

# INTERNATIONAL INSTITUTE OF MINERALS APPRAISERS

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## NEWSLETTER

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### **SME Conference 2016 Phoenix Convention Center February 21 - 24, 2016**

The International Institute of Minerals Appraisers is presenting two mineral valuation sessions to be held on **Tuesday, 23 February 2016** in Phoenix, Arizona USA.

The valuation sessions will be held in conjunction with the IIMA Annual meeting, and the Society for Mining, Metallurgy and Exploration Annual Conference & Expo 2016.

#### **Valuation I: Case Studies and Methodologies**

Chairs: John Manes, Marty Shumway

#### **Valuation II: Lessons Learned and Fundamental Issues**

Chairs: Tim Knobloch, Dan Collins

In addition to the valuation sessions held annually IIMA will also hold its annual meeting. A more detailed schedule of events will be provided in the January newsletter. This is a great opportunity to network and learn. We hope to see everyone there!

### **Valuation I Case Studies and Methodologies**

**Case Study: Quarry Impact on Ranch Land  
Market Value  
Tracy Grote  
Austin, Texas**

A Comal County, Texas ranch is impacted by an intermittently operating limestone quarry. The market value appraisal considered:

Limestone quality under county and TxDOT specifications; Client's unwillingness to provide income-expense data and its impact on appraisal methodology; Physical impact (quarry expansion or closure) of quarry to the property; Economic impact on market value estimate in light of grazing and hunting income, and recreational enjoyment.

For many mineral appraisers, an operating quarry is commonly assumed to continue unless the end-of-mine is near. In this case study, the continued operation of the quarry may not be a reasonable assumption.

Tracy Grote has been actively engaged in the real estate profession since 1977. A graduate from Tarleton State University with a Bachelor's Degree

in Agri-Business, he later obtained a Master's Degree in Land Economics and Real Estate from Texas A&M University. Presently holds the MAI designation as well as the CCIM designation, one of few appraisers in the country with both designations and expertise. Real estate experience includes various property types such as residential, multifamily, commercial, industrial, special purpose properties (auto speedway, convenience stores, marinas, petroleum bulk storage facility, airport FBOs, indoor shooting range, golf course, distillery property, etc.), ranches as well as surface quarries (primarily dimension stone and crushed aggregate).

He has been an MAI with the Appraisal Institute since 1985 and CCIM (Certified Commercial Investment Member) of the CCIM Institute since 2007. He has a Texas Real Estate Broker License. Is State Certified General Real Estate Appraiser in Texas and State Certified General Real Estate Appraiser in Arizona. A Professional Member with the Society of Mining, Metallurgy & Exploration and an Affiliate member of the International Institute of Minerals Appraisers (IIMA).

### **Simplified Guide for Mineral Appraisers to Ore Reserve and Mineral Resource Classifications**

**Robert Cameron**

**Robert Cameron Consulting, Black Hawk, CO**

When conducting an appraisal or issuing an opinion of value, it is important to properly identify or verify the resource or reserve classification of the material within the framework of the valuation code being utilized.

This paper will present a simple guide that can be used to help an appraiser to properly understand and evaluate the reported resource or reserve classification assumptions. Although the various resource and reserve reporting standards around the world are constantly changing, most modifications in the last few years are refinements or tightening of definitions surround the basic confidence of the estimate. An understanding of the broad principles discussed will help the appraiser to better set a value on the mineralization being reviewed.

Dr. Robert E. Cameron has over 35 years of experience in the geostatistical analysis of ore

reserves, computerized mine planning, mine design, computerized studies for mine production optimization, ultimate pit limit optimization, mine efficiency studies, equipment selection and utilization and operations research. He has completed geostatistical estimations or resource and reserve reviews or audits on over 300 properties worldwide during his career and routinely reviews and audits geostatistical calculations, ore reserves statements, minerals resources statements, computerized minerals models, mine designs, and their forward looking cash flow projections. Dr. Cameron served as Vice President, Technical Services for Frontier Mining Ltd. and was responsible for initial geostatistical resource and reserve assessment of potential mine acquisitions for Frontier Mining in China, Indonesia, and Central Asia. Dr. Cameron also had responsibility for supervising, reviewing and quality assurance of all ore reserve work performed by Behre Dolbear as their Director and Vice President of Geostatistics and Mine Planning from 1992 to 1999. Dr. Cameron is a Registered Member of the Society of Mining, Metallurgy and Exploration and a Member and Qualified Person of the Mining and Metallurgical Society of America in mining and ore reserves. Dr. Cameron holds B.S., M.S., and Ph.D. degrees in Mining Engineering from the University of Utah

### **Conservation Easements and the Income Approach to Value: Are You Kidding Me?**

**Alan Stagg**

**Stagg Resource Consultants, Inc., Cross Lanes, WV**

The use of conservation easements to create tax credits results in some interesting (i.e., creative) appraisals when the property involved allegedly has mineral development potential. Nowhere is this more evident than in the use of the Income Approach to Value for properties containing low-value commodities such as stone and sand and gravel for which development is not on anyone's planning horizon and in markets in which there is little or no demand for additional production. The appropriate application of the Income Approach to Value and examples from the author's experience of its misapplication in this type of appraisal are

reviewed and the ultimate test of an opinion of market value is proffered.

Stagg, a graduate of the University of Tennessee with a degree in geology, is the president of Stagg Resource Consultants, Inc. He has more than 51 years' experience in the mineral industry, with the last 35 including an emphasis on mineral appraisals. He has conducted appraisals in more than 40 states and internationally. Stagg is a registered professional geologist in 14 states, a registered member of SME, and a certified member of the International Institute of Minerals Appraisers.

**Accruing for Mine Reclamation and Post-Reclamation Care Expenses**  
**David Espinoza**  
**Geosyntec Consultants, Potomac, MD**

Different from other business activities, mining is an activity that generates revenues during a finite period whereas its liabilities can last a very long time (in many cases in perpetuity). However, valuation of mining investment opportunities typically focuses on the revenue side (i.e., mineral grade, commodity prices) with less emphasis to expenditures associated with mine reclamation and the care that follows. The financial analysis of long-lived liabilities that are far in the future is particularly difficult, if not impossible, with standard valuation techniques such as Net Present Value along with risk adjusted discount rates. The problem stems from the widespread practice of increasing the discount rate to account for the riskiness of the project which reduces the effect of these liabilities. The Decoupled Net Present Value (DNPV) concept, developed for valuation of infrastructure investments, is introduced. DNPV is conceptually similar to Real Options but simpler to apply. DNPV decouples risks from the time value of money and treats risks as a real cost to the project. Revenue risks reduces the value of revenue whereas expense risks increases the overall expenses.

Dr. David Espinoza has a degree in Civil Engineer, with a Ph.D. from Purdue University. He offers particular expertise on financial risk and return analysis for infrastructure and geoenvironmental projects. These projects have included disposal

facilities for municipal solid waste, mine tailings and other spoils, industrial wastes, coal combustion byproducts; water reservoir systems; and renewable energy projects. His advisory experience in the area of risk quantification has included evaluating the economic and financial feasibility of major capital projects, including projects to reduce carbon emissions in South America and the US. Dr. Espinoza has developed quantitative methods for the evaluation of investment risk in environmental and infrastructure projects using state-of-the-art financial theory, which have been widely published in leading peer reviewed journals and professional conference proceedings.

David has provided financial risk consulting services to large institutional investor such as PIMCO (the largest bond fund), Climate Change Capital (the largest carbon credits fund), as well as several private equity investors.

**Which Discount Rate to Use?**  
**John Gustavson**  
**Mineral Appraiser LLC, Boulder, CO**  
**Knobloch, Timothy S**  
**James Knobloch Petroleum Consultants,**  
**Marrietta, OH**

The Discounted Cash Flow approach can yield a reliable Market Value estimate, when applied to producing mineral properties. However, it requires accurate input in form of production rates, commodity price forecasts and cost estimates. For development-stage properties also development costs must be available and possibly discounted at a lower rate. Before- or after-Federal-tax must be considered as well as type of mineral estate. And the IRS has strict requirements for the required input parameters.

Even when all parameters are available the question arises of which discount rate or rates to apply to the future cash flow. A market-derived rate is preferable, but when not available the discount rate may be built up from CAPM and/or from WACC. Weaknesses and strengths will be presented.

John Gustavson (geologist, engineer) managed his own consulting company for 30 years and was one of the founders in 1991 of the American Institute of

Minerals Appraisers. He has taught and published extensively on the subjects of mineral appraisals. He is semi-retired and consults and mentors on valuation. He is an authority on when and when not to apply the DCF approach after determining the Highest & Best Use of a mineral property.

**Appraiser Liability: A Case Study**  
**Kent Lang**  
**Lang & Klain, P.C., Scottsdale, AZ**

All appraisers face the threat of litigation stemming from a variety of circumstances. For instance, appraisers may be sued over disagreements arising from their valuations or the scope of the valuation. Additionally, appraisers may be sued because they overlooked or omitted items from a valuation.

Given this reality, this paper will focus primarily on the main legal claims that may be brought against appraisers. These claims include, but are not limited to, negligence (negligent appraisals) and negligent misrepresentation. Through the examination of court decisions in this area, this paper will outline the legal elements that comprise each of these claims, and highlight and analyze the common factual scenarios that may give rise to legal action. Additionally, it will discuss when appraisers may be found liable to third parties for their valuations.

Kent Lang is an Arizona Construction Law Attorney, and is a Super Lawyers and Arizona's Top Lawyers honoree. He is also a member of the Arizona Registrar of Contractors Industry Advisory Council and an active member of multiple construction trade associations

**Mentoring Minerals Appraisers – Techniques  
for Success**  
**Ellis, Trevor R.**  
**Ellis International Services, Denver, CO, United  
States**

The author has successfully mentored a number of candidates to become certified by the International Institute of Minerals Appraisers, some interstate and internationally by phone and email only. This paper will provide the author's view of the role of the mentor. It will then recommend the mentoring techniques that he has found to be the best for

certification and overall training.

Trevor Ellis chairs the SME Valuation Standards Committee and represents SME on the International Mineral Valuation Committee. He has more than 40 years of diverse mining and petroleum industry experience. For the past 20 years, he has specialized as a Certified Minerals Appraiser in providing accurate market value appraisals of mineral properties, particularly for use in litigation settlements. He chaired the IVSC's development of a valuation standard for the minerals and petroleum sectors, first published in the 2005 edition of the International Valuation Standards.

**Valuation II: Lessons Learned  
and Fundamental Issues**

**Industrial Mineral Market Entry - A Bear  
Market or What the Market will Bear**  
**Marc Springer**  
**Spanish Flat Mining Company, Garden Valley,  
CA**

One of the most overlooked concepts of industrial mineral appraisal is market entry. Industrial minerals include low unit-value construction aggregate and fill material to high value fillers/extenders and chemical-grade mineral deposits containing unique or special properties suitable for end-users requirements.

Mineral property owners commonly fail to consider, among other cost and timing related issues, realistic marketability and absorption rate attributes when valuing industrial mineral properties for sale. The dynamic relationship between mineral producers and consumers requires mineral property valuers to examine closely the supply/demand dynamics, matching a subject mineral deposit with end-use product requirements, and existing competitive contractual relationships for target markets.

When large value disparities exist between industrial mineral property appraisals, the difference is often reconciled by a comprehensive feasibility analysis, which considers realistic market attributes. The Security Exchange Commission generally requires sales contracts, in addition to feasibility

analyses, as reserve calculation criteria for U.S. industrial mineral property investments.

Marc Springer is a geologist, mineral appraiser, and consulting mineral resources/mining geologist, conducting business with his wife Linda Springer, via their company Spanish Flat Mining Company. Mr. Springer's professional background combines 38 years of industry and federal government (BLM) experience highlighting: mineral rights and resource appraisal, mine property evaluation, mining law, geology, mine operations management, reclamation planning and cost estimation, mine safety and health training, and expert consultation, reports and testimony. His certifications include state, national and federal government recognition as a California Professional Geologist and General Appraiser, Blaster, Mine Gas Tester and Mine Safety Representative, IIMA Certified Mineral Appraiser, MSHA Instructor, and BLM Certified Mineral Examiner

**Valuation Technique During High-Velocity Pricing Change**

**Andrew Schissler**

**Mining Engineering, Colorado School of Mines, Littleton, CO**

Mines and their associated assets are valued using three industry accepted approaches; market-based, royalty, and discounted cash flow analysis. Usually in stable pricing environments, the three methods will result in equivalent value. When price, regulatory environment, inflation, weighted average cost of capital, and geo-political risk change with high velocity, the valuation methods return significantly different results. The purpose of this paper is to present experienced-based valuation tools that reduce variation and quantify business risk including options strategy. Valuation technique is pertinent in the 2016 timeframe as mineral assets offer unparalleled opportunity.

Dr. Schissler has 42 years of experience in mining. He has participated as lead or team member in over 75 mineral valuation studies in all types of minerals for projects on continents worldwide. He has held positions at mines from Laborer to Executive Vice President in operations and engineering. He currently is an Adjunct Professor at Colorado

School of Mines, coordinates the SME Professional Engineer Exam Committee, and is a Principal Engineer Associate with 4 firms. He is a Registered Professional Engineer in 2 states, a Certified Mine Foreman in 3 states, and a Qualified Person to produce compliant valuation studies as defined by most security exchanges. He is a Founding Registered Member of SME.

**Effects of Global Affairs on Valuation of Mineral Resources**

**Stephen Olmore**

**S D Olmore & Assoc Inc, Key Biscayne, FL**

Global affairs and politics affect valuation of mineral resources. Latin American Republics are highlighted.

Stephen D. Olmore, Ph D is president, S D Olmore & Assoc Inc, 750 Fernwood Road, Key Biscayne, Florida 33149: Phone – (305) 365-5799; steve@olmore.com - [www.olmore.com](http://www.olmore.com). He has 40 years' experience in mineral exploration and development.

**Reliability of the Mineral Appraisal Report: The New World of Appraisal Review**

**Robert Frahme**

**Gustavson Associates, Boulder, CO**

After sinking many \$000s on an appraisal for decision making or litigation, how does the decision maker or legal counsel know that the report will withstand the scrutiny of litigation or negotiation? The recent re-writing of the Uniform Standards of Professional Appraisal Practice (USPAP), especially that part addressing "appraisal of the appraisal" (Standard Rule 3) is one recent sea-change in USPAP. It requires testing the underlying appraisal report against five newly clarified parameters: "Completeness, Accuracy, Adequacy, Relevance and Reasonableness". When tested by a qualified reviewer, the user of the report gains a clear picture of the reliability of the report without arcane references to alleged USPAP violations, as frequently done in the past. Beyond the extensive appraisal education and experience that should be required of the practicing appraiser, the reviewer must have additional education, experience, and a different mind-set. Comments will be provided on

getting it right the first time (appraiser selection), and common structural errors the reviewer should find in determining whether the report is adequately supported before the opposition asserts that it is not.

Robert B. Frahme holds a B.S. degree in Geology from the University of New Mexico and an M.B.A. degree from the University of Wyoming. He holds the professional designations of CPG from the American Institute of Professional Geologists (1975); MAI from the Appraisal Institute (1989); and CMA from the International Institute of Minerals Appraisers (2002). In addition he holds the Certified General Appraiser License in the States of Colorado, Idaho, Montana, Missouri, Oklahoma, and Indiana, and has held that license in approximately 24 states as needed in appraisal assignments.

He began his career as Resident Geologist at the Sunrise Mine in Wyoming, continued as Mineral Economist for BLM; Senior Geologist with the western coal mining affiliate of Occidental Petroleum Corporation; Financial & Economic Analyst for Exxon Minerals Company; Appraiser with Hagood Realty Advisors; Senior Appraiser with Cushman & Wakefield; Chief Appraiser with Gustavson Associates, where he has been for over 10 years.

His appraisal experience includes many years in both commercial real estate and mineral property appraisal. His specialty in appraisal is eminent domain appraisal of mineral properties and review/rebuttal of mineral property appraisals. He has testified in many jurisdictions in connection with direct and inverse taking actions, working for both the condemnor and for the condemnee.

#### **Acquisition of Economic Data for Appraisals in Different Commodity Markets**

**Daniel Collins  
Collins Productions, Littleton, CO**

Experience in obtaining data from the field on properties used for the Sales Comparison, the Income, and the Cost Approaches in the Appraisal of Mineral Properties has demonstrated that there are varying levels of difficulty with respect to the appraisal of construction materials and

specialty/industrial mineral properties versus precious and base metal mineral properties. The overall market of the commodity seems to dictate the level of the proprietary nature of the mining company's data and the difficulty or ease in obtaining such data.

This presentation on lessons learned reviews the various methods and strategies used in obtaining the necessary data that is applied in the three approaches: the Sales Comparison Approach, the Income Approach and the Cost Approach.

Daniel Collins is a geologist, minerals economist and a Colorado licensed attorney, who has served in a number of industries during his career. He is currently working as a minerals appraiser and landman/attorney in the minerals industry. He is a Certified Minerals Appraiser under the International Institute of Minerals Appraisers.

#### **Capital Cost Overruns in the Mining Industry -- Mistakes, Misjudgements or ?**

**Al Kuestermeyer**

**Ta M. Li**

**Tetra Tech Inc., Golden, CO**

Escalating Capital Costs have been the runaway factor in the mining industry, plaguing both the international financial community and mining companies. Traditionally associated with the junior market sector, now even the major mining companies are experiencing uncontrollable capital costs. This presentation examines the reasons behind these excessive cost overruns, suggesting solutions to better manage Capital Costs in the construction and development of new mines.

Alva Kuestermeyer is a metallurgical engineer and mineral economist with over 40 years of engineering, operating and consulting experience in the mining industry. Mr. Kuestermeyer has a B.S. degree in Metallurgical Engineering from South Dakota School of Mines and a M.S. in Mineral Economics from Colorado School of Mines. He has performed costing and economic studies for scoping, pre-feasibility and feasibility for mining projects involving precious and PGM metals, uranium, base metals, and industrial mineral projects. Additionally, he has served as the project

manager, metallurgical engineer and mineral economist for numerous technical, economic, and acquisition due diligence assignments for financial institutions and mining companies. Mr. Kuestermeyer joined Tetra Tech in November 2014. Prior to Tetra Tech, he was Executive Vice President at European Uranium Resources (EUU) where he managed the company's engineering and environmental studies for its Kuriskova and Novoveska Huta projects in Slovakia, and directed exploration work for EUU's uranium concessions in Sweden and Finland. His previous work employment was at ASARCO, PAH, SRK and Behre Dolbear.

Ta M. Li is a mining engineer with over 40 years of diversified experience in the minerals business. He holds a B.S. in mining engineering from Columbia University, New York. Li serves as Vice President, Business Development for Tetra Tech and its mining consulting group. An Honorary Member of AIME, he has conducted numerous feasibility studies as well as due diligence assignments for financial and mining entities. He was president of SME in 2001.

**Mineral Valuation in a World of  
Volatile and Cyclical Commodities**  
**Bereket Berhe, Joe Hinzer and Ross D.  
Lawrence**  
**PEO, Toronto, ON, Canada**

The fortunes of mining companies and their implied value are tied to cycles - both economic and commodity - within which they operate. Hence the determination of appropriate future metal prices is one of the most critical factors faced by mineral valuers especially for advanced projects. Price, and hence revenue, is usually the most sensitive input to the valuation model. Empirical studies of past forecasts show that the success rate for commodity price forecasting is very poor. This paper explores various approaches and comments on their strengths and weaknesses. We conclude that careful evaluation of long-term metal prices is a key element and is hardly a luxury that can be left to simple averages or rules of thumb.

Ross D. Lawrence, BSc, MComm, PEng, CMA is a former partner in Watts, Griffis and McOuat

Limited. Now a Principal Consultant, he has been a consulting engineer for 54 years, involved in projects world-wide. He has specialized in mineral valuation for the past 30 years.

**Reconciling AISC to Mineral Project Valuations**  
**Grant Malensek**  
**SRK Consulting (U.S.), Inc., Denver, CO**

Since establishing formal guidelines in 2013, the World Gold Council's (WGC) All-In Sustaining Cost (AISC) has been a frequently reported metric for comparing costs per payable metal unit sold for gold mining companies. Like most financial and economic metrics, it should not be a surprise to industry types since there are many interpretations of AISC within the industry, even with explicit WGC guidelines. While AISC appears to be driven by the needs of the investment community in ranking current producers, it is also often quoted by companies in valuations for mineral projects not yet in production. However, such technical-economic valuations using accepted best practices are invariably in conflict with several aspects of the AISC guidelines. This presentation attempts to highlight the discrepancies between AISC guidelines and standard technical-economic valuations so that the reader can better understand what the numbers represent. To this end, for valuations of mineral projects not yet in production, SRK advocates a "Total Cash Cost" concept which reports costs per payable metal unit sold during life of mine commercial operations.

Grant Malensek is a Professional Engineer/Geoscientist specializing in financial modeling and evaluation of mining projects with over 20 years of business experience in financial analysis, project management and business development. He is able to leverage both technical and financial skill sets to coordinate with functional teams to ensure inputs used in economic and business models are based on current assumptions between groups

## USPAP Rebate

The new 2016-17 edition of the Uniform Standards for Professional Appraisal Practices is now available and undoubtedly, the Appraisal Institute will offer its 15-hr USPAP and 7-hr update USPAP course in a number of places (see [www.appraisalinstitutute.org](http://www.appraisalinstitutute.org) for details).

This is a great opportunity for an Associate to get that appraisal knowledge under the belt, which he/she needs together with the already existing technical/scientific background to move aggressively toward Certification.

Effective from 1 March 2014 the IIMA offers a \$50 rebate to Associates, who complete this USPAP course.

Good Luck! If any questions, please contact your Mentor and discuss this opportunity! Or contact our new Chair of the Mentoring Committee, Rachel Vass.

## Valuation Session DVDs

Valuation Sessions from the 2015 SME Annual Meeting is available. Also, while supplies last 2011, 2012, 2013, and 2014 DVD sessions are still available.

Members of the American Institute of Minerals Appraisers may claim up to 6 Hours of Continuing Education Credits when personally attending the complete two Valuation Sessions. Subsequent hours recorded by CMA's for serious desk study of the DVD material may also be claimed as contact hours toward CE credits.

The cost for the DVDs is as follows. It is largely dictated by the cost of production.

Please, address any questions to the AIMA Past President at [johngustavson1@aol.com](mailto:johngustavson1@aol.com)

## Cost for DVDs:

2-set from 2015	\$95
2-set from 2014	\$95
2-set from 2013	\$90
2-set from 2012	\$90
3-set from 2011	\$120

Please, mail your check made out to the "IIMA" with your name and address and allow 2 weeks for delivery.

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Special thanks to the contributions made. The strength of the IIMA organization is through the commitment, education, and contributions of its members. We are always looking for articles to enhance our profession and welcome any material that members may provide. Thanks!

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