

## SUPPLEMENTARY MATERIAL

**Table S1:** Maximum known ages in millions of years (Ma), tectonic setting, location and associated reference for Archean and Proterozoic cadmium-containing minerals.

Mineral	Chemical Formula	Maximum Age (Ma)	Tectonic Setting	Location	Reference
Greenockite	CdS	4000	serpentinised peridotite	Otway Ni Deposit, Nullagine, East Pilbara Shire, Western Australia, Australia	Nickel, E. H., Hallberg, J. A., Halligan, R. (1979) Unusual nickel mineralisation at Nullagine, Western Australia, Journal of the Geological Society of Australia, 26, 61-71
Otavite	CdCO <sub>3</sub>	2770	graben, clastic	Braeside Station, Gregory Ranges District, East Pilbara Shire, Western Australia, Australia	Taylor, D.; H. J. Dalstra ; A. E. Harding ; G. C. Broadbent ; M. E. Barley (2001) Genesis of High-Grade Hematite Orebodies of the Hamersley Province, Western Australia. Economic Geology (2001) 96 (4): 837–873
Hawleyite	CdS	2706	ore-forming komatiites	Lunnon Shoot, Kambalda Nickel Mines, Kambalda, Coolgardie Shire, Western Australia, Australia	Foster, J. G., Lambert, D. D., Frick, L. R., Maas, R. (1996) Re-Os isotopic evidence for genesis of Archaean nickel ores from uncontaminated komatiites, Nature, 382, 703-706
Cadmoselite	CdSe	2716	volcanogenic massive sulfide deposit	Kidd Mine (Kidd Creek Mine), Kidd Township, Timmins Area, Cochrane District, Ontario, Canada	Mosier, D. L., Berger, V. I., Singer, D. A. (2009) Volcanogenic Massive Sulfide Deposits of the World—Database and Grade and Tonnage Models,

					U.S. Geological Survey, Open-File Report, 2009-1034, 1-46
Cernyite	$\text{Cu}_2\text{CdSnS}_4$	2644	granitic pegmatites	Tanco Mine (Bernic Lake Mine), Bernic Lake, Lac-du-Bonnet Area, Manitoba, Canada	McCauley, A., Bradley, D. C. (2014) The Global Age Distribution of Granitic Pegmatites, The Canadian Mineralogist, 52, 183-190
Ramdohrite	$\text{CdAg}_{5.5}\text{Pb}_{12}\text{Sb}_{21.5}\text{S}_{48}$	1800	volcanogenic massive sulfide deposit	Metsämonttu Mine, Kisko, Salo, Southwest Finland, Finland	Mosier, D. L., Berger, V. I., Singer, D. A. (2009) Volcanogenic Massive Sulfide Deposits of the World—Database and Grade and Tonnage Models, U.S. Geological Survey, Open-File Report, 2009-1034, 1-46
Aldridgeite	$(\text{Cd,Ca})(\text{Cu,Zn})_4(\text{SO}_4)_2(\text{OH})_6 \cdot 3\text{H}_2\text{O}$	1706	metasedimentary and metavolcanic succession	Block 14 Opencut, Broken Hill, Broken Hill District, Yancowinna Co., New South Wales, Australia	Page, R. W., Stevens, B. P. J., Gibson, G. M. (2005) Geochronology of the sequence hosting the Broken Hill Pb-Zn-Ag orebody, Australia, Economic Geology, 100, 633-661
Birchite	$\text{Cd}_2\text{Cu}_2(\text{PO}_4)_2\text{SO}_4 \cdot 5\text{H}_2\text{O}$	1706	metasedimentary and metavolcanic succession	Block 14 Opencut, Broken Hill, Broken Hill District, Yancowinna Co., New South Wales, Australia	Page, R. W., Stevens, B. P. J., Gibson, G. M. (2005) Geochronology of the sequence hosting the Broken Hill Pb-Zn-Ag orebody, Australia, Economic Geology, 100, 633-661
Edwardsite	$\text{Cu}_3\text{Cd}_2(\text{SO}_4)_2(\text{OH})_6 \cdot 4\text{H}_2\text{O}$	1706	metasedimentary and metavolcanic succession	Block 14 Opencut, Broken Hill, Broken Hill District, Yancowinna Co., New South Wales, Australia	Page, R. W., Stevens, B. P. J., Gibson, G. M. (2005) Geochronology of the sequence hosting the Broken Hill Pb-Zn-Ag orebody, Australia, Economic Geology, 100, 633-661

Niedermayrite	$\text{Cu}_4\text{Cd}(\text{SO}_4)_2(\text{OH})_6 \cdot 4\text{H}_2\text{O}$	1706	metasedimentary and metavolcanic succession	Block 14 Opencut, Broken Hill, Broken Hill District, Yancowinna Co., New South Wales, Australia	Page, R. W., Stevens, B. P. J., Gibson, G. M. (2005) Geochronology of the sequence hosting the Broken Hill Pb-Zn-Ag orebody, Australia, Economic Geology, 100, 633-661
Nyholmite	$\text{Cd}_3\text{Zn}_2(\text{AsO}_4)_2(\text{AsO}_3\text{OH})_2 \cdot 4\text{H}_2\text{O}$	1706	metasedimentary and metavolcanic succession	Block 14 Opencut, Broken Hill, Broken Hill District, Yancowinna Co., New South Wales, Australia	Page, R. W., Stevens, B. P. J., Gibson, G. M. (2005) Geochronology of the sequence hosting the Broken Hill Pb-Zn-Ag orebody, Australia, Economic Geology, 100, 633-661