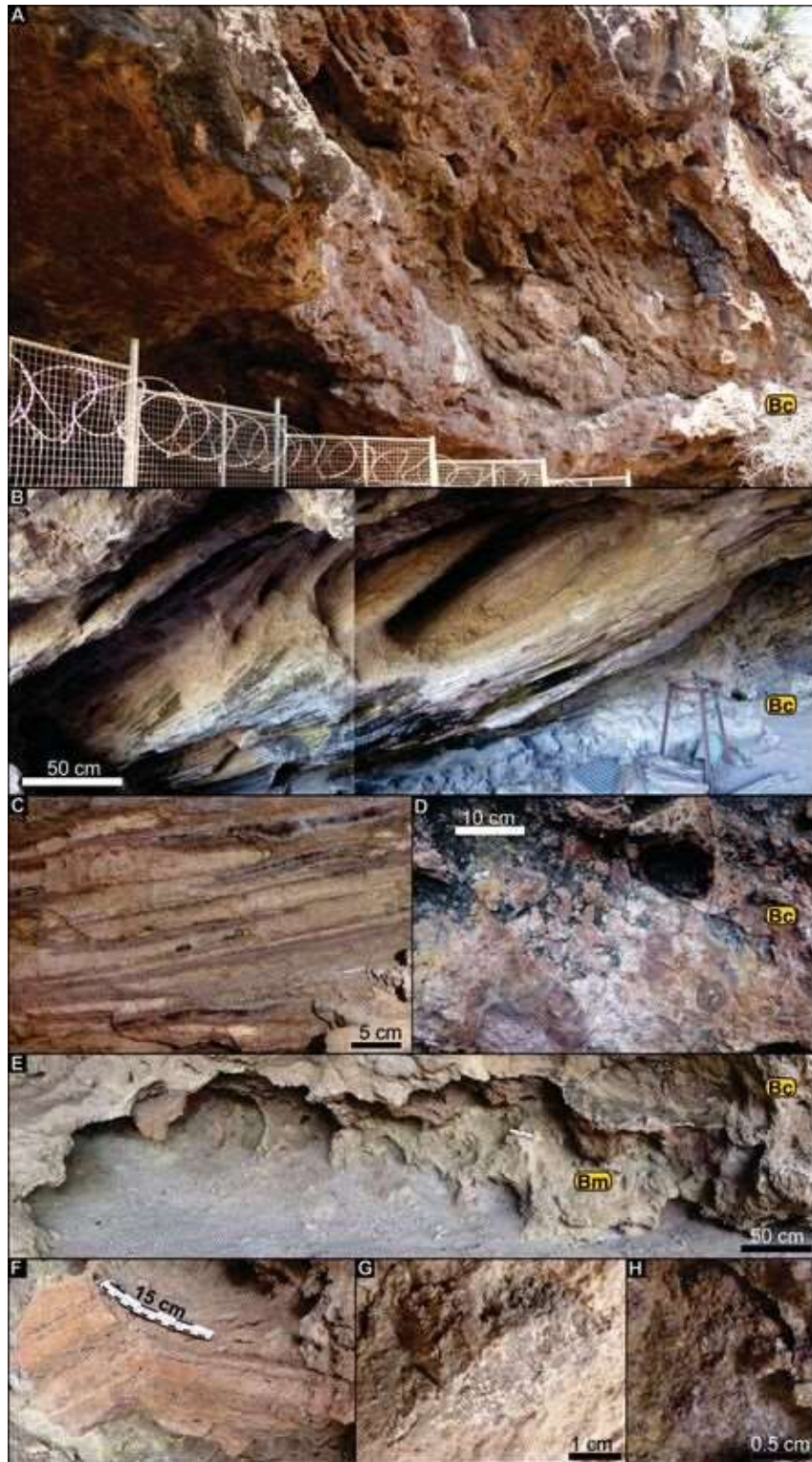


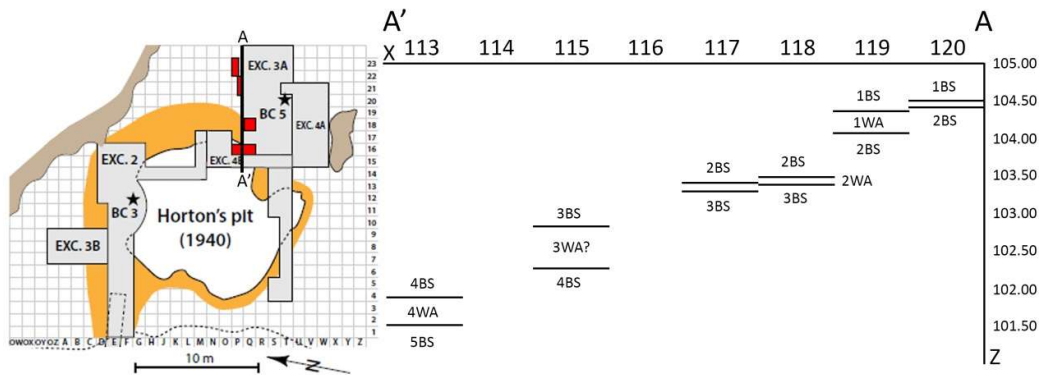
Backwell et al. Supplemental Material

New Excavations at Border Cave, KwaZulu-Natal, South Africa

Journal of Field Archaeology 2018



Backwell et al. **Supplemental Material 1.** A. Border Cave entrance showing the cave roof, which is a bedded and cavernous, clast-supported volcanoclastic breccia (coded Bc). Note the jointed nature of the facies marked by iron-oxide staining (right centre). B. Block of cross-bedded sandstone (>4 m x 2.5 m) in the clast-supported volcanoclastic breccia. C. Close-up showing the internal layering in the cross-bedded sandstone block (i.e., foresets). D. Clast-supported, poorly sorted, dense, rhyolite clasts made up the bulk of this clast-supported facies. E. Matrix-supported volcanoclastic breccia exposed in the southern end of the Border Cave. Here, a ~1 m thick layer of this facies (coded Bm) is overlain by the cavernous, clast-supported volcanoclastic breccia (Bc). A. F & G. Dense, poorly sorted rhyolite fragments are separated by the matrix, D, which is a medium-grained, friable, highly porous sandstone.



Backwell et al. **Supplemental Material 2.** New Border Cave excavations along the north face of Beaumont's EXC. 3A and along the east face of Beaumont's EXC. 4B. The figure records the placement of the new excavation squares, the members excavated, and their z readings (depths).

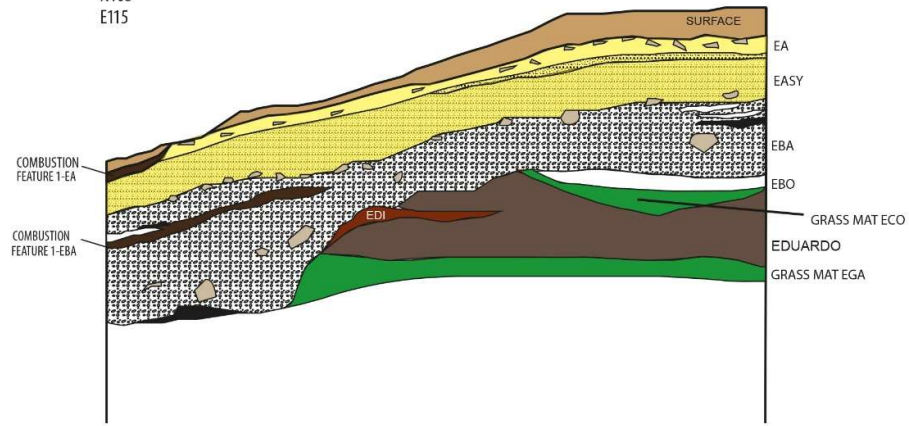
Backwell et al. **Supplemental Material 3.** Stratigraphy from the 2015-2017 excavations of Border Cave. We provide the names of various layers within each of the members. We have retained Beaumont's member names (Beaumont 1994; Beaumont et al. 1992), but where we are unable to distinguish the phases he assigned to members, we simplify the member name. Only layers visible in stratigraphic sections are listed here; tiny lenses from the centre of squares are omitted to simplify the table. We add the Munsell colour for each layer and a brief description of the sediment. PB = Peter Beaumont; HP = Howiesons Poort; post-HP = post-Howiesons Poort.

PB member acronyms post-1987	PB Industrial names	Backwell et al. member acronyms	Backwell et al. layer names	Munsell colour	Sediment description
1BS.UP	Iron Age/sterile	-			
1BS.LR.A	ELSA	1BS.LR	-	not excavated	
1BS.LR.B					
1BS.LR.C			Brown Light Brown Grass Mat 1 Greyish Brown Grass Mat 2 Dark Brown/Brown Dark Reddish Brown Brown (east) Grass Mat 3	10YR 4/3 10YR 3/3 5YR 3/2 10YR 5/2 7YR 4/2 10YR 3/3 / 10YR 5/3 5YR 3/2 10YR 4/3 -	very fine silt very fine silt organic organic organic
1WA	ELSA	1WA	Light Brownish Grey Very Dark Brown Barry Black burnt Grass Mat Barry Greyish Brown Ben Unburnt grass mat Betty Very Dark Greyish Brown Bill Burnt/Unburnt Grass Mat Bimba Grass Mat Bingo Grass Mat Bob	10YR 6/2 10YR 2/2 - 10YR 5/2 - 10YR 3/2 - -	fine silt burnt organic fine pebbles, coarse sand organic ashy, loamy burnt/unburnt organic organic organic
2BS.UP	MSA 3b/post-HP	2BS.UP	Brown Camy 1,2 Yellowish Brown Carlos 1, 2 Grass Mat Camilla 1 Grass Mat Camilla 2 Yellowish Brown Carlos 3,4 Grass Mat Carly Yellowish Brown Casey Grass Mat Cassidy	10YR 4/3 10YR 5/4 10YR 5/4 10YR 5/4 10YR 5/4 - 10YR 5/4 10YR 4/3	clayey sand clayey sand, loose organic organic sandy silt, loose organic, pebbly, sandy silty, loose silty, loose
2BS.LR.A	MSA 3b/post/HP	2BS.LR A,B	Brown Cathy 1,2,3,4,5 Yellowish Brown Caz 1,2,3 Dark Greyish Brown Cecil 1,2 Combustion Feature Black Cerberus Dark Yellowish Brown Cecilia 1,2 Grass Mat Ceta Dark Yellowish Brown Chloe Combustion Feature Cilla 1	10YR 4/3 10YR 5/4 10YR 4/3 5YR 2.5/1 10 YR 4/4 10YR 4/4 10YR 4/4 varied colours	sandy silt, loose, almost sterile silty (almost velvety), loose ashy silt, loose, almost sterile ashy, loose silty, firm, moist organic, very silty, compact silty, loose ashy, cemented
2BS.LR.B	MSA 3b	2BS.LR C	Brown sand lower gravel Brown Sand Lower silt Dark Greyish Brown Grass Mat	10YR 5/3	coarse sand, gravelly silty, loose, uncemented ashy, loose organic
2BS.LR.C	MSA 3a/post-HP			10YR 5/3 10YR 4/2 -	
2WA	MSA 3a/post-HP	2WA	White Ash Black Brown with charcoal inclusions Very Dark Greyish Brown David Very Dark Brown Dax/Deve Light Brown Dazy Dark Yellowish Brown Devo Greyish Brown Dobe Grass Mat Decon Reddish Black Desmond 1,2 Greyish Brown Digby Dark Brown Dijon 1,2,3 Grass Mat Dark Brown Dijon Dark Yellowish Brown Dino 1,2,3,4/ Dark Yellowish Brown Dossy 1,2,3,4,5,6,7 Grass Mat Dossy Light Brownish Grey Dipsy Combustion Feature White Dubbin Very Dark Brown Dudi Dark Brown Dulce 1,2,3,4 Reddish Brown Dussy	10YR 8/1 10YR 2/1 10YR 5/3 10YR 3/2 7.5YR 2.5/2 7.5YR 6/4 10YR 4/4 10YR 5/2 - 2.5YR 2.5/1 10YR 5/2 7.5YR 3/3 - 10YR 4/4 - 10YR 6/2 10YR 8/1 10YR 2/2 7.5YR 3/2 5YR 4/4	ashy, partly cemented ashy, loose ashy, loose ashy, soft, loose ashy, loose silty, loose sandy, loose ashy, cemented organic ashy, loose silty, roof spall silty, loose organic silty, loose, roof spall organic ashy, loose silty, loose, partly cemented silty silty, loose silty, loose
3BS.UP	MSA2b/HP	3BS	Very Dark Brown Ea Very Dark Brown Easy Very Dark Brown Eba 1,2,3,4,5 Dark Grey Ebo Burnt Grass Mat Eco Dark Reddish Brown Edi 1,2,3 Dark Grey Eduardo 1,2,3,4 Grass Mat Ega	7.5YR 2.5/2	gravelly, loose gravelly, roof spalls, loose silty/sandy, loose ashy/silty, loose organic silty, loose fine sand organic and silty
3BS.LR.A	MSA2b/HP			10YR 2/2 10YR 2/2 10YR 4/1 - 5YR 3/4 5YR 4/1 -	
3BS.LR.B	MSA2b/HP				
3WA	MSA2b/HP			not present in new excavation	
1RGS.A	MSA2a/HP		Dark Brown Ekhart	7.5YR 3/2	silty, loose

1RGS.B	MSA2a/HP	RGS	Very Dark Greyish Brown Elf 1,2 Brown Emu 1,2 Dark Brown Elmo 1,2 Chocolate Brown Ena	10YR 3/2 7.5YR 4/2 10YR 3/3 7.5YR 4/3	silty, loose, with shell silty, loose silty, loose silty, loose
4BS	MSA 1 late/Pietersburg	4 BS	Brown Orange Dark Brown (chocolate)	10YR 4/3 7.5YR 7/4 Pink 7.5YR 3/2	silty, loose ashy, loose, weakly cemented silty, loose, weakly cemented
4WA.UP	MSA 1 late/ P.	4WA	Pinkish White 1,2,3,4 Pinkish Grey 1,2,3,4 Pinkish Grey with charcoal flecks White 1,2,3,4,5,6,7,8,9,10,11,12 Grey Reddish Brown Ian 1,2,3,4,5,6,7	7.5YR 8/2 7.5YR 7/2 7.5YR 7/2 10YR 8/1-10YR 7/2 5YR 6/2 5YR 6/4	ashy, partly/strongly cemented ashy, partly cemented ashy, partly cemented ashy, strongly cemented ashy, loose gritty/ashy. loose
4WA.LR.A	MSA1 early/P.				
4WA.LR.B	MSA1 early/ Pietersburg				
5BS	MSA1 early/ Pietersburg	5BS	Very Dark Greyish Brown Jan1,2,3,4 Brown unconsolidated (N109 only) White Jet 1,2 Very Dark Grey Jez 1,2,3,4,5 Very Dark Greyish Brown Jim 1,2,3,4 Brown John 1,2	10YR 3/2 10YR 4/3 7.5YR 8/1 7.5YR 3/1 10YR 3/2 7.5YR 4/2	silty, loose sandy ashy, loose/cemented ashy, loose ashy, loose ashy, loose/cemented
5WA	MSA1 early/ Pietersburg		not yet excavated		
6BS.UP	MSA1 early/P.				
6BS.LR	MSA1 early/P.				

A

North profile
N108
E115

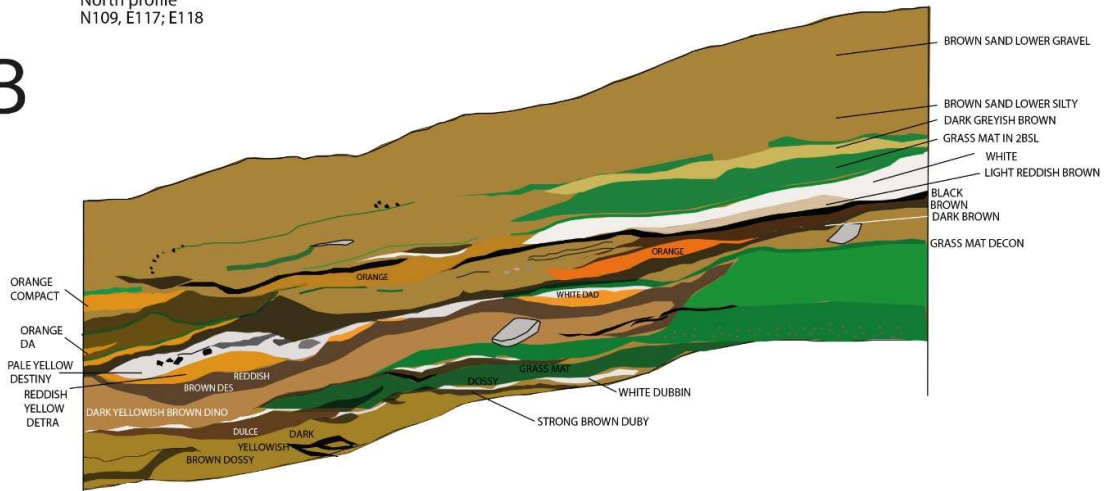


Paloma de la Peña, May 2017



B

North profile
N109, E117; E118

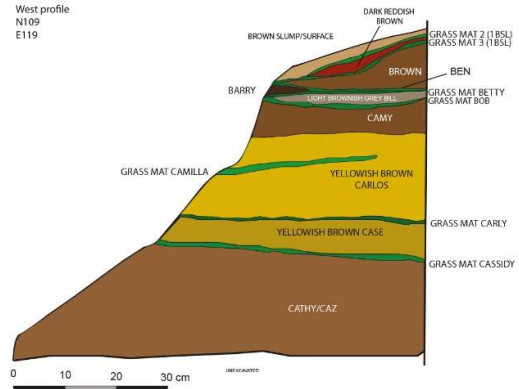


Paloma de la Peña, April 2018



C

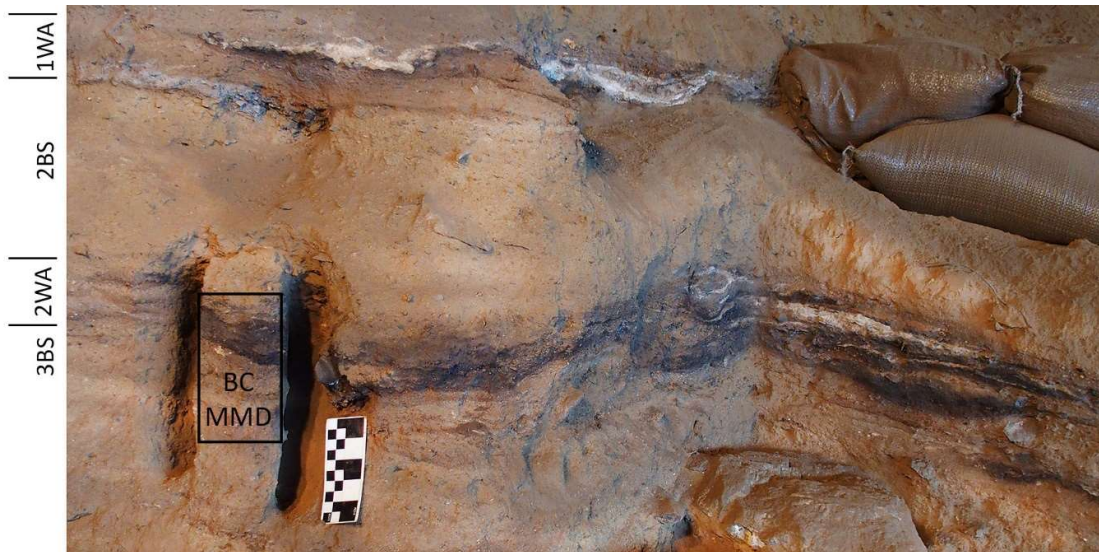
West profile
N109
E119



Backwell et al. **Supplemental Material 4**. Border Cave profiles. A. Border Cave, North Profile, Square N108 E115. The top of this square was excavated by Beaumont and it was subsequently badly eroded. Member 3 BS begins at the top of Ea and ends with Grass Mat Ega.

B. Border Cave, North profile of Squares N109 E117 and N109 E118. Member 2 BS Lower occurs between the eroded surface layer, Brown Sand Lower Gravel, to Grass Mat 2 BS L. Member 2 WA occurs between layer White and Very Dark Brown Dudi. Many complex combustion features are present in Member 2 WA. The White ash layers (east and west) that cap Member 2 WA are the surface layers of combustion features underlain by rubefied deposits (layer Orange in the west and layer Light Reddish Brown in the east). Pale Yellow Destiny is also ash at the top of a combustion feature and it overlies the rubefied layer Reddish Yellow Detra. R = rock.

C. Border Cave, West profile of Square N109 E119. Member 1 BS Lower is from the top of the slumped surface to the base of Grass Mat Bob. Member 1 WA includes layers Camy to Grass Mat Cassidy.



Backwell et al. **Supplemental Material 5**. Border Cave: Context of the micromorphology sample (MMD) shown in FIGURE 3. The sample was taken from the refreshed southern profile of Todd and Miller's EXC. 4A at a medial point on the E-W sloping deposit. At this point, longitudinally Member 2 WA (post-Howiesons Poort) is thickening downslope with fine stratification becoming more apparent (see right of the sample). Two meters downslope, lower strata in Member 2 WA and upper strata of 3 BS (Howiesons Poort) have been reworked by channels (See Supplemental Material 6). Photograph is horizontally oriented ensuring deposit slope is accurately represented.



Backwell et al. **Supplemental Material 6**. Border Cave Member 2 WA channels in the partly collapsed South Profile of EXC. 4A. The figure shows reworking of the lower strata of Member 2 WA and the upper strata of Member 3 BS by water channels. The dashed line identifies the most intense area of reworking. The feature is found two meters downslope of micromorphology sample MMD on the refreshed southern profile of Todd and Miller's EXC. 4A. The photograph is horizontally oriented to ensure that the deposit slope is accurately represented.