

# NEWSLETTER

Serving the Petroleum and Geothermal Community

Nevada Petroleum Society; P. O. Box 11526; Reno, NV 89510

Visit our NPS Homepage: <http://www.nbmq.unr.edu/nps/>

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## Dinner Meeting: Thursday, Apr 5, 2012

**Speaker:** Dr. Andrew Hanson  
Associate Professor  
UNLV Dept of Geoscience

**Title:** "Molecular organic geochemistry of Railroad Valley Oils and Source Rocks"

**Place:** Ramada Reno Hotel  
1000 East 6<sup>th</sup> Street, Reno, Nevada

**Agenda:** Cocktail Reception 6:30  
Skyline Bar, 14th Floor

Redeem your dinner ticket for a drink at the Skyline Bar  
Hosted by Barbour Well, Inc.

Dinner Served at 7:00 PM

**Dinner Costs:**  
NPS Members \$ 20; Non-Members \$23; Students \$10

**Menu:**  
Buffet style; including chicken & beef entrees, side dishes and salad.

**\*\*RSVP**

**RSVP Tuesday April 3, 2012**

**Diane Phillips (775) 267-4663 or [trailsend@pyramid.net](mailto:trailsend@pyramid.net)**

► **ABSTRACT – NPS Monthly Dinner Meeting – Apr 5, 2012**

**MOLECULAR ORGANIC GEOCHEMISTRY OF  
RAILROAD VALLEY OILS AND SOURCE ROCKS**

Hanson, Andrew D. and Ahdyar, LaOde; UNLV Dept. of Geoscience; Las Vegas, NV 89154-4010

A comprehensive geochemical study of oils from Railroad Valley, Nevada and two candidate source rock intervals from the nearby Egan Range was conducted in order to establish oil-oil and oil-source rock correlations. Analyses consisted of total organic carbon, Rock-Eval pyrolysis, and vitrinite reflectance for source rock samples, as well as biomarker, diamondoids, and stable carbon isotope analyses on source rock extracts and oil samples.

Total organic carbon analyses showed high organic content in the Mississippian Chainman Shale. However, outcrop samples of the Paleogene Sheep Pass Formation Member B were organically lean. Strata in both of these units are immature to mature, and tend to be oil-gas prone.

Biomarker analysis of oil samples revealed the presence of two different oil groups. Group 1 oils (Trap Spring and Grant Canyon oils) appear to originate from marine shale source rocks that were deposited under normal marine salinity and dysoxic conditions, as shown by high Pr/Ph ratios, low homohopane index, and high diasterane/steranes ratios. In addition, age related biomarker parameters suggest this group was derived from a source rock that is older than the Cretaceous and this group correlates with our Chainman Shale source rock extracts. Group 2 oils (Eagle Spring, Kate Spring, and Ghost Ranch oils) are lacustrine-derived and have low Pr/Ph, high gammacerane, good preservation of homohopane, and low diasterane/sterane ratios. High gammacerane and high C<sub>24</sub> tetracyclic terpane suggest that the oil in this group was derived from a source rock deposited under hypersaline conditions. The abundance of oleanane and dinosterane provide good evidence that oils in this group are derived from source rocks younger than the Cretaceous, which points to the Sheep Pass Formation Member B. This comprehensive geochemical study of oil also suggests that the oils from Kate Spring and Ghost Ranch are different from oils from Eagle Spring but they are still closely related. A difference in source rock facies and source rock depositional conditions in the lacustrine system is hypothesized as a key reason for the differences.

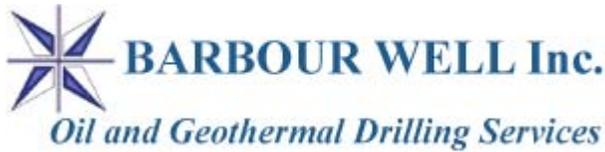
Stable carbon isotope data clearly showed two different groups, which supports the biomarker data. Group 1 oils have low  $\delta^{13}\text{C}_{\text{SAT}}$  and high  $\delta^{13}\text{C}_{\text{AROM}}$ , which is indicative of a marine source rock. On the other hand, Group 2 oils have high  $\delta^{13}\text{C}_{\text{SAT}}$  and lower  $\delta^{13}\text{C}_{\text{AROM}}$ , which suggests lacustrine-derived oil. Additionally, diamondoid analyses showed most of the oil and source rock extracts have low abundances of diamondoids, which suggest that intense oil cracking has not yet occurred.

The results of this research show that two different intervals (the Chainman Shale and the Sheep Pass Formation Member B) serve as effective source rocks in this basin. Specifically, oil fields in the western and southern part of the basin (Trap Spring and Grant Canyon) were charged by the Chainman Shale source rock, whereas the Sheep Pass Formation member B was the main contributor of the reservoir oils in the eastern part of the basin (Eagle Spring, Kate Spring, and Ghost Ranch). This new understanding of effective source rock(s) in this basin improves the hydrocarbon play concept in the Basin and Range Province.

► **About the Speaker:**

Dr. Andrew D. Hanson, Associate Professor, Director of "Thermal Anomalies around Salt" Industry Consortium  
UNLV Dept. of Geoscience, 4505 So. Maryland Parkway, Las Vegas, NV 89154-4010 USA  
Phone: 702-895-1092, FAX: 702-895-4064  
email: [andrew.hanson@unlv.edu](mailto:andrew.hanson@unlv.edu), <http://geoscience.unlv.edu/andrewhanson.htm>

► **Cocktail Reception 6:30 Hosted by Barbour Well:**



*Barbour Well, Inc. would like to extend regards and appreciation for all of the attendees at the March NPS meeting who, like ourselves, are committed to the advancement of oil and geothermal energy production throughout Nevada. Please enjoy a complimentary cocktail on us as you receive a ticket when paying for your event. It is our hope to provide you with excellence in oil and geothermal drilling services.*

*Steve Zarcone Business Development*

**Barbour Well Inc.**, 260 Sunpac Ave. Suite A, Henderson, NV 89011  
Direct: 805-207-6407, Cell: 661-755-7687, [www.barbourwell.com](http://www.barbourwell.com)

► **Proposed Name Change for NPS – Membership Business:**

**NAME-CHANGE BALLOTS IN THE MAIL**

Ballots for voting on the proposed name-change of our professional association from the *Nevada Petroleum Society, Inc.* to the *Nevada Petroleum and Geothermal Society, Inc.* were distributed to all NPS members by email and U.S. Postal Service on March 31<sup>st</sup>. Deadline for receipt of ballots by the NPS is the end of day, April 30<sup>th</sup>. Results of the voting will be announced at the May 3<sup>rd</sup> dinner meeting. If you have not received your ballot, or if you prefer a paper ballot instead of an electronic ballot, please contact Jerry Walker at (775) 348-0650 or [jerry\\_reno@charter.net](mailto:jerry_reno@charter.net).

► **NPS Officer Candidates 2012-2013 (Jun 1 – May 31):**

The election for Officers for the year 2012-2013 will take place at the April dinner meeting “...by a majority vote of the members eligible to vote (that is, Active, Honorary, and Life members) who are present and vote at the regularly scheduled meeting”. At this time, there is a single candidate for each office.

<b>President</b>	<b>John Snow, Chief Operating Officer, Standard Steam</b>
<b>Vice-President/President Elect</b>	<b>William (Bill) Ehni, Geologist, Ehni Enterprises, Inc.</b>
<b>Secretary</b>	<b>Judy Kareck, Engineer, Lumos &amp; Associates</b>
<b>Treasurer</b>	<b>Steve Foster, Geophysicist/Geologist</b>

► **2011 and 2012 NPS Scholarship Awards:**

**Scholarship Awards in 2012:** 5 proposals, \$4,500 total grants

- 1) **Ryan B. Anderson** (M.S. candidate at the University of Nevada, Reno), **\$1,000** – *Structural controls of the Emerson Pass geothermal system, Pyramid Lake Paiute Indian Reservation, western Nevada*
- 2) **Joel Edwards** (M.S. candidate at the University of Nevada, Reno), **\$1,000** – *Structural controls on the Neal Hot Springs geothermal system, Vale, Oregon*
- 3) **Brett Mayhew** (M.S. candidate at the University of Nevada, Reno), **\$1,000** – *Structural investigation of the Astor Pass geothermal system*
- 4) **Jonathan Payne** (M.S. candidate at the University of Nevada, Reno), **\$1,000** – *Active faulting at a geothermal and petroleum prospect in Gabbs Valley, Nevada*
- 5) **Stefano Benato** (Ph.D. candidate at the University of Nevada, Reno), **\$500** – *Utilization of coupled thermal-hydrologic-mechanical-chemical modeling to investigate fracture network permeability evolution and reservoir responses to EGS stimulation experiments and long term thermal drawdown at Ormat Desert Peak and Brady's, Nevada*

**Scholarship Awards in 2011:** 4 proposals, \$4,600 total grants

- 1) **Dev Maharjan** (Ph.D. candidate at the University of Nevada, Las Vegas), **\$1,700** – *Seawater temperature changes across the SPICE event (Steptoean stage) in the Great Basin*
- 2) **Gregory Dering** (M.S. candidate at the University of Nevada, Reno), **\$1,000** – *Structural controls of a geothermal system in northeastern Nevada*
- 3) **Julie Johnson** (M.S. candidate at the University of Nevada, Reno), **\$1,000** – *Oxygen isotopes of refractory minerals in sedimentary rocks*
- 4) **Joel Edwards** (M.S. candidate at the University of Nevada, Reno), **\$350** – *Structural controls of geothermal systems in the Great Basin*

Congratulations to all the student award winners. Thanks to Jim Trexler and Jim Faulds, alternating Scholarship Committee chairs, and to the committee members, including Bill Ehni, Steve Foster, John Snow, Alan Wallace, and Jerry Walker

► **Donations for 2011 and 2012 NPS Scholarship Awards:**

Special thanks to all the members who augmented their membership renewals with a little extra cash for the NPS graduate student research awards. Because of their generosity, the NPS raised an additional \$735 in 2011 and \$610 in 2012 for scholarships to students who are researching topics on the bedrock geology of the Great Basin applicable to energy exploration.

***Gold Level***

Roy Barton  
Chris Henry  
Alan Wallace

***Silver Level***

Diane Phillips  
Kurt Rosen

***Bronze Level***

Tom Anderson  
Lou Bortz  
Vicki Ehni  
Larry Garside  
Andrew Hanson  
Sean Long  
Scott McDaniel  
Marilyn Miller

***Copper Level***

Jason Blake  
Scott Bechard  
Pat Cashman  
Jim Trexler  
Tom Callicrate  
Gaylord Cleveland  
Bill Doerner  
Bill Ehni  
Dave Fitch  
Texas FitzGerald  
Steve Foster  
Alan Glaser

Heggie Wilson  
Jerry Walker  
George Vrame  
Tom Graham  
James Henderson  
Don Hibbard  
Byron Hubanks  
John Louie  
Mike Mitchell  
Barney Poole  
Lowell Price

► **National Geothermal Academy – Jun 18 – Aug 10, 2012:**

*The National Geothermal Academy is an 8-week intensive summer course in all aspects of geothermal energy development and utilization. The course is offered for 6 credits at either the undergraduate or graduate level. Individual weeks are offered as professional development. In summer 2012 Modules 2,3,4 or 5,6,7 are offered as 3 credit sections.*

Schedule for this summer is June 18 to August 10, 2012

Applications for Summer 2012 available [http://www.unr.edu/geothermal/Application\\_2012.pdf](http://www.unr.edu/geothermal/Application_2012.pdf)

Applications are due February 15, by 5pm in the applicants local time zone.

<http://www.unr.edu/geothermal/NGA.htm>

► **Next Scheduled BLM Geothermal Lease Sale – January 29, 2013:**

Nominations accepted for this sale until June 29, 2012.

[http://www.blm.gov/nv/st/en/prog/minerals/leasable\\_minerals/geothermal0/ggeothermal\\_leasing.html](http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html)

► **Next Scheduled Oil & Gas Lease Sale – June 12, 2012:**

The notice and preliminary list of parcels is available for this sale. 59 parcels are listed for a total of approximately 99,000 acres; 47 of the parcels have presale offers.

[http://www.blm.gov/nv/st/en/prog/minerals/leasable\\_minerals/oil\\_gas/oil\\_and\\_gas\\_leasing.html](http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html)

► **Results from March 2012 Oil & Gas Lease Sale:**

The BLM Oil & Gas Lease Sale held in Reno in March was very successful. Of the 42 parcels offered, 42 were sold for total receipts of \$1,788,595.00. The high bid per parcel was \$217,160 for a 2440 acre parcel in T31N R56E, Elko Co by Lonewolf Expl, Billings MT. The high bid per acre was \$91/acre for a parcel in T30N R56E, Elko Co also by Lonewolf Expl. The lowest bid/acre for any parcel offered was \$4/acre, twice the minimum bid of \$2/acre. No parcels were available for the Non-Competitive Over the Counter sale. The State of Nevada receives approximately half of the revenue from the BLM Lease Sales. Prior to the sale, 33 of the parcels originally offered were removed, due to concerns over sage grouse habitat.

► **Sunrise Sustainable Resources Group – Geothermal Panel Discussion**  
**Tuesday April 10, 2012; 6:30 PM – Desert Research Institute (DRI)**

**“Warming up to Geothermal Energy”**

Refreshments served; \$5 donation for non-members

**Panel:**

**Daniel Fleischman – Ormat Technologies Inc.**

**Bill Ehni – Ehni Enterprises, Inc.**

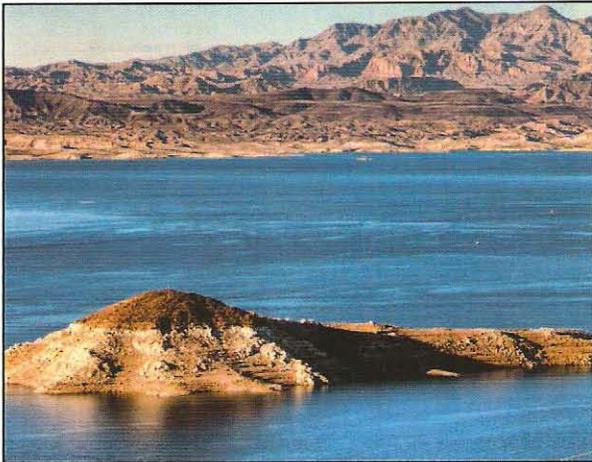
**Matt Miller – GBL Geothermal**

**Dr. Lisa Shevenell – Nevada Bureau of Mines & Geology, UNR**

Email [president@sunrisenevada.org](mailto:president@sunrisenevada.org) with questions

# UNLV

7<sup>th</sup> Annual  
UNLV  
GeoSymposium  
2012



**Symposium:**  
Friday, April 13, 2012  
Auditorium and Lobby  
SEB Building, UNLV Campus

**Field Trip:**  
Saturday, April 14, 2012

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Nevada Petroleum Society  
PO BOX 11526  
Reno, NV 89510

March 1, 2012

Dear Sir or Madam,

You are cordially invited to the 7<sup>th</sup> Annual UNLV GeoSymposium, hosted and organized by students from the UNLV Department of Geoscience. This annual forum provides an opportunity for UNLV Geoscience students to present their research to academic, industry, and government professionals.

The GeoSymposium is a two-day affair, commencing on Friday, April 13, 2012 in the Auditorium of the UNLV Science and Engineering Building. Attendees will hear addresses from the UNLV Vice President of Advancement, Dr. Bill Boldt, Dr. Kevin Peterson from Dartmouth College and Timothy Garfield from ExxonMobil Corporation. Throughout the day oral presentations and poster presentations will be given by graduate and undergraduate Geoscience students. A silent auction of rock and mineral specimens will take place in the afternoon benefiting the Department of Geoscience. On Saturday, April 14, students will host a local hiking tour to discuss the local geology of the Las Vegas area.

Attendance at the GeoSymposium is currently free, relying on the generosity of alumni and friends of the Department of Geoscience. Funds raised will help benefit the department by providing:

- Awards and scholarships to undergraduate and graduate students for outstanding research achievements and presentations.
- Defraying of costs associated with the GeoSymposium, including location rental, meals, refreshments and the student field trip.

It is also our goal to build new relationships with local industries and agencies. The opportunity to interact with business and academic prospects provides our students the chance to develop networking skills and career placement opportunities.

Philanthropic donations can be made online at <http://geoscience.unlv.edu/GeoSymposium/donate.html>. We will warmly acknowledge all donations received before March 31, 2012 in our meeting program. Please see the enclosed information on registration and sponsorship opportunities. Additionally, more information can be found by visiting our web page at <http://geoscience.unlv.edu/GeoSymposium/>

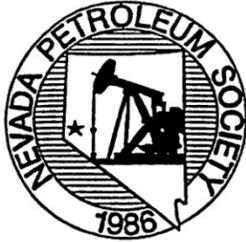
We hope that you will be able to attend the 2012 UNLV GeoSymposium, and we thank you for your continued interest and support.

Sincerely,

A handwritten signature in black ink that reads "Swapan Kr. Sahoo".

Swapan Kr. Sahoo  
*GeoSymposium Coordinator*  
*Department of Geoscience (SEB 3244)*  
Ph: 702-774-1410  
E-mail [sahoos@unlv.nevada.edu](mailto:sahoos@unlv.nevada.edu)

Geoscience Department  
GeoSymposium  
4505 S. Maryland Parkway  
Las Vegas NV 89154-4010



# APPLICATION FOR MEMBERSHIP

Name \_\_\_\_\_

Occupation/Title \_\_\_\_\_

Company/Affiliation \_\_\_\_\_

Work Address \_\_\_\_\_  
Street City State Zip Code

Residence Address \_\_\_\_\_  
Street City State Zip Code

Preferred Mailing Address?  **WORK** -or-  **RESIDENCE**

Work Phone \_\_\_\_\_ Residence Phone \_\_\_\_\_ Fax \_\_\_\_\_

Mobile Phone \_\_\_\_\_ Email \_\_\_\_\_

Member of AAPG?  **YES** -or-  **NO**

Professional References – list two references with phone numbers and addresses

1) Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_  
Street City State Zip Code

2) Name \_\_\_\_\_ Phone \_\_\_\_\_

Address \_\_\_\_\_  
Street City State Zip Code

Education – list colleges and universities attended, degree(s) received, and date of degree(s) (OPTIONAL)

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Membership Type**

- ACTIVE \$20.<sup>00</sup>/year
- ASSOCIATE \$15.<sup>00</sup>/year
- STUDENT \$10.<sup>00</sup>/year
- LIFE \$200.<sup>00</sup> (one-time payment)

Signature \_\_\_\_\_

Date \_\_\_\_\_

Please make check payable to:

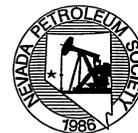
**Nevada Petroleum Society**  
P.O. Box 11526  
Reno, NV 89510-1526

**DO NOT COMPLETE**

For NPS Membership Committee Signatures Only

\_\_\_\_\_  
\_\_\_\_\_

# Nevada Petroleum Society – Publication List 2012



## SPECIAL VOLUMES

- NPS 1** Oil Fields of the Great Basin (1994) R.A. Schalla and E.H. Johnson, editors, 31 papers on regional and field specific geology, 5 plates, soft cover with plastic comb binding, 380 p. \$65.00
- NPS 2** Membership Directory (only available **free on the Web** at <http://www.nbmj.unr.edu/nps/membershipdir.htm>)
- NPS 15** TerraScan's Geologic Map of the Eastern Great Basin, Nevada and Utah (1978, rev. 1987) compiled and edited by E.L. Howard, 3 sheets (includes cross-sections) ~~\$20.00/NPS or \$25.00/non-NPS~~ **order by phone only for discounted price of \$5.00**
- NPS 21** Carboniferous–Permian (Late Paleozoic) Hydrocarbon System, Rocky Mountains–Great Basin Region, U.S., Major Historic Exploration Objective (2001, updated 2003) J. Peterson, RMAG Open-File Report on CD only; 54 p., 45 illustrations, CD **\$15.00**

## FIELD TRIP GUIDEBOOKS

- NPS 3** Oil Fields, Production Facilities and Reservoir Rocks of Northern Nye County, Nevada (1989) compiled by W.J. Ehni and D.M. Evans, 8 abstracts and papers, 30 p. (xerox copy only – unbound) \$8.00
- NPS 4** Oil Fields and Geology of the Pine Valley, Eureka County Area, Nevada (1990) D.M.H. Flanigan, L.J. Garside, and M. Hansen, editors, 15 papers and abstracts, 74 p. (xerox copy only – unbound) **\$15.00**
- NPS 5** Geology of White River Valley, the Grant Range, Eastern Railroad Valley and Western Egan Range, Nevada (1991) D.M.H. Flanigan, M. Hansen, and T.E. Flanigan, editors, 10 papers and abstracts, 74 p. **\$15.00**
- NPS 6** Structural Geology and Petroleum Potential of Southwest Elko County, Nevada (1992) J.H. Trexler, Jr., T.E. Flanigan, D.M.H. Flanigan, M. Hansen, and L.J. Garside, editors, 9 papers, 2 plates, 96 p. **\$25.00**
- NPS 7** Structural and Stratigraphic Relationships of Devonian Reservoir Rocks, East Central Nevada (1993) C.W. Gillespie, editor, 15 papers, 3 plates, 203 p. **\$33.00**
- NPS 8** Dating of Pre-Tertiary Attenuation Structures in Upper Paleozoic and Mesozoic Rocks and the Eocene History in Northeast Nevada and Northwest Utah (1994) C.H. Thorman, C.J. Nutt, and C.J. Potter, editors, 11 papers, 125 p. on CD-ROM only **\$25.00**
- NPS 9** Structural and Stratigraphic Investigations and Petroleum Potential of Nevada, with Special Emphasis South of the Railroad Valley Producing Trend (1994) S.W. Dobbs and W.J. Taylor, editors, two volumes bound as one, 13 papers, 22 plates, 281 p. **\$40.00**
- NPS 10** Mississippian Source Rocks in the Antler Basin of Nevada and Associated Structural and Stratigraphic Traps (1995) M.W. Hansen, J.P. Walker, and J.H. Trexler, Jr., editors, 16 papers and 7 abstracts, 166 p. **\$25.00**
- NPS 11** Cenozoic Structure and Stratigraphy of Central Nevada (1996) W.J. Taylor and H. Langrock, editors, 11 papers, 122 p. **\$25.00**
- NPS 12** The Roberts Mountains Thrust, Elko and Eureka Counties, Nevada (1997) A.J. Perry and E.W. Abbott, editors, 4 papers, 2 abstracts and reference papers/abstracts, 86 p. **\$25.00**
- NPS 13** Hydrocarbon Habitat & Special Geologic Problems of the Great Basin (1998) D.E. French and R.A. Schalla, editors and co-chair **\$25.00**
- NPS 14** Cenozoic Geology of the Northern Colorado River Extensional Corridor, Nevada and Arizona: Economic Implications of Extensional Segmentation Structures (1999) J.E. Faulds, editor, 183 p., 3 color plates **\$35.00**
- NPS 16** Structure & Stratigraphy of the Eureka, Nevada Area (2001) Marilyn S. Miller and Jerome P. Walker, editors, 108 p., 11 color plates, book and CD **\$40.00** (NPS16), book only **\$30.00** (NPS16b), CD only **\$30.00** (NPS16c)
- NPS 17** Detachment and Attenuation in Eastern Nevada and its Application to Petroleum Exploration (2002) W. Ehni and J. Faulds, editors, 163 p., book & CD **\$40.00** (NPS17), book only **\$35.00** (NPS17b), CD only **\$15.00** (NPS17c)
- NPS 18** Oil, Gas, and Geothermal Occurrences in Northwestern Nevada (2003) S. Foster, editor, 102 p. **\$25.00**
- NPS 19** Megabreccias and Impact Breccias of East Central Nevada (2004) C.W. Gillespie and S. Foster, editors **\$35.00**
- NPS 20** Great Basin Paleozoic Carbonate Platform: Facies, Facies Transitions, Depositional Models, Platform Architecture, Sequence Stratigraphy, and Predictive Oil and Gas Reservoir and Mineral Host Models (2006) H.E. Cook and J.J. Corboy, 129 pages **out of print** (report from USGS Open-File Report 2004-1078, **free on Web** at <http://pubs.usgs.gov/of/2004/1078/>)
- NPS 22** Geology, Geothermal Resources and Petroleum Exploration of Neogene Basins in the Reno, Nevada Area (2007, 2nd ed., includes two papers not in 1st ed.) S. Limerick, editor, 7 papers, 3 reprints, and roadlog, 140 p. **\$25.00**
- NPS 23** Sedimentology and Tectonic Setting of the Late Cretaceous to Eocene Sheep Pass Formation in the Southern Egan Range (2008) P. Druschke, trip leader; J. Trexler, Jr., editor **\$25.00**

These publications are only available from the Nevada Bureau of Mines and Geology (NBMG).

**NBMG contact information:** Phone: (775) 682-8766, Fax: (775) 784-6690

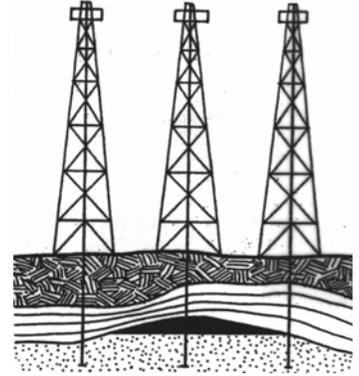
Web: <http://www.nbmj.unr.edu>

Web: <http://www.nbmj.unr.edu/nps/>

# Oil and gas resources from NBMG

The following publications are available from the Nevada Bureau of Mines and Geology. **NBMG publications that are underlined are also available free on the Web at <http://www.nbmq.unr.edu/>.**

**Oil and gas information page on the NBMG website**  
<http://www.nbmq.unr.edu/Oil&Gas/index.html>



## Bulletins

**B104** Oil and gas developments in Nevada: **Garside, Hess, Fleming and Weimer (1988), \$15.00, for updates, see OF01-7, OF04-1, and M162**

## Educational Series

E-6 **Oil and gas in Nevada** (Student book for grades 4-8, 23 pages) \$3.45  
E-24 **Nevada oil: Division of Minerals** (Brochure, 1996) free

## Lists

L-8 **List of oil and gas wells drilled in Nevada since 1907:** Hess, Davis, and Boldi (2001, updated 2003) *superseded by OF04-1, see also OF01-7*  
L-12 **Nevada oil and gas well catalog (NVOILWEL),** *superseded by OF04-1, see also OF01-7*  
Complete list of Nevada oil and gas well exploration data, 1906-present. Listed logs and cuttings are housed at NBMG. Shows, geologic tops and tests are given when available.

## Maps

**M162** **Petroleum data map of Nevada:** Garside and Hess (2007), 1:1,000,000, \$15.00

## Mineral Industry Series

The Nevada Mineral Industry is **published annually**, beginning in 1979. Each volume has a **section on oil and gas** in Nevada. Most of these reports are available *free on the Web* at <http://www.nbmq.unr.edu/>.

## Open-File Reports

OF83-5 **Nevada oil shale:** Garside, 10 pages, \$4.00 (for more oil shale information, see also USGS MF-1546 and MF-2091)  
OF86-13 **Nevada petroleum production statistics, 1954-1986:** Hess, Loomis and Garside, 14 pages, \$5.00  
**OF92-5** **Nevada oil and gas source-rock database:** Hess, compilation of source-rock analyses performed on cuttings samples taken at varying depth intervals from oil and gas exploration wells in Nevada up to 1992, complete print-out, \$20.00  
OF96-6c **Nevada oil and gas wells, 1907-1996:** 1:1,000,000 color digital map of Nevada showing major roads, county boundaries, and locations of oil wells drilled since 1907, original printout, \$20.00, *see also OF01-7, M162*  
**OF01-7** **Nevada oil and gas well database map:** Hess, CD and 4 page text, \$15.00  
Contains the following: L-12; updated OF96-6, partial; L-8; B104 text; digital base layers of Nevada data in Shapefile and Arc/Info export file format designed for use at scale 1:1,000,000 (county, towns, roads, USGS topo boundaries for 1:100,000 and 1:24,000, Township and Range); georeferenced raster graphic of the Nevada state base map, B&W, scale 1:1,000,000; 18 USGS digital raster graphic maps (DRG), 1:250,000-scale, topo maps in tiffw format  
OF00-2 **Hydrocarbon assessment of the Yucca Mountain vicinity, Nye County, Nevada:** French, 78 pages and 4 plates, \$44.40  
**OF04-1** **Nevada oil and gas well database (NVOILWEL):** Hess (2004), \$86.40 for photocopy  
**OF07-7** **Assessment of the potential for carbon dioxide sequestration with enhanced oil recovery in Nevada:** LaPointe, Price, and Hess (2007), 24 pages, \$7.20  
**OF11-2** **Qualitative petroleum potential map of Nevada:** Garside and Hess (2011), plate 1:1,000,000 and text  
**OF11-6** **Oil and gas well information for Nevada – 2011 update:** Hess, Henson, David, Limerick, Siewe, and Niles; portable hard drive, 105 GB, 9643 files, \$115; free on web at <http://www.nbmq.unr.edu/Oil&Gas/NVWellInfo.html>

## Reports

**R51** **Preliminary assessment of the potential for carbon dioxide disposal by sequestration in geological settings in Nevada:** Price and others (2005), CD-ROM or paper copy, 35 pages, \$15.00  
**R52** **Assessment of the potential for carbon dioxide sequestration by reactions with rocks in Nevada:** Sturmer, LaPointe, Price, and Hess (2007) \$22.00 paper

## USGS

Assessment of undiscovered oil and gas resources of the Eastern Great Basin Province, 2005, Fact Sheet  
**FS-2005-3053, free at <http://pubs.usgs.gov/fs/2005/3053/>**  
**Basin and Range Carbonate Aquifer System Study:**  
<http://nevada.usgs.gov/barcass/data.htm>

Ordering information for Nevada Bureau of Mines and Geology

Sales office located at Great Basin Science Sample and Records Library, 2175 Raggio Parkway, Reno, NV 89512

Phone: (775) 682-8766 Fax: (775) 784-6690 Web: <http://www.nbmq.unr.edu>

# Geothermal Resources from NBMG

Geothermal information page on the NBMG website

<http://www.nbmq.unr.edu/Geothermal/index.html>

The following publications on geothermal resources are available from the Nevada Bureau of Mines and Geology. **NBMG items that are underlined are available free on the Internet and can be viewed at <http://www.nbmq.unr.edu/>.**

## Bulletins

- B65 Mineral and water resources of Nevada: Cornwall (1964) pp. 267-269, \$7.00  
B89 Geology and mineral deposits of Pershing County, Nevada: Johnson (1977) pp. 104-106, \$21.00  
B91 Thermal waters of Nevada: Garside and Schilling (1979) \$22.00, *for update see L-5*  
B97 Discovery and geology of the Desert Peak geothermal field—a case history: Benoit, Hiner, and Forest (1982), \$15.00 (*see also OF03-27*)  
B99B Mineral resources of northern Nye County, Nevada: Kleinhampl and Ziony (1984) pp. 37-38, \$19.00

## Educational Series

- E-7 Geothermal resources in Nevada: Student reading/activity book for grades four through eight, 27 pp., \$4.05  
E-15 Nevada geothermal electric power production, brochure (1992) 2 pp., \$0.60  
E-35 Major mines, oil fields, and geothermal plants in Nevada  
E-46 Taking the pulse of the Earth  
E-51 Life's a beach: In search of ancient shorelines and volcanoes in the Grimes Point and Lahontan Mountains area

## Lists

- L-5 Index to geothermal well files housed at NBMG: Davis and Hess (2009) *updates* App. 2 of B91, \$19.50

## Maps

- M126 Nevada geothermal resources: Shevenell, Garside, and Hess (2000), *superseded by M161*  
M141 Nevada geothermal resources (second edition): Shevenell and Garside (2005), 1:750,000, \$16.00 for paper copy, *available folded or rolled, superseded by M161*  
M146 Geologic map of the Fraser Flat quadrangle and the west half of the Moses Rock quadrangle, Washoe Co., NV  
M151 Geothermal potential map of the Great Basin, western United States: Coolbaugh and others (2005), 1:1,000,000, \$30.00, *rolled only*  
M161 Nevada geothermal resources: Penfield, Shevenell, Garside, and Zehner (2010), 1:750,000, \$18.00, *folded or rolled, supersedes M126 and M141*

## Mineral Industry Series

MI-1979 through current year—The Nevada mineral industry is published annually and has a section on geothermal activities, varies with year, MI-1994-current year available free on Internet at <http://www.nbmq.unr.edu/> and click on "Online Documents."

## Newsletters

Nevada Geology Newsletter no. 19, page 3 (Summer 1993) "Low-temperature geothermal resources in Nevada" by Larry Garside, free

## Open-File Reports

- OF83-6 Preliminary map of thermal wells in the Moana geothermal area, Reno, Nevada: Garside, \$8.00  
OF87-2 Mineral resource inventory – U.S. Navy master land withdrawal area, Churchill County, Nevada: Quade and Tingley, \$92.00  
OF94-2 Nevada low-temperature geothermal resource assessment: 1994: Garside, with a bibliography by Davis and Garside, \$40.00 for text and plate, or \$20.00 for text on disk, or \$7.00 for plate only  
OF96-2-9 Reconnaissance photogeologic map of young (Quaternary and late Tertiary) faults in Nevada: (Plate 9) 1:1,000,000, map and text, \$15.00  
OF03-27 Preliminary geologic map of the Desert Peak-Brady geothermal fields, Churchill County, Nevada: Faulds and Garside (2003), \$15.00 (*see also B97*)  
OF06-5 Mineral- and energy resource potential for White Pine County, Nevada  
OF06-6 Mineral- and energy resource potential for Pershing County, Nevada  
OF06-7 Mineral- and energy resource potential for Lyon County, Nevada  
OF06-12 Potential resources associated with proposed roadless areas in Nevada  
OF09-10 Preliminary geothermal potential and exploration activity in Nevada: Zehner, Coolbaugh, and Shevenell, 1:1,000,000-scale plate and text, \$20.00 (*supersedes OF09-1*)  
OF10-6 Preliminary geologic map of the Lee-Allen geothermal area, Churchill County, Nevada  
OF11-3 Preliminary geologic map of the Reese River geothermal area, Lander County, Nevada  
OF11-10 Descriptive logs, skeletonized samples, and photographs of core from Presco Energy's thermal gradient wells P3-1, P 10-1, and P 32-2 in the Rye Patch area, Pershing County, Nevada: Davis (2011, Web version only)

## Reports

- R21 Geothermal exploration and development in Nevada through 1973  
R25 Evaluation of geothermal activity in the Truckee Meadows, Washoe County, Nevada: Bateman and Scheibach (1975), \$4.00  
R33 Papers on mineral deposits of western North America: (1979), presented at the Fifth Quadrennial Symposium of IAGOD, \$10.00  
R41 Precious-metal mineralization in hot springs systems, NV-CA: Tingley and Bonham (1986), \$15.00  
R43 Mineral resources of the Kumiva Peak 30' by 60' Quadrangle: Tingley (1989) pp. 16-17, \$5.00  
R44 Mineral resources of the Pahranagat Range 30' by 60' Quadrangle: Tingley (1989) pp. 8-9, \$5.00  
R45 Mineral resources of the Overton 30' by 60' Quadrangle: Tingley (1989) pp. 12-13, \$5.00  
R46 Mineral resources of the Timpahute Range 30' by 60' Quadrangle: Tingley (1991) pp. 30-31, \$5.00  
R51 Preliminary assessment of the potential for carbon dioxide disposal by sequestration in geological settings in Nevada

## Special Publications

Nevada Petroleum Society; Apr 2012

SP4 Geology of Nevada: a discussion to accompany the Geol. map of Nevada (see below): Stewart (1980), \$25.00

00001 Geologic map of Nevada: Stewart and Carlson, U.S.G.S. (1978) 1:500,000, *available rolled only*, \$20.00 available free on the Internet at <http://keck.library.unr.edu/> and click on "Great Basin geoscience dataset" or at <http://www.nbmng.unr.edu/dox/dox.htm>, see SP4 for descriptive text

#### Urban Map Series

3Ah Energy and mineral resources map of the Las Vegas SE Quadrangle: Papke and Bell (1973) *available rolled or folded*, \$2.00

4Ah Energy and mineral resources map of the Reno Quadrangle: Bingler, Bonham, and Luza (1973) *available rolled or folded*, \$2.00

5Ah Energy and mineral resources map of the Washoe City Quadrangle: Papke and Jones (1978) *available rolled or folded*, \$2.00

#### Nevada Petroleum Society

NPS5 Geology of White River Valley, the Grant Range, Eastern Railroad Valley and Western Egan Range, Nevada

NPS18 Oil, gas and geothermal occurrences in northwestern Nevada

NPS22 Geology, Geothermal Resources and Petroleum Exploration of Neogene Basins in the Reno, Nevada Area

#### USGS Publications

C1249 Geothermal energy – clean power from the earth's heat: Duffield and Sass, *free on the Internet at* <http://geopubs.wr.usgs.gov/circular/c1249/>

I-1701 Bouguer gravity anomalies, depth to bedrock, and shallow temperature in the Humboldt House geothermal area, Pershing County, Nevada: Schaefer (1986), \$9.00

OF74-271 Geothermal systems of northern Nevada: Hose and Taylor (1974), 30 pages, call for prices

OF74-1066 The chemical composition and estimated minimum thermal reservoir temperatures of the principal hot springs of northern and central Nevada, call for prices

OF81-918 Geothermal resources of the western arm of the Black Rock Desert, northwestern Nevada, part I, geology and geophysics: Schaefer, Welch, and Maurer (1983), 41 pages and 4 plates, call for prices

OF02-374 A helicopter-borne magnetic survey over Dixie Valley geothermal field, Nevada: A web site for distribution: Pearson, deRidder and Johnson (2002), *available free on the Internet at* <http://pubs.usgs.gov/of/2002/ofr-02-0374/>, call for prices

OF02-384 High-resolution aeromagnetic survey to image shallow faults, Dixie Valley geothermal field, Nevada: Grauch (2002), <http://pubs.usgs.gov/of/2002/ofr-02-0384/>, call for prices

#### Other Resources

Great Basin Center for Geothermal Energy is at <http://www.unr.edu/geothermal/>.

For more information, please contact:

Nevada Bureau of Mines and Geology  
Great Basin Science Sample and Records Library  
2175 Raggio Parkway  
Reno, NV 89512

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E-mail: [nbmg@unr.edu](mailto:nbmg@unr.edu)  
[www.nbmng.unr.edu](http://www.nbmng.unr.edu)

<b>Nevada Petroleum Society Calendar: Year 2012-2013</b>	
Apr 5, 2012	<p><b>NPS Monthly Dinner Meeting</b> – Thursday Apr 5, 6:30 PM                      Ramada Reno Hotel, 1000 E 6<sup>th</sup> St, Reno, NV  <b>Speaker: Dr. Andrew Hanson</b>                      Associate Professor, UNLV Dept of Geoscience, Las Vegas, NV  <b>Topic: Molecular organic geochemistry of Railroad Valley Oils and Source Rocks</b>  <a href="mailto:andrew.hanson@unlv.edu">andrew.hanson@unlv.edu</a> <a href="http://geoscience.unlv.edu/andrewhanson.htm">http://geoscience.unlv.edu/andrewhanson.htm</a></p>
Apr 9, 2012	<p>Northern Nevada SME Meeting, Monday, Apr 9, 2012 - 6PM  <b>Please visit our page <a href="http://www.smennv.org">www.smennv.org</a> for more details</b>                      Social Hour 6 PM, Dinner 6:45 PM and Technical Session, at 7:30 PM                      Circus - Circus Hotel and Resort, Mandalay Room in Convention Center                      Members \$22/person and Non-Members \$25/person payable at the door                      Mackay students enjoy free admission and dinner.  <b>RSVP Required by noon, THURSDAY, Apr 5, 2012</b>                      Kaitlin C. Sweet 775.225.6147, email: <a href="mailto:kcsweet@enviroincus.com">kcsweet@enviroincus.com</a></p>
Apr 10, 2012	<p>Sunrise Sustainable Resources Group – Geothermal Panel Discussion -                      Tuesday April 10, 2012; 6:30 PM                      Desert Research Institute (DRI) - “Warming up to Geothermal Energy”                      Refreshments served; \$5 donation for non-members                      Email <a href="mailto:president@sunrisenevada.org">president@sunrisenevada.org</a> with questions</p>
Apr 20, 2012	<p>GSN Monthly Dinner Meeting – Friday Apr 20, 6:00 PM                      Elks Lodge, 597 Kumle Lane, Reno, NV                      Drinks at 6:00 PM, dinner at 7:00 PM, and talk at 8:00 PM.                      Contact Laura Ruud at (775) 323-3500 or e-mail <a href="mailto:gsn@gsnv.org">gsn@gsnv.org</a> for reservations.</p>
Apr 22-25, 2012	<p><b>AAPG Annual Meeting, Long Beach CA</b>  <a href="http://www.aapg.org/longbeach2012">http://www.aapg.org/longbeach2012</a></p>
May 3, 2012	<p><b>NPS Monthly Dinner Meeting</b> – Thursday May 3, 6:30 PM                      Ramada Reno Hotel, 1000 E 6<sup>th</sup> St, Reno, NV  <b>Speakers:</b>  <b>Greg Dering</b> “Structural Controls of the Tuscarora Geothermal Field, Elko County, Nevada”  <b>Bill Ehni</b> “Tufa Deposition at Pyramid Lake Nevada”</p>
Jun 12, 2012	<p><b>Nevada BLM Oil &amp; Gas Lease Sale, Reno NV</b>  <a href="http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html">http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/oil_gas/oil_and_gas_leasing.html</a></p>

Sep 9-12, 2012	<b>Rocky Mountain Section – AAPG 2012</b> <b>Grand Junction, Colorado - Sep 9-12, 2012</b> Hosted by Grand Junction Geological Society Vintage Geology – Perfectly Aged, Grand Junction 2012 <a href="http://www.rmsaapg2012.com/welcome.html">http://www.rmsaapg2012.com/welcome.html</a>
Sep 30 – Oct 3, 2012	<b>GRC's 36th Annual Meeting – Sep 30 – Oct 3, 2012</b> Geothermal: Reliable, Renewable, Global. Peppermill Resort Spa – Reno, NV <a href="http://www.geothermal.org/Press%20Releases/Dec_6_2011.html">http://www.geothermal.org/Press%20Releases/Dec_6_2011.html</a>
Jan 29, 2013	<b>Nevada BLM Geothermal Lease Sale, Reno NV</b> <a href="http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html">http://www.blm.gov/nv/st/en/prog/minerals/leasable_minerals/geothermal0/ggeothermal_leasing.html</a>

The NPS Newsletter is provided to members of the Nevada Petroleum Society.  
For information about membership and events, see the NPS website at <http://www.nbmj.unr.edu/nps/>  
To submit articles, corrections or suggestions for the newsletter; Contact Vicki Ehni 775-883-1107, cell 775-720-6387; email [vehni@aol.com](mailto:vehni@aol.com) .

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