Supplement S4
Qualitative Portrayal of Murray Formation Colors as a Function of Stratigraphic Position

Extraformational sediment recycling on Mars

Kenneth S. Edgett, Steven G. Banham, Kristen A. Bennett, Lauren A. Edgar, Christopher S. Edwards, Alberto G. Fairén, Christopher M. Fedo, Deirdra M. Fey, James B. Garvin, John P. Grotzinger, Sanjeev Gupta, Marie J. Henderson, Christopher H. House, Nicolas Mangold, Scott M. McLennan, Horton E. Newsom, Scott K. Rowland, Kirsten L. Siebach, Lucy Thompson, Scott J. VanBommel, Roger C. Wiens, Rebecca M. E. Williams, and R. Aileen Yingst

QUATLITATIVE PORTRAYAL OF MURRAY FORMATION COLORS AS A FUNCTION OF STRATIGRAPHIC POSITION

Figure S4-1 (next page). Qualitative portrayal of Murray formation colors, as a function of stratigraphic position, in sunlight. Most of the Murray formation rocks above the Pahrump Hills member are reddish rather than light gray. No color image processing was performed; all images shown exhibit their "raw" colors. Image exposure durations ranged between 7.2 and 30.0 milliseconds. **(A)** Strata encountered along the *Curiosity* rover traverse, as a function of elevation relative to the Martian datum. Color images are examples of Murray formation drill cuttings, discarded drill fines, and dust-free rock surfaces viewed via MAHLI; blue arrows point to their locations in the column. **(B)** Unprocessed composite MAHLI image of the MAHLI calibration target, in sunlight, showing that the red, green, and blue swatches (top) indeed exhibit those colors on Mars; bare (dust-free) Murray formation bedrock (reddish brown) and unconsolidated aeolian sand (gray) are visible in the background on the right. Green arrow indicates the position of the reddish bedrock in the stratigraphic column. **(C)** Example drill hole (named Mojave), providing a comparison of the color of the aeolian dust-coated rock surface with freshly created drill cuttings; white box indicates the area selected for the colored column in A.

Image identifiers: **(A)** The December 2019 version of the MSL Sedimentology and Stratigraphy Working Group's composite stratigraphic column shows rock units encountered through September 2019. Rock units encountered after that date were still in discussion and refinement at the time of this writing. From top to bottom, the MAHLI image sub-frames come from images: 2288MH0001900010803598C00, 2245MH0004240010803240C00, 2154MH0004650010802748C00, 2055MH0007060010801837C00, 1753MH0001900010700525C00, 1710MH0001900010604333C00, 1661MH0001900010603274C00, 1605MH0006780010602139C00, 1566MH0001900010600669C00, 1495MH0003970010504585C00, 1464MH0003970010503887C00, 1422MH0003970010503281C00, 1361MH0003970010502187C00, 1060MH0003970010400402C00,

0908MH0003970010302871C00, 0881MH0003970010302423C00;
(B) Composite of MAHLI images 1696MH0003740010604177C00 and 1696MH0003740020604178C00; **(C)** MAHLI image 0881MH0003970010302423C00.