

DENISON MINES CORP.

Form 6-K

April 25, 2007

**FORM 6-K**  
**UNITED STATES SECURITIES AND EXCHANGE COMMISSION**  
**Washington, D.C. 20549**  
**Report of Foreign Private Issuer**  
**Pursuant to Rule 13a-16 or 15d-16**  
**of the Securities Exchange Act of 1934**

**Date: April 23, 2007**

**Commission File Number: 001-33414**

Denison Mines Corp.

(Translation of registrant's name into English)

Atrium on Bay, 595 Bay Street, Suite 402, Toronto, Ontario M5G 2C2

(Address of principal executive offices)

Indicate by check mark whether the registrant files or will file annual reports under cover Form 20-F or Form 40-F.

Form 20-F  Form 40-F

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(1):

**Note:** Regulation S-T Rule 101(b)(1) only permits the submission in paper of a Form 6-K if submitted solely to provide an attached annual report to security holders.

Indicate by check mark if the registrant is submitting the Form 6-K in paper as permitted by Regulation S-T Rule 101(b)(7):

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Indicate by check mark whether by furnishing the information contained in this Form, the registrant is also thereby furnishing the information to the Commission pursuant to Rule 12g3-2(b) under the Securities Exchange Act of 1934.

Yes  No

If Yes is marked, indicate below the file number assigned to the registrant in connection with Rule 12g3-2(b): 82- \_\_\_\_\_

**Signatures**

Pursuant to the requirements of the Securities Exchange Act of 1934, the registrant has duly caused this report to be signed on its behalf by the undersigned, thereunto duly authorized.

**Denison Mines Corp.**

*/s/ Sheila Colman*

Sheila Colman

Canadian Counsel and Corporate Secretary

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Date: April 23, 2007

EXHIBIT INDEX

Exhibit Number	Description
1	Technical Report on the Arizona Strip Uranium Project, Arizona USA dated February 26, 2007
2	Consent to filing of Technical Report
3	Consent to filing of Technical Report

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**Exhibit No. 1**

**TECHNICAL REPORT ON THE  
ARIZONA STRIP URANIUM PROJECT,  
ARIZONA, U.S.A.  
PREPARED FOR  
DENISON MINES CORP.**

**Report for NI 43-101**

**Author:**

**Thomas C. Pool, P.E.**

**David A. Ross, P. Geo.**

**February 26, 2007**

**SCOTT WILSON ROSCOE POSTLE ASSOCIATES INC.**

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**SCOTT WILSON RPA**  
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**1 SUMMARY**

**EXECUTIVE SUMMARY**

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) has been requested by Denison Mines Corp. (Denison) to prepare an independent Technical Report on the Arizona Strip Uranium Project located in northern Arizona, the USA. The purpose of this Technical Report is to document a mineral resource estimate compliant with the CIM Definition Standards for Mineral Resources and Mineral Reserves for three of the breccia pipe uranium deposits owned by Denison in the Project area. The report has been prepared to meet the requirements of National Instrument 43-101 and Form 43-101F1.

Denison controls four significant breccia pipe uranium deposits in the Arizona Strip district of northern Arizona: Arizona 1, Canyon, Pinenut, and Kanab North. Arizona 1 has been partially developed for underground mining; all surface facilities for shaft sinking are in place at Canyon; and Pinenut is a fully developed underground mine currently on standby. Kanab North, mined previously, is reported to have only minor quantities of mineralized material remaining in place and is not included in the Scott Wilson RPA mineral resource estimate.

Denison's predecessor, Energy Fuels Nuclear (Energy Fuels), explored, discovered, developed, and mined in the Arizona Strip district from 1980 through 1994. Energy Fuels produced over 19 million pounds  $U_3O_8$  from the district.

Breccia pipe mines of the Arizona Strip typically contain relatively high grade, vertically-oriented uranium mineralization over intervals of hundreds of feet at depths ranging from 500 ft. to over 2,000 ft. Most identified pipes, however, are barren of potentially economic mineralization and many must be explored by deep drilling in order to discover a potential mine.

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Exploration for breccia pipe uranium deposits is difficult. Small diameters (~300 ft.), significant depths (>1,500 ft.), and erratic mineralization are complicating factors. Surface rotary drilling can economically provide only an approximation of what may exist at depth. Gamma logging supplemented by core drilling provides the basic data from which mineral resources may be estimated. Additional drilling from underground stations is necessary to fully define the mineralization. This process requires that a shaft be sunk at substantial cost in order to provide access for drilling.

All permits are in place for Arizona 1 to commence production. Pinenut permits need to be converted to a currently-accepted version. Canyon requires additional permitting, which may be difficult due to the presence of nuclear opposition in the vicinity. Nevertheless, environmental impacts from mine development and operation are minimal.

Denison owns and operates the White Mesa uranium mill at Blanding, Utah, to which mineralized material from the various pipe mines would be hauled by truck and at which the material would be processed by acid leaching to recover the contained uranium. There are no major technical difficulties in the operational process.

Mineral resources for Arizona 1, Pinenut, and Canyon have been estimated using historical  $eU_3O_8$  data provided by Denison, long-term metal price, and estimated operating costs.

**CONCLUSIONS**

Denison's breccia pipe uranium deposits constitute significant mineral resources which are well defined within the standards of the US uranium industry. The pipes are partially to fully developed, partially to fully permitted, have a substantial operating history of nearby similar deposits to draw upon for operational guidance, have full access to an operating uranium mill with a substantial operating history on similar mineralized material, and exhibit a sound economic potential in the current uranium market.

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Mineral resources for the Arizona 1, Canyon, and Pinenut breccia pipes as estimated by Scott Wilson RPA in January 2007 are listed in Table 1-1. These have been estimated using historical data provided by Denison and a cut-off grade of 0.2% eU<sub>3</sub>O<sub>8</sub>.

**TABLE 1-1 INFERRED MINERAL RESOURCES FEBRUARY 2007****Denison Mines Corp. Arizona Strip Project**

	<b>Tons</b>	<b>eU<sub>3</sub>O<sub>8</sub> (%)</b>	<b>eU<sub>3</sub>O<sub>8</sub> (lbs)</b>
<b>ARIZONA 1</b>	70,300	0.68	956,000
<b>CANYON</b>	70,500	1.08	1,523,000
<b>PINENUT</b>	99,200	0.44	873,000

## Notes:

1. CIM Definitions were followed for mineral resources.
2. Interval grades were converted from the gamma log data and are therefore equivalent U<sub>3</sub>O<sub>8</sub> (eU<sub>3</sub>O<sub>8</sub>).
3. Grade-shell wireframes at 0.2% eU<sub>3</sub>O<sub>8</sub> were used to constrain the grade interpolation. All material within the wireframes is included in the estimate.
4. eU<sub>3</sub>O<sub>8</sub> values were interpolated by kriging.
- 5.

Wireframes  
were  
constructed with  
a minimum drill  
hole sample  
length of 6 ft.

6. High eU<sub>3</sub>O<sub>8</sub> grades were cut to 6% at Arizona 1, 10% at Canyon, and 8% at Pinenut.
7. Blocks are 5 ft. by 5 ft. by 5 ft.
8. Gemcom Software International Inc. Resource Evaluation Edition Version GEMS 6.02 was used.

Scott Wilson RPA is of the opinion that the properties are of merit and warrant the proposed programs and budgets.

#### **RECOMMENDATIONS**

Scott Wilson RPA recommends that Denison:

1. Consolidate and catalogue the Arizona Strip database in a location and facility where it can be used as a basis for an updated mine planning and production studies.
2. Verify and validate the Arizona Strip database, including resurveying surface drill collar locations and down-hole orientation, and verifying the gamma-log to eU<sub>3</sub>O<sub>8</sub> calibrations by chemical assaying.
3. Compile updated production studies on each relevant pipe.



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4. Hire trained personnel to carry through the verification and planning process and to form a cadre for mine development and operation.
5. Move forward with permitting activities as necessary to meet the requirements of regulatory authorities.
6. Initiate the rehabilitation process for existing facilities.

**BUDGET**

Scott Wilson RPA recommends the following program to assess the work required, costs and economics of placing the three Arizona Strip projects into production. The total budget, which includes starting the site rehabilitation and the permitting process, is \$925,000.

**TABLE 1-2 RECOMMENDED PROGRAM AND BUDGET**  
**Denison Mines Corp. Arizona Strip Project**

Item	US\$
<b>Stage 1</b>	
Database Update	100,000
Production Studies Update	150,000
Total Site Rehabilitation Costs	150,000
Personnel Costs (Mining Engineer, Geologist, CAD Technician)	325,000
Permitting Costs	100,000
<b>Subtotal</b>	<b>825,000</b>
Contingency	100,000
<b>Total</b>	<b>925,000</b>

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**2 INTRODUCTION AND TERMS OF REFERENCE**

Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) has been requested by Denison Mines Corp. (Denison) to prepare an independent Technical Report on the Arizona Strip Uranium Project located in northern Arizona, the USA. The purpose of this Technical Report is to document a mineral resource estimate compliant with the CIM Definition Standards for Mineral Resources and Mineral Reserves for three of the breccia pipe uranium properties owned by Denison within the Project area. The report has been prepared to meet the requirements of National Instrument 43-101 and Form 43-101F1. Scott Wilson RPA visited the Project from October 11 to 13, 2005.

Denison is a Canadian company engaged in uranium exploration and production with several projects in the Athabasca Basin region of northern Saskatchewan, including a 22.5% interest in the McClean mill, and in the southwest U.S.A, including the White Mesa Mill. Denison also has many exploration projects in Canada and Mongolia. Denison, formerly International Uranium Corporation (IUC), which changed its name to Denison Mines Corp. as a result of the merger with Denison Mines Inc. on December 1, 2006, controls four breccia uranium properties within the Arizona Strip district of northern Arizona. IUC entered the uranium industry in May 1997 by acquiring the uranium assets of Energy Fuels Ltd., Energy Fuels Exploration Company, and Energy Fuels Nuclear, Inc. (together Energy Fuels).

Author Thomas C. Pool, P.E., Scott Wilson RPA Associate Mining Engineer, visited the property as part of a field trip during the period October 11 to 13, 2005. There has been no additional work on the property since that time. No independent samples were taken, because the existing mine workings were not then accessible and sufficient drilling exists to verify the presence of uranium mineralization. Relevant reports and data were provided to Scott Wilson RPA and were reviewed and discussed with Denison staff at

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each of the project sites. Various maps and technical reports provided by Denison, in addition to the public documents that were reviewed, are listed in Section 21 References.

Author David A. Ross, P.Geo., Scott Wilson RPA Senior Geologist, carried out the mineral resource estimate for the Arizona 1, Canyon, and Pinenut breccia pipe deposits in conjunction with Mr. Pool and Denison staff.

Currencies are United States Dollars (US\$) unless otherwise stated. Measurements are generally in imperial units unless otherwise stated. A list of abbreviations is shown in Table 2-1. Grades of uranium are expressed in pounds of uranium oxide ( $eU_3O_8$ ) or percent %  $eU_3O_8$ .

Scott Wilson notes that all gamma log grades listed and discussed herein utilize an  $eU_3O_8$  characterization. The  $e$  preceding  $U_3O_8$  indicates that the respective grades are equivalent  $U_3O_8$  grades based on an assumed direct correlation between gamma-ray intensity, as measured by the gamma logging tools, and uranium content. Such is not always the case and the correlation must always be checked by chemical and radiometric assays of core samples or by direct neutron activation. Energy Fuels performed extensive checks on core, and the available results seem to confirm the general correlation, but detailed test results are not available for review. In layman's terms, the  $e$  prefix indicates that somewhat less reliance can be placed on the reported grades than if sufficient data were available to provide greater assurance on the correlation.

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**TABLE 2-1 LIST OF ABBREVIATIONS**

m	micron
°C	degree Celsius
°F	degree Fahrenheit
mg	microgram
A	ampere
a	annum
bbl	barrels
Btu	British thermal units
C\$	Canadian dollars
cal	calorie
cfm	cubic metres per minute
cm	centimetre
cm <sup>2</sup>	square centimetre
d	day
dia	diameter
dmt	dry metric tonne
dwt	dead-weight ton
ft	foot
ft/s	foot per second
ft <sup>2</sup>	square foot
ft <sup>3</sup>	cubic foot
g	gram
G	giga (billion)
Gal	Imperial gallon
g/L	gram per litre
g/t	gram per tonne
Gpm	Imperial gallons per minute
gr/ft <sup>3</sup>	grain per cubic foot
gr/m <sup>3</sup>	grain per cubic metre
hr	hour
ha	hectare
hp	horsepower
in	inch
in <sup>2</sup>	square inch
J	joule
k	kilo (thousand)
kcal	kilocalorie
kg	kilogram
km	kilometre
km/h	kilometre per hour
km <sup>2</sup>	square kilometre
kPa	kilopascal
kVA	kilovolt-amperes
kW	kilowatt
kWh	kilowatt-hour

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L	litre
L/s	litres per second
m	metre
M	mega (million)
m <sup>2</sup>	square metre
m <sup>3</sup>	cubic metre
mi	mile
min	minute
MASL	metres above sea level
mm	millimetre
mph	miles per hour
MVA	megavolt-amperes
MW	megawatt
MWh	megawatt-hour
m <sup>3</sup> /h	cubic metres per hour
opt, oz/st	ounce per short ton
oz	Troy ounce (31.1035g)
oz/dmt	ounce per dry metric tonne
ppm	part per million
psia	pound per square inch absolute
psig	pound per square inch gauge
RL	relative elevation
s	second
st	short ton
stpa	short ton per year
stpd	short ton per day
t	metric tonne
tpa	metric tonne per year
tpd	metric tonne per day
US\$	United States dollar
USg	United States gallon
USgpm	US gallon per minute
V	volt
W	watt
wmt	wet metric tonne
yd <sup>3</sup>	cubic yard
yr	year

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**3 RELIANCE ON OTHER EXPERTS**

This report has been prepared by Scott Wilson Roscoe Postle Associates Inc. (Scott Wilson RPA) for Denison Mines Corp. (Denison). The information, conclusions, opinions, and estimates contained herein are based on:

Information available to Scott Wilson RPA at the time of preparation of this report,

Assumptions, conditions, and qualifications as set forth in this report, and

Data, reports, and other information supplied by Denison and other third party sources.

Scott Wilson RPA relied on Denison for information regarding the current status of legal title, property agreements, and any outstanding environmental orders. Scott Wilson RPA has not investigated the legal title of the unpatented mining claims. Scott Wilson RPA has not independently investigated the permitting and reclamation status of the property.

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**4 PROPERTY DESCRIPTION AND LOCATION**

Prior to its bankruptcy in 1995, Energy Fuels located and developed to various stages numerous uranium mineralized breccia pipe structures in northwestern Arizona, between Utah and the Grand Canyon, an area termed the Arizona Strip (Figure 4-1). Most of the Energy Fuels breccia pipes are between the town of Fredonia, on the Arizona Utah state line, and Grand Canyon National Park in T36N to 39N, R2W to 5W, Salt River Meridian. These include the Kanab North, Pinenut, and Arizona 1 pipes. One deposit, Canyon, is located south of the park.

**KANAB NORTH**

Kanab North is located in Sections 17 and 20, T38N, R3W, Mojave County, Arizona, about 20 mi. south of Fredonia by unsurfaced road. It was mined during 1988-1991 and produced 260,818 tons of ore at an average grade of 0.53% U<sub>3</sub>O<sub>8</sub> containing 2,767,570 pounds U<sub>3</sub>O<sub>8</sub>. Minor quantities of mineralized material remain in the mine. A headframe, hoist, and compressor are in place on the Kanab North site, and it is anticipated, but not assured, that the mine could be reopened with a minimum of time and expense.

Denison's land position at Kanab North consists of seven unpatented mining claims encompassing approximately 145 acres: Kanab 71, 76, and 36 (Figure 4-2).

**ARIZONA 1**

Arizona 1 is a partially developed mine, with the production shaft having been completed for about 1,250 ft. of its proposed final 1,650 ft. depth. Drill stations were cut near the current shaft bottom and some 40,000 ft. of drilling, including 34,000 ft. of percussion and 6,000 ft. of core drilling, were completed from that point. The mine is located in Sections 22 and 23, T36N, R5W, Mojave County, Arizona, about 45 mi. southwest of Fredonia by unsurfaced road. A headframe, hoist, and compressor are in

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place, and it is anticipated, but not assured, that access to the shaft bottom could easily be attained. Haulage distance from Arizona 1 to the White Mesa mill at Blanding, Utah, is 307 mi.

Denison's property position at Arizona 1 consists of ten unpatented mining claims encompassing approximately 207 acres: Sin 1279 1283, and 1305 1309 (Figure 4-3).

**CANYON**

Only surface development is currently in place at the Canyon site: a headframe, a hoist, and a compressor. The shaft has been collared to a depth of about 50 ft. The site is located in Sections 19 and 20, T29N, R3E, Coconino County, Arizona. The haulage distance from Canyon to the White Mesa mill at Blanding, Utah, is 325 mi.

Denison's property position at Canyon consists of nine unpatented mining claims encompassing approximately 186 acres: Canyon 64 66, 74 76, and 84 86 (Figure 4-4).

**PINENUT**

Pinenut is a fully developed underground mine which produced 25,807 tons of ore at an average grade of 1.02%  $U_3O_8$  containing 526,350 pounds  $U_3O_8$  in 1989. It has been on standby since then. A hoist, headframe, and compressor are in place, and it is anticipated, but not assured, that mine access could easily be established to recover any remaining mineralized material. Pinenut is located in an unsurveyed portion of T36N, R4W, Mojave County, Arizona, about 45 mi. south of Fredonia by unsurfaced road. The haulage distance from Pinenut to the White Mesa mill at Blanding, Utah, is 317 mi.

Denison's property position at Pinenut consists of ten unpatented mining claims encompassing approximately 207 acres: Pinyon 593 597, and 637 641 (Figure 4-5).



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**5 ACCESSIBILITY, LOCAL RESOURCES, PHYSIOGRAPHY AND INFRASTRUCTURE**

Northern Arizona is part of the Colorado Plateau, a region of the western United States characterized by semi-arid, high-altitude, gently sloping plateaus dissected by steep walled canyons, volcanic mountain peaks, and extensive erosional escarpments. The breccia pipes north of the Grand Canyon are within the Kaibab and Kanab Plateaus, smaller plateaus within the Colorado Plateau. The Canyon pipe is in the Coconino Plateau. Elevations on the northern plateaus range from 6,900 ft. to 9,000 ft., while on the Coconino Plateau the elevations at the proposed mine site are approximately 6,500 ft.

Climate in northern Arizona is semi-arid, with cold winters and hot summers. January temperatures range from about 7°F to 57°F and July temperatures range from 52°F to 97°F. Annual precipitation, mostly in the form of rain but some snow, is about 12 in. Vegetation on the plateaus is primarily open pinyon-juniper woodland and shrubs.

The region north of the Grand Canyon is very sparsely populated. Due to the inaccessibility and low population, infrastructure is not well developed. The largest community within 65 mi. of the northern breccia pipes is Fredonia, Arizona, which has a population of about 1,200. Fredonia is accessible over state and federal highways from Las Vegas, Nevada, 220 mi. west, and Flagstaff, Arizona, 200 mi. by road to the southeast. Municipal airfields are maintained at Fredonia and Kanab, Utah (7 mi. north).

The nearest railway line operates in Utah, 96 mi. northwest of Fredonia. The nearest commercial centres to the Fredonia area are the towns of St. George and Cedar City, Utah, both about 88 mi. to the northwest by road.

The White Mesa Mill owned by Denison is about 275 mi. by road from Fredonia. The Canyon pipe is in north central Arizona, 153 mi. north of Phoenix and 10 mi. south

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of Grand Canyon Village, in the Kaibab National Forest, Coconino County. The White Mesa mill is 325 mi. by road from the Canyon site.

Access to the Canyon site is via State Highway 64 and Federal Highway 180 to within two miles of the proposed mine site, then over unsurfaced roads. The Atchison, Topeka and Santa Fe railway line passes east-west 50 mi. south of the site at Williams, and a spur of the railway, which passes 10 mi. west of the Canyon site, services the National Park. Airports at Flagstaff, Phoenix, and Grand Canyon Village provide air access to the area.

Access to Arizona 1 is via Highway 389 six miles west of Fredonia to the Mt. Trumbull road and 36 mi. south over a gravel/dirt surface. Pinenut is four miles east of Arizona 1. Kanab North is 18 mi. south of Fredonia by unpaved road.

Although the Coconino Plateau is sparsely populated, tourist traffic to Grand Canyon National Park results in large numbers of people passing through the region daily to visit the park.

The community of Tusayan, seven miles northwest of the Canyon site, provides much of the housing and other facilities for people who work within Grand Canyon National Park. Seasonal population is from 500 to 1,000. A clinic run by a Phoenix hospital is operated at Grand Canyon Village, as well as a K-12 grade school with a capacity of 250 students. Williams, a rural community, 44 mi. south of the site at Interstate 40, has a population of about 2,500. Williams relies heavily on tourism to maintain its economy, but many people are also involved in agriculture and forestry. The town offers an elementary, middle and high school, an emergency centre, shopping and a variety of community services. Although housing is available, lack of adequate water supplies has limited housing construction. Flagstaff, 56 mi. southeast of the Canyon project, is a full service city with a population of 60,000 and also a regional trade centre for northern Arizona.

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Arizona, and particularly Coconino County, is among the fastest growing areas in the United States, due to the climate, landscape diversity, economic and recreational opportunities. Resources and services are often stretched to meet the needs of the growing population.

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**6 HISTORY**

Uranium exploration and mining of breccia pipe uranium deposits started in 1951 when a geologist of the US Geological Survey noted uranium ore on the dump of an old copper prospect on the South Rim of the Grand Canyon of Northern Arizona. The prospect was inside Grand Canyon National Park, but on fee land that predated the park. A mining firm acquired the prospect and then mined a significant high-grade uranium deposit, the Orphan Mine. By the time mining ended in the early 1960s, 4.26 million pounds of  $U_3O_8$  and some minor amounts of copper and silver had been produced.

After the discovery of the first deposit in the 1950s, an extensive search for other deposits was made by the government and industry, but only a few low-grade prospects were found. Exploration started again in the early 1970s. In the mid 1970s, Western Nuclear, then headed by Robert Adams, leased the Hack Canyon Prospect located about 25 mi. north of the Grand Canyon and found high-grade uranium mineralization offsetting an old shallow copper/uranium site. In the next few years, a second deposit was found a mile away along a fault.

In the late 1970s, Energy Fuels formed a uranium exploration venture with several Swiss utilities and acquired significant uranium reserves in southeast Utah. It permitted and built a 2,000 tpd mill at Blanding, Utah, to process this classical Colorado Plateau ore, which was expected to average 0.13%  $U_3O_8$ , and sell into a market that was over \$30/lb  $U_3O_8$ . The uranium market fell in 1980, and the Hack Canyon Property was leased by Energy Fuels from Western Nuclear in December 1980 as a likely low-cost source of  $U_3O_8$ .

Development started promptly, and the deposits were in production by the end of 1981. They proved to be much better than the initial estimates suggested. The Energy Fuels exploration program provided a continuing flow of new reserves in newly discovered uranium bearing pipes.

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The Kanab North orebody was also discovered in 1981, but development did not begin until late 1984 because the site was located in a Wilderness Study Area. Kanab North was fully developed in 1988 and operated until December 1990 when it was placed on standby. Production totalled about 2.8 million pounds  $U_3O_8$  at an average grade of just over 0.50%  $U_3O_8$ . Some minor quantity of mineralized material remains.

Energy Fuels has explored the Arizona 1 pipe with a total of 253 drill holes, including: 18 core holes from underground drill stations with a total footage of 6,122 ft.; 17 rotary holes from surface with a total footage of 25,289 ft., and 218 long holes from underground drill stations with a total footage of 36,189 ft. Thus, total drill footage drilled at Arizona 1 amounts to 67,600 ft. Mine development of the Arizona 1 orebody began in 1990 but was suspended in 1992, with the shaft at a depth of 1,254 ft.

The Canyon orebody is located on mining claims that Energy Fuels acquired from Gulf Mineral Resources Company (Gulf) in 1982. Gulf drilled eight exploration holes at the site from 1978 through May 1982 but found only low-grade uranium in this pipe. Additional drilling completed by Energy Fuels in 1983 identified a major deposit. Energy Fuels drilled a further 36 holes from May 1983 through April 1985 to delineate the uranium mineralization and to determine placement of the mine shaft and water supply well. Additional drilling of six holes was completed in 1994.

The Havasupais Indians have actively opposed a mine at this site, and while the surface plant and headframe are in place, no significant mine development has been initiated.

The Pinenut mine was developed in 1989, but saw only minor production, approximately 0.5 million pounds  $U_3O_8$  at an average grade of 1.02%  $U_3O_8$ , and was then placed on standby.

Energy Fuels identified and investigated more than 4,000 circular features in northern Arizona. Some 110 of the most prospective features were explored by deep drilling, and

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approximately 50% of those drilled were shown to contain uranium mineralization. Ultimately, nine pipes were deemed worthy of development. Total mine production from the Energy Fuels breccia pipes from 1980 through 1991 was approximately 19.1 million pounds  $U_3O_8$  at an average grade of just over 0.60%  $U_3O_8$ .

Energy Fuels was acquired by the Concord group in the early 1990s following the death of Robert Adams. Concord declared bankruptcy in 1995, and most of the Energy Fuels assets were acquired by International Uranium Corporation (IUC) in 1997. Since that time, IUC, which after the December 1, 2006 merger with Denison Mines Inc. changed its name to Denison Mines Corp, has maintained its ownership of the Kanab North, Pinenut, Arizona 1, and Canyon pipes; all other breccia pipe prospects have been dropped.

**HISTORICAL MINING OPERATIONS**

Kanab North has been mined, is reported to contain minor quantities of mineralized material remaining, and is currently on standby. The Pinenut mine has been developed, partially mined, and is on standby. Arizona 1 is partially developed and on standby, with the shaft near its final depth. Only surface facilities and shaft collar have been developed at Canyon.

Mine development and production are similar for most breccia pipe mines. The following is a description of the Kanab North Mine. The mine is accessed by a conventional 2 1/2 compartment vertical shaft (7 ft. x 16 ft.), to a depth of 1,590 ft. Stations are located on the 1,100 ft. level and the 1,500 ft. level. Due to topography, the shaft is located 850 ft. from the orebody and two crosscuts were required to develop the mine. A decline (500 ft. in length) from the canyon wall intersects the orebody at the first level station elevation and provides an escapeway and a ventilation passage using a 75-Hp, 100,000 cfm fan. The main shaft is serviced by a double drum 400-hp hoist. Skip capacity is 2.3 tons. The orebody was drilled and developed from four shaft stations 200 ft. apart. Various mining methods were used such as room and random pillar,

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shrinkage stoping, and long hole/slot mining (a bulk mining system breaking up to 25,000 tons in a single blast).

Sublevels strategically located between shaft stations were interconnected with inclines and raise boreholes. Trackless rubber-tired mining equipment was used throughout the mine. Loaders ranged from one to three cubic yards in size; haul trucks had a ten-ton capacity. Some electric slushers were used in driving ramps and when selective mining was required. All ore fell to a central delivery location at the bottom level, enabling trucks to haul ore to loading trenches where a small winch transferred ore or waste to the skip for hoisting. The workforce at the Kanab North Mine totalled 41 employees. At maximum in 1990, the mine produced 102,000 tons of ore, or about 400 tons per day.

**HISTORICAL MINERAL RESOURCES**

Uranium mineral resource estimates on the Arizona Strip breccia pipes were compiled by Energy Fuels' exploration department in accordance with parameters developed specifically for breccia pipe resource estimates. These parameters were based on Energy Fuels' previous experience with breccia pipes in the region. These parameters are shown in Table 6-1.

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**TABLE 6-1 RESERVE/RESOURCE ESTIMATION PARAMETERS USED BY  
ENERGY FUELS**

**Denison Mines Corp. Arizona Strip Project**

Cut-off Thickness	Minimum of 8.0 ft.
Cut-off Grade	Minimum of 0.15% U <sub>3</sub> O <sub>8</sub> as determined from radiometric logs or in core
Cut-off GT	1.20% ft.
Dilution	The top and bottom of each ore zone will include 3.0 ft. of waste or mineral. The ore intercept may be comprised of two or more smaller zones separated by a six-foot maximum section of waste or mineral between each of the included ore zones.
Tonnage Factor	13 ft. <sup>3</sup> per ton of dry ore (substantiated by Hack Canyon Mine runs)
Extraction	100% recoverable reserve
Disequilibrium Factor	1.00 chemical to radiometric ratio
Levels	Vertical section of mineralized breccia pipe divided into 10-ft. horizontal slices
Drill hole Location	Location established at midpoint of each level by deviation survey
Map Scale	1 inch = 20 feet for the final reserve calculation

Energy Fuels established the following method of calculation for reserves.

Ore zones for the reserve calculations are prepared by entering the probe data into the GAMLOG program, where mineable ore zones for each drill hole are established using the cut-off and dilution parameters as defined above. The mineralized portion(s) of each drill hole is divided into 10-ft. thick levels; thickness, grade, and top elevation are computed for each drill hole intercept for each level. If a zone is greater than 10 ft. thick, or occurs across level divisions, the half-foot intervals included in the applicable level are averaged to establish the grade for the appropriate segment of the intercept. These divided intercepts are not required to satisfy the minimum grade and thickness parameters for each portion, but they must satisfy the criteria as a whole (Memorandum from Mathisen, 1985).

Mineralization was classified by Energy Fuels into proven, probable, and possible categories based on the distance from the mineralized drill hole. Proven was based on a

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25 ft. diameter around the drill hole; probable was distances up to 50 ft.; and possible included mineralization interpolated from more widely spaced holes.

Energy Fuels estimated the historical resources, which are discussed below, in the early 1990s prior to the implementation of NI 43-101. The resources listed below are, therefore, historical in nature. The historical resource estimates were prepared to industry standards in place at the time. Denison is not treating the historical estimates as NI 43-101 defined resources or reserves verified by a qualified person, and the historical estimates should not be relied upon.

Scott Wilson RPA has carried out recent estimates of the Arizona 1, Canyon, and Pinenut breccia pipes, which are reported in Section 17 Mineral Resource and Mineral Reserve Estimates, and which supersede the historical estimates discussed below.

***ARIZONA 1***

The most detailed and documented historical estimate of the quantity of mineralized material identified in the Arizona 1 breccia pipe was summarized by the Energy Fuels exploration department in a memorandum dated April 7, 1992. Based on extensive drilling from both surface and underground, this historical estimate totals 120,000 tons of mineralized material at an average grade of 0.545% U<sub>3</sub>O<sub>8</sub> containing 1.3 million pounds of U<sub>3</sub>O<sub>8</sub>. The Energy Fuels estimate used a cut-off grade of 0.15% U<sub>3</sub>O<sub>8</sub>, which is considered too low for sustainable market conditions.

***CANYON***

Uranium resources at Canyon were estimated by Energy Fuels on the basis of surface drilling only, in accordance with the standard practice outlined above. As of June 27, 1994, the total resource was reported to be 100,000 tons at an average grade of 0.84% U<sub>3</sub>O<sub>8</sub> containing 1.8 million pounds U<sub>3</sub>O<sub>8</sub>. The Energy Fuels estimate used a cut-off grade of 0.15% U<sub>3</sub>O<sub>8</sub>, which is considered too low for sustainable market conditions.

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**PINENUT**

Remaining resources for Pinenut, estimated in December 1988, are stated as 109,900 tons of material at an average grade of 0.416% U<sub>3</sub>O<sub>8</sub> containing 913,900 pounds U<sub>3</sub>O<sub>8</sub>. The cut-off grade used for this estimate was apparently 0.20% eU<sub>3</sub>O<sub>8</sub>. Scott Wilson RPA has not been provided with detailed information on which to judge the validity of the Pinenut historical mineral resource estimate.

**HISTORICAL RESOURCE ESTIMATE COMPARISON WITH ACTUAL PRODUCTION**

In its Preliminary Feasibility Report for the Canyon project dated December 11, 1984, Energy Fuels provided a listing of historical reserves/resources estimated for various pipes based on surface drilling only. Scott Wilson RPA has compared those reserve/resource estimates with actual production results in Table 6-2.

**TABLE 6-2 ENERGY FUELS RESOURCE ESTIMATES VS. ACTUAL PRODUCTION**

**Denison Mines Corp. Arizona Strip Project**

Pipe	Surface Drilling Estimate			Production + Remaining Resource			Ratio (lbs)
	Tons	Grade (% U <sub>3</sub> O <sub>8</sub> )	M Pounds (U <sub>3</sub> O <sub>8</sub> )	Tons	Grade (% U <sub>3</sub> O <sub>8</sub> )	M Pounds (U <sub>3</sub> O <sub>8</sub> )	
Hack #1*	132,400	0.37	0.98	133,800	0.53	1.42	1.45
Hack #2*	125,400	0.57	1.43	497,100	0.70	7.00	4.90
Hack #3*	21,250	0.40	0.17	111,300	0.50	1.12	6.59
Pigeon*	164,700	0.75	2.47	439,400	0.65	5.70	2.31
Kanab N.	83,300	0.45	0.75	260,800	0.53	2.77	3.69
Pinenut	150,000	0.50	1.50	137,800	0.53	1.45	0.97
Hermit*	n/a	n/a	0.60	36,339	0.76	0.55	0.92

\* Note: Not included in the Denison property. These properties were reclaimed by Energy Fuels.

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These estimates are not compliant with NI 43-101, but are included to illustrate that surface drilling typically does not provide sufficient information to reliably estimate the total resource which might be available. Even so, this conclusion is not universally true since actual mine output from both the Hermit and Pinenut pipes compared very closely with resource estimates compiled from surface drilling.

Production at Pinenut included 20,512 tons grading 1.115%  $U_3O_8$  from the zone between 3,960 ft. to 4,070 ft. elevation and 4,911 tons grading 0.695%  $U_3O_8$  from the zone between 4,070 ft. and 4,200 ft. elevation. A generalized cross section of Pinenut suggests that virtually all of this material was mined from below 4,087 elevation. Scott Wilson RPA considered the mineralization below 4,087 to be mined out and only reports mineral resource above that elevation in Section 17 of this report.

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**7 GEOLOGICAL SETTING**  
**REGIONAL GEOLOGY**

Parts of two distant physiographic provinces are found within Arizona: the Basin and Range province in the southern and western edge of the state, and the Colorado Plateau province in most of northern and central Arizona. The Arizona Strip lies within the Colorado Plateau province.

Surface exposures within the Arizona Strip reveal sedimentary and volcanic rocks ranging in age from upper Paleozoic to Quaternary; the area is largely underlain by Mississippian through Triassic sedimentary rocks (Figure 7-1). However, exposed within the Grand Canyon are older rocks reaching Precambrian in age.

The region has experienced volcanic activity since Pliocene time. A number of lava-capped buttes rise above the general landscape, and lava flows cover large areas of the southern part of the district. Faulting has exerted significant control on the geologic development and geomorphic history of the region. Major structural features are the Grand Wash, Hurricane, and Toroweap fault systems, all trending generally north-south with the upthrown side to the east. These faults are topographically prominent, showing impressive scarps. Other less prominent fault systems exist.

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**PROPERTY GEOLOGY**

**KANAB NORTH**

The cross sectional area of the pipe probably averages about 30,000 ft.<sup>2</sup>. The pipe extends vertically for some 1,000 ft. from the Toroweap limestone into the Supai Group. The ultimate depth to the bottom of the pipe is unknown. Internal ring fractures have been recognized and are mineralized.

Mineralization extends discontinuously from the Toroweap over the length of the pipe, but is concentrated predominantly in the Hermit Shale and upper Esplanade Sandstone. A sulphide cap, largely in the Toroweap, overlies the mineralization. High grade mineralization is found in the ring fractures, largely in the Esplanade Sandstone. The thickness of mineralization within the fractures ranges between 6 ft. to 30 ft., with a grade range between 0.5% U<sub>3</sub>O<sub>8</sub> and 0.7% U<sub>3</sub>O<sub>8</sub>.

**ARIZONA 1**

Arizona 1, in common with all other breccia pipes within the Arizona Strip, was believed by Energy Fuels to have had its origin as a solution collapse of the Redwall Limestone. This collapse worked its way upward through the overlying formations to the surface where the throat diameter is in the order of 200 ft. to 300 ft. Vertical displacement in the throat averages some 175 ft. Uranium mineralization is distributed irregularly over a depth interval of approximately 650 ft. mainly at the level of the Hermit Shale formation to a maximum depth of some 1,400 ft. from surface.

**CANYON**

The surface expression of the pipe is a broad shallow depression in the Permian Kaibab Formation. The pipe is essentially vertical with an average diameter of less than 200 ft., but it is considerably narrower through the Coconino and Hermit horizons (80 ft.). The cross sectional area is probably between 20,000 ft.<sup>2</sup> and 25,000 ft.<sup>2</sup>. The pipe

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extends for at least 2,300 ft. from the Toroweap limestone to the upper Redwall horizons. The ultimate depth of the pipe is unknown. An annular ring is present around the pipe.

Mineralization extends vertically both inside and outside the pipe over some 1,700 vertical feet, but ore grade mineralization has been found mainly in the Coconino, Hermit, and Esplanade horizons and at the margins of the pipe in fracture zones. Sulphide zones are found scattered throughout the pipe but are especially concentrated (sulphide cap) near the Toroweap-Coconino contact, where the cap averages 20 ft. thick and consists of pyrite and bravoite, an iron- nickel sulphide. The ore assemblage consists of uranium-pyrite-hematite with massive copper sulphide mineralization common in and near the ore zone. The strongest mineralization appears to occur in the lower Hermit-upper Esplanade horizons in an annular fracture zone.

**PINENUT**

A detailed description of the Pinenut pipe has not been made available to Scott Wilson RPA.

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## **8 DEPOSIT TYPES**

Paleozoic sedimentary rocks of northern Arizona are host to thousands of breccia pipes. The pipes are known to extend from the Mississippian Redwall Limestone to the Triassic Chinle Formation, which makes some 4,000 ft. of section. However, because of erosion and other factors, no single pipe has been observed cutting through the entire section. No pipe is known to occur above the Chinle Formation or below the Redwall Limestone.

Breccia pipes within the Arizona Strip are vertical or near vertical, circular to elliptical bodies of broken rock. Broken rock is comprised of slabs and rotated angular blocks and fragments of surrounding and stratigraphically higher formations. Hence, many geologists consider the pipes to have been formed by solution collapse of underlying calcareous rocks, such as the Redwall Limestone. Surrounding the blocks and slabs making up the breccia is a matrix of fine material comprised of surrounding and overlying rock from various formations. The matrix has been cemented by silicification and calcification for the most part.

Breccia pipes are comprised of three interrelated features: a basinal or structurally shallow depression at surface (designated by some as a collapse cone); a breccia pipe which underlies the structural depression, and annular fracture rings which occur outside, but at the margin of the pipes. Annular fracture rings are commonly, but not always, mineralized. The structural depression may range in diameter up to 0.5 mi. or more, whereas breccia pipe diameters range up to about 600 ft.; the normal range is 200 ft. to 300 ft.

Mineralized breccia pipes found to date appear to occur in clusters or trends. Spacing between pipes ranges from some hundreds of feet within a cluster to several miles within a trend. Pipe location may have been controlled by deep-seated faults, but

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karstification of the Redwall Limestone in Mississippian and Permian times is considered to have initiated formation of the numerous and widespread pipes in the region.

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## **9 MINERALIZATION**

In the breccia pipe deposits, uranium occurs largely as blebs, streaks, small veins, and fine disseminations of uraninite/pitchblende ( $UO_2$ ). Mineralization is mainly confined to matrix material, but may extend into clasts and larger breccia fragments, particularly where these fragments are of Coconino sandstone. In addition to uranium, an extensive suite of elements is reported to be anomalously concentrated in mineralized rock within breccia pipes throughout northern Arizona: Ag, As, Ba, Cd, Co, Cr, Cs, Cu, Hg, Mo, Ni, Pb, Sb, Se, Sr, V, and Zn. Many of rare earth elements are consistently enriched in mineralized samples. Copper occurred in such concentrations as to be economic and mined in a number of pipes. Gold occurred in anomalous quantities only in the Copper Mountain mine where samples assaying up to 5 oz per ton were obtained. Silver, on the other hand, is almost always anomalously high in all mineralized pipes, and in some pipes is of economic grade.

Within many pipes, there is a definite mineralogical zoning in and around the uranium orebody. At Hack-2, detailed work has shown a pyrite-rich cap immediately overlying the orebody, followed by, in descending order, a cobalt-nickel zone, a molybdenum-barium-zinc zone, and a lead-rich zone.

Pipes are surrounded by bleached zones, particularly notable in the Hermit Formation where unaltered red sediments contrast sharply with grey-green bleached material. Both age dating and disequilibrium determinations indicate that remobilization of uranium has occurred. Uranium concentrations in the upper levels of a pipe tend to be in equilibrium, but with depth disequilibrium in the orebodies increases in favour of the chemical assays.

Age dating of mineralization (U-Pb) indicates a range from 101 to 260 million years, which suggests that the earliest uranium mineralization had occurred in the Permian before the pipes completely formed into the Triassic.

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Uranium mineralization within Arizona 1 extends significantly in the vertical dimension. Continuous drill hole intersections of several tens of feet with grades exceeding 1.00%  $U_3O_8$  or more are not uncommon. The maximum continuous surface drill hole intersection was 92.5 ft. at an average grade of 1.55%  $U_3O_8$ . On average, the 12 drill holes from surface that intersected uranium mineralization recorded 75 ft. of 0.62%  $U_3O_8$ .

Uranium mineralization at Canyon is concentrated in three stratigraphic levels: Coconono, Hermit/Esplanade, and a lower zone. Mineralization extends vertically from a depth of 600 feet to over 2100 feet. Intercepts range widely up to several tens of feet with grades in excess of 1.00%  $U_3O_8$ . Twenty-two drill holes from surface encountered uranium mineralization averaging 100 ft. of 0.45%  $U_3O_8$ . The CYN-19 drill hole encountered a total of 418.5 ft. with an average grade of 0.30%  $U_3O_8$ .

Detailed information on the distribution of uranium mineralization at the Pinenut pipe has not been made available to Scott Wilson RPA.



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**10 EXPLORATION**

Denison, or its predecessor, IUC, has not carried out any exploration on the properties since the acquisition in 1997.

Exploration for breccia pipes in northern Arizona typically begins with a search for surface expressions of circular features. This search was aided by geologic mapping, Landsat aerial photography, thermal infrared imagery, geochemical testing, and certain geophysical methods such as resistivity, Very Low Frequency (VLF), and time domain electromagnetics. Other techniques tested included: geobotany, microbiology, and biogeochemistry. All of these methods were utilized to identify surface expressions of breccia pipes. The key element of the process was to zero in on the throat of the pipe as a locus for drilling from the surface since the throat is usually associated directly with the centre of the collapse.

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## **11 DRILLING**

Denison, or its predecessor, IUC, has not carried out any drilling on the properties since the acquisition in 1997.

Shallow drilling was often conducted to locate the centre of the collapse feature as a guide to the throat of the underlying breccia pipe. The basic tool for exploring breccia pipes in northern Arizona is deep rotary drilling supplemented by core drilling, to a depth of 2,000 ft. or more from surface. Prospective pipes were usually first tested with three drill holes. If no showing of mineralization was present, the effort was abandoned.

Drilling of breccia pipes is a difficult process. Substantial depths, approximately 2,000 ft., small targets, approximately 200 ft. in diameter, and non-homogeneous rock formations combine to limit the accuracy of the drilling process. The presence of cavernous and brecciated sediments near the present land surface can result in loss of circulation of drilling fluid; as a result, much drilling is conducted blind. Periodic spot cores are taken to determine whether or not holes are within the target structure or have drifted away from the pipe. Indeed, most pipes cannot be completely drilled out from the surface due to deviation from desired targets. All drill holes are surveyed for deviation and logged with gamma logging equipment.

If surface drilling provides sufficient encouragement that a mine can be developed on that basis, a vertical shaft is sunk or drilled to its ultimate depth and underground drill stations are established at various levels to provide platforms for further exploration and delineation drilling. Drilling from underground stations typically utilized large-bore percussion drills. The resulting drill holes, out to as much as approximately 200 ft., were then gamma logged and surveyed as a supplement to surface drilling.

Drilling of the Arizona 1 and Canyon breccia pipes by Energy Fuels has been described in Section 6 History.

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**12 SAMPLING METHOD AND APPROACH**

All the historical drill holes on Denison's Arizona Strip breccia pipe properties were gamma logged and surveyed for deviation. These data provide the basic building blocks from which quantities of mineralized material are estimated. Core holes were drilled to supplement this data, to provide information for determination of disequilibrium, and to accommodate material for metallurgical testing. This process was consistent with industry standards at the time and the work carried out by Energy Fuels is judged by Scott Wilson RPA to have been of superior quality.

All of the basic data for calculation of quantities and grades of mineralized material for the Arizona 1, Pinenut, and Canyon deposits, originally by Energy Fuels and more recently by Scott Wilson RPA, were derived directly by gamma log interpretation. Energy Fuels completed numerous checks on this data by means of chemical assays, closed-can assays, and various beta gamma analyses, but the records for these auxiliary analyses and checks are scattered and incomplete. Nevertheless, all available indications point toward the gamma logging process providing a reasonable perspective on mineralization encountered by drilling.

Scott Wilson RPA notes that all gamma log grades listed and discussed herein utilize an  $eU_3O_8$  characterization. The  $e$  preceding  $O_8$  indicates that the respective grades are equivalent  ${}^3O_8$  grades based on an assumed direct correlation between gamma-ray intensity, as measured by the gamma logging tools, and uranium content. Such is not always the case and the correlation must always be checked by chemical and radiometric assays of core samples or by direct neutron activation means. Energy Fuels performed extensive checks on core and the available results seem to confirm the general correlation, but detailed test results are not available for review. In layman's terms, the  $e$  prefix indicates that somewhat less reliance can be placed on the reported grades than if sufficient data was available to provide greater assurance on the correlation. It is at least partially for this reason that mineral resources listed herein are classified as inferred.

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**13 SAMPLE PREPARATION, ANALYSES, SECURITY AND PROTOCOLS**

Industry standards for uranium exploration in the western United States are based almost completely on the gamma logging process with a number of checks, including: 1) frequent calibration of logging tools, 2) core drilling and chemical analysis of core as a check on gamma log values and the potential for disequilibrium; 3) possible closed-can analysis as an adjunct to chemical assays; and 4) possible gamma logging by different tools and/or companies.

Energy Fuels used the GAMLOG computer program to interpret gamma-ray logs. The GAMLOG program was developed by the U.S. Atomic Energy Commission. The essence of the method is a trial-and-error iterative process by which  $U_3O_8$  grades are determined for a series of 1/2-foot or 1-foot layers which can be considered to comprise the zone under analysis. The objective of the iterative process is to find a grade for each separate layer such that an imaginary set of separate gamma-ray anomalies (one from each separate layer) could be composited to form an over-all anomaly which would closely match the real anomaly under analysis (Scott 1962). Scott Wilson RPA accepts the validity of the GAMLOG program.

There are no specific provisions for security of data or samples other than those employed for confidentiality. The previous property owner, Energy Fuels, is deemed to have met or exceeded industry standards for the exploration process.

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**14 DATA VERIFICATION**

Data verification in uranium exploration in the western United States takes the form of a combination of logging tool calibration, chemical assays on core, and various checks by other logging units and outside laboratories. Most of this verification process is internal and company specific. Independent verification has not been part of the industry standard process. Energy Fuels operations in the Arizona Strip are judged by Scott Wilson RPA to have met or exceeded industry standards.

Complete sets of basic drill hole data, such as gamma logs and chemical assay data for the Arizona 1, Canyon, and Pinenut breccia pipe deposits, were not available for Scott Wilson RPA's inspection. However, some of the gamma logs and chemical assay data that were available for inspection by Scott Wilson RPA confirm the validity of a vast majority of these data. The checks by Scott Wilson RPA included reinterpretation of selected gamma logs and comparison of chemical assay data with log interpretations. Certain items of data could not be confirmed due mainly to lack of a complete set of chemical assay data for core holes. Notwithstanding the foregoing, most mismatches in data or interpretation seemed to err on the conservative side; i.e., lower grade, less tons, fewer pounds.

Scott Wilson RPA notes, however, that for the Arizona 1 deposit, where substantial information is available from both surface and underground drilling, the two data sets show a pattern of divergence, with surface gamma log results showing generally higher values than gamma log results for the underground drilling. Certainly, the surface gamma logging tools and procedures were in all respects standard for the period, with no major bias expected. Nevertheless, a comparison of available chemical assay data with gamma log interpretations suggests the possibility of overestimation of uranium grades by surface hole gamma logs. This potential overestimation is tempered somewhat by questions from Energy Fuels personnel concerning the validity of chemical assays for this

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particular data set. Reassay data available to Scott Wilson RPA do not seem to diverge greatly from the original data.

Underground gamma logging at Arizona 1 is understood to have utilized newly-developed tools which may or may not have been as well calibrated as the surface tools. Given, however, that the underground gamma results are generally lower than the surface gamma results, any potential bias seems to be conservative.

Thus, surface gamma data at Arizona 1 is not fully supported by either underground data or by chemical assay data. A potential exists, therefore, that grades developed by surface gamma logging could be overstated.

The situation is reversed at both Canyon and Pinenut where available data indicate substantial grade understatement by gamma logging in comparison to chemical assays. Available chemical assay data at Canyon and Pinenut show chemical grades to be in the order of 60% higher than gamma logging grades.

It should be stressed that chemical assay data for all pipes is incomplete, unverified and, in some cases, conflicting. This situation contributes substantially to the use of an inferred classification for mineral resources within all pipes.

Scott Wilson RPA concludes that, although not all data were available for checking, Energy Fuels followed standard industry practices of the time and that the results of those practices are likely to be a reasonable guide to mineralization available for resource estimation and exploitation.

Scott Wilson RPA is of the opinion that available data are insufficient to make a definitive judgement on the differences between gamma values and chemical assays. We recommend that Denison attempt to pursue these discrepancies in greater detail in order to clarify the situation.

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Energy Fuels developed and mined a series of breccia pipe deposits in the Arizona Strip during the period 1980 to 1991. In addition to those pipes covered in this report (Kanab North, Pinenut, Arizona 1, and Canyon), Energy Fuels also produced from other breccia pipes, which were subsequently reclaimed and are not owned by Denison (Hack 1, Hack 2, Hack 3, Pigeon and Hermit). Production from these other pipes is summarized in the following table.

**TABLE 15-1 ENERGY FUELS PRODUCTION SUMMARY OTHER BRECCIA  
PIPES**

**Denison Mines Corp. Arizona Strip Project**

<b>Pipe</b>	<b>Tons of Ore</b>	<b>Average Grade (% U<sub>3</sub>O<sub>8</sub>)</b>	<b>Pounds U<sub>3</sub>O<sub>8</sub></b>
Hack 1	133,822	0.530	1,419,623
Hack 2	497,099	0.704	7,000,273
Hack 3	111,263	0.504	1,121,748
Pigeon	439,359	0.649	5,702,570
Hermit	36,339	0.760	552,449

In addition to the Energy Fuels pipes, several other significant pipes in the area have been identified by other companies. These pipes include: Sage, EZ-1, and EZ-2. While well explored and delineated, these pipes were not developed for production, mainly due to declining prices.

The information on historical production provided above is not necessarily indicative of mineralization in the Denison breccia pipes discussed in this report.

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**16 MINERAL PROCESSING AND METALLURGICAL TESTING**

Denison has not carried out any metallurgical work on the properties.

Historically, drill core from the exploration drilling process as well as bulk samples from underground exploration and development were routinely sent from the Arizona Strip projects to the White Mesa mill at Blanding, Utah, for amenability testing. Those tests were the basis for estimates of processing cost and process recovery.

**Canyon**

Test work completed on samples from the Canyon pipe during 1984 indicated 99% leach extraction with 25 g/l of free acid at a pH of 0.8. Leach retention time was 48 hours at 70°C with a sodium chlorate addition of 16 pounds per ton.

**Arizona 1**

Mill amenability tests on mineralized material from core drilling at Arizona 1 prior to 1993 indicated that 96% extraction could be attained with a leach retention time of 48 hours. Acid consumption was 540 pounds per ton of material with the addition of 1.75 pounds of sodium chlorate.

**Pinenut**

Details on Pinenut amenability are not available, but some 25,800 tons of material at an average grade of 1.02% U<sub>3</sub>O<sub>8</sub> from Pinenut were processed at the White Mesa mill at Blanding, Utah, during 1989 and 1990. On the basis of the results from that milling, Energy Fuels expected to recover 96% of the uranium contained in the remaining material.



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**17 MINERAL RESOURCE AND MINERAL RESERVE ESTIMATES  
GENERAL STATEMENT**

Scott Wilson RPA has prepared mineral resource estimates for the Arizona 1, Canyon, and Pinenut deposits using historical drill hole data provided by Denison (Table 17-1). Scott Wilson RPA interpreted a set of cross sections and plan views to construct 3D grade-shell wireframe models at 0.2% eU<sub>3</sub>O<sub>8</sub>. Variogram parameters were interpreted and eU<sub>3</sub>O<sub>8</sub> grades were estimated in the block model using kriging. The grade-shell wireframes were used to constrain the grade interpolation. All blocks within the 0.2% eU<sub>3</sub>O<sub>8</sub> grade-shell wireframes, regardless of grade, were included in the mineral resource estimate.

Inferred mineral resources at the Arizona 1 deposit are estimated to include 70,300 tons grading 0.68% eU<sub>3</sub>O<sub>8</sub> containing 956,000 pounds eU<sub>3</sub>O<sub>8</sub>. Due to difficulties encountered in validating historical data, all mineral resources are classified as Inferred despite dense drilling from underground in some areas.

Inferred mineral resources at the Canyon deposit are estimated to include 70,500 tons grading 1.08% eU<sub>3</sub>O<sub>8</sub> containing 1,523,000 pounds eU<sub>3</sub>O<sub>8</sub>. All mineral resources are classified as Inferred given the drill hole spacing and orientation with respect to the continuity of the mineralization.

Inferred mineral resources at the Pinenut deposit are estimated to include 99,200 tons grading 0.44% eU<sub>3</sub>O<sub>8</sub> containing 873,000 pounds eU<sub>3</sub>O<sub>8</sub>. As noted in Section 6 History of this report, mineralization below the 4,087 ft. level was mined out in the 1980s, prior to Pinenut being placed on standby. Scott Wilson RPA, therefore, restricted all mineral resources estimated at Pinenut to areas above that level. Due to difficulties encountered in validating historical data, all mineral resources are classified as Inferred despite dense drilling from underground in most parts of the deposit.

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There are no Mineral Reserves estimated at any of the three deposits at this time.

**TABLE 17-1 INFERRED MINERAL RESOURCES FEBRUARY 2007**  
**Denison Mines Corp. Arizona Strip Project**

	<b>Tons</b>	<b>eU<sub>3</sub>O<sub>8</sub></b> <b>(%)</b>	<b>eU<sub>3</sub>O<sub>8</sub></b> <b>(lbs)</b>
<b>ARIZONA 1</b>	70,300	0.68	956,000
<b>CANYON</b>	70,500	1.08	1,523,000
<b>PINENUT</b>	99,200	0.44	873,000

Notes:

1. CIM Definitions were followed for mineral resources.
2. Interval grades were converted from the gamma log data and are therefore equivalent U<sup>3</sup>O<sup>8</sup> (eU<sup>3</sup>O<sup>8</sup>)
3. Grade-shell wireframes at 0.2% eU<sup>3</sup>O<sup>8</sup> were used to constrain the grade interpolation. All material within the wireframes is included in the estimate.
4. eU<sup>3</sup>O<sup>8</sup> values were interpolated by kriging.
- 5.

Wireframes  
were  
constructed with  
a minimum drill  
hole sample  
length of 6 ft.

6. High eU<sup>3</sup>O<sub>8</sub>  
grades were cut  
to 6% at  
Arizona 1, 10%  
at Canyon, and  
8% at Pinenut.
7. Blocks are 5 ft.  
by 5 ft. by 5 ft.
8. Gemcom  
Software  
International  
Inc. Resource  
Evaluation  
Edition Version  
GEMS 6.02 was  
used.

**ARIZONA 1 DEPOSIT RESOURCE ESTIMATE  
RESOURCE DATABASE AND VALIDATION**

Scott Wilson RPA received header, survey, and eU<sub>3</sub>O<sub>8</sub> data from Denison in Excel format. Data were amalgamated and parsed as required, converted to ASCII, and imported into Gemcom Software International Inc. (Gemcom) Resource Evaluation Version 6.03 for mineral resource modeling.

The Arizona 1 Gemcom database includes drill holes from both surface and underground totalling 253 collar records with 67,600 ft. drilling (Table 17-2). Most drilling is from underground including 236 holes for a total length of 42,312 ft. and an average length of 179 ft. Surface drilling includes 17 holes with a total length of 25,289 ft. for an average depth of 1,488 ft.

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**TABLE 17-2 ARIZONA 1 GEMCOM DATABASE  
RECORDS  
Denison Mines Corp. Arizona Strip Project**

<b>Table Name</b>	<b>Number of Records</b>
HOLE-ID	253
SURVEY	3,372
eU <sub>3</sub> O <sub>8</sub> VALUES	56,590
COMP_CTRL	186
COMPOSITE (Resource Comps.)	1,597

The Arizona 1 Gemcom database includes 56,590 eU<sub>3</sub>O<sub>8</sub> values with 0.5 ft. lengths totalling 28,295 ft. of values. Underground drilling accounts for the bulk of the eU<sub>3</sub>O<sub>8</sub> data and includes 42,078 records for 21,039 ft. of eU<sub>3</sub>O<sub>8</sub> values.

Visual inspection of eU<sub>3</sub>O<sub>8</sub> values by Scott Wilson RPA found a number of unsampled intersections in underground drilling that lie in close proximity to well mineralized intersections in nearby drill holes suggesting that eU<sub>3</sub>O<sub>8</sub> data is discontinuous in some mineralized areas. Although unsampled intervals were treated as zero grade during the compositing process, best efforts were made to minimize the impact of unsampled, but potentially mineralized intercepts.

A variety of validation queries and routines were run in Excel, Access, and Gemcom to identify data errors. Only a few minor problems were identified and corrected. Scott Wilson RPA verified a significant number of data records with original logs. No discrepancies were identified.

In Scott Wilson RPA's opinion, the Gemcom drill hole database is valid and is suitable to make an Inferred Mineral Resource estimate at Arizona 1.

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**CUT-OFF GRADE**

In its feasibility studies of the various Arizona Strip breccia pipes compiled during the 1980s and 1990s, Energy Fuels typically used a cut-off grade of 0.15%  $U_3O_8$ . Current estimated operating costs for uranium production (mining, haulage, and milling) from these pipes are in the order of \$200 per ton of material processed. Considering a marginal production cost of 60 percent of the basic operating cost, the marginal cost of production would be approximately \$120 per ton. Since only about three pounds  $U_3O_8$  would be recovered from each ton of material processed, a projected long-term sustainable market price in the range of \$30 to \$40 per pound  $U_3O_8$  is not sufficient to justify a cut-off grade of 0.15%  $U_3O_8$ . A more reasonable cut-off for long-term sustainable market conditions would be approximately 0.20%  $U_3O_8$ . This cut-off grade was also applied at the Canyon and Pinenut deposits.

**GEOLOGICAL INTERPRETATION AND 3D SOLIDS**

Scott Wilson used Leapfrog 3D contouring software to create preliminary grade-shell wireframes at a 0.2%  $eU_3O_8$  cut-off. These were imported into Gemcom and used as a guide to create a set of polylines. Level plans are spaced 5 ft. or 10 ft. apart and extend from 4,600 ft. to 3,830 ft. elevation. The polylines were edited and joined together in 3D using tie lines. During this stitching process, polylines and/or tie lines were snapped to composite control intervals which were interpreted using a 0.2%  $eU_3O_8$  cut-off, minimum intercept length of 6 ft., and minimum waste thickness of 6 ft. Occasionally, lower grade intersections were included to facilitate continuity. Isolated mineralized intercepts greater than 10 ft. long were enveloped with cylinders of a diameter equal to or less than the length of the intersection, to a maximum of 25 ft.

Twenty-five domains (Figures 17-1 and 17-2) were interpreted and assigned identifier numbers from D01 through to D27 (D13 and D14 are not included). The domains range in size from 100 tons to 39,200 tons for a total of 70,300 tons. Domains D01 and D02 make up nearly 75% of the total tons and are described in detail below.

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D01 is located in the southern half of the breccia pipe between elevations 4,460 ft. and 4,250 ft. It has an elongated-irregular shape, plunging  $-80^{\circ}$  to the north, and is approximately 25 ft. in diameter. D01 totals 13,000 tons and is intersected by two surface holes and fifteen underground drill holes.

D02 is the downplunge extension of D01 and ranges in elevation from 4,300 ft. to 4,070 ft. It has an irregular shape with several shoots but has a plunge of  $-65^{\circ}$  to the north. D02 is the largest of the 25 domains and totals 39,000 tons. It is intersected by six surface holes and 58 underground drill holes.

**FIGURE 17-1 ISOMETRIC VIEW OF ARIZONA 1 GRADE-SHELL  
WIREFRAMES (LOOKING NORTH)**

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**FIGURE 17-2 ISOMETRIC VIEW OF ARIZONA 1 GRADE-SHELL  
WIREFRAMES (LOOKING EAST)**

**eU<sub>3</sub>O<sub>8</sub> STATISTICS**

Percent eU<sub>3</sub>O<sub>8</sub> values inside the grade-shell wireframes were tagged with domain identifiers and exported to Excel for basic statistical analysis. Given that eU<sub>3</sub>O<sub>8</sub> values from surface drill holes were measured using a different instrument than the underground gamma logs, Scott Wilson RPA generated separate descriptive statistics (Table 17-3) and a Quartile-Quartile plot (Figure 17-3) to assess whether any bias was evident between the measurement methods.

The average value of the eU<sub>3</sub>O<sub>8</sub> from underground drilling is 0.52%, while the average value from surface drilling is 0.88%. Since there are considerably more records

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from underground drilling (n=5,326) than from surface drilling (n=1,099), the average value is weighted toward the mean eU<sub>3</sub>O<sub>8</sub> from underground drilling. The Quartile-Quartile plot (Figure 17-3) confirms that eU<sub>3</sub>O<sub>8</sub> from surface drilling are higher, particularly for values above 0.5% eU<sub>3</sub>O<sub>8</sub>.

**TABLE 17-3 ARIZONA 1 DESCRIPTIVE STATISTICS OF eU<sub>3</sub>O<sub>8</sub> (%)  
 VALUES**

**Denison Mines Corp. Arizona Strip Project**

	<b>All Drill Holes</b>	<b>Underground Drill Holes</b>	<b>Surface Drill Holes</b>
Mean	0.58	0.52	0.88
Median	0.33	0.32	0.40
Standard Deviation	0.79	0.63	1.28
Coefficient of Variation	1.36	1.21	1.46
Minimum	0.00	0.00	0.04
Maximum	10.50	7.80	10.50
Count	6,425	5,326	1,099

**FIGURE 17-3 QUARTILE-QUARTILE PLOT OF eU<sub>3</sub>O<sub>8</sub> VALUES FROM  
 SURFACE VERSUS UNDERGROUND DRILL HOLES**

For values less than 0.5% eU<sub>3</sub>O<sub>8</sub>, the two data sets are somewhat similar. For values above 0.5% eU<sub>3</sub>O<sub>8</sub>, surface holes contain a higher proportion of high values. This bias suggests some questions regarding the reliability of the data set. However, Scott Wilson



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RPA considers the data set suitable to estimate inferred mineral resources considering the grade is biased low due to the high proportion of values from underground drilling. There is some opportunity for the average grade to be higher and improve the overall integrity of the database by relogging selected drill holes from surface and underground.

**CUTTING HIGH GRADE VALUES**

Because of the skewed nature of uranium breccia-pipe deposit data sets, a small number of high  $eU_3O_8$  values have a tendency to overly influence the average grade. Such outliers must be treated in some manner in order to reduce their influence on the average grade. One way of treating the high values is to cut or cap them at a specific grade level. In Scott Wilson RPA's view, raw values should be cut rather than composites, since composites, in general, smooth the high values by combining them with adjacent lower values and mask their influence on the average grade.

In the absence of production data to calibrate the cutting level, inspection of the  $eU_3O_8$  distribution can be used to estimate a first pass cutting, or capping, level. Scott Wilson RPA examined the distribution of  $eU_3O_8$  values to determine the effect of high values on the average grade. Given the smooth log-normal distribution shown in Figure 17-4 and the spatial distribution of the high-grade samples with respect to the domain boundaries, Scott Wilson RPA chose to cut  $eU_3O_8$  values to 6%.

Cutting  $eU_3O_8$  values to 6% affects 19 values which represent less than 0.5% of the resource values. This has a small effect on the average value (Table 17-4) and lowers the standard deviation. Scott Wilson RPA recommends that the cutting level be reassessed as more data become available.

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*www.scottwilson.com***FIGURE 17-4 FREQUENCY DISTRIBUTION OF eU<sub>3</sub>O<sub>8</sub> VALUES WITHIN THE  
0.2% eU<sub>3</sub>O<sub>8</sub> GRADE-SHELL WIREFRAME FOR ARIZONA 1****TABLE 17-4 ARIZONA 1 DESCRIPTIVE STATISTICS OF CUT eU<sub>3</sub>O<sub>8</sub>  
(%) VALUES****Denison Mines Corp. Arizona Strip Project**

	<b>All Drill Holes</b>	<b>Underground Drill Holes</b>	<b>Surface Drill Holes</b>
Cutting Level	6.00	6.00	6.00
Number of Values Cut	19	6	13
Mean	0.58	0.52	0.86
Median	0.33	0.32	0.40
Standard Deviation	0.76	0.62	1.19
Coefficient of Variation	1.32	1.20	1.38
Minimum	0.00	0.00	0.04
Maximum	6.00	6.00	6.00
Count	6,425	5,326	1,099

**COMPOSITING**

All digital eU<sub>3</sub>O<sub>8</sub> data received from Denison have 0.5 ft. sample lengths. Scott Wilson RPA composited these data to two-foot lengths starting at the first mineralization wireframe boundary from the collar and resetting at each new mineralization wireframe

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boundary. Composites less than 0.5 ft. long were excluded from the database. These may occur at the bottom of the mineralized zone, immediately above where the drill hole exits the grade-shell wireframe. Table 17-5 summarizes statistics of the uncut and cut eU<sub>3</sub>O<sub>8</sub> composite values.

**TABLE 17-5 ARIZONA 1 DESCRIPTIVE STATISTICS OF eU<sub>3</sub>O<sub>8</sub>  
(%) COMPOSITE VALUES  
Denison Mines Corp. Arizona Strip Project**

	All Drill Holes		Surface Holes		Underground Holes	
	Uncut	Cut	Uncut	Cut	Uncut	Cut
Mean	0.58	0.58	0.89	0.87	0.52	0.52
Median	0.35	0.35	0.41	0.41	0.33	0.33
Standard Deviation	0.75	0.72	1.25	1.16	0.57	0.57
Coefficient of Variation	1.28	1.24	1.40	1.34	1.10	1.09
Minimum	0.00	0.00	0.05	0.05	0.00	0.00
Maximum	8.28	5.96	8.28	5.96	5.42	5.10
Count	1,589	1,589	272	272	1,317	1,317

Scott Wilson RPA notes that the average grade of the interpolated blocks (0.68%) is greater than the average cut eU<sub>3</sub>O<sub>8</sub> value of the composites (0.58%). This is due to higher grade composites representing larger volumes within the wireframe models.

**DENSITY**

Scott Wilson RPA did not receive density measurements and, therefore, applied a tonnage factor of 13 ft.<sup>3</sup> which had been used in the historical resources and substantiated by Hack Canyon mines production data.

**VARIOGRAPHY AND KRIGING PARAMETERS**

Scott Wilson RPA used Sage 2001 software to prepare a series of variograms from eU<sub>3</sub>O<sub>8</sub> composite values located within the mineralized wireframes (Figures 24-1 to 24-5 in Appendix 1). To help create interpretable variograms, only composites less than 3% eU<sub>3</sub>O<sub>8</sub> were used in the analysis. The downhole variogram is well developed and indicates a nugget effect of 15%. Long range variograms were attempted in a variety of

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directions and commonly indicate a range of 25 ft. Single structure spherical models were used with a 15% nugget effect to model the experimental variograms.

Grade interpolation by kriging was restricted by the grade-shell wireframe models and by a spherical search ellipse with a 40 ft. radius. Interpolation parameters are summarized in Table 17-6.

**TABLE 17-6 ARIZONA 1 SEARCH STRATEGY  
AND KRIGING PARAMETERS  
Denison Mines Corp. Arizona Strip Project**

Search Ellipsoid X (ft.)	40
Y (ft.)	40
Z (ft.)	40
Orientation	spherical
Nugget	0.15
Sill	1.00
Range X (ft.)	25
Range Y (ft.)	25
Range Z (ft.)	25
Maximum samples per hole	n/a
Minimum samples	2
Maximum samples	20

**BLOCK MODEL**

A model of 2,976,000 blocks was built in Gemcom. Blocks are 5 ft. by 5 ft. by 5 ft. in size and the model has 62 columns, 48 rows, and 100 levels. The model origin is at coordinates 777,110 ft. E, 2,005,060 ft. N, and 4,500 ft. elevation. Each block in the model contains the following information:

Interpolated cut and uncut  $eU_3O_8$  grades related to mineralized blocks inside the mineralization wireframes (Figures 17-5 to 17-10).

The percentage volume of each block within the mineralization wireframes.

A global density of 13 ft.<sup>3</sup>/ton.

Mineral Resource classification identifiers for mineral resource blocks.

The distance to the closest composite used to interpolate the block grade.

The average distance to all composites used to interpolate the block grade.

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**CLASSIFICATION OF MINERAL RESOURCES**

Definitions for resource categories used in this report are consistent with those defined by CIM (2000 and 2004) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction. Mineral Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. Mineral Reserves are classified into Proven and Probable categories.

Scott Wilson RPA classified all mineral resources at Arizona 1 as Inferred since the chemical assay data provided were insufficient to thoroughly verify the calibration of the gamma-log to  $eU_3O_8$  values as discussed in Section 14 Data Verification. Also, Scott Wilson RPA was unable to confirm the downhole orientation survey data. Drill hole spacing at Arizona 1 relative to variogram ranges and apparent continuity of the mineralized zones are sufficient to upgrade some of the mineral resources to at least the Indicated category if the  $eU_3O_8$  values and orientation data can be confirmed.

**MINERAL RESOURCE VALIDATION**

Scott Wilson RPA validated the block model for mineral resource estimation based on visual inspection, volumetric comparison, and a comparison of results using inverse distance squared estimation.

Scott Wilson RPA visually compared the block grades with the composite grades on plan views and found good overall correlation. Scott Wilson RPA notes that its grade interpolation profiles should be reviewed and revised as new data become available.

The estimated total volume of the wireframe models is 912,600 ft.<sup>3</sup>, while the volume of the block model at a zero cut-off is 912,900 ft.<sup>3</sup>. The small difference in volumes is

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mainly due to the integration precision related to Gemcom's Level 3 (nine needles per cell) integration level used to estimate the percentage of mineralization in each block.

In addition to the kriging interpolation method, Scott Wilson RPA estimated the mineral resource at Arizona 1 using the inverse distance squared (Table 17-7). It is Scott Wilson RPA's opinion that the difference in contained pounds of eU<sub>3</sub>O<sub>8</sub> is within acceptable limits.

**TABLE 17-7 ARIZONA 1 COMPARISON OF KRIGING VERSUS INVERSE  
DISTANCE SQUARED METHOD  
Denison Mines Corp. Arizona Strip Project**

	<b>Tons</b>	<b>eU<sub>3</sub>O<sub>8</sub> (%)</b>	<b>eU<sub>3</sub>O<sub>8</sub> (lbs)</b>
<b>Kriging</b>	70,300	0.68	956,00
<b>Inverse Distance Squared</b>	70,300	0.72	1,012,000

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**SCOTT WILSON RPA  
 CANYON DEPOSIT RESOURCE ESTIMATE  
 RESOURCE DATABASE AND VALIDATION**

Scott Wilson RPA received header, survey, and eU<sub>3</sub>O<sub>8</sub> data from Denison in Excel format. Data were amalgamated and parsed as required, converted to ASCII, and imported into Gemcom Resource Evaluation Version 6.03 for mineral resource modeling.

The Canyon Gemcom database includes 45 surface holes totalling 61,400 ft. of drilling for an average depth of 1,364 ft. (Table 17-8). The database includes 37,442 eU<sub>3</sub>O<sub>8</sub> values with 0.5 ft. lengths totalling 18,721 ft. of values.

**TABLE 17-8 CANYON GEMCOM DATABASE  
 RECORDS  
 Denison Mines Corp. Arizona Strip Project**

<b>Table Name</b>	<b>Number of Records</b>
HOLE-ID	45
SURVEY	1,348
eU <sub>3</sub> O <sub>8</sub> VALUES	37,442
COMP_CTRL	72
COMPOSITE (Resource Comps.)	583

A variety of validation queries and routines were run in Excel, Access, and Gemcom to identify data errors. Only a few minor problems were identified and corrected. Scott Wilson RPA verified a significant number of data records with original logs. No discrepancies were identified.

In Scott Wilson RPA's opinion, the Gemcom drill hole database is valid and is suitable to make an Inferred Mineral Resource estimate.

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**CUT-OFF GRADE**

Scott Wilson RPA applied a 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off grade at Canyon. An explanation of costs and reasoning in determining this cut-off grade is described in the Arizona 1 subsection above.

**GEOLOGICAL INTERPRETATION AND 3D SOLIDS**

Scott Wilson used Leapfrog 3D contouring software to create preliminary grade-shell wireframes at a 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off. These were imported into Gemcom and used as a guide to create a set of polylines. Level plans are spaced 5 ft. or 10 ft. apart, depending on the density of drilling, and extend from 6,500 ft. to 4,525 ft. elevation. Contoured polylines were joined together in 3D using tie lines. During this stitching process, polylines and/or tie lines were snapped to composite control intervals which were interpreted using a 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off, minimum core length of 6 ft., and minimum waste thickness of 6 ft. Occasionally, lower grade intersections were included to facilitate continuity. Isolated mineralized intercepts greater than 10 ft. long were enveloped with cylinders of a diameter equal to or less than the length of the intersection, to a maximum of 25 ft.

Sixteen domains (Figure 17-11) were interpreted and assigned identifier numbers from D01 through to D18 (D09 and D17 are not included). Domains range in size from 200 tons to 39,500 tons for a total of 68,800 tons. Domain D01 makes up more than 50% of the total tons. Domains D02, D12, D14, and D15 together make up an additional 30% of the total tons. These large domains are described below.

Domains D01 and D02 are located between elevations 5,270 ft. and 5,110 ft. and represent almost 70% of the total tons of the mineral resource estimate at Canyon. These zones make up the central zone within the breccia pipe and form a thick semi-continuous cylinder 150 ft. in diameter. D01 and D02 are intersected by ten and three drill holes, respectively.

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The geometry of the deeper zones is thought to be similar to mineralization at the Orphan Mine where mineralization occurs as bands and rings around the periphery of the pipe. These domains cannot be fully tested by vertical drilling, so that mineralized intercepts can only provide general location. Therefore, a considerable degree of geologic interpretation is involved in projecting ring domains. Domains D12, D14, and D15 account for more than 20% of the mineral resource tons at Canyon and are intersected by three or four drill holes each.

**FIGURE 17-11 ISOMETRIC VIEW OF CANYON GRADE-SHELL  
WIREFRAMES (LOOKING NORTH)**

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**FIGURE 17-12 ISOMETRIC VIEW OF CANYON GRADE-SHELL  
WIREFRAMES (LOOKING EAST)**

**eU<sub>3</sub>O<sub>8</sub> STATISTICS**

Percent eU<sub>3</sub>O<sub>8</sub> values inside the grade-shell wireframes were tagged with domain identifiers and exported to Excel for statistical analysis. All values have 0.5 ft. sample lengths. Table 17-9 lists descriptive statistics for uncut % eU<sub>3</sub>O<sub>8</sub>.

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**TABLE 17-9 CANYON DESCRIPTIVE  
STATISTICS OF eU<sub>3</sub>O<sub>8</sub> (%) VALUES  
Denison Mines Corp. Arizona Strip Project**

Mean	1.02
Median	0.31
Standard Deviation	2.36
Coefficient of Variation	2.30
Minimum	0.00
Maximum	39.86
Count	2,366

**CUTTING HIGH GRADE VALUES**

Given the distribution of eU<sub>3</sub>O<sub>8</sub> values at Canyon, Scott Wilson RPA chose to cut eU<sub>3</sub>O<sub>8</sub> values to 10%. The reasoning and method are described in the Arizona 1 subsection above.

Cutting eU<sub>3</sub>O<sub>8</sub> values to 10% affects 36 values which represent 1.5% of the values. This has a small effect on the average eU<sub>3</sub>O<sub>8</sub> value (Table 17-10) and lowers the standard deviation to 1.71 from 2.26. Scott Wilson RPA recommends that the cutting level be reassessed as more data become available.

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**FIGURE 17-13 FREQUENCY DISTRIBUTION OF  $eU_3O_8$  VALUES WITHIN  
THE 0.2%  $eU_3O_8$  GRADE-SHELL WIREFRAME FOR CANYON  
TABLE 17-10 CANYON DESCRIPTIVE STATISTICS  
OF CUT  $eU_3O_8$  (%) VALUES  
Denison Mines Corp. Arizona Strip Project**

Cutting Level	10.00
Number of Values Cut	36
Mean	0.95
Median	0.31
Standard Deviation	1.82
Coefficient of Variation	1.91
Minimum	0.00
Maximum	10.00
Count	2,366

**COMPOSITING**

All digital  $eU_3O_8$  data received from Denison have 0.5 ft. sample lengths. Scott Wilson RPA composited this data to two-foot length starting at the first mineralization wireframe boundary from the collar and resetting at each new mineralization wireframe boundary. Composites less than 0.5 ft. long were excluded from the database. These may occur at the bottom of the mineralized zone, immediately above where the drill hole

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exits the grade-shell wireframe. Table 17-11 summarizes statistics of the uncut and cut eU<sub>3</sub>O<sub>8</sub> composite values.

**TABLE 17-11 CANYON DESCRIPTIVE STATISTICS OF eU<sub>3</sub>O<sub>8</sub> (%)  
COMPOSITE VALUES  
Denison Mines Corp. Arizona Strip Project**

	Uncut	Cut
Mean	1.03	0.96
Median	0.36	0.36
Standard Deviation	1.89	1.58
Coefficient of Variation	1.83	1.65
Minimum	0.00	0.00
Maximum	15.20	9.89
Count	584	584

Scott Wilson RPA notes that the average grade of the interpolated blocks (1.08%) is greater than the average cut eU<sub>3</sub>O<sub>8</sub> value of the composites (0.96%). This is due to higher grade composites representing larger volumes within the wireframe models.

**DENSITY**

Scott Wilson RPA did not receive density measurements and, therefore, applied a tonnage factor of 13 ft.<sup>3</sup> which had been used in the historical resources and substantiated by Hack Canyon mines production data.

**VARIOGRAPHY AND KRIGING PARAMETERS**

Scott Wilson RPA used Sage 2001 software to prepare a series of variograms of composite eU<sub>3</sub>O<sub>8</sub> values within the mineralized wireframes. To help create interpretable variograms, only composites less than 3% eU<sub>3</sub>O<sub>8</sub> were used in the analysis. The downhole variogram is well developed and indicates a nugget effect of 40% (Figures 24-6 in Appendix 1). Long range variograms were less developed and are difficult to interpret probably due to lack of data. Scott Wilson RPA applied similar variogram models as interpreted in the Arizona 1 data for kriging purposes.

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Grade interpolation was performed by kriging and was restricted by the grade-shell wireframe models and by a spherical search ellipse with a 40 ft. radius. Interpolation and kriging parameters are summarized in Table 17-12.

**TABLE 17-12 CANYON SEARCH STRATEGY  
AND KRIGING PARAMETERS  
Denison Mines Corp. Arizona Strip Project**

Search Ellipsoid X (ft.)	40
Y (ft.)	40
Z (ft.)	40
Orientation	spherical
Nugget	0.40
Sill	1.00
Range X (ft.)	25
Range Y (ft.)	25
Range Z (ft.)	25
Maximum samples per hole	n/a
Minimum samples	2
Maximum samples	20

**BLOCK MODEL**

A model of 417,696 blocks was built in Gemcom. Blocks are 5 ft. by 5 ft. by 5 ft. in size and the model has 48 columns, 38 rows, and 229 levels. The model origin is at coordinates 446,850 ft. E, 1,776,550 ft. N, and 5,680 ft. elevation. Each block in the model contains the following information:

Interpolated cut and uncut  $eU_3O_8$  grades related to mineralized blocks located within the mineralization wireframes (Figures 17-14 to 17-17).

The percentage volume of each block within the mineralization wireframes.

A global density of 13 ft.<sup>3</sup>/ton.

Mineral Resource classification identifiers for mineral resource blocks.

The distance to the closest composite used to interpolate the block grade.

The average distance to all composites used to interpolate the block grade.

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**CLASSIFICATION OF MINERAL RESOURCES**

Definitions for resource categories used in this report are consistent with those defined by CIM (2000 and 2004) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such form and quantity and of such grade or quality that it has reasonable prospects for economic extraction. Mineral Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. Mineral Reserves are classified into Proven and Probable categories.

Scott Wilson RPA classified all mineral resources at Canyon as Inferred given the drill hole spacing, variogram ranges relative to the apparent continuity of the mineralized zones, and the fact that the gamma-log to  $eU_3O_8$  conversion was not thoroughly verified against chemical assay results as discussed in section 14 Data Verification. Verification of  $eU_3O_8$  results by drilling and chemical assays would result in reclassification of mineral resources as Indicated and Measured.

**MINERAL RESOURCE VALIDATION**

Scott Wilson RPA validated the block model for mineral resource estimation using: visual inspection, volumetric comparison, and a comparison of results using inverse distance squared.

Scott Wilson RPA visually compared the block grades with the composite grades on plan views and found good overall correlation. Scott Wilson RPA notes that its grade interpolation profiles should be reviewed and revised as new data become available.

The estimated total volume of the wireframe models is 894,600 ft.<sup>3</sup>, while the volume of the block model at a zero cut-off is 894,400 ft.<sup>3</sup>.

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In addition to the kriging interpolation method, Scott Wilson RPA estimated the mineral resource at Canyon using the inverse distance squared (Table 17-13).

**TABLE 17-13 CANYON COMPARISON OF KRIGING VERSUS INVERSE  
 DISTANCE SQUARED METHOD  
 Denison Mines Corp. Arizona Strip Project**

	<b>Tons</b>	<b>eU3O8 (%)</b>	<b>eU3O8 (lbs)</b>
<b>Kriging</b>	70,500	1.08	1,523,000
<b>Inverse Distance Squared</b>	70,500	1.08	1,523,000

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**SCOTT WILSON RPA**  
**PINENUT DEPOSIT RESOURCE ESTIMATE**  
**RESOURCE DATABASE AND VALIDATION**

Scott Wilson RPA received header, survey, and eU<sub>3</sub>O<sub>8</sub> data from Denison in Excel format. Data were amalgamated and parsed as required, converted to ASCII, and imported into Gemcom Resource Evaluation Version 6.04 for mineral resource modeling.

The Pinenut Gemcom database includes drill holes from both surface and underground totalling 512 collar records with 119,647 ft. drilling (Table 17-14). Most drilling is from underground including 483 holes for a total length of 84,516 ft. and an average length of 175 ft. Surface drilling includes 29 holes with a total length of 35,130 ft. for an average depth of 1,211 ft.

**TABLE 17-14 PINENUT GEMCOM DATABASE  
RECORDS  
Denison Mines Corp. Arizona Strip Project**

<b>Table Name</b>	<b>Number of Records</b>
HOLE-ID	512
SURVEY	6,234
eU <sub>3</sub> O <sub>8</sub> VALUES	77,738
COMPOSITE (2 ft. intervals)	48,080

The Pinenut database includes 77,738 eU<sub>3</sub>O<sub>8</sub> values with 0.5 ft. lengths totalling 38,869 ft. of values. Underground drilling accounts for the bulk of the eU<sub>3</sub>O<sub>8</sub> data and includes 64,020 records for 32,010 ft. of eU<sub>3</sub>O<sub>8</sub> values.

A variety of validation queries and routines were run in Excel, Access, and Gemcom to identify data errors. Only a few minor problems were identified and corrected. Scott Wilson RPA verified a significant number of data records with original logs. No discrepancies were identified.

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Visual inspection of eU<sub>3</sub>O<sub>8</sub> values by Scott Wilson RPA found a number of unsampled intersections in well mineralized intersections in nearby drill holes suggesting that eU<sub>3</sub>O<sub>8</sub> data are discontinuous in some mineralized areas. Although unsampled intervals were treated as zero grade during the compositing process, best efforts were made to minimize the impact of unsampled, but potentially mineralized, intercepts.

In Scott Wilson RPA's suitable to make an Inferred Mineral Resource estimate at Pinenut.

### **CUT-OFF GRADE**

Scott Wilson RPA applied a 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off grade at Pinenut. An explanation of costs and reasoning in determining this cut-off grade is described in the Arizona 1 subsection above.

### **GEOLOGICAL INTERPRETATION AND 3D SOLIDS**

Taking into consideration the density of drilling, sample distribution pattern, and nature of mineralization, Scott Wilson RPA subdivided the Pinenut mineralization into three domains, D01, D0, and D03. A description of the domains and methods used to create them is given below:

The first step was to develop a wireframe representing the volume with semi-continuous to continuous eU<sub>3</sub>O<sub>8</sub> values reported. This sampling wireframe (D02) was required to constrain grade interpolation in the mineralized zones and to prevent dilution from unsampled intervals which may in fact be mineralized, as described above. The sampling wireframe was created by digitizing polylines on 20 ft. spaced level plans and tying them together in 3D.

D01 represents a 0.2% eU<sub>3</sub>O<sub>8</sub> grade-shell wireframe located inside D02. It has an overall trend that plunges steeply to the south. D01 was created using Leapfrog 3D contouring software at a 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off and was constrained by the D02 sampling wireframe. Best efforts were made to snap the wireframe to the assay boundaries, but, given the data distribution, this was not always possible.

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D03 represents two smaller zones located outside the D02 sampling wireframe. D03 was created by digitizing a number of polylines on plan and tie-lines in 3D. These zones are defined by only one drill hole.

Figures 17-18 and 17-19 depict the D01 and D03 wireframes. The D02 solids represent small mineralized zones within the overall D02 sampling wireframe (not shown) but outside the D01 grade-shells. The elevations shown in Figures 17-18 and 17-19 are where underground levels were established for underground drilling and development of the Pinenut deposit. Most mining took place under the 4070 level.

**FIGURE 17-18 ISOMETRIC VIEW OF PINENUT WIREFRAME SHELLS  
(LOOKING NORTH)**

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**FIGURE 17-19 ISOMETRIC VIEW OF PINENUT GRADE-SHELL  
WIREFRAMES (LOOKING EAST)**

**eU<sub>3</sub>O<sub>8</sub> STATISTICS**

Percent eU<sub>3</sub>O<sub>8</sub> values inside the grade-shell wireframes were tagged with domain identifiers and exported to Excel for statistical analysis. All values have 0.5 ft. sample lengths. Table 17-15 lists descriptive statistics for uncut %eU<sub>3</sub>O<sub>8</sub>.

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**TABLE 17-15 PINENUT DESCRIPTIVE STATISTICS  
OF eU<sub>3</sub>O<sub>8</sub> (%) VALUES  
Denison Mines Corp. Arizona Strip Project**

Mean	0.64
Median	0.36
Standard Deviation	0.83
Coefficient of Variation	1.30
Minimum	0.00
Maximum	10.13
Count	20,314

**CUTTING HIGH GRADE VALUES**

Given the distribution of eU<sub>3</sub>O<sub>8</sub> values at Pinenut, Scott Wilson RPA chose to cut eU<sub>3</sub>O<sub>8</sub> values to 8%. An explanation of the method is described in the Arizona 1 section above.

Cutting U<sub>3</sub>O<sub>8</sub> values to 8% affects only 17 values, five of which are located outside the eU<sub>3</sub>O<sub>8</sub> 0.2% grade-shell wireframe. This has virtually no effect on the average eU<sub>3</sub>O<sub>8</sub> value (Table 17-16) and lowers the standard deviation to 0.83 from 0.82. Scott Wilson RPA recommends that the cutting level be reassessed as more data become available.

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**FIGURE 17-20 FREQUENCY DISTRIBUTION OF  $eU_3O_8$  VALUES WITHIN  
 THE 0.2%  $eU_3O_8$  GRADE-SHELL WIREFRAME FOR PINENUT  
 TABLE 17-16 PINENUT DESCRIPTIVE STATISTICS OF  
 CUT  $eU_3O_8$  (%) VALUES INSIDE 0.2% GRADE-SHELL  
 Denison Mines Corp. Arizona Strip Project**

Cutting Level	8
Number of Values Cut	12
Mean	0.64
Median	0.36
Standard Deviation	0.82
Coefficient of Variation	1.30
Minimum	0.00
Maximum	8.00
Count	20,314

**COMPOSITING**

All digital  $eU_3O_8$  data received from Denison have 0.5 ft. sample lengths. Scott Wilson RPA composited this data to two-foot length starting at the first mineralization wireframe boundary from the collar and resetting at each new mineralization wireframe boundary. Composites less than 0.5 ft. long were excluded from the database. These may occur at the bottom of the mineralized zone, immediately above where the drill hole



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exits the grade-shell wireframe. Table 17-17 summarizes statistics of the uncut and cut eU<sub>3</sub>O<sub>8</sub> composite values.

**TABLE 17-17 PINENUT DESCRIPTIVE STATISTICS OF eU<sub>3</sub>O<sub>8</sub> (%)  
COMPOSITE VALUES INSIDE 0.2% GRADE-SHELL  
Denison Mines Corp. Arizona Strip Project**

	Uncut	Cut
Mean	0.62	0.62
Median	0.36	0.36
Standard Deviation	0.78	0.77
Coefficient of Variation	1.27	1.26
Minimum	0.00	0.00
Maximum	8.84	7.93
Count	5,297	5,297

**DENSITY**

Scott Wilson RPA did not receive density measurements and, therefore, applied a tonnage factor of 13 ft.<sup>3</sup> which had been used in the historical resources and substantiated by Hack Canyon mines production data.

**VARIOGRAPHY AND KRIGING PARAMETERS**

Scott Wilson RPA used Sage 2001 software to prepare a series of variograms of composite eU<sub>3</sub>O<sub>8</sub> values within the mineralized wireframes. To help create interpretable variograms, only composites less than 3% eU<sub>3</sub>O<sub>8</sub> were used in the analysis. The downhole variogram is well developed and indicates a low nugget effect of 10% (Figure 24-7 in Appendix 1). Long range variograms (Figure 24-8 and 24-9 in Appendix 1) suggest that the direction of maximum continuity dips steeply to the south. Variograms were modeled using nested spherical models.

Grade interpolation was performed by kriging and was restricted by the grade-shell wireframe models and by a spherical search ellipse. Interpolation parameters are summarized in Table 17-18 and 17-19.

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**TABLE 17-18 PINENUT SEARCH ELLIPSE PARAMETERS**  
**Denison Mines Corp. Arizona Strip Project**

		<b>D01</b>	<b>D02</b>	<b>D03</b>
Search Ellipsoid	X (ft.)	20	13	13
	Y (ft.)	30	13	13
	Z (ft.)	13	13	13
Orientation	X	00°/090°	spherical	spherical
	Y	-75°/180°		
	Z	-15°/000°		
Maximum samples per hole				
Minimum samples		5	2	2
Maximum samples		12	10	10

**TABLE 17-19 PINENUT VARIOGRAM PARAMETERS**  
**Denison Mines Corp. Arizona Strip Project**

	<b>C0</b>	<b>C1 Sill</b>	<b>C1 Range (ft.)</b>	<b>C2 Sill</b>	<b>C2 Range (ft.)</b>
X	0.1	0.7	10	0.2	30
Y	0.1	0.5	8	0.4	20
Z	0.1	0.6	6	0.2	13

**BLOCK MODEL**

A model of 947,520 blocks was built in Gemcom. Blocks are 5 ft. by 5 ft. by 5 ft. in size and the model has 72 columns, 94 rows, and 140 levels. The model origin is at coordinates 799,199 ft. E, 2,004,100 ft. N, and 4,500 ft. elevation. Each block in the model contains the following information:

Interpolated cut and uncut eU<sub>3</sub>O<sub>8</sub> grades related to mineralized blocks located within the mineralization wireframes (Figures 17-21 to 17-24).

The percentage volume of each block within the mineralization wireframes.

A global density of 13 ft.<sup>3</sup>/ton.

Mineral Resource classification identifiers for mineral resource blocks.

The distance to the closest composite used to interpolate the block grade.

The average distance to all composites used to interpolate the block grade.

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**MINERAL RESOURCE REPORTING**

Mineral resource reports were created using Gemcom volumetrics reporting procedures. All blocks within domains D01 and D03, regardless of grade, were included as part of the mineral resource statement since each of these domains were constrained using wireframes built at the 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off grade. Given that the block grades within the D02 domain were interpolated unconstrained further block selection was required to ensure that the blocks over the 0.2% eU<sub>3</sub>O<sub>8</sub> cut-off included as part of the mineral resource were spatially grouped with a reasonable chance of underground mining. Small groups of isolated blocks less than 250 tons were not included as part of the mineral resource statement.

As noted in Section 6 History of this report, mineralization below 4,087 ft. elevation was mined out in the 1980s, prior to Pinenut being placed on standby. Scott Wilson RPA, therefore, restricted all mineral resources estimated at Pinenut to areas above that elevation.

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**CLASSIFICATION OF MINERAL RESOURCES**

Definitions for resource categories used in this report are consistent with those defined by CIM (2000 and 2004) and adopted by NI 43-101. In the CIM classification, a Mineral Resource is defined as a concentration or occurrence of natural, solid, inorganic or fossilized organic material in or on the Earth's crust in such Form and quantity and of such grade or quality that it has reasonable prospects for economic extraction. Resources are classified into Measured, Indicated, and Inferred categories. A Mineral Reserve is defined as the economically mineable part of a Measured or Indicated Mineral Resource demonstrated by at least a Preliminary Feasibility Study. Mineral Reserves are classified into Proven and Probable categories.

Scott Wilson RPA classified all mineral resources at Pinenut as Inferred since the chemical assay data provided was insufficient to thoroughly verify the calibration of the gamma-log to eU<sub>3</sub>O<sub>8</sub> values as discussed in Section 14 Data Verification. Also, Scott Wilson RPA was unable to confirm the downhole orientation survey data. Drill hole spacing at Pinenut relative to variogram ranges and apparent continuity of the mineralized zones is sufficient to upgrade some of the mineral resources to at least the Indicated category if the eU<sub>3</sub>O<sub>8</sub> values and orientation data could be confirmed.

**MINERAL RESOURCE VALIDATION**

Scott Wilson RPA validated the block model for mineral resource estimation based on historic production data, visual inspection, volumetric comparison, a comparison of results using inverse distance squared.

Some validation of the model is given by comparing block model results with historic production data below the 4,087 elevation. The block model in this part of the deposit (not included in the mineral resource estimate) reports 36,000 tons grading 0.89% eU<sub>3</sub>O<sub>8</sub> (640,800 lbs eU<sub>3</sub>O<sub>8</sub>) compared to historic production of 25,556 tons grading 1.03% U<sub>3</sub>O<sub>8</sub> (526,023 lbs U<sub>3</sub>O<sub>8</sub>). It is not known what parts of the estimated mineral resource were



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mined below the 4,087 ft. elevation, so it is not possible to reconcile the tonnage, but the grades area similar.

Scott Wilson RPA visually compared the block grades with the composite grades on plan views and found good overall correlation. Scott Wilson RPA notes that its grade interpolation profiles should be reviewed and revised as new data become available.

The estimated total volume of the 0.2% eU<sub>3</sub>O<sub>8</sub> wireframe models is 1,452,955 ft.<sup>3</sup>, while the volume of the block model at a zero cut-off is 1,454,217 ft.<sup>3</sup>. These volumes include the material below 4,087 ft. which has been mined out and is not reported in the mineral resource estimate. The small difference in volume may be due to Gemcom software's needling method that assigns volumes to partial blocks.

In addition to the kriging interpolation method, Scott Wilson RPA estimated the mineral resource, above the 4,087 ft. level, at Pinenut using the inverse distance squared (Table 17-20).

**TABLE 17-20 PINENUT COMPARISON OF KRIGING VERSUS INVERSE  
DISTANCE SQUARED METHOD**

**Denison Mines Corp. Arizona Strip Project**

	<b>Tons</b>	<b>eU<sub>3</sub>O<sub>8</sub> (%)</b>	<b>eU<sub>3</sub>O<sub>8</sub> (lbs)</b>
<b>Kriging</b>	99,200	0.44	873,000
<b>Inverse Distance Squared</b>	99,200	0.46	913,000

17-48

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**18 OTHER RELEVANT DATA AND INFORMATION**

**HISTORICAL LIFE OF MINE PLANS**

A life of mine plan was established for the Canyon pipe by Energy Fuels and was presented in the Environmental Impact Study for the Canyon Mine published in 1985. The plan included the sinking of a 1,500 ft. vertical shaft with development levels between 900 ft. and 1,500 ft. This development program was expected to require about three years for completion. Following mine development, mine production will commence at a rate of about 200 tons of ore per day. A minimum of five years of mining is anticipated, with the potential for an increase in mine life based on additional mineralization identified by underground drilling. Overall project life is expected to be approximately 10 years. A reasonably detailed estimate of capital costs for the Canyon mine from a Preliminary Feasibility Report compiled by Energy Fuels in late 1984 constituted \$4.1 million in plant and equipment, and \$8.5 million in pre-production development.

Energy Fuels compiled a Final Feasibility Report on the Arizona 1 project dated January 1, 1993. This report outlines the basics of a two-phase program of exploration, development and production over a six-year mine life. Considering development work completed to date, the anticipated remaining pre-production costs totalled \$5.6 million for a potential mine life of about four years.

Additional costs necessary to resume production and to complete mining of the Pinenut deposit were reported by Saskatchewan Mining & Mineral Services Ltd. in its acquisition study of Energy Fuels for IUC dated November 25, 1996, to be \$1.4 million.

These feasibility studies and life of mine plans will require updating using current prices and costs.

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PROCESSING**

It is anticipated that all mineralized material produced from Denison breccia pipes on the Arizona Strip will be processed at Denison's White Mesa mill at Blanding, southeastern Utah.

The White Mesa mill is located six miles south of Blanding. Energy Fuels anticipated reopening of many small low-grade mines on the Colorado Plateau, and the mill was designed to treat 2,000 short tons of ore per day. Construction commenced in June 1979 and was completed in May 1980. Due to uranium market variability, the mill has frequently operated on a campaign basis in order to provide intervals for stockpiling sufficient ore to operate the mill at capacity. Treatment of higher grade ores from the Arizona Strip required certain minor modification to the leaching circuit and is at a rate somewhat lower than nominal capacity. The basic mill process is a sulphuric acid leach with solvent extraction recovery of uranium and vanadium.

Since 1980, the mill has operated intermittently in a series of campaigns to process ores from the Arizona Strip as well as from a few higher-grade mines of the Colorado Plateau. Overall, the mill has produced approximately 28 million pounds  $U_3O_8$  and 33 million pounds  $V_2O_5$ .

**HISTORICAL OPERATING COSTS**

Operating costs estimated in the past for the three major Denison projects in the Arizona Strip are summarized in Table 18-1.

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*www.scottwilson.com***TABLE 18-1 HISTORICAL OPERATING COST ESTIMATES BY ENERGY****FUELS****Denison Mines Corp. Arizona Strip Project**

	<b>Mining \$/ton</b>	<b>Haulage \$/ton</b>	<b>Milling \$/ton</b>	<b>Total \$/ton</b>
Canyon (1984)	\$ 38.85	\$ 22.00	\$ 43.00	\$ 103.85
Arizona 1 (1993)	\$ 34.28	\$ 25.17	\$ 53.24	\$ 112.69
Pinenut (1996)	\$ 39.72	\$ 34.87	\$ 41.36	\$ 115.95

Holding costs for Arizona Strip properties are minimal and consist entirely of annual fees for unpatented mining claims on BLM land.

Reclamation bonds in place for the Arizona Strip properties amount to \$375,000.

**URANIUM MARKET ANALYSIS**

After reaching historical lows in the 1990s, uranium prices have risen substantially from approximately US\$10.00 per pound U<sub>3</sub>O<sub>8</sub> in early 2003 to over US\$70.00 per pound U<sub>3</sub>O<sub>8</sub> by late 2006.

18-3

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**Historical Uranium Prices**

Major factors influencing this rapid increase include: a weak US dollar compared to currencies in the major uranium producing countries; recent disruptions in the uranium supply chain; waning commercial uranium inventories; Russia's withdrawal from the uranium concentrates market; increasing uranium requirements, and speculative acquisition of uranium concentrates. On a more fundamental basis, the outlook for nuclear power has changed dramatically toward the positive since 2000. Global warming concerns, an excellent safety record, increasing efficiency, competitive costs, progress on waste disposal issues, and continuing new reactor installations have all contributed to an atmosphere of healthy growth for the nuclear industry in general.

As a result of these influences, the market for natural uranium concentrates has evolved from a market driven by excess secondary supplies to one driven by primary production. This change is not fleeting, but fundamental; it is the foundation of the future and must be recognized by both producer and consumer alike.

18-4

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Global uranium requirements are expected to rise from the current level of about 170 million pounds  $U_3O_8$  per year to 186 million pounds  $U_3O_8$  per year by 2010 and further to approximately 220 million pounds  $U_3O_8$  per year by 2020.

International Nuclear, Inc. (iNi), a uranium consulting firm located in Golden, Colorado, and of which one of the authors, Thomas C. Pool, P.E., is a principal, forecasts future uranium prices based on the concept that prices are a function of the break-even production cost of the marginal producer which is taken as the equivalent of the spot market price. Nevertheless, this fundamental approach must be adjusted for market dynamics and by forecast anomalies in purchasing activity.

On this basis, iNi expects that uranium prices will continue to rise through 2008 but then begin to moderate late in the decade as new primary production facilities fill the anticipated supply gap and the market attains reasonable balance. In the longer term, depletion of some of the lower cost deposits and increasing requirements will push prices higher once again. Market prices are expected to exceed \$25 per pound  $U_3O_8$  for the foreseeable future.

**ENVIRONMENTAL CONSIDERATIONS**

Mine development of uranium-bearing breccia pipes of the Arizona Strip requires a minimum of surface disturbance, typically less than 20 acres, and has little if any impact on groundwater since most of the mines are relatively dry. The overall environmental impact is small. Nevertheless, the Grand Canyon area is environmentally sensitive in many ways and the permitting, development, and operation of uranium mine is a contentious issue.

The Canyon mine has been particularly contentious, mainly due to Havasupai Indian religious claims, but also due to its proximity to the primary access highway to Grand Canyon National Park.

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The Havasupai Indian Reservation is located some 35 mi. from the Canyon mine site. Still, the Tribe claims that the mine site has significant religious value and has actively sought to prevent the mine from being completed through legal action. Following the Environment Impact Statement process in 1986, a series of court hearings and appeals lasted into August 1991 when the U.S. District court approved a modified Plan of Operation and denied an appeal of the Tribe.

Northern Arizona, and the Flagstaff area in particular, is a centre of environmental activism which includes a strong antinuclear component. Relatively easy access to the mine site has eased the ability of protesters to gather at the site and to attempt to damage and/or disrupt the operation. It is not clear that a resumption of mining activity on the Canyon site could proceed unimpeded.

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**SCOTT WILSON RPA****19 INTERPRETATION AND CONCLUSIONS**

Denison's breccia pipe uranium deposits constitute significant current inferred mineral resources which are well defined within the standards of the US uranium industry. The pipes are partially to fully developed, partially to fully permitted, have a substantial operating history of nearby similar deposits to draw upon for operational guidance, have full access to an operating uranium mill with a substantial operating history on similar mineralized material, and exhibit a sound economic potential in the current uranium market.

Mineral resources for the Arizona 1, Canyon, and Pinenut breccia pipes as estimated by Scott Wilson RPA are listed in Table 19-1. These have been estimated at a cut-off grade of 0.2% eU<sub>3</sub>O<sub>8</sub>.

**TABLE 19-1 INFERRED MINERAL RESOURCES FEBRUARY 2007**  
**Denison Mines Corp. Arizona Strip Project**

	Tons	eU <sub>3</sub> O <sub>8</sub> (%)	eU <sub>3</sub> O <sub>8</sub> (lbs)
<b>ARIZONA 1</b>	70,300	0.68	956,000
<b>CANYON</b>	70,500	1.08	1,523,000
<b>PINENUT</b>	99,200	0.44	873,000

## Notes:

1. CIM Definitions were followed for mineral resources.
  2. Interval grades were converted from the gamma log data and are, therefore, equivalent U<sub>3</sub>O<sub>8</sub> (eU<sub>3</sub>O<sub>8</sub>)
  3. Grade-shell wireframes at 0.2% eU<sub>3</sub>O<sub>8</sub> were used to constrain the grade interpolation. All material within the wireframes is included in the estimate.
  4. eU<sub>3</sub>O<sub>8</sub> values were interpolated by kriging.
  5. Wireframes were constructed with a minimum drill hole sample length of 6 ft.
  6. High eU<sub>3</sub>O<sub>8</sub> grades were cut to 6% at Arizona 1, 10% at Canyon, and 8% at Pinenut.
  7. Blocks are 5 ft. by 5 ft. by 5 ft.
  8. Gemcom Software International Inc. Resource Evaluation Edition Version GEMS 6.02 was used.
- Scott Wilson RPA is of the opinion that the properties are of merit and warrant the proposed programs and budgets.



**SCOTT WILSON RPA**  
**20 RECOMMENDATIONS**

Scott Wilson RPA recommends that Denison:

1. Consolidate and catalogue the Arizona Strip database in a location and facility where it can be conveniently used to verify, update, and complete resource/reserve estimates for the Arizona 1, Canyon, and Pinenut pipes so that they can be used as a basis for an updated mine planning and feasibility studies.
2. Verify and validate the Arizona Strip database including resurveying surface drill collar locations and down-hole orientation, and verifying the gamma-log to  $eU_3O_8$  calibrations with chemical assaying.
3. Compile updated production studies on each relevant pipe.
4. Hire trained personnel to carry through the verification and planning process and to form a cadre for mine development and operation.
5. Moving forward with permitting activities as necessary to meet the requirements of regulatory authorities.
6. Initiate the rehabilitation process for existing facilities.

**BUDGET**

Scott Wilson RPA recommends the following program to assess the work required, costs and economics of placing the three Arizona Strip projects into production. The total budget, which includes starting the site rehabilitation and the permitting process, is \$925,000.

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**SCOTT WILSON RPA****TABLE 20-1 RECOMMENDED PROGRAM AND BUDGET****Denison Mines Corp. Arizona Strip Project**

<b>Item</b>	<b>US\$</b>
<b>Stage 1</b>	
Database Update	100,000
Production Studies Update	150,000
Total Site Rehabilitation Costs	150,000
Personnel Costs (Mining Engineer, Geologist, CAD Technician)	325,000
Permitting Costs	100,000
<b>Subtotal</b>	<b>825,000</b>
Contingency	100,000
<b>Total</b>	<b>925,000</b>

20-2

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**21 REFERENCES**

- Arizona 1 Project; Final Feasibility Report; Energy Fuels Nuclear, Inc.; January 1, 1993.
- Canyon Project; Preliminary Feasibility Report; R. M. Steele; Energy Fuels Nuclear, Inc.; December 11, 1984.
- CIM, 2004: CIM Definition Standards for Mineral Resources and Mineral Reserves, Prepared by CIM Standing Committee on Reserve Definitions, Adopted by CIM Council, November 14, 2004.
- CIM, 2000: CIM Standards on Mineral Resources and Reserves Definitions and Guidelines, CIM Bulletin Vol. 93, No. 1044, October 2000.
- International Uranium Corporation Acquisition Study of Energy Fuels Nuclear, Inc.; Saskatoon Mining & Mineral Services Ltd.; November 25, 1996.
- Memorandum from I.W. Mathisen, Jr., dated January 15, 1985.
- Memorandum to I.W. Mathisen from J.T. Cottrell on Canyon Resource 1994 Changes; Energy Fuels Nuclear; June 27, 1994.
- Memorandum to Roger B. Smith from Donn M. Pillmore; Arizona 1 Mine Recoverable Ore Reserve Calculation; Energy Fuels Nuclear; April 7, 1992.
- Scott, J.H., 1962: GAMLOG A Computer Program for Interpreting Gamma-Ray Logs; United States Atomic Energy Commission, Grand Junction Office, Production Evaluation Division, Ore Reserves Branch, TM-179, September, 1962.

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**22 SIGNATURE PAGE**

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This report titled Technical Report on the Arizona Strip Uranium Project, Arizona, U.S.A. and dated February 26, 2007, was prepared and signed by the following authors:

**(Signed & Sealed)**

Dated at Denver, Colorado  
February 26, 2007

Thomas C. Pool, P.E.  
Associate Mining Engineer  
Scott Wilson Roscoe Postle Associates Inc.

**(Signed & Sealed)**

Dated at Toronto, Ontario  
February 26, 2007

David A. Ross, P. Geo.  
Senior Geologist  
Scott Wilson Roscoe Postle Associates Inc.  
22-1

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**SCOTT WILSON RPA**  
**23 CERTIFICATES OF QUALIFICATIONS**  
**THOMAS C. POOL, P.E.**

I, Thomas C. Pool, P.E., as an author of this report entitled Technical Report on the Arizona Strip Uranium Project, Arizona, U.S.A. , prepared for Denison Mines Corp. and dated February 26, 2007, do hereby certify that:

1. I am an Associate Mining Engineer with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.
2. I am a graduate of Colorado School of Mines with a professional degree in Mining Engineering.
3. I am registered as a Professional Engineer in the State of Colorado (Reg.#12108 ). I am a Member of the Australasian Institute of Mining & Metallurgy, and a Member of Society for Mining, Metallurgy, and Exploration, Inc.
4. I have worked as a mining engineer for a total of 36 years since my graduation. My relevant experience for the purpose of the Technical Report is: approximately 30 years as a consultant in the uranium industry having evaluated scores of projects throughout the world.
5. I have read the definition of qualified person set out in National Instrument 43-101 ( NI43-101 ) and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a qualified person for the purposes of NI43-101.
6. I visited the Arizona Strip Property on October 12, 2005 and at several times in the past.
7. I am responsible for overall preparation of this Technical Report.
8. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.
9. I have had no prior involvement with the property that is the subject of the Technical Report other than my employment with Energy Fuels Nuclear and the Concord group of companies in the late 1980s and early 1990s.
10. I have read National Instrument 43-101, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

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11. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 26<sup>th</sup> day of February, 2007

**(Signed & Sealed)**

Thomas C. Pool, P.E

23-2

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**DAVID A. ROSS, M.SC., P.GEO.**

I, David A. Ross, P.Geo., as an author of this report entitled "Technical Report on the Arizona Strip Uranium Project, Arizona, U.S.A.", prepared for Denison Mines Corp. and dated February 26, 2007, do hereby certify that:

1. I am a Senior Geologist with Scott Wilson Roscoe Postle Associates Inc. of Suite 501, 55 University Ave., Toronto, ON, M5J 2H7.
2. I am a graduate of Carleton University, Ottawa, Canada, in 1993 with a Bachelor of Science degree in Geology and Queen's University, Kingston, Ontario, Canada, in 1999 with a Master of Science degree in Mineral Exploration.
3. I am registered as a Professional Geoscientist in the Province of Ontario (Reg.#1192). I have worked as a geologist for a total of 13 years since my graduation. My relevant experience for the purpose of the Technical Report is:  
Mineral resource estimation and reporting on numerous mining and exploration projects around the world.

Exploration geologist on a variety of gold and base metal projects in Canada, Indonesia, Chile, and Mongolia.

4. I have read the definition of "qualified person" set out in National Instrument 43-101 ( NI43-101 ) and certify that by reason of my education, affiliation with a professional association (as defined in NI43-101) and past relevant work experience, I fulfill the requirements to be a "qualified person" for the purposes of NI43-101.
5. I did not visit the property.
6. I am responsible for Section 17 of the Technical Report.
7. I am independent of the Issuer applying the test set out in Section 1.4 of National Instrument 43-101.
8. I have had no prior involvement with the property that is the subject of the Technical Report.
9. I have read National Instrument 43-101, and the Technical Report has been prepared in compliance with National Instrument 43-101 and Form 43-101F1.

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10. To the best of my knowledge, information, and belief, the Technical Report contains all scientific and technical information that is required to be disclosed to make the technical report not misleading.

Dated this 26<sup>th</sup> day of February, 2007

**(Signed & Sealed)**

David A. Ross, M.Sc., P.Geol

23-4

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**24 APPENDIX 1**

**VARIOGRAMS (USING SAGE 2001 SOFTWARE)**

**FIGURE 24-1 DOWNHOLE VARIOGRAM ARIZONA 1**

**FIGURE 24-2 DIRECTIONAL (090/00) VARIOGRAM ARIZONA 1**

24-1

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**FIGURE 24-3 DIRECTIONAL (090/-45) VARIOGRAM ARIZONA 1**

**FIGURE 24-4 DIRECTIONAL (000/-65) VARIOGRAM ARIZONA 1**

24-2

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**FIGURE 24-5 DIRECTIONAL (000/-90) VARIOGRAM ARIZONA 1**

**FIGURE 24-6 DOWNHOLE VARIOGRAM CANYON**

24-3

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**FIGURE 24-7 DOWNHOLE VARIOGRAM PINENUT**  
**FIGURE 24-8 DIRECTIONAL (090/00) VARIOGRAM PINENUT**  
24-4

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**FIGURE 24-9 DIRECTIONAL (000/-15) VARIOGRAM PINENUT**  
24-5

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Fax: (416) 947-0395**

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March 28, 2007

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Autorité des marchés financiers

New Brunswick Securities Commission

Nova Scotia Securities Commission

Prince Edward Island Department of Provincial Affairs and Attorney General

Securities Division, Department of Justice Government of Newfoundland and Labrador

Dear Sirs/Mesdames:

**Re: Denison Mines Corp. (the Company )**

**Filing of Technical Report dated February 26, 2007**

I, Thomas C. Pool, PE., consent to the public filing of the technical report titled *Technical Report on the Arizona Strip Uranium Project, Arizona, U.S.A.* (the Technical Report ) prepared by Scott Wilson Roscoe Postle Associates Inc. for the Company.

I further confirm that I have read the written disclosure in the Company s news release titled *Denison Announces Inferred Mineral Resource Estimates on its Arizona Strip Properties* dated March 20, 2007 and that it fairly and accurately represents the information in the Technical Report that supports the disclosure.

This letter is provided to the securities regulatory authorities to whom it is addressed pursuant to the requirements of applicable securities legislation and not for any other purpose.

Sincerely,

**SCOTT WILSON ROSCOE POSTLE ASSOCIATES INC.**

/s/ Thomas C. Pool

Thomas C. Pool, P.E.

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**SCOTT WILSON RPA**

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**Exhibit No. 3**

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**Email: *david.ross@scottwilson.com***

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March 28, 2007

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Alberta Securities Commission  
Saskatchewan Financial Services Commission  
The Manitoba Securities Commission  
Ontario Securities Commission  
Autorité des marchés financiers  
New Brunswick Securities Commission  
Nova Scotia Securities Commission  
Prince Edward Island Department of Provincial Affairs and Attorney General  
Securities Division, Department of Justice Government of Newfoundland and Labrador

Dear Sirs/Mesdames:

**Re: Denison Mines Corp. (the Company )**

**Filing of Technical Report dated February 26, 2007**

I, David A. Ross, P.Geo., consent to the public filing of the technical report titled *Technical Report on the Arizona Strip Uranium Project, Arizona, U.S.A.* (the Technical Report ) prepared by Scott Wilson Roscoe Postle Associates Inc. for the Company.

I further confirm that I have read the written disclosure in the Company's news release titled *Denison Announces Inferred Mineral Resource Estimates on its Arizona Strip Properties* dated March 20, 2007 and that it fairly and accurately represents the information in the Technical Report that supports the disclosure.

This letter is provided to the securities regulatory authorities to whom it is addressed pursuant to the requirements of applicable securities legislation and not for any other purpose.

Sincerely,

David A. Ross, P.Geo.  
Scott Wilson Roscoe Postle Associates Inc.