

INTERNATIONAL INSTITUTE OF MINERALS APPRAISERS

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NEWSLETTER

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2020 IIMA/SME CONFERENCE EVENTS IN PHOENIX, AZ!

Many thanks to our authors who have submitted an abstract for the upcoming 2020 IIMA meeting in Phoenix, Arizona, on Tuesday, February 25th. The time is drawing near. This issue contains a round-up of IIMA events encircling that date including a minerals appraiser mentor/mentee clinic, evening social, technical sessions, and business meeting luncheon.

But wait, is there something else brewing?

As many know, the IIMA meeting has been held in the same convention center as the SME meeting for decades. However, at this year's business meeting, the IIMA membership will be asked whether the time has come to move the sessions into a different venue. Should IIMA continue to hold its two valuation sessions in parallel with SME, but at a separate locale?

I look forward to hearing your thoughts at the IIMA business meeting. See you there!

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2020 IIMA/SME CONFERENCE SCHEDULE

Monday, Feb. 24th

3:00 pm - Mentor/Mentee Clinic
(with coffee/snacks)

*IIMA Suite - Sheraton Phoenix Downtown
340 North 3rd Street
Phoenix, AZ 85004*

6:00 pm - IIMA Social Event (open
bar/appetizers)

IIMA Suite - Sheraton Phoenix Downtown

Tuesday, Feb. 25th

9:00 am - Valuation Sessions I - Case Studies
and Methodologies

Phoenix Convention Center: North 128 B

12:00 pm - IIMA Annual Business Meeting

*The Arrogant Butcher
2 E Jefferson St
Phoenix, AZ 85004*

2:00 pm - Valuation Sessions II - Lessons
Learned

Phoenix Convention Center: North 128 B

5:00 pm - Closure

2020 IIMA/SME CONFERENCE ABSTRACTS

A Direct, Project-Based Comparison of Commonly Used Pre-Feasibility-Level Cost Estimating Methods

Scott Stebbins; Aventurine Engineering, Inc.
Elk, WA

Aventurine Engineering, Inc., was asked to evaluate
and compare the reliability, pertinence, and utility of

the different methods commonly used to estimate prefeasibility-level costs. We examined five different approaches upon which evaluators typically rely to estimate mineral development project capital and operating costs at a pre-feasibility level. In addition to a ground-up approach, we also used Glacier Resource Innovation Group's Evaluate, the U.S. Bureau of Mines Cost Estimating System (CES), an agglomerated, parametric approach centered around CIM's Special Volume 47 CapCosts, and Info Mine USA's Sherpa. Costs for three different mineral development and exploitation projects were estimated using each method. In addition to tabulating and comparing the estimated costs, all other information produced by each method is presented to provide insight into the utility of the overall results. As a consequence, much of the discussion in this presentation revolves around the overall suite of information provided by each cost-estimating system and the degree to which this information enhances the overall project evaluation process.

Valuation of an Undeveloped Mineral (Limestone and Sandstone) Property Using Comparative Sales, West Virginia

Donnie Lumm; D.K. Lumm Geological Consulting
Lexington, KY

A vacant and undeveloped property located in West Virginia was the subject of a recent mineral valuation of aggregate deposits. The 121 acre subject property is located on a steep slope, has direct access to a highway, and lacks infrastructure and utilities. The subject was previously explored by core drilling and prospect highwall cuts and retains a permit for quarrying, and has 3.8million tons of limestone resource. Although SEC and JORC reporting criteria stipulate a mineral resource has no monetary value, the active permit and exploration drilling on the subject imparts a modest investment value to the property. Lacking mineral property sales data, fee simple land sales of similar undeveloped properties located adjacent to various operators of active limestone quarries were reviewed and selected for recent comparative sales to the subject. Adjustments for slope amount, highway access, and improved structures were made to derive a sales price per acre for the comps. The average fee simple sales price of

the comps (\$6,150 per acre) was reconciled by multiplying the amount of permitted acreage (37.3 acres) of the subject to derive a value estimate (\$230,000) for the limestone.

Using Paired Sales Data to Adjust Comparative Sales to Subject Property

John Gustavson; Mineral Appraiser, LLC
Boulder, CO

The Sales Comparison approach to valuation is applicable to all stages of Highest & Best Use when valuing mineral properties, be they exploratory or producing. When adjusting the value from a comparable sale to the Subject property, the availability of reliable data from paired Sales lends support to this approach and increases its relevance. In a Paired Sales analysis, comparable sales are selected, which are similar in all parameters except for one, such as commodity price. The difference in the two sales prices can then be attributed to that one parameter. The author describes the fundamentals and illustrates the concept from market observations of his case studies of Paired Sales. The cases show that market value adjustments to Subject can be made proportional to findings from such paired Sales. The examples relate to the proportionality between the fair market value of a mineral estate to commodity price, to geologic risk, to leasing activity, and to other parameters.

Calculation of the Degree of Comparability for Historical Coal Property Transactions Used in the Determination of Fair Market Value for Coal Properties with High-Grade Metallurgical Coal

Dennis Knoll; Earthtech, Inc.
Somerset, PA

In Pennsylvania the task of determining the fair market value for high grade, low volatile metallurgical coal is challenging because of the paucity of comparable sales transactions. In order to successfully evaluate a known coal property sales transaction for the purpose of using it to value another coal property one must consider numerous factors, both qualitative and quantitative in nature. This paper describes the examination of all five known coal property transactions in the entire

Pennsylvania low volatile basin that took place over a five-year period, relative to the valuation date of coal properties that were taken by the Commonwealth. Discussed are the degree to which the known transaction value factors required quantitative adjustments to be considered to be comparable to the same value factors considered for the taken properties. For each transaction a “degree of comparability”, was calculated, which is the inverse of the quotient of the cumulative, adjusted value/clean ton (based on the quantitative adjustments) divided by the actual selling price per clean ton.

Appraisals of Oil and Gas Interests in Unconventional Resources-Norming Data to Create a Comparable Sale

Betsy Suppes
Johnstown, PA

When writing an appraisal of an oil and gas interests for it is difficult to find comparable sales because the sales are never exactly like what is being appraised. For example, the sale may not be nearby, may not be leased, may be held by production (HBP) by a vertical well, or a sale included surface rights. A free gas allowance may also be part of an appraisal. This paper discusses norming techniques for sales of unimproved land which includes oil and gas interests and other calculations that would assist the appraiser in making a reasonable valuation.

Asset Appraisal Versus Company Valuations

Amy Jacobsen; Behre Dolbear Group, Inc
Edgefield, SC

There are fundamental differences between the appraisal of a mining project and the valuation of a mining company. The appraisal of a mining project generally takes into account the technical aspects of a project, such as mining rate, metallurgical recovery and market sales; whereas, the valuation of a mining company will take into account not only the technical aspects of its mining projects and mineral properties, but the business-related issues such as debt and equity as well. What does this mean for the appraiser? This paper explores the different valuation methodologies that are commonly used

along with the methods used to determine discount rates and their appropriate application to either the appraisal of a mining property or a mining company.

Trends in Gold Property Transaction Values 2012 – 2021

Grant Malensek; RPA USA, Ltd.
Lakewood, CO

RPA has reviewed market transactions globally from 2012 to 2019 on gold properties containing mineral resources and mineral reserves. The property values derived from the transactions have been normalized in terms of \$/oz contained gold or gold equivalent where gold is the dominant component. Trends in \$/oz values are examined over the eight-year period for producing versus on-producing properties, and for potential causes of variances in \$/oz values, such as political jurisdiction, location and infrastructure, size and grade of deposit, and classification of resource/reserve.

Condemnation Valuation for the Undeveloped Mineral Property - NOI or Royalty?

James Beck; J.M. Beck & Associates
Lakewood, CO

An appraiser's opinion of value is used to support "just compensation" determinations in eminent domain (condemnation) proceedings. The first step in any appraisal is identifying exactly what is to be appraised, i.e., the "mineral in-place" or an "operating (or soon to be operating) mine". A common error among practitioners is appraising the former (mineral in-place) by capitalizing net operating income (NOI), thus attributing value to non-existent capital assets such as development capital, sales contracts, intellectual capital, etc. Undeveloped property is best appraised by capitalizing the royalty income stream, omitting the contributory value of assets not yet present. Operating (or soon to be operating) properties are best appraised through capitalizing NOI, appropriately recognizing the contributory value of capital already present. Using the latter technique when the appraisal assignment requires the former (e.g., for minerals in-place) will greatly overstate the opinion of just compensation.

Deterministic versus Stochastic Modeling - The Role of Each in the Appraisal Process

Craig Wood; Stagg Resource Consultants, Inc.
Cross Lanes, WV

Historically, individuals and companies used a deterministic discounted cash flow model to develop a "point estimate" of the "value" of a mining operation and/or the underlying mineral interest. Over time, practitioners recognized the dubious nature of depending on the output of only one model due to the inherent uncertainty of the various inputs. As this analysis became more sophisticated, multiple deterministic models were prepared to test the sensitivities of those inputs and their potential impact on model results. Eventually, the probabilistic approach was developed, with a series of models prepared and subjectively weighted to yield a weighted-average result for this analysis. Finally, with the advent of faster computer processors and advanced software packages, stochastic modeling arose, which allows for: numerous trial runs, randomly-generated model inputs within specified ranges, and statistically determined results. This paper reviews the development and application of both deterministic and stochastic modeling by potential acquirers, discusses the pros and cons of each method, and illustrates how each can have a role in the appraisal process.

Impact of the Feasibility Study Input Parameters Deviation on Mineral Project Cash Flow Model: An Iron Ore Case Study

Naci Duru, Freeport-McMoRan, Inc.
Sahuarita, AZ

Reliability of the mineral projects' feasibility studies are the basis for investment decision making processes. However there is generally a potential to deviate from feasibility study design basis and cash flow model input parameters. Some of the most important factors that determine reliability of the discounted cash flow evaluations are the accuracy of the reserve estimate, mine design parameters, correct assessment of the plant recoveries, opex and capex estimates, commodity price forecasts at which the product is to be sold and the methodology used for discount rate estimation. Alternate cash flow model

scenarios and sensitivity analyses are common tools to define project risks clearer and evaluate mineral projects. This paper presents the impact of technical and financial input parameter deviations on an iron ore project feasibility by using sensitivity analysis and implementation of cash flow models based on multiple mine plans and final product price forecasts completed by a detailed global iron ore supply projection study.

MODERNIZATION OF MINE PROPERTY DISCLOSURES AND S-K SUBPART 1300: APPRAISERS BEWARE!

PART II

Evan Mudd

Last newsletter, we dove into the basics of our new (slightly spooky) friend in the industry known as S-K 1300. We covered the location of these new regulations, the reporting of reserves *and* resources, and the reporting mechanics that mining registrants are tasked with following. Part II is a continuation of this story where we reveal the *true identity* of that ominous, qualified person that the new regulations so frequently reference.

Who is a Qualified Person?

S-K 1300 introduces a new figure into the U.S. public disclosure scene - the Qualified Person. In a move which closely aligns the regulations with global standards such as those promoted by CRIRSCO, the Qualified Person is:

- (1) A mineral industry professional with at least five years of relevant experience in the type of mineralization and type of deposit under consideration and in the specific type of activity that person is undertaking on behalf of the registrant; and
- (2) An eligible member or licensee in good standing of a recognized professional organization at the time the technical report is prepared. A professional organization:

- Is an organization recognized within the mining industry as a reputable professional association; or
- A board authorized by U.S. federal, state or foreign statute to regulate professionals in the mining, geoscience or related field.

The professional organization must also meet five additional standards for admissions, competence, continuing education, disciplinary powers, and publication of membership. So, for a large portion of the registered engineers and geologists in our IIMA membership, this person might just be *you*.

I was initially surprised to learn there is no exam, no certification, no designation, or society that the SEC has charged with granting a Qualified Person designation. From a short survey of participants in the industry, and by questioning those involved with drafting S-K 1300, I learned that a person with sound experience (five years in the deposit type) will meet requirement #1, and a Professional Engineer, or Professional Geologist, (the respective state of licensure meeting those requirements as the “professional organization” in many cases), to meet requirement #2. It should be noted that not all states specifically regulate mining and geoscience engineers. Therefore, this could vary from state to state. However, if you are a registered SME member, or member of another professional organization, such as those recognized by CRIRSCO that meets these standards, then you will most likely meet this criteria no matter the state that you are working in.

The Qualified Person responsibilities are critical. According to the text of S-K 1300, they are the only means for a company to convert resources into reserves. This establishes an interesting role for the qualified person who is, a gatekeeper of resources and reserves. Furthermore, if the qualified person is employed by the registrant, they are also considered under S-K to be “named” in the company’s registration statements as an *expert*. Hence, they also inherit a significant amount of personal liability under SEC Section 11. In many cases, those liabilities may not be legally be protected by the registrant’s corporate structure, and it should also be noted that the qualified person may not disclaim responsibility by relying on third-party specialists. Really? Yes, Qualified Persons working as

employees of mining registrants inherit expert, Section 11 liability under S-K 1300, and, apparently, it will not be easily shaken by depending on third party contractors. A caveat, however, is that qualified persons who work as third-party contractors for a registrant are not required to be *personally* named on the company's registration statements. Therefore, a third-party contractor acting in the capacity of a qualified person is *not* personally liable. This special provision for outside contractors was a compromise made by the SEC, in their words, to "assuage some of the concerns" that were raised in connection with expert liability.

This concludes Part II of our tour of S-K 1300. Consistent with other international standards such as CRIRSCO, a qualified person has five years of experience with the deposit type and is part of a recognized professional organization. They are responsible for the accuracy of mining disclosures, and, if they are working as an employee of the mining registrant, they will have Section 11 expert liability, and may not disclaim it. Now that we've revealed the true identity of that ominous, qualified person, which, is likely to be a reader of this IIMA newsletter, we will, in the final, Part III of this series, explore a mysterious scenario involving reserves which lose their marketability, and mining properties that fall idle.

IIMA - Comments on S-K 1300 Revised Industry Guide 7

**By
Andy Clay**

There are a number of key points to note from the new SEC S-K 1300 reporting standards for Mineral Resources and Reserves and what readers should be aware of is the impact it has on the Reporting of Value.

Irrespective of the laudable move towards alignment with international standards and in particular CRIRSCO, the overriding problem that the previous IG 7 raised was the ability to account for the value of mineral assets with limited and non-aligned reporting, primarily the inability to disclose "Mineral

Resources". This meant that any dual-listed issuer in the SEC and global regulated market had to prepare two different statements for their mineral assets with obvious shareholder disclosure conflicts and could only value Mineral Reserves.

In the detailed Questionnaire sent out by the SEC about five years ago they asked numerous questions about what the minerals industry needed and there was a sense that the questionnaire was mindful of accounting difficulties for standardized reporting. In some ways this was similar to the revised Petroleum Resources Management System for Oil and Gas for those familiar with those changes.

**So let's cut to the chase and the issue is
ultimately accounting for value
using technically aligned reporting!**

This means that there is a major emphasis on the competence of the experts reporting this technical and valuation information albeit they haven't moved towards requiring "independence" of the reporting as is generally accepted in O&G.

It does focus on the culpability of the Qualified Person or expert preparing the information AND signing it off. So expect scrutiny and the 600lb gorilla to wield a stick!

Getting ready for implementation and setting a "short and concise" Technical Report compliant with S-K 1300 should be undertaken as soon as possible in a style that means the objectives of the SEC rule as well as the other CRIRSCO Codes are met in a matter of fact way.

It should also be branded as part of a company's corporate communication process. Our recommendation is "fill out the form" and complete the Table 1 disclosure and indicate any differences between CRIRSCO Table 1 and the S-K 1300 Technical Report requirements. Many companies globally have already shifted their annual reporting to publishing Table 1.

The question is, will a "value" defined in the reporting disclosure be prepared by the QP, and if so, must it be compliant with the generally accepted Codes for Mineral Asset valuation such as IMVAL Code subsidiary versions? If so, must they always be signed off by a Competent Valuator? If not what weight will a non-IMVAL compliant valuation carry and in particular with respect to holding the valuator to account? Will accounting firms be able to do this

work without being recognised as a professional competency or must they ensure internal expertise or hire external experts?

Another on-going problem for valuers is the allowance for “exclusive” reporting of Mineral Resources.

We have raised this point *ad nauseum* and the regulator still fails to see that every time the “modifying factors” change, the “pick” from the Mineral Resource base changes. It is “Set Theory” and only “inclusive” should be allowed especially to

Where are YOU taking your USPAP course?

The 7-Hour USPAP Update Course is *highly recommended* for IIMA **Certified Members** every two (2) years after they have completed the 15-Hour USPAP Course. Associate Members are not required to take the 7-Hour USPAP Update Course. However, if it has been YEARS since you took the 15-Hour USPAP Course, it may be time for a Refresher, assuming that you are aiming toward Certification as a full Member. Associate Members should contact their assigned Mentor or the IIMA Secretary for info about taking the 15-Hour USPAP Course.

Appraisal Institute (AI) USPAP Offerings

7-hr	January 28, 2020	St. Louis, MO
7-hr	January 29, 2020	East Peoria, IL
7-hr	January 30, 2020	Ft. Mitchell, KY
7-hr	January 30, 2020	Chicago, IL
7-hr	January 31, 2020	Leawood, KS
7-hr	January 31, 2020	Richmond, VA
7-hr	January 31, 2020	Paso Robles, CA
7-hr	January 31, 2020	Altamonte Springs, FL
7-hr	January 31, 2020	Lafayette, CA
7-hr	January 31, 2020	Louisville, KY
7-hr	February 3, 2020	Phoenix, AZ
7-hr	February 4, 2020	Goshen, IN
7-hr	February 4, 2020	Lansing, MI
7-hr	February 5, 2020	Spokane, WA
7-hr	February 5, 2020	Torrington, CT
7-hr	February 5, 2020	Carlsbad, CA
7-hr	February 6, 2020	Wilmington, NC

permit comparable reporting on a “value per unit” methodology or Market Comparison. Valuers should always insist on “inclusive” disclosure.

The other key point of acknowledging “judgement” of the reporting expert is simply a recognition of existing processes. Let’s wait and see the first time there is a joust from the S-K 1300 surveillance team with the authors of the reports! Be prepared.

20th November 2019

The Appraisal Institute (AI) has an extensive listing for Classroom sessions for the 7-Hour USPAP Update Course. The registration fee for classroom sessions runs between \$150 - \$185 for AI Members. The online classes are listed as a “7-Hour Equivalent USPAP Update Course” and cost \$195.

You may review the AI Classroom schedule posted online at this [Appraisal Institute](http://www.appraisalinstitute.org) link, or visit www.appraisalinstitute.org.

The American Society of Appraisers also has posted course offerings online. Their web address is www.asa.org. The cost ranges from \$175 - \$225.

American Society of Appraisers (ASA) USPAP Offerings

7-hr	January 24, 2020	Toronto, ON*
15-hr	January 27-28, 2020	Webinar
7-hr	January 29, 2020	Webinar
7-hr	January 29, 2020	Tampa Bay, FL*
7-hr	January 30, 2020	Kenner, LA*
15-hr	January 31-February 1, 2020	Kenner, LA*
7-hr	February 10, 2020	Chicago, IL* (sold out)
15-hr	February 11-12, 2020	Chicago, IL*
7-hr	February 21, 2020	Charlotte, NC*
7-hr	February 21, 2020	Vancouver, WA* (sold out)
7-hr	February 26, 2020	Webinar (sold out)
7-hr	March 6, 2020	Rockville, MD*
7-hr	March 20, 2020	Denver, CO*
7-hr	March 31, 2020	Webinar (sold out)
15-hr	April 6-7, 2020	Webinar
7-hr	May 20, 2020	Webinar
7-hr	June 1, 2020	Cleveland, OH

2020 IIMA Business Meeting Luncheon Menu



Entrées (choice of)

1. MEDITERRANEAN CHICKEN SALAD
Sun Dried Olive, Crispy Chickpea, Cucumber, Cauliflower, Local Feta, Toasted Pine Nut, Harissa Yogurt Vinaigrette
2. SALMON*
Glazed Heirloom Beets, Roasted Cauliflower, Pesto Quinoa, Marcona Almond
3. AB CHEESEBURGER*
Grilled Onion, Prairie Breeze Cheddar, Pickle, Shredded Lettuce
4. BAKED RIGATONI with CRUSHED MEATBALLS
Roasted Peppers, Spicy Marinara, Ricotta, Smoked Mozzarella
5. TURKEY PASTRAMI
Coleslaw, Swiss, Pretzel Bun

The cost is \$40. Please reserve your place by mailing a check to IIMA Treasurer, Charles Howard and indicate your menu selection.

OR

You may pay directly through the IIMA website. Navigate to “make a payment”, then enter your menu selection under “enter comment” with the \$40 amount.

 Hi,

Make a Payment to the Institute

Use this option to make a payment to the institute.

Enter Comment:

Enter Amount:

\$

OPPORTUNITY KNOCKS!

Did you forget to pay your dues?

You can do it instantly while signing up for the annual business meeting. To do so, log in and “make a payment to the institute.” Comment that it is your annual dues payment.

Or, would you prefer to pay by check?
All checks can be made payable to IIMA and sent to the following address:

Charles Howard, P.E.
Treasurer, IIMA
Howard Engineering, Inc.
411 Main Street Suite 210



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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.

All articles are contributed on a volunteer basis. The views and opinions expressed in any and all articles are those of the authors and do not necessarily reflect those of IIMA or your Newsletter Editor. If any IIMA member would like to professionally add-on to, rebut, or clarify any articles, I will feature such articles in the following newsletter. Thank you!
