

**Supplementary Table 3**

Soil chemistry data for selected Cienega Amarilla profiles.

Profile	Stratum	Depth below surface (cm)	% Gypsum	% Carbonate	% Organic carbon
11-4	V	65–99	2.1	5.0	0.8
	IV	99–120	2.5	8.3	0.2
11-2		119–131	0.1	10.7	0.8
		131–172	1.2	6.4	0.2
11-37	IIIc	165–192	13.0	9.3	0.5
	IIIb <sub>4</sub>	210–220	11.9	18.3	0.5
		240–250	14.2	19.2	0.5
		260–270	10.6	6.2	0.5
	IIIb <sub>3</sub>	280–290	12.5	5.0	0.4
		290–300	13.3	4.9	0.3
		310–320	16.6	8.1	2.4
	IIIb <sub>2</sub>	320–330	14.0	3.9	0.8
		330–340	7.9	9.5	1.7
		340–350	6.2	6.1	0.5
		350–360	11.4	4.8	0.3
		360–375	5.6	7.2	0.5
	IIIb <sub>1</sub>	390–400	4.0	8.6	0.5
		420–430	3.7	12.7	0.4
	IIIa	430–440	0.0	9.6	0.0
	II	450–460	4.4	8.8	0.6
		490–500	3.6	13.4	0.2
560–570		0.0	4.7	0.0	
588–598		1.6	12.2	0.0	
700–710		0.0	1.8	0.0	
I	748–756	1.6	9.2	0.3	
	810–820	0.5	4.7	0.1	
	900–910	2.8	9.6	0.7	
	970–980	4.7	–	–	