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Abstract #308600

REVISION OF THE TYPE *SIPHONODELLA PRAESULCATA* CONODONT LOCALITY AT LICK CREEK, MONTANA

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The type section for the *Siphonodella praesulcata* conodont fauna in North America at the Lick Creek locality is important as a reference section for ongoing Devonian-Mississippian boundary (DCB) studies within the Sappington Formation and correlative Exshaw and Bakken formations. As originally described, the *S. praesulcata* conodonts occur in a 2 ft oolitic grainstone presumed to be at or near the top of the Sappington Formation (in Unit 5), but the exact stratigraphic position within the Sappington is poorly known. Because Unit 4 contains the latest Devonian *Retispora lepidophyta* spore assemblage, and the original authors did not find it, there was concern about the relative age of the newly defined *S. praesulcata* species to *R. lepidophyta*, and if the oolitic grainstones were part of Unit 5 elsewhere, or could possibly be part of the overlying Cottonwood Canyon Member.

Detailed stratigraphic studies of the Lick Creek section and other nearby sections resolve much of the uncertainty with the stratigraphic position of the *S. praesulcata* conodonts. The Sappington at Lick Creek consists of a normal Sappington succession from Unit 1 through Unit 5, with the addition of over 8 ft of oolitic grainstones near the top. Unit 4, which has been found beneath a veneer of cover, provides the key evidence to show that the oolitic grainstones occur near the top of Unit 5 (based on regional thickness). The overlying Cottonwood Canyon Member is only 4 cm thick at Lick Creek, but at other localities nearby it reaches more typical thicknesses of 3-4 ft, where it also rests on oolitic grainstones. These relationships suggest that very little of Unit 5 has been eroded at Lick Creek, thus placing the *S. praesulcata* locality somewhere near the top of Unit 5.

This new analysis confirms that the *R. lepidophyta* spore assemblage underlies the *S. praesulcata* fauna at Lick Creek, although they may overlap. Preliminary results from our continuing conodont and other microfossil biostratigraphic work at Lick Creek and regionally confirm earlier work that Sappington Unit 4 is Devonian in age,