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Report On Third Annual Meeting

Donald Warnken, AIMA *Editor*

The third annual AIMA business meeting was held at the Wynkoop Brewpub in Denver, CO on February 26,2001. Our thanks for organizing, arrangements, and chairing the meeting goes to Trevor Ellis, AIMA President. The Wynkoop Brewpub was an excellent choice for our meeting place. The meeting room was private, small but large enough for our group to conduct business, to eat, and to socialize. Also, the food selection was great as was the liquid refreshments.

Eleven AIMA members were present which included; Trevor Ellis, John Gustavson, Ross Lawrence, Stuart Lamb, Bill Jennings, Wes Lilly, Edwin Moritz, Richard Bate, Sam Pickering, A.R. (Ron) Briggs, and myself, Donald Warnken. We also had two guests, Bill Roscoe and Michael Bourassa, both from Toronto, Canada.

Bill Roscoe and Ross Lawrence are both active in developing Canadian Mineral Valuation Standards and in the founding of the Canadian Association of Mineral Valuators (CAMV), a sister organization to AIMA. Much of the pre-meeting discussion was focused on their work in the preparation of methodology and standards for the Toronto Securities Exchange. Other appraisal issues concerning AIMA members were addressed during the informal discussion.

The timing of AIMA's business meeting coincided with the Society of Mining, Metallurgy and Exploration's (SME) 2001 Annual Meeting which was also held in Denver, CO. Six AIMA members were to present papers at that meeting. The AIMA participants were; Bernard Guarnera, Jeffrey Kern, Stuart Lamb, John Gustavson, Ross Lawrence, and Trevor Ellis.

Production Risk – Thoughts From Oil and Gas Appraisal That Might Also Apply To Other Minerals

Thomas B. Henderson, Jr., AIMA Member

I have run into appraisals of oil and gas that have handled production estimates as if they were economic issues. Certainly, in coming up with the value of a property you cannot completely separate the estimate of the volumes that will be recovered from the prices that will flow. I have seen varying price schedules and production risk assumptions that utilized market risk factors in that dual role, but trying to handle production risk with a market price projection does not seem logical to me.

In response to this concern, consider the use of varying production risk percentages through the life of a property. During the initial production days, before the field performance is comfortably assured, the risk factor is higher that it will be for the life of the field. Gradually as the field depletes the risk factor increases until production is coming from the final, lets say, 10 percent of the estimated reserves. It is during these last days that uncertainties rule: when will the wells water out? Production that you could bet the farm on during the middle life of the field becomes iffy.

From an investment perspective, the chances of getting your money back out of the portion of early production are good, but not as good as from the middle three quarters of the field life. During the last quarter the risk advances to the point that the investor might be advised to avoid any reserve purchase at all except at drastic discount. Production risk is better a tailor made schedule than an average number for the life of the field.

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It is absolutely essential if values are being established for time slices out of the life of a field for investment and ad valorem tax purposes.

Minutes of the Third Annual Meeting

The Third Annual Meeting of the AIMA was held at the Wynkoop Brewpub in Denver, CO on February 26th, 2001.

Trevor Ellis, President, opened the meeting at 4:30 P.M. Eleven members and two guests were present. A quorum was present.

John Gustavson exhibited our Certificate of Incorporation and gave a brief history of and the basis for forming AIMA.

Minutes of the 2nd Annual Meeting were read and approved. It was reported that all proposed Resolutions and changes to AIMA Bylaws approved at that meeting were later approved by a vote of the membership. John Gustavson explained the need for the changes and displayed a typewritten copy of the new Bylaws.

John Gustavson reported that 22 ballots for the election of Year 2001-2002 officers had been returned. The successful candidates were; Trevor Ellis, President; Sam Pickering, Vice President; Ed Mortiz, Treasurer; John Gustavson, Secretary; with Michael Cartwright remaining Past President.

Ed Mortiz, Treasurer, reported that Year 2001 annual dues had been received from 20 of the current 28 AIMA members. Our bank balance as of February 2001 was $3,965.42. Annual cash flow to the Institute was estimated to be $1,680 from dues for the year. Expenses for 2001 are expected to total $1,490, which includes $650 for our Website and Domain names, $344 for the news brochure, and $234 for reprinting the Bylaws (which was not reported in the bank balance). There was some discussion concerning the deposit of some AIMA funds in CD's. After discussion, no action was taken.

Sam Pickering motioned that all members furnish a thumb nail description of their appraisal specialty. It was adopted. Sam agreed to furnish each member a questionnaire and Ron Briggs agreed to submit a website form.

John Gustavson led a discussion concerning the furnishing of each member with a certification Certificate. Sam Pickering motioned that upon request, existing members be furnished a replacement Certificate which shows their new membership number (as year issued followed by a dashed number indicating the chronological order of issue for the year). The Motion was adopted.

There was some discussion concerning the formation of an Application Review Committee. The issue was resolved by leaving it up to the discretion of the officers to appoint three Committee members.

Donald Warnken was appointed editor of the Newsletter. A quarterly issue of the Newsletter was set as a goal with the next issue to be published in May 2001.

In review of old business, a new AIMA brochure has been prepared for handout. It was suggested the brochures be handed out at Professional meeting to prospective members. Also, as a public relations effort, it was suggested that the president make press releases to publishers of mineral magazines.

There was some discussion concerning reviewing ethics violations and the process for reviewing complaints. The procedure is covered in our Bylaws (see paragraph 2.623). John Gustavson agreed to take over from Trevor Ellis the review of AIPG's progress.

The placing of an AIMA application form on our website was discussed. There were no objections. Also discussed was the possibility of uploading papers from the SME 2000 and 2001 annual meeting valuation sessions to our website. But, Trevor Ellis raised concern over possible copyright infringements. SME's policy generally prevents releasing papers for such use for two years. Trevor Ellis will check with SME about this when the timing seems appropriate.

At the 1999 and 2000 meetings it had been determined that an archive of Newsletters be included on our website. No objections were raised to including historical articles. Also, the Editor was directed to furnish Michael Cartwright a copy of each new Newsletter for inclusion on the website.

It was decided that a copy of all incoming e-mails to the AIMA website be routed through the AIMA headquarters.

Trevor Ellis discussed the International Accounting Standards Committee (IASC) recommendations in its Extractive Industries Issues Paper. He stated that the International Accounting Standards are being adopted globally very rapidly and he expects that the U.S. will adopt the Standards by 2005. He also discussed the close relationship of the IASC with the International Valuation Standards Committee (IVSC). Trevor expressed his concern that is the Extractive Industries international Accounting Standards are finalized with the historic value based reserve and resource reporting requirement proposed by the IASC Steering Committee, the standards will financially disadvantage the mining and petroleum industries relative to other industries allowed current value reporting of their assets in their primary financial statements. (See AIMA Newsletter, July 2000 and February 2001). IVSC has appointed Trevor as its U.S. representative on its Extractive Industries task force. The task force is responding to the questions and proposals in the IASC Issues Paper, and will likely be asked by IVSC to rapidly develop an international valuation standard for the extractive industries.

Trevor Ellis motioned that he be funded $600 ($300 per meeting) to represent AIMA at the next two international valuation standards meetings, these being in Australia on Cont'd on page 3

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October 2001 (hosted by AusMM) and May 2002 with the Council of Mining and Metallurgical Institutes, and that the AIMA sponsor the meetings with $600. John Gustavson objected to Trevor not presenting an approved AIMA platform at the meeting and on the IVSC Extractive Industries task force. The motion died after much discussion.

A motion was made and passed to create an associate membership at a membership fee of 1/3rd regular membership dues. All associates must have appropriate education and be working on obtaining the necessary experience for certification. Associate members would not have voting rights.

A motion was made and passed to create a member Emeritus position for those members retiring from the profession. Membership dues would be 1/3rd the regular membership dues and the member Emeritus would not have voting rights.

The meeting adjourned at 8:00 P.M.

Minerals Valuation Sessions, SME 2002 Annual Meeting Appeal For Papers

Sam Pickering, Jr., Vice President, AIMA

The next SME (Society for Mining, Metallurgy & Exploration) meeting will be in Phoenix, Arizona on February 25-27,2002. We are scheduled to have a single session of up to 6 papers on mineral appraisal Tuesday afternoon, 26 February, followed perhaps by a lively debate on Discount Rate selection.

Stuart Limb (e-mail cmc@doitnow.com, telephone 606-443-3978), and Sam Pickering (e-mail indmin@aol.com, telephone 912-743-9323) have agreed to chair the sessions. Please contact either one of them as quickly as possible if you would like to present a paper. SME deadlines are looming.

AIMA Membership Listing

Sam Pickering, Jr., Vice President, AIMA

At the 2001 AIMA annual meeting in Denver several members asked for a Newsletter listing of current AIMA members with a short summary of contact information, background, areas of expertise, and specialization, types of minerals typically appraised, etc. If you would like to be included in this Newsletter listing, please fill out the information and send to our patient Newsletter Editor Don Warnken (tel. 918-663-3074, fax 918-665-8343).

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Potential Increase in U.S. Appraisals From Extractive Industries International Accounting Standard

Trevor Ellis, AIMA, President

Editors Note: The following is based largely on a paper that Trevor Ellis is submitting to The American Institute of Professional Geologists for consideration for publication in The Professional Geologists. Contact Trevor Ellis is you wish to receive a copy of the full text of this paper.

Rapid implementation of the International Accounting Standards (IAS) for public financial reporting is taking place globally. IAS provides for the current value of assets to be reported in the primary financial accounts of companies. European companies are required to convert to IAS by 2005. In December 2000, based on recommendations of the U.S. Financial Accounting Standards Board, which has been assisting with the development of IAS, the U.S. took a leading role in management and financing of the International Accounting Standards Board (IASB). The U.S. and Canada then joined with Australia, France, Germany, Japan, the UK and New Zealand in development of "convergence goals" for Cont'd on page 4

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merging their accounting standards with IAS. The outcome should allow corporations to file financial reports in multiple countries without modification. The U.S. is already working on adoption of a few specific IAS standards. From the indications I have seen, I expect that full acceptance of financial report filings using IAS accounting rules will occur in the U.S. and Canada around 2005.

In some European countries in recent years, the work available for appraisers has doubled to tripled according to one estimate, because many corporations are having the *fair* value of assets appraised each two to three years for financial reporting purposes. The present U.S. GAAP accounting system is historic value based, providing only for downward adjustment in value of assets, with the accounting value of real property assets commonly having little relationship to real world values. The potential benefits of increased work for AIMA members from the possible U.S. and Canadian introduction of current vaue reporting for the extractive industries of mining and petroleum is obvious.

In November 2000, the Extractive Industries Steering Committee of the International Accounting Standards Board (IASB) released an Issues Paper seeking replies by 30 June 2001. Based on the responses received, the committee is to develop an accounting standard for the mining and petroleum industries for finalized publication in the fourth quarter of 2002 as part of IAS. The rapid development of this standard is occurring at the specific request of the International Organization of Securities Commissions.

The tentative views expressed by the IASB Steering Committee have a disconcerting *déjà vu* resemblance to the U.S. Securities and Exchange Commission's perspective expressed in its highly restrictive and antiquated *Industry Guide 7*. Its tentative recommendation is that primary accounts of extractive industries companies must be reported on an historic value basis only. Disclosure of the current value of reserves would be restricted to a supplemental information section and likely be based on a canned calculation of a pseudo value as is done now for U.S. petroleum reporting. The question of whether to allow quantitative and value reporting of resources that are not reserves, as supplemental information, only barely remained on the edge of the table for discussion, this being an item of great importance for the mining industry. (See AIMA Newsletter, February 2001, for a review of the document).

If the standard is finalized with this perspective, the restriction to an historic cost accounting basis for reserves and resources will greatly handicap the financial abilities of the mining and petroleum industries relative to other industries allowed current value accounting of their assets. Research reviewed in the Issues Paper, partially based on the Australian experience, shows that investors react very favorably to current value reporting of reserves in the primary financial accounts of extractive industries corporations, resulting in "a significant effect on the value that the market places on an enterprise's shares" compared to disclosure of the current value in supplemental information.

I am the U.S. representative and leader to the Extractive Industries Task Force of the International Valuation Standards Committee (IVSC), a sister organization to the IASB. A primary function of IVSC's highly respected International Valuation Standards (IVS) is provision of guidance for valuations conducted for use under IVS by advising its members to follow IVS when working outside the U.S. It also asked the Appraisal Foundation to adapt the Uniform Standards of Professional Appraisal Practice to more closely mirror IVS.

The volunteer Task Force of internationally recognized minerals valuation experts is assisting the IVSC in developing its input to the IASB. Through this, the Task Force hopes to influence the IASB Steering Committee to modify the outcome to an appropriate current value accounting standard for the extractive industries based on an international minerals valuation standard. The IVSC has decided to sponsor the Task Force to compose on a timely basis an Extractive Industries addition to IVS, and will be seeking financial support for the under taking.

In the review of mining and petroleum practices in the IASB Issues Paper, Steering Committee members expressed considerable concern about the lack of tight industry standards for the inputs into reserve and resources estimates, particularly economic inputs. Considerable confusion is apparent over what, if any similarities might be drawn between the petroleum industry's reserve definitions (developed by the Society of Petroleum Engineers and World Petroleum Congress) and the mining industry's reserve and resource reporting standard (the Australian JORC Code, adopted internationally through the Council of Mining and Metallurgical Institutions and in definitions by the United Nations). In addition to the lack of "quality" that Steering Committee members perceive in reserves and resource estimates, they express concern about the difficulties and inconsistencies in valuation of those reserves and resources. The petroleum industry has much more distance to cover in addressing these concerns than the mining industry. The petroleum industry's reserve definitions are looser than those of the mining industry; the petroleum industry lacks an equivalent of the reserve-resource reporting standard of the mining industry based on defined competent person requirements; and no equivalent of the Australian mining industry's VALMIN Code is present for petroleum.

I have somewhat been surprised and disappointed be the extreme lack of interest of the members of the U.S. extractive industries in the efforts of the IVSC Task Force. The leaders of the major mining industry institutes in Canada and Australia have expressed considerable concern about the content of the IASB issues Paper and have actively shown strong interest in the efforts of the Task Force. So far the petroleum industry domestically and internationally has shown no interest in the Task Force, and provided no assistance or

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input. Discouragingly, no input has been received from any AIMA member, despite my requests in the February 2001 Newsletter, at the AIMA 2001 Annual Meeting, and through direct contacts especially to members working in the appraisal of oil and gas. At the AIMA Annual Meeting, members effectively delivered a strong rebuff to my international efforts, by withdrawing $1,200 of funding, this having previously been approved by the out going President last year after submittal to the Board. Six hundred dollars ($600) was for assistance with expenses for my travel to Australia in October 2001 and May 2002 to participate in and present papers at international mineral valuation standards meetings. The other $600 was for AIMA sponsorship of those two meetings.

The present negative direction for drafting of the International Accounting Standard for the Extractive Industries, based on any historic value accounting in the primary financial accounts, has considerable momentum. For this momentum to be reversed so as to result in a favorable current value accounting outcome based on fair value reporting of reserves in the primary financial accounts, there will need to be a great increase in interest and involvement from the mining industry, and a massive increase form the petroleum industry. This must be reflected in moral, informational and financial support for the IVSC's Extractive Industries Task Force's development of its various inputs to the IASB Extractive Industries Steering Committee through 2002, and its timely writing of an extractive industries valuation guidance section for incorporation in the International Valuation Standards. A positive outcome from these efforts, when compared to the alternative, will provide immense financial benefits for the mining and petroleum industries internationally, and likely around 2005 in the U.S. and Canada. It will also result in a great increase in demand for mineral property, to the benefit of AIMA members.

Uniform Appraisal Standards For Federal Land Acquisitions

The Uniform Appraisal Standards For Federal Land Acquisitions has been revised. It can now be downloaded from the Department of Justice's Website at www.usdoj.gov. All appraisers must abide by those standards in the preparation of appraisals for Federal acquisitions and condemnation work. The standards have been prepared by representatives from various Federal Government agencies, none of who have backgrounds in mineral appraisals. This fact is detected from reading.

Section D-11 of the "standards" concerns the Valuation of Mineral Properties. There are several positions in the "standards" which may concern AIMA members. One is excerpted and is shown below. The *editor* invites your comments. All replies will be presented in the next Newsletter issue.

"***In developing an estimate of value by the income capitalization approach for a mineral property, it is generally recognized that the most appropriate method of capitalization is yield capitalization, most notably discounted cash flow (DFC) analysis. The income that may be capitalized is the royalty income, and not the income or profit generated by the business of mining and selling the mineral. For this reason, the income capitalization approach, when applied to mineral properties, is sometimes referred to as the royalty income approach."***

Direct Sales Comparison Approach To Value

Michael R. Cartwright, Past AIMA President

The general explanation of the direct sales comparison approach to value has been largely adapted from *The Appraisal of Real Estate, 11th Edition.*

The direct sales comparison approach to fair market value is the process in which a retrospective market value is derived by analyzing the market for transactions of similar properties and comparing those properties to the subject property. A major assumption of the direct sales comparison approach is that fair market value of a property is directly related to the transaction prices of comparable and competitive properties. Comparative sales analysis focuses on similarities and differences among property transactions that affect value. Factors affecting value of transactions include differences in property rights appraised, the motivations of buyers and sellers, financing terms, market conditions at the time of sale (the comparative number of buyers, sellers, and lenders), size, location, physical features, and if the properties produce income, economic characteristics. Ideally, elements of comparison are tested against market evidence to estimate which elements are sensitive to change and how they affect value.

This approach to value is primarily based on the principle of substitution, which holds that the value of a property tends to be set by the price that would be paid to acquire a substitute property of similar utility and desirability within a reasonable amount of time. This principle implies that the reliability of the direct sales comparison approach is diminished if substituted properties are not available in the market.

Applicability and Limitations

The direct sales comparison approach is applicable to all types of real property interests when there are sufficient recent and reliable transactions to indicate value patterns or trends in the market. For property types that are bought and sold regularly, the direct sales comparison approach often provides a supportable indication of fair market value. When a market is weak or thin and the number of reliable transactions is insufficient, the applicability of direct sales comparison approach may be limited. The direct sales comparison approach is rarely applied to some special-purpose properties because of few similar properties may be sold in a given market, even one that is geographically broad.
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Generally, the direct sales comparison approach has broad applicability and is persuasive when sufficient and reliable property and transaction data are available. It usually provides the primary indication of fair market value in appraisals of properties such as single family residences which are not typically purchased for their income producing characteristics. However, buyers of investment quality income producing properties typically concentrate on a property's economic characteristics, often focusing on the rate of return for an investment made in anticipation of future cash flows. Buyers of owner-operated properties also concentrate on a property's economic characteristics. They tend to focus more on the actual level of returns, and the size of the anticipated future cash flows, instead of the rate of return. Thoroughly analyzing comparable sales of income-producing properties can be difficult because information about the economic factors influencing buyer's decisions to purchase, as well as sellers' decisions to part with the property, is not generally not available from public records or interviews with buyers and sellers.

To ensure reliability of value conclusions derived by applying the direct sales comparison approach, the appraiser must be able to verify the market data obtained and fully understand the behavioral characteristics of the buyers and sellers involved in property transactions. Caution should be exercised when sales data are provided by someone who is not a direct party to the transaction. Incorrect conclusions may result if an appraiser relies on such data without considering the motivations of the actual parties to the transactions. Errors can also result if an appraiser cannot obtain sufficient information about the buyers' and sellers' opinion concerning the anticipated income and expense schedules, or potential changes in use or property operations are not appropriately considered.

The direct sales comparison approach to value includes any recent sale of the subject property. This situation generally allows for an easier analysis of the more important elements of comparison since the physical and ownership characteristics may be virtually identical.

Mineral Property Markets and Market Structure

In general there are four types of markets which have a bearing on the analysis of income-producing mineral properties: auction markets, dealer markets, and direct search markets, going from most organized and efficient to least organized and efficient.

The most integrated market is a continuous auction market for truly fungible goods in which all buyers and sellers converge at one place to bid on or offer to sell a good. The New York Stock Exchange is an example of an auction market. The main advantage of a continuous auction market is that participants can quickly and easily arrive at prices and quantities for these directly interchangeable goods. However, continuous auction markets, as opposed to periodic auctions in the real property environment, require very heavy and frequent trading to cover the expense of maintaining the market. If an appraiser is analyzing the sales or mergers of relatively large mineral producing companies the publicly traded share markets are an excellent source of readily available and reliable information.

Another highly integrated market is the dealer market. In this market the dealers specialize in various fungible commodities, purchase assets for their own inventory, and sell goods for a profit from their inventory. Dealers, unlike brokers, buy and sell commodity assets for their own accounts. The dealer's profit margin is the bid-asked spread, the difference between the price at which the dealer buys for and sells from his inventory. The metals derived from mineral resources and the over-the-counter (OTC) securities market are examples of a dealer markets. If an appraiser is analyzing the sales or mergers of rather small mineral producing companies with a relatively larger amount of shareholders than a family corporation the OTC share markets is a fair to good source of available and fairly reliable information. If an appraiser is appraising a metallic mineral producing property, such as gold and silver, the dealer, or commodity, markets are generally the most reliable source for current, historic, and future price information. A dealer market is also an excellent source of information for the appraiser needing price information for mining and mineral processing machinery and equipment.

In markets where trading in a good is sufficiently active, brokers can find it profitable to offer search services to buyers and sellers. A good example of a brokered market is real estate, where economies of scale in searches for available single family residences and some of the smaller and more actively traded commercial properties and searching for prospective buyers make it worthwhile for participants to pay brokers to conduct property searches for them. Real estate brokers in given geographic and property type markets develop generally reliable specialized knowledge about these markets and be of assistance to appraisers of these types of properties.

The least organized market, and the one in which almost all mineral property transactions occur, is a direct search market.

In a direct search market individual buyers and sellers must seek each other out directly. Mineral property markets are characterized by sporadic participation and relatively high-priced and nonstandard real properties. Because of the paucity of total transactions and the specialized property needs of purchasers, such as mineral resource size, type of mineral commodity, and type of mining knowledge and skill required, it does not pay most people or firms to seek profits by specializing in such a geographically and mineral commodity diverse market. Many "transactions" in the diverse mineral property markets are not actually sales, but are individually negotiated mining leases with a type of owner financing in the form of a mineral production royalty. Because of this type of market it is often difficult for a mineral property appraiser to acquire a sufficient amount of potentially comparable transactions and to verify any data other than a sales price

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noted in a quit claim deed. Mineral property buyers and sellers are notorious for not wanting to provide any type of detailed information about their property or their operating incomes and expenses.

Open Market Transaction Criteria

The material in this section is largely adopted from **J. Eaton**, *Real Estate Valuation In Litigation second edition (2d,ed. 1995).*

Before a mineral property can be considered a comparable property, an appraiser must ensure that it was actually sold, not leased, and that the sale was an open market transaction. For appraisal purposes, an "open market" transaction is also known as an "arms length" transaction. If the following questions can be answered affirmatively, the sale property meets the criteria for an open market, arms-length transaction.

Did the sale convey unencumbered fee simple title or its equivalent? A negative answer to this question may not necessarily eliminate a sale as a potential comparable. For instance, if only a leased fee estate was conveyed, it may be possible to adjust the sale price of the property to reflect the impact of the leasehold interest. The sale of an un-patented mining claim located on the public domain does not transfer fee title because the United Stated retains the fee interest. However, the sale of an un-patented mining claim evidenced by a proper conveyance transfers all the mineral estate.

Were both the buyer and seller typically motivated? A negative answer to this question eliminates all forms of forced sales and sales in which the price paid for the property was affected by a personal relationship between the parties. It is not uncommon to find sales of mineral properties as part of bankruptcy filings by individuals or firms. These types of transactions are better characterized as opportunistic transactions in which neither buyer nor seller are typically motivated. Mineral properties are typically bought and sold in very sparse markets, i.e. markets in which buyers or sellers are few to none. For the appraiser, sparse market activity in mineral properties can raise questions about motivation.

Were both parties well informed or well advised and acting in what they considered to be their own best interest? Not uncommonly, mineral properties are sold from a probate estate by persons who have little to no knowledge about a mineral property. The bulk of mineral property transactions tend to occur at a point in time when neither the seller nor the buyer has any great knowledge concerning the quantity and quality of the mineral resource. Mineral property information is oftentimes a closely guarded secret among buyers and sellers and, therefore, the appraiser may not be able to fully determine a definite answer to this question.

Was the property exposed in the open market for a reasonable length of time? Exposure of mineral properties to the "open market" is not generally accomplished in the same manner as conventional real estate such as single-family residences and small commercial properties. Sales typically occur in a direct search market and oftentimes a potential buyer (seller) will approach all owners (potential buyers) of specific types of mineral property to inquire as to its availability for sale (purchase).

Was payment made in cash or its equivalent? Just as in more conventional real estate transactions, seldom is a mineral property purchased for cash. Unlike the more conventional real estate sales there is not an active group of lenders willing to provide buyers with relatively uniform and easy to obtain mortgages or trust deeds. Most commonly, the seller is paid through a mineral production royalty which may or may not be associated with a fixed price. Payment of a purchase through a mineral production royalty is a form of installment sale. If it has an agreed upon final price it may be possible to estimate a cash equivalent value. Estimating cash equivalency, using conventional annuity payment discounting of a mineral production royalty presents problems when there is no production history or comparable royalty payment streams.

Was financing, if any, on terms generally available in the community at the time of sale and typical for the type of property in its locale? This question is directly related to the one immediately above in that a mineral production royalty is a very common method of financing mineral property sales. The main complicating factor is that there is not really any standardized form of mineral property royalty, as in the petroleum field for the solid minerals. However, financed mineral property transactions involving the same commodity, often have very similar terms and conditions. Alternate forms of financing may therefore be analyzed in the same manner as a mortgage loan for more conventional real estate.

Did the price represent normal consideration for the property sold unaffected by special financing and/or terms, services, fees, costs, or other credits incurred in the transaction? This can be a difficult question to provide a clear yes or no answer to in mineral properties. Often a mineral property transaction will involve certain types of work and/or expenditures to be made as part of the terms and conditions of the agreement. As in the immediately above question, these special types of costs and credits may be more or less typical for certain types of mineral properties, but they may prove to be very difficult to translate into a cash equivalent value.

Prior Sales of Subject Property

Perhaps the single best indicator of fair market value for a producing mineral property is a reasonably recent, arms length sale of the subject property. Verification would be required to ensure that the property interest sold is the same as that being appraised. Adjustments may have to be made for any mineral resource, mineral product pricing and quantity, or other conditions that may have changed since the date of sale. This situation is more common for undeveloped or non-producing mineral properties. But the most recent sale may still be on the order of two or more years in age and require significant

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market condition adjustments. A prior sale of the subject property is unusual for producing mineral properties.

Elements of Comparison

Each and every mineral deposit of a given commodity is a truly unique occurrence in relation to its particular geographical controls, its inherent physical and chemical properties, the quantity of valuable mineral or rock that it contains, its applicable extraction and processing methods, and its geographic location with respect to the markets for its products. In order to effectively utilize the direct comparison approach to value the sales of properties being compared should take place in a relatively large, active, and open market in which there is a relatively level of actual arms length sales transactions. The mineral properties being bought and sold in this market place also must have an abundance of directly comparable qualities for which relatively simple and objective adjustments can be made in order to take minor property differences into account.

Finding an adequate amount of reliable and verifiable market data to properly support adjustments to potentially comparable mineral properties can be difficult due to the normally small number of transactions occurring in a relative narrow time frame or geographically constrained market area. Most mineral property buyers and sellers will not willingly share the detailed property data required to make reliable adjustments and knowledgeable consultants or agents may be prevented from disclosing data about a mineral property because of strict confidentiality agreements. Any sales of mineral deposits used for possible comparison will normally require at least as much research and on-site examination as the subject mineral property to accurately identify, measure, and account for any difference that may affect value.

Truly comparable mineral deposits must have similar mine lives at similar production rates with similar product mixes and market areas. Effective age and condition of the machinery and equipment of any potential comparables must be equivalent as well as equipment maintenance, rebuilding, and replacement schedules. Buyers and sellers must be carefully interviewed to determine their motivations and actual knowledge of the most important mineral property and mineral product market conditions.

The Appraisal of Real Estate notes that elements of comparison are the characteristics of properties and transactions that cause the prices paid for real estate to vary. This widely accepted textbook also notes that there are ten basic elements of comparison that should be considered in direct comparable sales analysis. A brief discussion of some of the most probable elements of comparison involved in mineral property transactions include, but are not limited to, the following items: geographic location; physical characteristics (geology, mineral reserves,); real property rights conveyed; economic characteristics (operating expenses, lease/royalty provisions, mineral product mix); use (zoning); market conditions (date of sale); conditions of sale; financing terms; non-realty components of value (plant, machinery, and equipment), and; expenditures made immediately after purchase. Many of these common elements of comparison are interrelated with each other and do not lend themselves to independent analysis.

Most real estate texts boldly state that no particular location is inherently desirable or undesirable (AI 1996). This may be true for most conventional real estate, but it is definitely not the case for mineral properties. Mineral properties are absolutely location-dependent because a valuable mineral deposit is physically located in a particular place and any mineral production from it must also occur at that exact location. Location, in conjunction with he physical characteristics of a property, may be the most important items in looking for similarities among mineral properties. Location is also important when comparing two or more properties containing the same kind of mineral deposit because the location, and its inherent physical characteristics, may have a large influence on accessibility, mining and processing methods, operating costs, and distance to market for its mineral product.

Geographical location factors affecting value include the following: determines political boundaries, physical and legal accessibility, climatic conditions, distance to market for mineral products, distance and availability of supplies, transportation routes and modes of transport, water supply availability, quality and quantity. Geographic location determines the availability of utilities such as electricity, natural gas, water service, and sewer connections. Geographic location also determines whether a mineral deposit is within or near a governmentally specified mineral resource zone, other known mineral resource area, wilderness, or other environmentally sensitive area which can affect allowable mining processing activities.

The physical characteristics of a mineral property are the primary determinant of its economic characteristics. The details of the geology of a mineral property are of primary importance because the local geology determines the types of mineral deposits that can occur, the quality of grade of these mineral deposits, their ultimate size and physical and economic limits, and the most appropriate mining and mineral processing methods for a given mineralogical composition.

A property's physical and mineral deposit characteristics are largely determined by the local geology. Local geology determines the following items: basic rock types present on the property such as intrusive, volcanic, sedimentary, or metamorphic; whether the rocks are relatively hard or soft, loosely agglomerated or well cemented, and general abrasiveness; heavy mineral placer deposits; the three dimensional size, shape, and attitude of the mineral deposit and its relative degree of economic continuity and uniformity. Rock types and mineral deposit types determine geo-mechanical rock properties and geo-technical mine design parameters along with the quantity and quality (grade) of the

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mineral resources; any mineral product or waste stream contaminants; general mine-ability and process-ability of the mineral deposit; overburden and waste to ore ratios and mining dilution amounts; groundwater quantity and quality; topographic relief; stream flow patterns and amounts, and; elevation effects on equipment efficiency and local weather conditions.

Another part of the property's physical characteristics concerns the man-made improvements to the mineral property. Are the mine and plant capacities (nameplate and actual) coordinated and without any significant under or over sizing? Are the fixed and mobile machinery, equipment, and buildings appropriate for the mineral deposit type, size, and production rate? What is the condition, effective age, suitability, availability, and utilization of the plant and equipment? Are there depreciation and/or obsolescence issues involved with the mine and plant design and layout or the plant's machinery and equipment? Are there abnormal breakdowns, repair and maintenance schedules due to mineral deposit qualities or lack of appropriate maintenance? Are improvements to the real estate (access or haul roads, mineral stockpile, concentrate, and waste areas, tailings impoundments, equipment and parts storage, and buildings) well located, of quality construction and materials, and well maintained?

An exact description of the real property rights involved in any potentially comparable sale is quite important because mineral title and ownership aspects of potentially comparable sales include: fee simple absolute with a single person/entity as owner and operator, partial/joint ownership and/or operation of the property; fractional interests within a larger mineral property; severed surface and subsurface mineral rights; mineral/mining lease or only a license with a private entity or a governmental agency; un-patented lode mining; un-patented placer mining claims; association placer claims; un-patented mill sites adjacent to or elsewhere located; water rights; easements, encumbrances, restrictive covenants, etc. on the property in favor of others.

Most of the economic characteristics of a mineral property are determined by its physical characteristics. Economic characteristics include all of the attributes of a property that affect its income and appraisers must take care not to attribute differences in real property rights conveyed or changes in market conditions to different economic characteristics (AI 1996). It can be difficult to isolate economic characteristics from physical characteristics and real property rights when less than the fee simple title is owned. Economic characteristics that typically affect a mineral property's income include operating expenses for mining and mineral processing, capital expenses associated with improvements to the property, mineral lease and royalty terms, mineral lease expiration and renewal dates and terms, and quality of management.

Economic characteristics in general can include: type of mining operation, capital and operating expenses and maintenance and replacement expenses; exploration, development and/or reclamation expenses; lease terms, royalty rates, and other mineral interests, expiration dates, renewal or purchase options, expense recovery clauses; mining and processing related permit fees, expiration dates, and renewal options; environmental assessment reports or environmental impact studies costs and time frames; feasibility study expenses and time; environmental and reclamation requirement expenses and timing; property, severance taxes, or un-patented mining claim fees; current or potential lawsuits involving the property, obsolescence and depreciation issues of mine design, mined land support, and processing, on-site of off-site processing or custom processing and/or smelting/refining; type of mining and processing determine lowest cut-off grade/quality; responsible ownership and competent management.

Any difference in the current use or highest and best use of a potential comparable and the subject property must be addressed. The appraiser must recognize the difference and determine if the sale is an appropriate comparable and, if so, whether as adjustment is required (AI 1996), or if an adjustment can even be made. Many mineral properties have been purchased by speculators or agents for mining companies without specifically addressing any mineral rights.

Items commonly associated with highest and best use that should be examined include: then current zoning, probability of zoning change; non-conforming use limited to current owner or run with the land; zoning/permit requirements such as setbacks from property lines/streets, maximum slopes and depths, buffer zone land, view-shed/noise screening, hours of operation, noise dust limits, vehicle size and/or frequency of travel restrictions, special assessment for road damage; highest and best use at time of sale; environmental/reclamation requirements at time of sale; location within a mineral resource zone, wilderness study area, or other special land classification area.

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Market conditions at the time of sale of a potentially comparable mineral property refer to the general stability of the market at that time for mineral products/properties of that nature. Price structures such as spot or market, contract, negotiated, or administered; forward or contracted delivery prices and quantities; general mineral produce prices, quantities, and specifications; internal consumption or open

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market sales; special government or private project uses and prices; national, regional, and local economic conditions; demographics, growth and expected changes; interest and discount rates and mineral project related capital availability; existing/contemplated mining regulations, legislation, and/or significant court decisions. The date of sale of a comparable mineral property can be very important due to the often extreme volatility of certain mineral prices, especially metallic minerals that are sold in international markets and also experience active trading in commodity futures markets.

Conditions of sale refer to the general motivations and expectations of mineral property buyers and sellers and include: Arm's length or related person/entity transaction; vending a property in to a company by an officer, employee, or consultant; property owner-operator, investor, or speculator transaction, junior to senior mining company transaction or vice-versa; captive mine to independent or vise-versa; relative equality of knowledge and/or bargaining power; sale to or by an existing competitor or new entrant; distress on part of seller or necessity on part of buyer; back-in agreement by a larger producer, expectations of production methods and rates and new mineral product/market development; estimated mine life; contract mining/processing agreements or equipment purchase/maintenance agreements; forward/contract delivery sales; mineral product labor, supplies, or royalty escalation adjustment factors and contract clauses.

There is no typical structure for mineral property purchases in the entire industry. All cash, all finance (recourse/non-recourse), all stock/shares (free trading, restricted, stock option), normal bank loans, royalty, working capital, or profits mineral interest financing, work commitments, installment contract, or other combination of these methods; loan mortgage or lien on property; mineral commodity hedging requirement. Non-realty components of a transaction may include: plant, machinery, and equipment; water rights; assemblage of assets for related income producing activities; and assumption of debt or other liabilities.

Expenditures made immediately after purchase may include: joint venture capital contribution; deferred maintenance, rebuilding, refurbishing, or replacement expenses; land or mineral surveys; work commitments, exploration, development, bankable feasibility study, financing commitments; performance/surety bond payments for environmental/reclamation. The total sale price and terms and conditions of the comparable sale also need to be analyzed in order to determine how the sale price was allocated among the various components of value contained in the total mineral property sale.

To the best of this appraiser's knowledge there is no true market place for mineral properties of any kind anywhere in the world. The reason for this is that each and every mineral property is a very specialized property that normally has very few fungible and truly directly comparable characteristics beyond the fact that it is naturally occurring and contains a specific mineral commodity. What market does exist is characterized by buyers and sellers with very specialized knowledge, interests, and requirements that limit their search for acceptable transactions to a very limited number of potential participants. And, most mineral property buyers and sellers do not rely on the direct sales comparison approach to value that is typically a difficult approach to use in estimating the fair market value of a property that is primarily valuable because of what it contains, a mineable and marketable mineral resource, rather than what it can be used for.

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