

# Denison Mines Corporation

## Specialty Minerals and Metals

Rating  
**SPECULATIVE BUY**

Price Target  
**C\$0.90**

DML-TSX  
DNN-NYSE

Price  
**C\$0.47**

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## Out with the old, in with the new; Denison announces freeze wall design for Phoenix

**Out with the old, in with the new:** This morning Denison announced the decision to adopt a freeze wall design for in-situ recovery mining at the high-grade Phoenix deposit (Figure 1). This decision follows the completion of a trade-off study which assessed the merit of the freeze wall design versus the previously planned freeze dome. Based on the results of the study, as further detailed below, the freeze wall is expected to reduce technical and operational risk and upfront capital costs, and provide greater environmental protection. Accordingly, Denison plans to incorporate the use of the freeze wall (rather than the dome) in all project design and environmental assessment efforts going forward, including a future Feasibility Study.

In our view, this announcement is positive for the ongoing development and de-risking of the Phoenix deposit. As a reminder, we continue to believe that Denison's shares will re-rate as the company advances technical work in support of in-situ recovery mining at Phoenix. Furthermore, given the positive implications for costs, the decision to adopt a freeze wall could provide upside to our current valuation. However, as we are uncertain as to the magnitude of the potential reduction in capital, our estimates remain unchanged at this time. We maintain our SPEC BUY rating and \$0.90/sh target price; our target price remains based on 1.0x NAV measured as at Oct 1, 2021.

**Benefits of the freeze wall:** Based on the results of the tradeoff study and work completed on the Waterbury PEA (see our previous note [here](#)), there are a number of potential benefits related to the adoption of a freeze wall relative to the freeze dome as previously outlined in the Wheeler River PFS. These include:

- **Lower technical and operational risk:** The freeze wall design is expected to use conventional diamond drilling methods for installation, rather than more expensive directional/horizontal drilling. As this drilling method is well understood it decreases technical complexity and should provide greater certainty in costs. Furthermore, by using a wall rather than a dome design, there is no longer the risk that the ISR wells intersect and damage a freeze hole during installation.
- **A potential reduction in initial capital:** The freeze wall design will consist of vertical/angled freeze holes rather than larger horizontal freeze holes that encapsulate the entire deposit. This design allows for a phased mining approach where a smaller initial freeze wall can be installed to commence mining, followed by additional ground freezing throughout the mine life. By mining the deposit in phases, the lower capital-intensive areas (of higher-grade) can be mined first, which is expected to defer capital costs and shorten construction timelines. For context, if we reduce our upfront capital cost by 10% and spread capital spending over the life-of-mine (based on the five Phases - Figures 2 and 3), our project-level NAV for Wheeler River (which includes Phoenix) would increase by 7%.
- **Greater environmental protection:** The freeze wall design provides full containment from the basement rock underlying the deposit to surface. Full containment of the mining area enhances environmental protection of the area so that if there was ever a failure in an ISR well, any released mining solutions would be contained. We expect this to be viewed positively from a permitting perspective. As a reminder, Denison will formally resume its Environmental Assessment process in January 2021.

### Market Data

52-Week Range (C\$) :	0.24 - 0.75
Avg Daily Vol (000s) :	556.41
Shares Out. (M) :	677.7
Market Cap (C\$M) :	318.5
Dividend /Shr (C\$) :	0.00
Dividend Yield (%) :	0.0

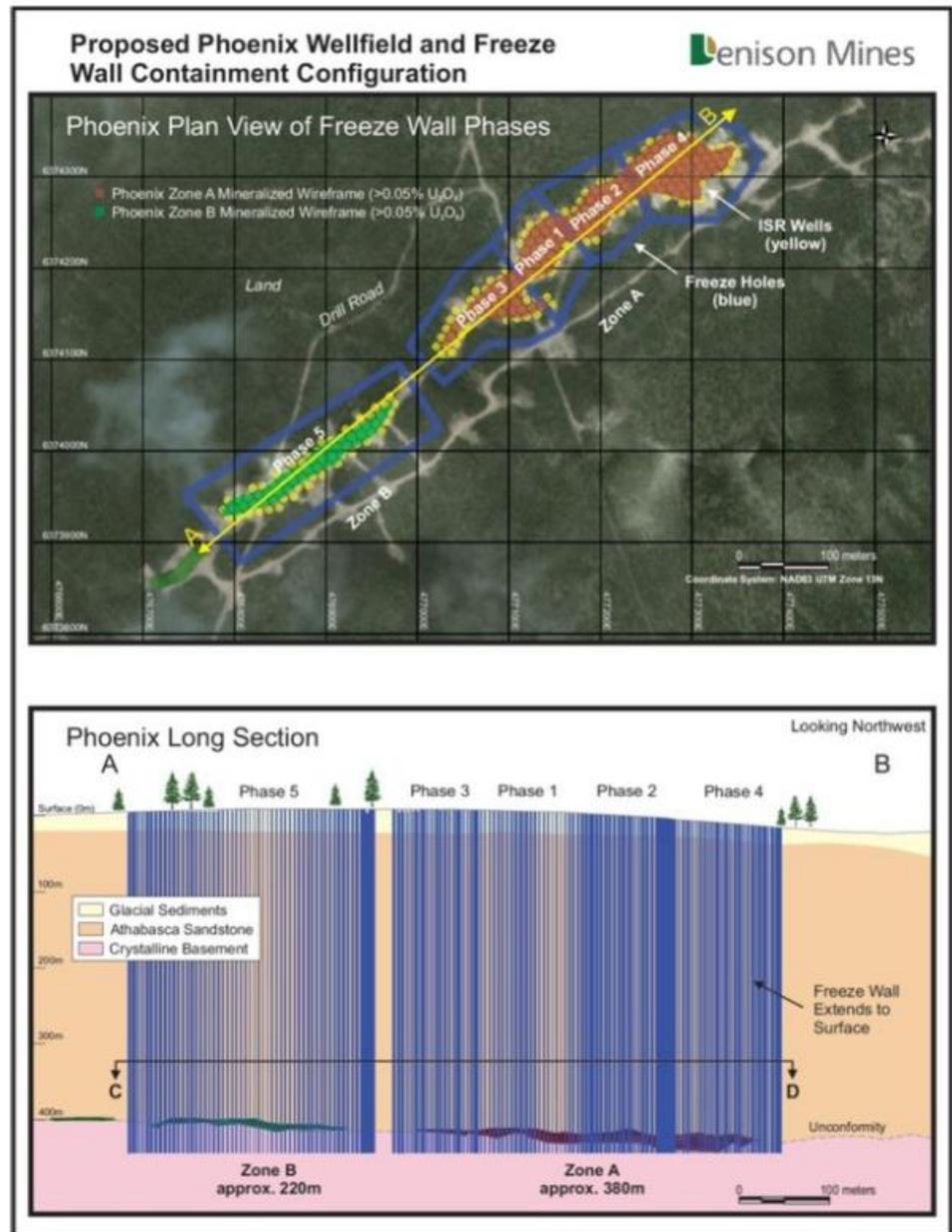


Source: FactSet

Priced as of close of business 30 November 2020

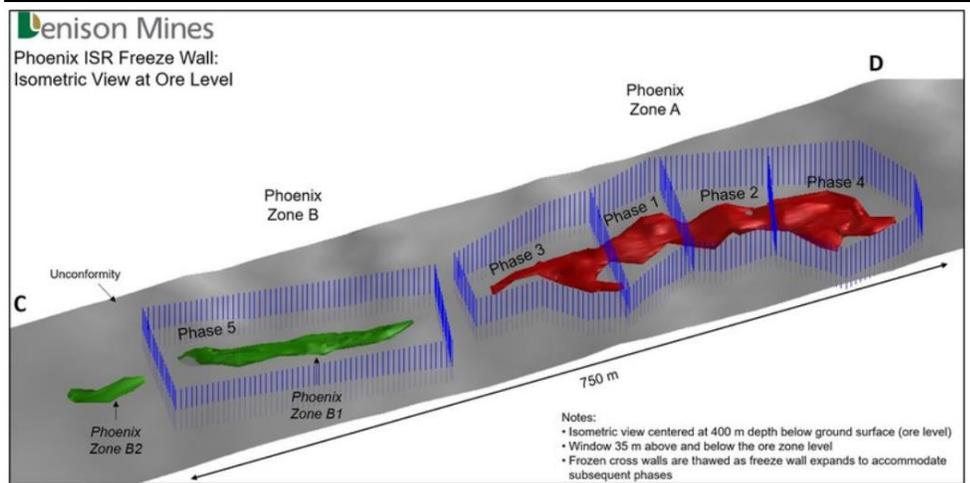
Denison is a Canadian uranium exploration, development and production company, with a diverse portfolio of uranium interests located in the Athabasca Basin. Denison's key assets include its flagship Wheeler River Project (90% DML), as well as its 22.5% interest in the McClean Lake JV, among other exploration projects.

Figure 1: Proposed Phoenix wellfield and freeze wall containment configuration



Source: Company Reports

Figure 2: Isometric view of Phoenix freeze wall



Source: Company Reports

Figure 3: Freeze wall phased mining approach

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
Reserves (% of total)*	36%	26%	14%	15%	9%	100%
Expected Life (months)	43	31	17	19	11	121

	Phase 1	Phase 2	Phase 3	Phase 4	Phase 5	Total
Expected (# of holes)	57	41	54	52	118	322
Expected Meterage	24,500	17,600	23,200	22,400	50,700	138,400

Source: Company Reports

Figure 4: NAV Breakdown - as at Oct 1, 2020

	Disc. Rate	C\$ MMs	C\$/sh	%
Wheeler River	10.0%	667	\$0.62	97%
Waterbury Lake - THT	10.5%	22	\$0.02	3%
Other		0	\$0.00	0%
Total Asset Level Cash Flows		688	\$0.64	100%
Other properties		45	\$0.04	
Cash & Equivalents		7	\$0.01	
Future Equity Issuances		265	\$0.25	
Working Capital (ex. Cash and Debt)		4	\$0.00	
Total Debt		0	\$0.00	
Corporate SG&A	8.0%	(99)	(\$0.09)	
Corporate tax adjustment	8.0%	0	\$0.00	
Net Asset Value		911	\$0.85	
<b>Net Asset Value per share</b>			<b>\$0.85</b>	

Source: Company Reports, Canaccord Genuity estimates

## Appendix: Important Disclosures

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### Investment Recommendation

Date and time of first dissemination: December 01, 2020, 09:26 ET

Date and time of production: December 01, 2020, 09:26 ET

### Target Price / Valuation Methodology:

Denison Mines Corporation - DML

Our target price is based on 1.0x our fully funded NAV, forecast as at Oct 1, 2021.

### Risks to achieving Target Price / Valuation:

Denison Mines Corporation - DML

Key risks to our investment thesis include uranium price movements and market sentiment, viability of ISR as the mining method, potential changes to project parameters, permitting and financing risks, and exposure to changes in the CAD:USD exchange rate.

### Distribution of Ratings:

#### Global Stock Ratings (as of 12/01/20)

Rating	Coverage Universe		IB Clients
	#	%	%
Buy	563	63.62%	56.31%
Hold	160	18.08%	40.00%
Sell	8	0.90%	37.50%
Speculative Buy	134	15.14%	79.85%
	885*	100.0%	

\*Total includes stocks that are Under Review

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**SELL:** The stock is expected to generate negative risk-adjusted returns during the next 12 months.

**NOT RATED:** Canaccord Genuity does not provide research coverage of the relevant issuer.

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### 12-Month Recommendation History (as of date same as the Global Stock Ratings table)

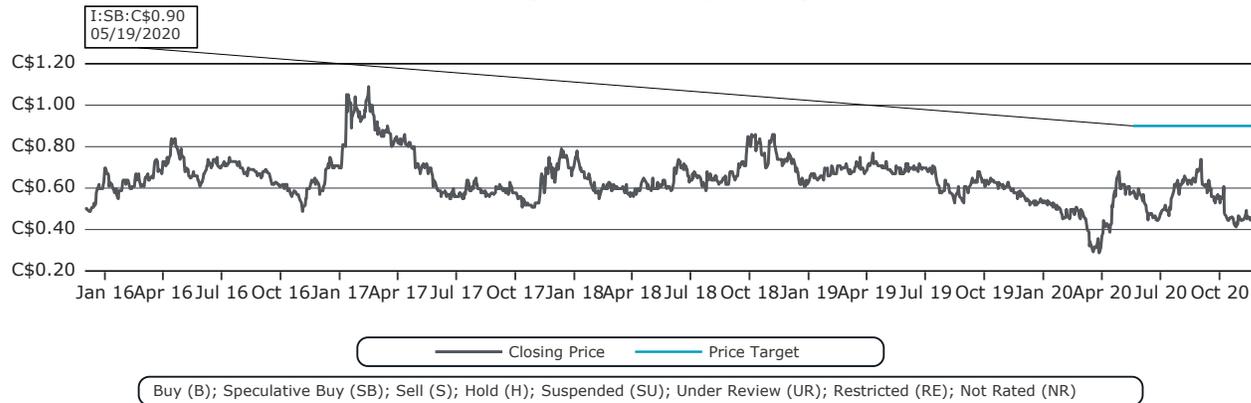
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### Denison Mines Corporation Rating History as of 11/30/2020



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