**Supplemental Text 1**

**Geologic Context of the La Prele Mammoth site**

La Prele Creek is a perennial streaming flowing over 40 km in a northeasterly direction from its head in the Laramie Range to its confluence with the North Platte river just outside of Douglas, Wyoming. The La Prele Mammoth site sits just under 2 km from the creek’s confluence with the North Platte within an alluvial terrace (T3). At the site La Prele Creek is incised into Paleocene Fort Union Formation which is primarily composed of fine-grained sedimentary rock. The Fort Union formation contains natural Paleocene coal which has been redeposited in alluvial valley fills. Our investigations have focused on the excavations of the Clovis occupation ~3.5 m below the surface of the T3 terrace including extensive dating from archaeological excavations and multiple stratigraphic trenches (Figure 1). This supplement will focus on Trench 1, which is a few meters north of our excavations.

Trench 1 was excavated into T3 to the west-southwest, perpendicular to the flow of La Prele Creek, in 2014 just north of Block A (Figure 1). The trench was almost 35 m in length and 4.5 m in depth and opens to La Prele Creek to the east where we cleaned the face of the terrace to expose, sample, and profile the lowest stratigraphic units. In total the terrace is 7 m in height, and the archaeological deposits lie approximately 3.5 m below modern ground surface (Supplemental Figure 1).

At the base of the terrace are four coarse grained alluvial units with bedload sands and gravels (A, B, C, and D). Stratum A consists of mixed alluvial gravels and sands which disconformably overlie bedrock and date to ca. 18,630 ± 830 BP (USGS 2012) based on an Optically-Stimulated Luminescence (OSL) date (Supplemental Table 2). Strata B and C include poorly sorted sands with increasing gravels in Stratum C. Cross-bedded coarse sands with find-gravel are dated to 17,190 ± 520 BP (USGS 2013) in Stratum D. Based on a 0% dispersal this is believed to be the most reliable OSL date from the site and indicates the terrace began aggrading in the Late Pleistocene (Supplemental Table 2).

Stratum E is an approximately 1 m thick layer of massive very fine-grained sand and silt interpreted to be primary fluvial sand or secondary loess. This stratum has proven difficult to date with two OSL dates taken from the middle and top of the stratum dating to 17,670 ± 1,530 BP (USGS 2013) and 13,830 ± 710 BP (USGS 2015). Two radiocarbon dates on charcoal dates to 10,963 ± 50 BP1 (12,975 – 12,718 cal yrs BP; AA-104814) at the base and 10,650 ± 100 BP (12,746 - 12,385 cal yrs BP; AA-104892) near the upper contact (Supplemental Table 1). We suspect the charcoal samples are intrusive and were introduced by bioturbation from the overlying stratum. The contact between Strata E and F is indistinct although Stratum E is distinguishable from F as it contains no gravels or obvious evidence of pedogenic modification.

Stratum F is comprised of suspended load alluvium from the repeated flooding of La Prele Creek. The aggradation was marked by multiple episodes of stability and soil formation including those associated with the Clovis occupation (Figures 3, 4, and Supplemental Figure 1). The mammoth and cultural materials were deposited in the upper half of F-1. Following the Clovis occupation the mammoth was buried by at least three flood events which were each followed by a short period of stability resulting in a thin zonal A-horizon (Soils 1a to 1c). Across most of the excavation areas, these A-horizons are welded (S-1), but they are distinct in Trench 1 (Supplemental Figure 1) and appear to weld part way through a terrace profile connecting Trench 1 to Block A (Figure 3). S-1 contains abundant microfauna and has been intensely bioturbated. The buried soils date to the Younger Dryas with soil organic matter humin dates ranging from 10,382 ± 40 BP (AA-105496) to 9924 ± 75 BP (AA-105646). This is consistent with dates on archaeological material which show the soils postdate the Clovis occupation of the latest Pleistocene (Supplemental Table 1).

Stratum F reaches to the modern surface although we do not have good age control on these upper sections. An OSL age of 26,150±2,210 (USGS 2016) on Stratum F2 is obviously incorrect while a second OSL date on F3 of 12,140±1,210 (USGS 2017) is likely also falsely old. Indications that the floodplain continued to aggrade through the Early Holocene are supported by two humin fraction dates on charcoal from Stratum F-3, 8844 ± 28 (9667 – 9540 cal yrs BP; AA-109424) and 8592 ± 44 (9663 – 9493 cal yrs BP; AA-104816).

In the Early to Middle Holocene the La Prele Creek began downcutting. Above the mammoth, Stratum G includes channel sands and gravels and an OSL date in Stratum G-1 dates to 7300 ± 520 (USGS 2018). We attempted to further date Stratum G-1 with a charcoal sample, however it produced an anomalous date of 34,260 ± 970 (AA-105815). We believe this sample was redeposited Paleocene coal or charcoal from the Fort Union formation. Stratum G-3 dated to the Middle Holocene based on a humin fraction soil organic matter date of 4789 ± 59 BP (AA-106010).

**Notes**

1. All radiocarbon dates presented here are in 14C yrs BP unless otherwise noted. Calibrated 14C ages are included in Table S1. All OSL dates are presented in cal yrs BP.