

**Crystal Data:** Tetragonal. *Point Group:*  $4/m\ 2/m\ 2/m$ . As cryptocrystalline (11-25 nm), thin films (<0.5 mm) and breccia matrix fillings.

**Physical Properties:** *Cleavage:* n.d. *Tenacity:* n.d. *Fracture:* Conchoidal (cryptocrystalline). Hardness = n.d.  $D(\text{meas.}) = \text{n.d.}$   $D(\text{calc.}) = 5.91$  Nonfluorescent.

**Optical Properties:** Opaque. *Color:* Yellow-brown to brownish black, reddish-brown translucency (cryptocrystalline crusts); gray with a yellow ochreous tinge due to yellow-brown internal reflections in reflected light. *Streak:* Pale yellow-brown. *Luster:* Earthy. *Optical Class:* n.d. No pleochroism or birefractance.

**Cell Data:** *Space Group:*  $P4_2/mnm$ .  $a = 4.6222(9)$   $c = 9.077(3)$   $Z = 2$

**X-Ray Diffraction Pattern:** Wildcat prospect, Detroit District, Juab Co., Utah, USA. 3.268 (100), 2.531 (58), 1.707 (48), 4.119 (35), 1.634 (14), 2.311 (13), 4.538 (12)

Chemistry:	(1)	(2)
MgO	0.61	
$\text{Al}_2\text{O}_3$	0.79	
$\text{SiO}_2$	0.41	
$\text{MnO}_2$	1.41	
$\text{Fe}_2\text{O}_3$	38.60	23.26
CuO	2.57	
$\text{TeO}_3$	49.35	76.74
PbO	1.97	
$\text{Bi}_2\text{O}_3$	1.31	
Total	97.02	100.00

- (1) Wildcat prospect, Detroit district, Juab Co., Utah, USA; average electron microprobe analysis and Raman spectroscopy; corresponds to  $(\text{Fe}_{1.74}\text{Cu}_{0.12}\text{Mn}_{0.06}\text{Al}_{0.05}\text{Mg}_{0.05})_{\Sigma=2.02}\text{Te}_{1.01}\text{O}_6$ .  
 (2)  $\text{Fe}^{3+}_2\text{Te}^{6+}\text{O}_6$ .

**Occurrence:** Within Au-, Te-, and Bi-rich jasperoid. Likely formed from weathering and oxidation of primary tellurium and/or telluride phases.

**Association:** Gold (native), tellurium (native), beyerite, clinobisvanite, carlfriesite, eckhardite, frankhawthorneite, khinite, mc Alpineite, paratellurite, tellurite, tlalallite, xocolatlite.

**Distribution:** At the Wildcat prospect, northwest part of the Detroit District, Juab Co., Utah, USA.

**Name:** Honors Andrew (“Andy”) M. McDonald, Professor of Mineralogy, Harquail School of Earth Sciences, Laurentian University, Sudbury, Ontario, Canada. His career highlights include characterizing new mineral species, applying mineralogy and crystal chemistry to understanding the evolution of alkaline rocks, exploring for Au and rare metals, and adding to our understanding of how the crystal structures of minerals relate to their observed physical and optical properties.

**Type Material:** National Museum of Natural History, Washington, DC, USA (NMNH 177134), Natural History Museum of Los Angeles County, Los Angeles, California, USA (67434), at Museums Victoria, Victoria, Australia (M54885), at the W.M. Keck Earth Science and Mineral Engineering Museum, University of Nevada, Reno, USA (2019.003.001), and at the Natural History Museum, London, England (BM 2019.10).

**References:** (1) Coolbaugh, M.F., J.K. McCormack, M. Raudsepp, E. Czech, R. McMillan, and A.R. Kampf (2020) Andymcdonaldite ( $\text{Fe}^{3+}_2\text{Te}^{6+}\text{O}_6$ ), a new ferric iron tellurate with inverse trirutile structure from the Detroit district, Juab County, Utah. *Can. Mineral.*, 58, 85-97.