



LOS ANGELES BASIN GEOLOGICAL SOCIETY

November 2024 Newsletter

Attention Students: A Free Lunch!

History of the Mountain Pass Mine

Alan Levy and Todd Ririe

Thursday, November 21st, 11:30AM

Signal Hill Petroleum, 2633 Cherry Ave., Signal Hill

2nd floor Conference Room

For Out-of-Towners, a Virtual Attendance Option is Available – See Below!

Abstract

The Molybdenum Corporation of America (MCA) was founded in 1919 and has a long history with exotic and high-tech elements. MCA invested in molybdenum and rhenium (Urad and Questa), tungsten (Wah Chang), beryllium (KBI), niobium (CBMM), yttrium (Blind River) and the other rare earths (Mountain Pass).

The Mountain Pass claims originally produced minor gold and the site was rediscovered in 1949 using a Geiger counter during the postwar uranium rush. Review of collected samples revealed that the rock was an igneous carbonate (a carbonatite) and was enriched in bastnaesite (a rare earth fluorocarbonate). Molycorp acquired the claims in 1950. The property was planned to be the world's leading lighter flint mine! Lighter flints are mischmetal, a pyrophoric mixture of rare earth metals. But the real money maker was the use of europium as an activator in an yttrium-based compound for the red phosphors in color TVs.

The Mountain Pass mine in California is one of the only locations extracting rare earth elements in the U.S. and is now owned by MP Materials (NYSE:MP). Bastnaesite concentrate was and continues to be shipped in one-ton bulk bags to a Chinese company (Shenghe). Production of separated rare earths is

now beginning. A facility to convert neodymium/praseodymium oxides to metal and then to alloy and magnets is being constructed in Fort Worth, Texas. As late as the mid-1980's, Mountain Pass led the world in rare earth production and innovation. This leadership was wrested from Molycorp by Chinese national interests using their own rare earth carbonatite orebody (Bayan Obo) and by acquiring western technology. The economics of rare earth production by MP Materials is still impacted by Chinese interests and competition. While MP Materials' success is a matter of national importance, its triumph is not a guaranteed event.

Biographies

Alan Levy has worked for Molycorp as a Senior Geologist, Minerals Economist and Manager of Business Development. He has worked for Molycorp based out of Anchorage, Alaska; Louviers and Englewood, Colorado; Los Angeles, California; and Sri Lanka. At Molycorp his work responsibilities included the rare earths, exotic elements, and a grab bag of gold, industrial minerals, quality control, legal issues, corporate divestment, and project management. He has a master's degree in geology from Queens College, N.Y. He is a member of the Society of Mining Engineers where he is currently the program chair for the southern California Section.

Todd Ririe has a BA degree in geology from Cornell College, and a PhD degree in geology from the University of Iowa and is a registered professional geologist in CA. He worked as a research geologist for Unocal Science & Technology in Brea, CA providing technical support for Molycorp's mining exploration for gold, tungsten, and rare earth elements globally. After the Chevron acquisition of Unocal, he joined the environmental technical support group for BP. He is a member of Geological Society of America, Society of Economic Geologists, National Groundwater Association, and Society of Mining Engineers where he served as chair of the SoCal section.

Luncheon prices, cash or check

Lunch and Talk (pre-registered)	\$25.00
Walk-ins:	\$35.00
Retired:	\$20.00
Student:	FREE!

Reservations are required by noon, November 19th, at labgs.org/meeting_info.html or directly contact LABGS Secretary Joseph Landeros at (626) 497-1710 or landerosjd@gmail.com.

Virtual Attendance this month on Zoom

In the name of increasing our visibility and getting the word out far and wide on our monthly meeting subjects, The LABGS executive committee will trial a Zoom option for the November meeting. By all means we encourage a physical meeting but if you cannot make we have this alternative in place.

To Join the Zoom Meeting:

<https://csulb.zoom.us/j/88336541760>

Meeting ID: 883 3654 1760

News from the Pacific Section Society of Economic Mineralogists and Paleontologists (SEPM)

Our very own Dr. Rick Behl will lead the Pacific Section SEPM annual 2025 field trip along the Santa Barbara coast, examining the stratigraphy, lithology, and sedimentary structures of the upper Miocene Monterey Formation at the beaches of Gaviota, Haskells, and Arroyo Burro. The Monterey was a critical player in the Miocene global carbon cycle and is the key oil-prone source rock and reservoir rock in California. A group campsite has been reserved at Cachuma Lake in addition to hotels being available in Solvang, Buellton, Goleta, and Santa Barbara. Stay tuned for additional details.



**More Scenes from the Pacific Section's 100-Year Anniversary
Celebration at Villalobos Hall, Whittier College and in the Field,
September 14-15, 2024**



BEN DAVIDSON



MARC KAMERLING



STEVEN TESTA



DAN STEWARD



STAN ESCHNER



RICK BEHL



TONY REID



DALTON LOCKMAN

Some of the day's speakers and our thanks to all of these and others who contributed their time and talent to produce some excellent and informative talks. A special thanks to Ben Davidson who secured our access to Fernando and La Habra formation exposures on private property and to Stan Eschner, who produced the beautiful PSAAPG banner from a cardboard storage tube, saying he had found it in his collection at home and "I've probably had it for at least 30 years"! As you can see, we put the banner to good use on the same day.



A Los Angeles Basin stratigraphic warm-up before departing the hotel parking lot for Stop 1, top left, with a close-up and panorama shot of the stop at the Sycamore Canyon sandstone and conglomerate member of the upper Miocene Puente formation along Turnbull Canyon Road, just northeast of Whittier.



Additional views from the first stop on Turnbull Canyon Road's Puente outcrop – excellent exposure and great discussions and questions! Rick Behl and others for scale, lower middle and left. At top right, PSAAPG President Amy Spaziani (L) and Past-President Kristi Whitaker (R), with Allegra Scheirer in the foreground, having an animated discussion on the rheology of fractured shale.



Field trip stops 2, 3, and 4: Top left, the slumped La Vida shale member of the Puente, the centerpiece of Stop 2. Amy Spaziani demonstrates a safe skedaddle across Turnbull Road, top right. A small pumping unit on display at the Olinda Oil Museum, bottom left. Stop 3 within the Brea-Olinda oil field with Dan and Rick providing a regional overview of the eastern Los Angeles Basin.



The Olinda Oil Museum served as Stop 4 and a lunch venue. Tania Gonzales explains her poster, title at top, – a fascinating integration of recent research and the area’s geomorphologic response. Top right, an amazing forelimb of a small thrust plate in the hanging wall of the Whittier Fault Zone, complete with overturned dips on the tips of the forelimb marker beds. A group shot at bottom in front of the still-operating "Olinda" #1 oil well, on the grounds of the Olinda Oil Museum.



The Closing Crew: a steep hike up two oil field roads within the Brea-Olinda field were required for the last two bonus stops on the field trip. Here is the group, strategically placed in front of overturned Pliocene Fernando formation and smiling!

The LABGS again extends our heart-felt thanks to all who participated in this amazing event.

IN MEMORIAM

JACK BARTH, October 8, 1947 – May 8, 2024



A celebration and thanksgiving for the life of Jack Barth was held on May 20, 2024 at 11:00 am at the Hildgenfeld Mortuary Chapel in Anaheim for Jack Barth with interment at the Good Shepherd Cemetery in Huntington Beach immediately thereafter.

LABGS Board Members

President: Dan Steward, (424) 634-6740, daniel@ironhorseenergy.com

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Scholarship Chairperson: Karla Tucker, (714) 658-0474, ktr2@aol.com

Secretary & Webmaster: Joseph Landeros, (626) 497-1710, landerosjd@gmail.com

Historical Anecdotes for November

On November 4, 1937, the Rio Bravo field was discovered west of Bakersfield by Union Oil Co's "Kernco" 1-34, T28S R25E, section 34. The initial production rate was 2,400 barrels of oil per day with an API gravity of 39.6, along with 1,260,000 cubic feet per day of gas. The Rio Bravo structure is a doubly-plunging, faulted anticline with upper Miocene production on the southeast nose and flank. Today the field is used for natural gas and LPG storage with a major rail-based transportation hub on site.

On November 20, 1937, just over 3 months after spudding the well, Ohio Oil Co's "KCL-E" #3 was completed as a discovery on the Canal oil field, just west of Bakersfield, at a depth of 8,175 ft. The initial production of the well, from the upper Miocene Stevens sand, within the Monterey formation, the Stevens being a recently discovered reservoir by Shell Oil from nearby Ten Section in 1936, was 2,267 barrels of oil per day with an API gravity of 36.9, making 1,700,000 cubic feet per day of gas. Shell was undoubtedly disappointed as their first well on the small Canal structure, "Canal A" 21-14, was wet, too far downdip. The Canal field remains active in the subsurface province southwest of Bakersfield known as the Bakersfield Arch.

"It has been said that if a dozen oil men or women are located within a radius of a hundred miles, they will soon form some kind of an organization and at the first opportunity have a barbecue."

- Bob Maynard, editor of the PSAAPG Newsletter, 1952