

EMD's Uranium (Nuclear Minerals) Committee Report

Michael D. Campbell, P.G., P.H., Chairman

As of: October 30, 2009

Committee Activities

Since our last report, the Uranium Committee continued to monitor the expansion of the nuclear power industry and associated uranium exploration and development in the U.S. A. and overseas. This information supports our updates to the public and members-only page of the EMD website.

With the encouragement of Bill Ambrose, who is also serving as Co-Chairman of AAPG's Astrogeology Committee, the Uranium Committee is converting its 2009 reports:

The Role of Nuclear Power in Space Exploration and the Associated Environmental Issues: An Overview and

Developing Industrial Minerals, Nuclear Minerals and Commodities of Interest via Off-World Exploration and Mining,

into a chapter of the Astrogeology Committee's AAPG Memoir with the working title:

The History and Path Forward of the Human Species into the Future:

Nuclear Power and Associated Environmental Issues in the Transition of Exploration and Mining on Earth to the Development of Off-World Natural Resources in the 21st Century

The Memoir should be ready in 2010.

The Uranium Committee Chairman continues to make progress with the draft of the AGI *Nuclear Energy and the Environment* booklet, and should be ready for review by the end of the year.

The Committee has established regular teleconferences to bring the Uranium Committee members and the associate consultants together to discuss the matters at hand. The first teleconference was held on September 11th and was well attended. For agenda, see ([Here](#)).

The Chair appointed the Committee's Vice-Chairs for Government and University and is evaluating candidates for the Vice-Chair for Industry. The new Web Portal was introduced to the Committee.

The Committee continues to monitor the exploration activities of the uranium in the world as well. Africa and South America have emerged as targets with numerous exploration projects offering considerable merit in terms of size, grade, and mineability. The Committee will initiate

a new evaluation on uranium reserves after the above tasks have been completed, beginning with a review of the high-grade Canadian and Australia deposits.

Table 1

Annual Canadian Uranium Production (tonnes U₃O₈)^a

| | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 |
|------------------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| McArthur River: | | | 4409 | 7830 | 8490 | 6877 | 8491 | 8491 | 8492 | 8492 | 7528 |
| Key Lake: | 6325 | 4400 | 474 | 353 | * | * | - | - | - | - | |
| McClellan Lake: | | 660 | 2722 | 2994 | 2762 | 2734 | 2724 | 2490 | 814 | 867 | 1476 |
| Rabbit Lake: | 5309 | 3175 | 3290 | 2070 | 519 | 2690 | 2462 | 2732 | 2326 | 1821 | 1613 |
| Cluff Lake: | 1225 | 1455 | 1702 | 1496 | 1918 | 32 | - | - | - | - | |
| Canada Total: | 12886 | 9690 | 12597 | 14743 | 13689 | 12333 | 13676 | 13713 | 11632 | 11180 | 10617 |
| World Total: | 40008 | 36643 | 40962 | 42886 | 42529 | 41998 | 47430 | 49052 | 46499 | 48680 | TBA |

Equivalent Million Pounds (U₃O₈): 97.4

Canadian Uranium Exports (tonnes uranium)^b

| | 2005 | 2006 | 2007 | 2008 |
|-----------------------------|-------|------|------|------|
| Canadian Production: | 11628 | 9863 | 9477 | 9000 |
| Less: Domestic Use: | 1607 | 1620 | 1661 | 1670 |
| Canadian Export: | 10021 | 8243 | 7816 | 7330 |

U.S. Uranium Industry Activities

U.S. production from in-situ operations of uranium concentrate in the 2nd Quarter of 2009 was 982,760 pounds U₃O₈, up 12 percent from the previous quarter, but down 8 percent from the 2nd Quarter of 2008. During the second quarter 2009, U.S. uranium concentrate was produced at five U.S. uranium concentrate processing facilities, one less than during the first quarter 2009.

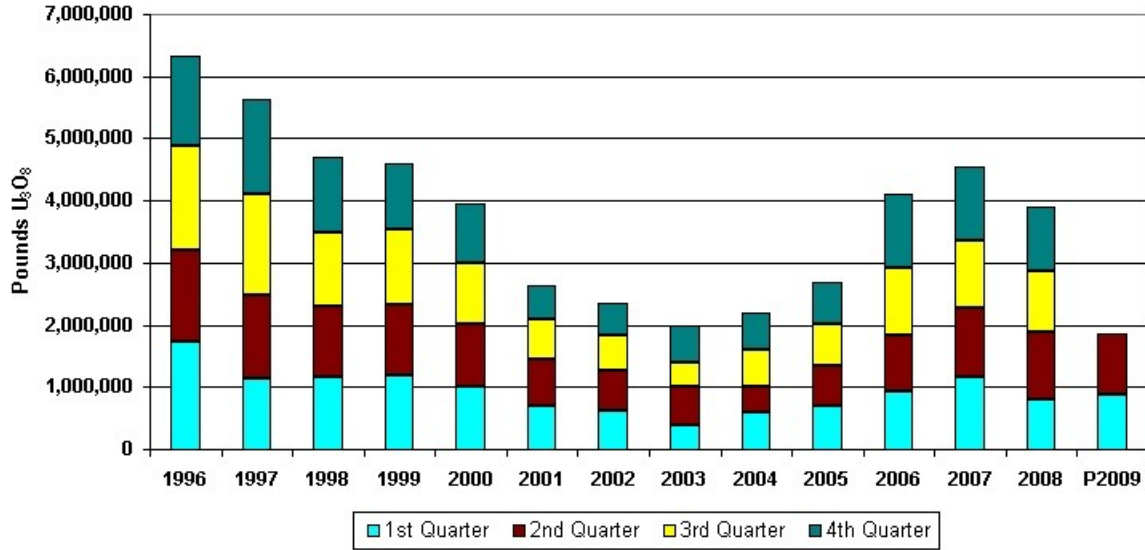
U.S. Uranium Mill in Production: White Mesa Mill

U.S. Uranium In-Situ-Leach Plants in Production:

1. Alta Mesa Project (South Texas)
2. Crow Butte Operation (South Dakota)
3. Kingsville Dome (South Texas)
4. Smith Ranch-Highland Operation (Wyoming)

For the first half of 2009, U.S. uranium concentrate production totaled 1,862,796 pounds U₃O₈. This amount is 1 percent lower than the 1,883,504 pounds produced during the first half of 2008, see Figure 1).

Figure 1. Uranium Concentrate Production in the United States, 1996 - 2nd Quarter 2009



P = Preliminary data.
 Source: Energy Information Administration: Form EIA-851A and Form EIA-851Q, "Domestic Uranium Production Report."

Five new in-situ projects are under development in the U.S. The price of yellowcake plays a pivotal role in the production of yellowcake. The spot price of yellowcake has begun to rise and its continued rise will likely stimulate further production (see Figure 2). This shows the current price listed by TradeTech and UxC and the leading prices of the S&P 500, oil, and gold.

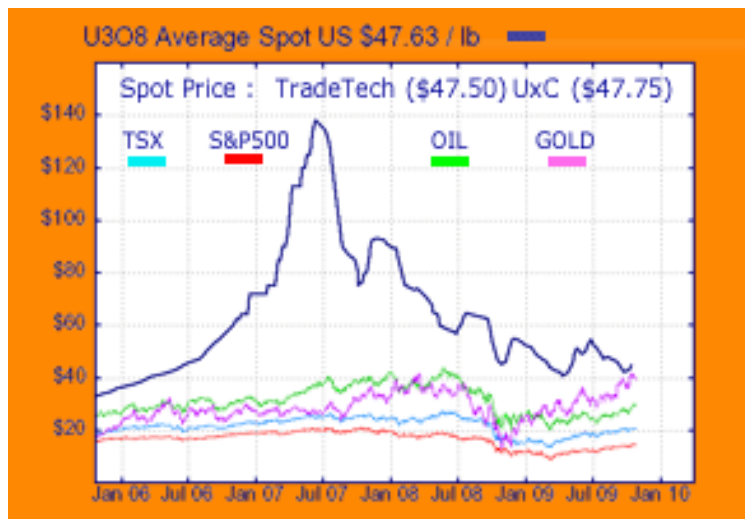


Figure 2 - Recent Price History of Yellowcake

The present total production capacity in the U.S. is approximately 22 million pounds/year, which represents about 22% of total world production in 2007. The status of the in-situ recovery plants in the U.S. is summarized in Table 2:

Table 2: U.S. Uranium In-Situ Recovery Plants by Owner, Capacity, and Operating Status

| In-Situ-Leach Plant Owner | In-Situ-Leach Plant Name | Production Capacity (pounds U ₃ O ₈ per year) | Operating Status at End of | | |
|--|--------------------------------|---|----------------------------------|----------------------------------|----------------------------------|
| | | | 2008 | 1st Quarter 2009 | 2nd Quarter 2009 |
| COGEMA Mining, Inc. | Christensen Ranch | 650,000 | Standby | Standby | Standby |
| COGEMA Mining, Inc. | Irigaray Ranch | - | Standby | Standby | Standby |
| COGEMA Mining, Inc. | Texas Operations | - | Reclamation | Reclamation | Reclamation |
| Cameco Corporation | Crow Butte Operation | 1,000,000 | Operating | Operating | Operating |
| HRI, Inc. | Church Rock | 1,000,000 | Partially Permitted And Licensed | Partially Permitted And Licensed | Partially Permitted And Licensed |
| HRI, Inc. | Crownpoint | 1,000,000 | Partially Permitted And Licensed | Partially Permitted And Licensed | Partially Permitted And Licensed |
| Lost Creek ISR LLC | Lost Creek Project | 2,000,000 | Developing | Developing | Developing |
| Mestena Uranium LLC | Alta Mesa Project | 1,000,000 | Producing | Producing | Producing |
| Power Resources, Inc. dba Cameco Resources | Smith Ranch-Highland Operation | 5,500,000 | Operating | Operating | Operating |
| Powertech Uranium Corp. | Centennial Project | - | Undeveloped | Undeveloped | Undeveloped |
| Powertech Uranium Corp. | Dewey Burdock Project | - | Undeveloped | Undeveloped | Undeveloped |
| South Texas Mining Venture, LLP | Hobson ISR Plant | 1,000,000 | Permitted And Licensed | Permitted And Licensed | Permitted And Licensed |
| South Texas Mining Venture, LLP | La Palangana | 500,000 | Partially Permitted And Licensed | Partially Permitted And Licensed | Partially Permitted And Licensed |
| URI, Inc. | Kingsville Dome | 1,000,000 | Producing | Producing | Producing |
| URI, Inc. | Rosita | 1,000,000 | Standby | Standby | Standby |
| URI, Inc. | Vasquez | 800,000 | Restoration | Shutdown | Shutdown |
| Uranerz Energy Corporation | Nichols Ranch ISR Project | - | Developing | Developing | Developing |
| Uranium Energy Corporation | Goliad ISR Uranium Project | 1,000,000 | Partially Permitted And Licensed | Partially Permitted And Licensed | Partially Permitted And Licensed |
| Uranium Energy Corporation | Nichols Project | - | Developing | Developing | Developing |
| Uranium One, Inc. | Jab and Antelope | 2,000,000 | Developing | Developing | Developing |
| Uranium One, Inc. | Moore Ranch | 2,000,000 | Developing | Developing | Developing |
| Total Production Capacity: | | 21,450,000 | | | |

- = No data reported.

Note: An operating status of "Operating" usually indicates the in-situ-leach plant was producing uranium concentrate at the end of the period.

Source: Energy Information Administration: Form EIA-851A and Form EIA-851Q, "Domestic Uranium Production Report."