Bigcreekite $BaSi_2O_5 \cdot 4H_2O$

Crystal Data: Orthorhombic. *Point Group*: 2/*m* 2/*m* 2/*m*. As tabular crystals elongated along [100], to several mm.

Physical Properties: *Cleavage*: Perfect on {001} and {010}. *Fracture*: Uneven. *Tenacity*: Brittle. Hardness = 2-3 D(meas.) = 2.66(3) D(calc.) = 2.76

Optical Properties: Translucent. *Color*: White to colorless. *Streak*: White. *Luster*: Vitreous to pearly. *Optical Class*: Biaxial (+). α = 1.537(2) β = 1.538(2) γ = 1.541(2) 2V(meas.) = 59.2(5)° 2V(calc.) = 60° *Dispersion*: moderate; $r < v$. *Pleochroism*: None. *Orientation*: $X = b$, $Y = a$, $Z = c$.

Cell Data: Space Group: *Pnma*. a = 5.0453(8) b = 9.044(1) c = 18.366(5) Z = 4

X-ray Powder Pattern: Big Creek, Fresno County, California, USA.
5.068 (100), 4.054 (85), 2.257 (75), 2.706 (60), 2.974 (45), 2.327 (40), 9.19 (30)

Chemistry:	(1)	(2)
Na_2O	0.11	
CaO	0.03	
SrO	0.02	
BaO	48.88	44.37
SiO_2	38.16	34.78
H_2O	[22.94]	20.85
Total	110.14	100.00

(1) Big Creek, Fresno County, California, USA; average of 4 electron microprobe analyses supplemented by IR spectroscopy, H_2O calculated from stoichiometry; corresponding to $Ba_{1.00}Na_{0.01}Si_{2.00}O_5 \cdot 4H_2O$. (2) $BaSi_2O_5 \cdot 4H_2O$.

Occurrence: Filling fractures in gneiss near the margins of a granodiorite pluton.

Association: Sanbornite, quartz, diopside, pyrrhotite.

Distribution: From the Esquire #7 claim, west side of Big Creek, eastern Fresno County, and on the northwestern slope of Trumbull Peak, Mariposa County, California, USA.

Name: For the locality that provided the first specimens, Big Creek, California, USA.

Type Material: M.Y. Williams Museum, University of British Columbia, Vancouver, British Columbia, Canada.

References: (1) Basciano, L.C., L.A. Groat, A.C. Roberts, R.A. Gault, G.E. Dunning, and R.E. Walstrom (2001) Bigcreekite: a new barium silicate mineral species from Fresno County, California. Can. Mineral., 39, 761-768. (2) (2002) Amer. Mineral., 87, 355 (abs. ref. 1).