or volume of the material produced but in the second case, value-based royalties, the assessment is more difficult because a value must be assigned to the commodity being sold. A third and more complex method relies on some measure of net profit or net back. For a net profit royalty, a measure of sales revenue is reduced by the deduction of certain allowable production and other costs to determine a net profit, and in a net back scheme some costs are allowed as deductions but usually not primary mining costs. Net profit and net back royalties are calculated as a % times net

profit or net back.

The advantage to government of unit and value based royalties is that they are fairly straight forward to calculate and pose fewer opportunities for tax minimization strategies. Their weakness is that low profit mines will have the same royalty basis as high profit mines, and this may impact them with regard to decisions about mine life, ore cut-off grade, and whether to continue operations when prices are low. Most Canadian provinces levy a form of net profits royalty, as do a few other jurisdictions including Nevada. In my experience, when a country is considering royalty reform, companies will argue strongly for a net profits type of royalty. However, most governments apply royalties based on units and/or on gross value (or net smelter return). Unit based royalties are in common use mainly for construction minerals and sometimes coal but are less often applied to most other minerals.

Determining the value of the commodity for a value based royalty is not always straight forward. Different commodities each pose their own special problems and a nation may use several different valuation methods. Not only will different commodities often be valued by different methods but even a single commodity may pose assessment challenges depending on the condition to which it has been processed. For example, take the following situation. A copper deposit is located which contains some ore suitable for recovery by smelting and some which is recoverable by leaching. The mine management determines that three products will be produced for sale: raw ore, a copper concentrate, and from an electro-winning plant, copper metal. The three copper products will obviously command very different sales values in the market. How should the three sales products be valued for royalty purposes? I usually advise nations that when devising a value based royalty to use a sales invoice (gross proceeds or net smelter return) based system for most minerals. A net smelter return (NSR) reflects the value of the mineral after deducting certain restricted costs not related to mining operations (such as the transport costs of the mineral to a third party facility that processes the mineral to a higher valued state and the charges associated with that processing).

Recommendation: I suggest that a gross proceeds type royalty be considered. It is transparent, is simpler to administer than other royalty types, and avoids most taxpayer tax minimization practices. The approach could be stated as an election by the taxpayer to pay based on either a pure gross proceeds basis or a net smelter return basis, with net smelter return carefully defined in the law.

- Should the rate be variable depending on commodity?

There are many different types of minerals and their extraction costs, prices received and profit margins may differ substantially. For example, the average gold mine probably has a higher profit potential over the long run than an average copper mine. Should not the royalty for gold thus be higher than for copper? Many nations do discriminate between mineral types. In some nations like India and Indonesia, long lists of minerals appear in their laws along with separate rates or amounts for each mineral type. Other nations classify minerals into groups and apply a different royalty to each mineral group. Still others apply a uniform system regardless of the mineral type. In my visits with tax authorities in many nations, those responsible for tax collection almost invariably prefer a uniform system, with the one exception being construction minerals. There are a variety of reasons for preferring a uniform system, and I will illustrate two reasons. Many mines produce one or more multi-metal concentrates. For example, a zinc concentrate may contain recoverable amounts of zinc, lead, silver, and gold. If different royalties apply to each mineral, how can the amount of royalty be calculated? A second reason

to avoid royalty discrimination between mineral types is that it invariably leads to sustained efforts by producers of one mineral type to lobby for a reduction in their rate to the lowest rate on any other mineral so that there is a “level playing field.” My advice to most governments is to have a uniform royalty approach to all minerals, with the exception of construction type minerals and coal.

Recommendation: a uniform royalty rate should apply to all hardrock minerals.

(2) What should the royalty rate be?

This is a difficult question. For marginally economic mines, any royalty may result in them becoming sub-economic leading to closure. For highly profitable mines, a low rate may see the government needlessly forgoing revenue. The key is to achieve a royalty that most mines can bear and still make reasonable profits. The experience of many nations with substantial mining industries has been that for most minerals a royalty rate of between 2 and 5% of mineral value (gross proceeds or net smelter return) works well. Rates higher than this may over the long run result in lower income tax and royalty yields because fewer new mines will meet minimum rate of return decision criteria in times of average prices and some will not be built (the income tax base will be smaller). Additionally, capital may flow to lower taxing jurisdictions. Almost all companies would view a gross proceeds royalty of greater than 5% as punitive. A draft bill considered by the House of Representatives (**H.R. 2262**) would impose an NSR of 8%, one of the highest value based royalty rates that I have encountered in my work. Is this rate too high? I am unable to offer a firm opinion on that without further study, and the main reason is another feature of the US tax system—the depletion allowance. Very few nations have a depletion allowance for mineral production. Such an allowance is viewed by most nations as a form of negative/reverse royalty and most nations have rejected this concept. In most nations, the concept of a royalty is that payments should be made to government as non-renewable minerals are mined. Conversely, a depletion allowance allows an income tax deduction as non-renewable minerals are mined. Thus, over the life of a mine the impact of a high royalty is offset to some extent by lowering income tax through a depletion allowance (assuming that most mines pay income tax). Even given the depletion allowance there is a strong argument in favor of a royalty rate much less than 8%. While taxpayers with multiple operations may be able to take advantage of depletion allowances in most years because they are taxed on income from all operations, the taxpayer with a single mine will not enjoy the benefits of depletion during the early years of the project when it already has substantial other deductions or when its taxable income falls to zero because of low commodity prices. An 8% gross value type royalty will have a major impact on independent mines. If the U.S.A. did not offer a depletion allowance, I would certainly counsel that a net smelter royalty should be set in the 3 to 5 percent range.

Recommendation: if a gross proceeds/net smelter return royalty basis is used the royalty rate should be no higher than 5%. If a form of net back or net profits tax is used, the rate should be substantially higher than 5% and the optimal rate would depend on what types of costs are allowed in calculating the royalty basis.

(3) How should the royalty be administered by the Federal Government?

- How can administration be simplified?

The royalty can be based on a system of self-assessment and standard reporting forms should be developed. An agency of government familiar with mining and royalty payments, such as the

Minerals Management Service, should be assigned responsibility and provided funding to put into place requisite administrative support. Royalty can be paid annually.

- **What types of enforcement and compliance provisions are needed?**

The basic provisions should cover at least basic topics such as: the requirement for the royalty payer to keep and hold sales records; the empowerment of government to inspect records, audit returns, and adjust returns; the ability of the royalty payer to challenge an adjusted return; penalties for false returns or no returns. Consideration could be given to incorporating by reference relevant provisions in the income tax law. Of key importance is the necessity to control transfer pricing practices.

Transfer pricing is a major and growing concern with regard to royalty in many nations. The term transfer pricing refers to a practice where the mine product is sold to an affiliated company at a price less than the product would have been sold to an unaffiliated party. It in effect transfers profit from one tax entity to another. If a royalty is based on some measure of sales value (such as a gross proceeds/net smelter return) this is a concern. The industry is consolidating, and sale of minerals between affiliated companies is common. In mining laws and model agreements that I have recently drafted I strive to reduce the potential for transfer pricing with regard to royalty. For example, I may require special reporting of any sale to an affiliate, with affiliate being defined very aggressively (for example a 5% ownership interest test, rather than a just a control test).

(4) What should the transition rules for a new royalty be?

In nations where I have assisted in mineral sector fiscal reform efforts, there are rarely any special transition rules. The one exception is where a special agreement has been negotiated between a company and the government and the agreement contains fiscal stabilization provisions. If the agreement has gone to their Congress (parliament) and been ratified as a law, the usual practice is to grandfather that agreement, often with the intent to avoid future litigation. The Congress has substantial experience with the introduction of new features in other aspects of the national tax system and could follow its usual practice.

Recommendation: The tax should be equally applied as of an effective date.

(5) Should the U.S.A. impose a royalty on locatable minerals?

Most nations impose some form of royalty on minerals when the nation is the owner of the mineral. There are very few exceptions and over the past few years some countries that previously had no royalty now either have one or are planning to introduce one. Almost all new or recently amended mining laws include a royalty provision. The rationale for a royalty varies from country to country. In some, it is perceived as a form of ownership transfer tax, where the nation is provided a fiscal payment as the mineral moves from national ownership into private ownership. In other nations, it is justified as a form of usage fee—the royalty is considered as the regulatory fee paid in exchange for the “right to mine” in much the same way as a driver pays an annual registration fee to register and use a car on public roads. In this later case, questions about minerals ownership are mute which may be an important factor in the U.S.A. where for perfected claims minerals may no longer belong to the government. Regardless of the rationale, the primary reason behind imposing a royalty in most nations is to increase the amount of money flowing to the government, either to the general

budget or for earmarked purposes. Most nations impose royalty and it is time for the U.S.A. to do so also.

(6) Will a royalty put U.S.A. producers at a disadvantage to producers in other nations?

Any increased cost, such as a royalty, puts a U.S.A. producer in a worse off position to compete. Increased costs may discourage investment into the sector both by US and foreign firms. However, almost all nations have royalty. In my advice to governments, I urge policy makers to take into account the complete tax system when considering a change in any part of it. It is the impact of the tax system as a whole that will determine whether most mines are able to operate profitably, and with sufficient profits to reinvest in new exploration to replace reserves. In extensive studies by myself and by the International Monetary Fund it has been determined that many mineral producing nations impose a fiscal system on mines that results in a total effective tax rate (ETR) in the range of 40 to 50%. ETR is simply the amount of all taxes and fees paid to government divided by before tax profit, calculated over the life of the mine. In my mining fiscal studies for other nations, I typically use a cashflow spreadsheet for one or more model mines and build in all the various taxes and fees and incentives. The model then calculates the ETR and the investor's rate of return. Such models are very useful to assist lawmakers in understanding the impact on a typical mine of various royalty rates in times of high and low commodity prices. They also allow a better understanding of the ways that the tax system works in a holistic way. For example, to what extent does the depletion allowance offset the impacts of a high royalty? To what extent does the ability to deduct a royalty from income subject to income tax affect profits? I don't know if such modeling has been done to assist in setting a proposed royalty method and rate in your reform effort. If the method and rate is contentious, I suggest that such modeling may be a useful tool for lawmakers to have so as to understand whether the rate is reasonable. Taken alone without reference to the rest of the tax system, a gross proceeds or net smelter return royalty applied to all minerals at rate of 8% will perhaps be the world's highest (rates on individual minerals are sometimes higher than 8%). Lawmakers should take care to create a royalty system that provides a real and fair return to the government but that allows the industry to make adequate profits to invest in new tax paying mines.

Concluding remarks

The current mining law is badly out of date. It suffers from a host of problems and among these is that it does not lay the groundwork for "a social licence to operate." By this I mean the acceptance by our society that the mining industry plays a positive role in our well-being. The public perceives the industry as highly polluting, causing a proliferation of abandoned eye-sores, putting workers at high risk, and contributing little to the national or local economy. Today, many communities view a proposed mine not as an engine for economic growth, but an industry that must be kept out of their back yard. The imposition of a royalty, especially one where revenues are earmarked for reclamation and local investment, may help to regain the industry's social licence to operate. Since 1990, over 100 nations have replaced or made major amendments to their mining laws. It is time for the U.S.A. to do the same.