highly shocked (5-10 %, up to 55 mm Ø, stage II-III). Unit 3 is better consolidated, slightly graded, has a pale grey to greenish-grey, dolomitic-clastic matrix and contains a higher amount of yellowish-ocre to greenish-yellow melt fragments (30-15 %). Basement clasts (up to 135 mm Ø; 3-8 %) display a high degree of shock metamorphosis (stages II-III).

Middle Suevite (unit 2). Unit 2 is a very heterogeneous breccia with a greenish grey to ocre grey, consolidated dolomitic matrix with finely dispersed green melt particles. Chaotic, melt-rich portions form 'breccia-in-breccia' structures and large melt particles of up to 110 mm are broken and interfinger with or are dissolved within the matrix. Sedimentary clasts are rare and crystalline fragments are variably shocked (max. 55 mm, stages II-III).

Upper Suevite (unit 1). The Middle Suevite is grading into a poorly consolidated breccia with pale-grey to ocre-grey, dolomitic-marly matrix and abundant large sedimentary clasts including an anhydrite block of 110 cm thickness (Fig. 1). The marl content of the matrix rises continuously, and size and amount of basement clasts diminishes towards the top of the sequence. Marly intercalations and irregular laminations occur in the graded subunit 1b and marl- and clay-rich sedimentary breccias are interbedded with better consolidated suevitic breccias at the top of the impactites ('Redeposited Suevite', unit 1a; Fig. 1).

Correlations: The units of the suevitic breccias of the UNAM cores may in part be correlated with the impactites identified within the crater (e.g. [5]). While unit 4 of UNAM 7 has no equivalent in other cores, unit 3 and unit 6 of UNAM 5 can be correlated with the basal, allogenic breccia of Yax-1 (ground-surged suevite, [5]). The melt-rich Middle Suevite of UNAM 5 (units 5, 4, and 3) and UNAM 7 (unit 2) might be correlated with the Middle and Upper Suevite from Yaxcopoil-1 (units 4/3). The 'Upper Suevites' represent fall-back suevites and are lateral equivalents of the 'Lower Sorted Suevite' of Yax-1 (unit 2, [5]).

Conclusions and discussion: Based on a variety of criteria it was possible to define clearly distinguishable units within the suevites of the UNAM drillcores: These provide the tool to reconstruct the sequence of events during the deposition of the ejecta plume material following the emplacement of the thick sedimentary megabreccia, represented by units 6 and 5 of UNAM 7, minutes after the impact. The transitional contacts and the presence of 'breccia-in-breccia' structures point towards the continuity of processes and indicate turbulent mixing and reworking. Within the Lower and Middle Suevite the degree of shock metamorphism, the amount of melt and sedimentary clasts, the carbonate content of the matrix and the depositional temperatures are closely related. A lateral shear component is indicated by broken melt clasts, elongated melt particles, and liquid flow structures within the matrix. The depositional temperature and internal shearing during the secondary lateral flow is less pronounced in UNAM 7 than in UNAM 5. The Upper Suevite of both cores represents late stage fall-back material that afterwards was redeposited either by a laminated mud-flow (UNAM 7) or in a turbulent, high-energy environment (UNAM5).

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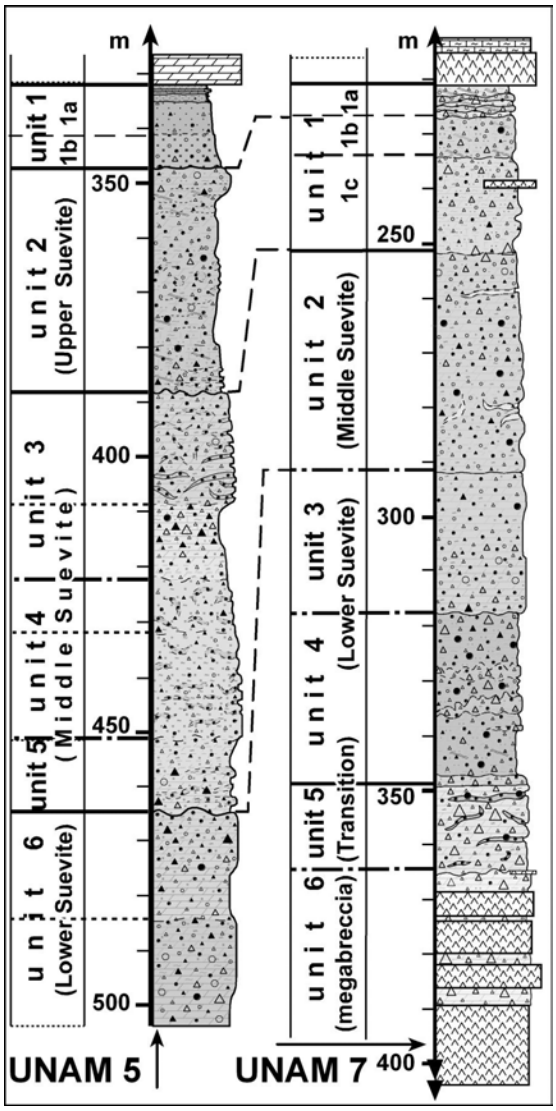

Fig. 1. UNAM 5 and 7 suevite petrography.