

# Research Council Round Table Presentation 1999 SME Annual Meeting, Denver

By Bill Hancock

[Slide 1] Thank you. Good afternoon ladies and gentlemen.

While the focus of this body is on mining and process chemical research and developments, I want to briefly review industry economic conditions and trends, how these are impacting the chemical supply industry, and how the chemical suppliers are responding to the present challenges.

Obviously, metal markets in general are distinctly poor. Copper, gold/silver, lead, zinc, you name it, are very low. Tarbutt and Soldi reported in the December 1998 issue of Mining Magazine in a study of 8 metals [Slide 2] that, on an inflation adjusted basis, metal prices are at historical lows. Furthermore, these authors, through trend analysis from 1900 to 1996, showed that there has been a fundamental downward inflation adjusted metal price trend that has been interrupted

primarily only during large scale conflicts when metal demand dramatically increased. In parentheses, I have tried to accurately update the price trends to 1999 and as you can see, the metal pricing situation is now particularly dour. A complicated set of indeterminate impact factors have been affecting prices over the last century and include **[Slide 3]:**

- ◆ Continuous cost reductions to capture market share with attendant downward commodity pricing pressure.
- ◆ **[Slide 4]** State command economies producing almost independent of market considerations leading to oversupply along with dramatic consumption increases.
- ◆ **[Slide 5]** Speculation due to the Bretton Woods accord that unhinged the world's primary currencies from the gold standard and high inflation rates that caused distrust in the primary world currencies.
- ◆ **[Slide 6]** War related price spikes due to increased raw material requirements and spurred economic activities.

- ◆ **[Slide 7]** Activities of institutions that have controlled or attempted to control the markets, such as the Tin Council, International Bauxite Association, and an association of nickel producers, among others. The net result of this complicated set of factors **[Slide 8]** is that over the 1990 to 1996 period, we experienced a 3-fold increase in population but a **35-fold increase** in metals production! When considering overall macroeconomic trends that are causing a decreasing metal price trend, how could this have happened? **[Slide 9]** The answer lies in developing economies of scale and through increasing productivity. Both are the direct result of basic and applications R&D in all parts of the industry. This is vitally important to remember. Although our industry in many ways exhibits oligopoly characteristics, over the long haul, the mining industry is subject to pure competitive forces.

This is the General story for the metals markets. While selected metals are doing okay and the industrial minerals markets have been fairly even, the market place for these commodities are also changing,

requiring producers to be increasingly more productive, cost efficient and responsive to the markets they serve.

Where are we now? As with all natural resource industries such as forest products, oil & gas, agriculture, and chemicals, everyone here knows the mining industry is presently going through a very difficult and serious economic time. What is causing this present situation?

- ◆ **[Slide 10]** With the end of the “cold war”, we are now in a peacetime situation where the macroeconomic trends show that raw material prices decrease. This “peace time dividend”, so to speak, is good for consumers such as you and I but very hard on the raw materials industries and those employed in these industries, again, such as you and I
- ◆ **[Slide 11]** The impact of the so-called “Asian” crisis that has engulfed different regions of the world in financial and economic crises. The short to medium term reduction in demand has created a raw material supply and demand imbalance, leading to severe price reductions.

- ◆ **[Slide 12]** New, “high technologies” in the areas of computerization, communications and manufacturing are resulting in more efficient raw materials utilization and increased substitution of alternative materials. Our civilization is dependent on raw materials so, as the world becomes richer, the need for these materials will be greater than ever. But the need to be cost competitive and efficient will be paramount.

Under these conditions, **[Slide 13]** mining companies are forced to change operational strategies, improve cost structures, rationalize operations, and even shut down mines.

What happens to mining companies impacts all support groups: universities, consulting firms, engineering and construction companies, service providers, and, not so surprisingly, suppliers. Each stakeholder has been forced to develop their own distinct survival strategies. This is having a significant impact on research and the way it is done.

Unfortunately, mining companies are being forced to reduce costs and expenses through manpower reductions; delaying capital expenditures; revamping administrative, management, and operating structures and procedures; reducing expenses every way they can and ... also going to their suppliers to lower product prices. We have to respond and do our part or there will be fewer mines for us to supply.

Although these measures are making mining companies, “lean and mean”, the potential exists that cutting costs could create a “death spiral” by not providing sufficient resources to R&D.

Lower chemical prices reduce supplier margins. In light of the resultant bottom line struggles being experienced by the chemical companies, we have also been forced to respond to the new economic conditions: redefining who we are, what we offer and our overall value to the industry. Without a doubt, everyone from top to bottom of the industry “food chain” must keep their focus on the value they add to the products and services they provide to the mining community. We have

a saying at Great Western that “if you are not serving a customer, you better be serving someone who is”, which is extremely salient under the present conditions. If you do not, you could be out of business.

Mining company short term survival may be gained by reagent cost reductions and lowering technical head count. But at the precise time when technical support and research is required to fuel production increases and efficiencies needed for long term survival, the onus to do this work is increasingly falling on the same chemical suppliers who are experiencing profit margin reductions.

For the most part the present conditions are only accelerating the reorganization and repositioning process that chemical suppliers have been undergoing the last several years. **[Slide 14]** There have been reorganizations, consolidations, mergers, new program introductions, product line extensions, and market expansions across the board. No chemical supplier has been immune to these changes. From a positive

perspective, though, these changes are taking place to capture new opportunities in the mining industry and so should benefit the industry.

I do not nor can speak for each of the suppliers represented on this panel, but I state with fair certainty that all organizations are looking deeply at who they are and taking courses of action to adjust their position and offerings to the industry, or they better!

Now, in an attempt to show how chemical suppliers are changing, for illustrative purposes I would like to briefly review the strategic changes occurring within Great Western Chemical, which have been of great magnitude. **[Slide 15]** Great Western Chemical has been a strong, traditional chemical distributor to 9 industry segments in the western U.S., western Canada, and Mexico with expansion now in the eastern U.S. Our 35 branch warehousing and shipping operations provides logistics and materials management support to the industries served. Executive management recognized 2-3 years ago, however, that the world was changing and that if we did not change in advance of the

rapid economic and societal transformations that have been and will be occurring, our viability would eventually be threatened.

**[Slide 16]** Consequently we are ISO certifying our entire organization; implementing an enterprise resource management program; have reorganized from a branch based to business based organization, developed and implemented fundamental strategic plans for the company, each of the businesses and support units; and are continuing to look deeply at how we do business. These changes are transformational and gut wrenching. However, with the new world economic paradigm, these changes have become absolutely necessary.

In due course, our mining business has dramatically changed. A thorough strategic review of mining industry trends, mining industry needs, Great Western capabilities, and our position within the marketplace pointed out 2 primary industry driving forces relevant to this audience: 1) the mining industry is undergoing intense operational cost reduction efforts leading mining companies to reduce technical

manpower, paradoxically, when there is a need to increase productivity and 2) there are intense ongoing efforts to reduce chemical and chemical sourcing costs. **[Slide 17]** Our strategic course was defined as expanding our product offerings into the specialty, value added chemical arena while continuing to support our full line of commodity chemicals. And to leverage our logistics capabilities to provide our customers an overall low cost and effective supply of commodity and specialty chemicals. By selling and servicing multiple chemicals, reagents, and chemical programs at a customer location, our goal is to maintain and even increase our sales, logistics, and technical service to that customer despite decreasing margins for individual products.

By serendipity, Great Western acquired a regional boiler and cooling tower water treatment company based in Portland, Oregon about 26 years ago that gives us a strong Technical Center base for R&D support of our chemical and specialty reagent programs. We are transforming and dramatically increasing our R&D in support of our programs through our Technical Center base, which is now providing application

and manufacturing R&D with sophisticated organic and inorganic analytical capabilities and in-house infrastructure and expertise. On the commercial side, over the last three years, the Great Western Chemical mining group has grown to 18 people in sales, technical, and administrative positions. To ensure we successfully support our technical reagent programs, we are hiring almost exclusively technical persons and, consequently, our mining team presently now is comprised of 9, fully half of the mining head count, who are experienced engineers and chemists involved in sales, management, and technical support where several years ago we had none.

In short, the customer focused strategy we have adopted is to have available a full complement of “screwdrivers and hammers” so that we have the requisite tools to solve customer opportunities or problems as the case may be whether this is a specialty reagent, commodity chemical or logistics issue. We know it is absolutely necessary to increase our R&D and technical capabilities to successfully support this strategy. Despite the present industry downturn, Great Western

Chemical is ramping up our R&D to capture the opportunities the industry conditions are availing us.

Great Western has gone through and plans to continue undergoing a massive metamorphosis, but the reasons for our changes are the same that other suppliers have been forced to contend. In a similar fashion, the Cytec's, Zeneca Specialties and OrePrep's of the world are looking at where their future lies and then implementing strategies to capture them. The importance to the mining industry is to be aware of the supplier base changes and to avail themselves to the new service and expertise being made available.

**[Slide 18]** Because of these severe industry times, many suppliers will be stronger and in a better position to support the industry. In the aggregate, suppliers may have reduced their R&D expenditures over the last several years, but in tuning their business strategies, the R&D that is being conducted is more focused to the suppliers core competencies which should provide short term industry benefits. But

mining companies must maintain their interest in innovation despite their reduced budgets and manpower reductions. Unless mining companies support supplier R&D efforts by a willingness to investigate and test the innovations being developed by suppliers, and being open and responsive to supplier offerings, the vitally needed developments will necessarily dry up. All chemical suppliers need opportunities to develop and supply innovative chemical solutions, reagents, and reagent programs and through these developments, and by being supportive, the long term industry vitality should remain intact.

# **Strategic Shifts in the Mining Chemical Supply Industry**



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# Inflation Adjusted Metal Prices: 1996 vs. 1900

■ Aluminum:	down 83%	(down 87%)
■ Copper:	down 34%	(down 60%)
■ Lead:	down 26%	(down 50%)
■ Silver:	down 18%	(down 21%)
■ Zinc:	down 6%	(down 11%)
■ Nickel:	up 6%	(down 34%)
■ Tin:	up 18%	(down 3%)
■ Gold:	up 75%	(up 22%)

# Market Forces Impacting Prices



- **Continuous cost reductions to capture market share.**
- **State command economies overproduced.**
- **Speculation due to abandonment of gold standard and high inflation rates.**
- **Price spikes experienced during WW1, WW2, and the Cold War.**
- **Institutions regulated markets.**

# **Net Result?**



**Population has increased 3-fold but metal production has increased 35-fold!**

**How? “Economies of scale” and increasing productivity. R&D played a vital role in the tremendous expansion of our industry.**

# Where Are We Now?



- We are now “enjoying” a peace time dividend.
- The “Asian” financial and economic crisis.
- Development of new “high” technologies.

# **What Are the Mines to Do?**



- **Change operational strategies.**
- **Improve cost structures.**
- **Rationalize operations.**
- **Shut down mines.**

# What Are Chemical Suppliers Doing?



- **Reorganizations.**
- **Consolidations.**
- **Rationalizations.**
- **Mergers.**
- **New program introductions.**
- **Product line extensions.**
- **Market expansions.**

# **Great Western Chemical Co.**



- **Traditional strong, classic distributor.**
- **Serves 9 industries.**
- **Focus in western U.S., western Canada, Mexico and expanding into eastern U.S.**
- **Branches in 32 western locations, 35 total.**
- **Logistics and materials management programs.**

# **GWCC Responding to New Economic Conditions**



- **ISO certification of entire organization.**
- **ERP.**
- **Company strategic plans and implementation.**
- **Business strategic plans and implementation.**
- **Support unit strategic plans and implementation.**

# **The Future of Mining Chemical R&D**



- **Suppliers should be stronger and better able to support the industry.**
- **R&D provided will be more focused to core competencies.**
- **Chemical company R&D should provide strong benefits to the mining industry.**
- **IMPORTANT: The mining industry must encourage chemical suppliers to develop new programs and products.**