geosciences

Supplementary Materials

Figure S1. Umayyad findings in eastern warehouse. (A-B) Broken amphorae along the walls of a side room of the eastern warehouse, dating to the Umayyad period.

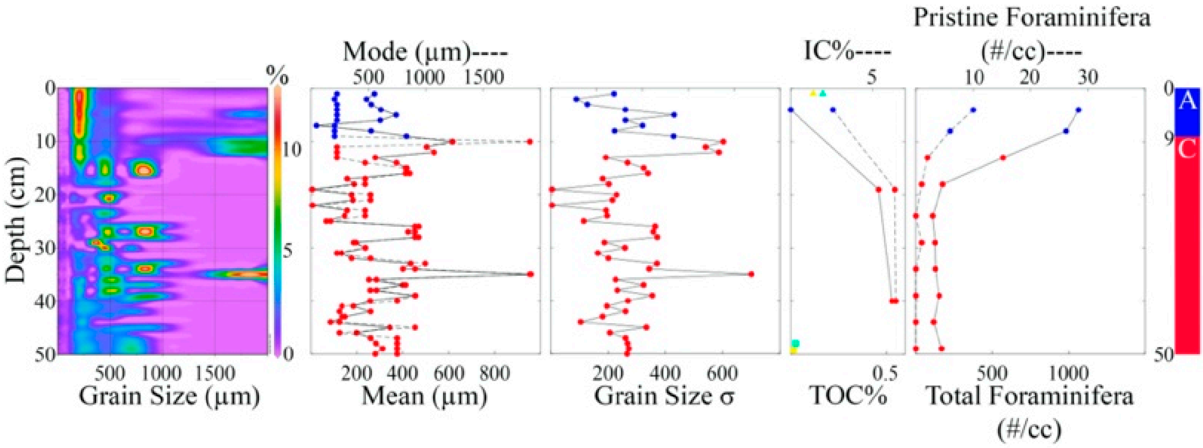

Figure S2. Core LL16 C2 results. Grain size distribution with depth in the core (1cm resolution) presented as a contour map (Ocean Data View 'ODV' Version 5.5.2 (Schlitzer, 2021)) as well as in conventional profiles (mean, mode, standard deviation). TOC and IC values (%) of a representative set of samples are shown as a profile for Core C2, reference samples are shown in squares (TOC) and triangles (IC) to show their comparative values to the core (yellow= aqueduct beach sandramp; aquamarine=shallow marine (-5m depth), see **Figure 1** for specific locations). Total and pristine foraminiferal abundances are shown plotted by core depth, sampling resolution of 5cm. The far right core illustration provides the thickness of each unit to scale, and the colors of the data points correspond with visually recognizable units.

Table S1. Raw data for all sediment samples analyzed. For all samples, type indicated by corresponding color, raw data from all analyses used is given.

Sample	CJ_000001	CJ_001002	CJ_002003	CJ_003004	CJ_004005	CJ_005006	CJ_006007	CJ_007008	CJ_008009	CJ_009010	CJ_010011	CJ_011012	CJ_012013	CJ_013014
Color														
Mean	240.791	254.041	242.96	245.042	240.925	240.889	241.367	239.777	246.625	241.789	255.099	244.023	242.35	242.958
Median	226.797	232.109	226.141	228.769	225.2	224.886	225.867	224.557	228.388	225.241	233.229	226.497	224.284	225.605
Mode	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4
Mean/Median	1.0617	1.09449	1.07437	1.07113	1.06983	1.07116	1.06862	1.06778	1.07985	1.07347	1.09377	1.07738	1.08055	1.07692
S.D.	92.5875	94.9928	85.162	84.6407	82.7957	83.2711	81.6974	80.8502	87.6177	82.7428	95.1353	85.4024	85.1897	83.8632
S.D/Median	0.40823953	0.40925944	0.37658806	0.36998326	0.36765409	0.37028139	0.36170578	0.36004311	0.3836353	0.3673523	0.40790511	0.37705753	0.37982959	0.3717258
Variance	8572.44	9023.63	7252.57	7164.04	6855.13	6934.07	6674.46	6536.75	7676.87	6846.37	9050.73	7293.57	7257.28	7033.04
C.V.	38.4514	37.3927	35.0519	34.5413	34.3658	34.5682	33.8478	33.7189	35.5268	34.221	37.2935	34.9978	35.1515	34.5176
Skewness	0.849823	1.49583	1.48539	1.29419	1.38226	1.48347	1.32555	1.36833	1.46002	1.43052	1.34421	1.42646	1.50872	1.43506
Kurtosis	2.15118	2.68166	3.40577	2.44871	2.939	3.49924	2.65611	2.92917	2.96911	2.85181	2.05892	2.70824	2.93319	2.70406
Foraminifera/cc				1190					1357					1011
Pristine/cc				22					10					16
TOC%													0	
IC%													2.62	
IRSL_net	94.773				107.699			114.987			120.001			
IRSL_err	9.814326				10.45653			10.79643			11.02311			
IRSL_front	24.835				30.323			32.093			32.403			
IRSL_front_Error	9.774815				10.41725			10.75988			10.98886			
IRSL_depletion	1.7102				1.783783			1.774314			1.739811			
IRSL_dep_err	0.367464				0.361445			0.347375			0.332288			
OSL_net	436.037				405.108			369.675			422.741			
OSL_err	20.9428				20.19673			19.29484			20.62467			
OSL_front	213.015				186.118			164.795			187.991			
OSL_front_err	20.91217				20.16204			19.26092			20.59269			
OSL_depletion	2.91026				2.699785			2.608698			2.601627			
OSL_dep_err	0.32098				0.303632			0.304747			0.283855			
IRSL/OSL	0.217351				0.265853			0.311049			0.283864			

CJ_014015	CJ_015016	CJ_016017	CJ_017018	CJ_018019	CJ_019020	CJ_020021	CJ_021022	CJ_022023	CJ_023024	CJ_024025	CJ_025026	CJ_026027	CJ_027028	CJ_028029	CJ_029030
259.314	247.699	252.235	241.388	245.047	244.857	269.963	254.876	244.289	229.576	236.847	237.31	233.946	231.972	237.281	238.468
237.633	228.548	230.75	222.025	227.874	225.286	236.453	228.685	221.636	212.819	218.789	220.6	218.647	216.433	222.103	221.155
223.4	223.4	223.4	223.4	223.4	223.4	223.4	223.4	203.505	203.505	203.505	223.4	203.505	203.505	223.4	223.4
1.09123	1.0838	1.09311	1.08721	1.07536	1.08687	1.14172	1.11453	1.10221	1.07874	1.08254	1.07575	1.06997	1.0718	1.06833	1.07829
96.3894	90.0201	92.8708	87.5773	85.0156	91.0697	121.129	101.805	93.9929	80.2523	84.0078	82.0524	77.8853	78.459	78.9918	84.3717
0.40562296	0.3938783	0.40247367	0.39444792	0.3730816	0.404240388	0.5122752	0.4451757	0.42408679	0.3770918	0.3839672	0.371951	0.35621481	0.36250941	0.35565391	0.38150483
9290.91	8103.62	8624.99	7669.78	7227.65	8293.69	14672.3	10364.3	8834.67	6440.43	7057.31	6732.59	6066.13	6155.82	6239.71	7118.59
37.171	36.3426	36.8191	36.2806	34.6936	37.193	44.8688	39.943	38.4761	34.9567	35.4693	34.5761	33.292	33.8226	33.2904	35.3807
1.30846	1.41198	1.50497	1.63744	1.3897	1.68115	1.77798	1.56693	1.71809	1.70328	1.61582	1.72189	1.61631	1.69898	1.5303	1.75165
1.96881	2.64865	2.67953	3.46175	2.74674	4.09465	3.79177	2.64295	3.48128	4.09149	3.42547	4.12703	3.78044	4.18942	3.46457	4.48827
				947					944					1376	
				22					32					6	
										0.03					
										2.06					
	121.335					151.895					142.434				
	11.09139					12.40963					12.00242				
	31.433					41.721					39.702				
	11.05337					12.36717					11.96854				
	1.699273					1.757366					1.772924				
	0.321963					0.298968					0.311423				
	421.877					484.28					462.617				
	20.60255					22.07496					21.57343				
	191.917					217.674					208.535				
	20.57112					22.04069					21.54101				
	2.669134					2.632926					2.641478				
	0.293207					0.269129					0.276416				
	0.287608					0.313651					0.307888				

CJ_030031	CJ_031032	CJ_032033	CJ_033034	CJ_034035	CJ_035036	CJ_036037	CJ_037038	CJ_038039	CJ_039040	CJ_040041	CJ_041042	CJ_042043	CJ_043044	CJ_044045	CJ_045046
235.053	242.205	234.985	236.015	320.394	239.376	266.893	329.761	255.065	273.271	364.316	400.924	538.877	383.482	373.474	632.711
219.408	222.58	217.892	215.369	224.067	217.87	220.484	229.12	217.341	220.47	246.895	353.648	382.239	265.099	256.598	431.613
223.4	223.4	203.505	203.505	203.505	203.505	223.4	223.4	203.505	203.505	223.4	905.126	905.126	905.126	905.126	223.4
1.07131	1.08817	1.07845	1.09586	1.4299	1.09871	1.21049	1.43925	1.17357	1.23949	1.47559	1.13368	1.40979	1.44656	1.45548	1.46592
79.5776	89.1799	81.9173	93.6466	320.429	92.2953	219.8	324.136	205.304	227.703	339.802	352.973	490.129	329.939	311.269	538.758
0.362692336	0.40066448	0.37595368	0.4348193	1.43005887	0.42362556	0.99689773	1.4146997	0.94461698	1.0328072	1.3763017	0.99809132	1.28225796	1.2445879	1.2130609	1.24824322
6332.59	7953.05	6710.45	8769.68	102675	8518.42	48312.1	105064	42149.9	51848.6	115466	124590	240226	108860	96888.4	290260
33.8551	36.82	34.8606	39.6783	100.011	38.5566	82.3552	98.2942	80.4909	83.3249	93.2713	88.0398	90.9538	86.0378	83.3443	85.1507
1.63584	1.70863	1.64199	2.27287	3.34414	1.86865	3.55651	2.78808	4.23453	1.44656	1.12448	0.431764	0.980667	0.625245	0.733557	0.818277
4.07977	3.83004	3.67647	7.66532	10.9794	4.36713	15.7585	8.17777	25.8391	2.12544	0.385365	-1.2415	0.151342	-0.893524	-0.63479	-0.464778
		998				998		938					413		
		6				10		3					0		
							0.04							0.36	
							3.38							4.92	
154.553					101.06					71.382					
12.50668					10.1262					8.548333					
42.851					27.502					16.826					
12.46936					10.0896					8.498706					
1.767238					1.747764					1.616834					
0.297981					0.364409					0.399018					
503.593					371.173					222.697					
22.51251					19.33497					14.99056					
224.671					163.241					81.035					
22.47672					19.30044					14.95684					
2.610995					2.570138					2.144061					
0.261251					0.298657					0.310319					
0.306901					0.272272					0.320534					

CJ_046047	CJ_047048	CJ_048049	CJ_049050	CJ_050051	CJ_051052	CJ_052053	CJ_053054	CJ_054055	CJ_055056	CJ_056057	CJ_057058	CJ_058059	CJ_059060	CJ_060061	CJ_061062
610.564	647.943	356.207	302.792	299.678	608.773	505.056	569.976	518.487	479.136	528.41	425.819	360.281	633.138	544.96	722.932
325.181	378.095	251.863	239.083	232.545	351.164	263.872	282.302	261.166	256.036	282.189	248.93	232.568	444.663	308.971	526.032
223.4	1738.87	223.4	223.4	245.24	223.4	223.4	203.505	203.505	203.505	203.505	203.505	203.505	203.505	203.505	1584.02
1.87761	1.71371	1.41429	1.26648	1.28869	1.73359	1.91402	2.01903	1.98528	1.87136	1.87254	1.7106	1.54914	1.42386	1.76379	1.37431
581.076	589.263	319.902	250.281	254.523	553.832	521.103	557.278	535.383	491.887	528.456	442.387	375.613	523.814	530.879	622.253
1.786931	1.5585051	1.2701429	1.04683729	1.094511	1.5771321	1.9748325	1.97404907	2.04997205	1.9211634	1.87270234	1.7771542	1.6150674	1.1780022	1.7182163	1.1829185
337649	347230	102337	62640.6	64782	306730	271548	310558	286635	241953	279265	195706	141085	274381	281833	387199
95.1703	90.9436	89.8079	82.6577	84.9321	90.9751	103.177	97.7721	103.259	102.661	100.009	103.891	104.256	82.733	97.4162	86.0734
0.949347	0.807018	1.07237	1.01134	0.925197	0.949225	1.46224	1.15096	1.34895	1.54251	1.30476	2.00237	2.46795	0.926374	1.24124	0.526568
-0.475655	-0.732737	0.277359	0.40034	0.185282	-0.40039	0.839616	-0.044057	0.49985	1.2078	0.469206	3.07727	5.64554	-0.270415	0.301505	-1.14955
		254					336								
		1					2								
									0.26						
									3.64						
				11.451					18.426						
				3.602083					4.451741						
				2.277					3.636						
				3.49471					4.372871						
				1.496403					1.491684						
				0.965248					0.737331						
				78.589					121.715						
				8.956618					11.11499						
				26.011					42.367						
				8.910948					11.0738						
				1.989425					2.067878						
				0.481746					0.403692						
				0.145707					0.151386						

CJ_062063	CJ_063064	CJ_064065	MB_000001	MB_001002	MB_002003	MB_003004	MB_004005	MB_005006	MB_006007	MB_007008	MB_008009	MB_009010	MB_010011
626.473	414.317	723.626	275.397	240.982	261.739	303.286	371.115	300.481	323.235	260.982	415.52	617.064	502.45
450.86	328.161	607.64	225.445	220.959	226.784	230.344	228.927	229.051	227.534	215.975	240.784	297.605	252.678
1584.02	684.201	1584.02	223.4	203.505	223.4	223.4	223.4	223.4	203.505	203.505	203.505	1908.87	223.4
1.38951	1.26254	1.19088	1.22157	1.09062	1.15413	1.31667	1.62111	1.31185	1.4206	1.20839	1.7257	2.07343	1.9885
552.972	371.403	583.856	220.168	89.7673	127.972	260.931	430.995	261.001	320.4	222.072	428.945	602.386	539.498
1.22648272	1.1317707	0.9608584	0.976592961	0.406262248	0.56429025	1.132788351	1.88267439	1.139488586	1.408141201	1.028230119	1.781451425	2.024112498	2.135120588
305778	137940	340887	48474	8058.17	16376.9	68084.8	185757	68121.7	102656	49316	183994	362869	291058
88.2675	89.6422	80.6847	79.9457	37.2506	48.8931	86.0344	116.135	86.8613	99.123	85.091	103.231	97.6212	107.373
0.871913	0.730487	0.5375	5.01481	1.8227	2.3295	4.30521	2.9203	3.5954	3.16716	4.13682	2.06082	1.07568	1.6312
-0.35977	-0.440655	-0.910736	28.5381	4.39001	6.56165	21.085	7.10865	14.7738	10.1817	22.1347	3.26902	-0.336661	1.2033
358						1066				982			
0						10				6			
						0							
						2.58							
			73.624				96.542			98.469			
			8.662101				9.906059			10.00265			
			19.764				24.168			26.361			
			8.621369				9.865901			9.962981			
			1.733903				1.667864			1.731153			
			0.424162				0.353914			0.365477			
			291.098				365.54			403.299			
			17.12408				19.1826			20.14694			
			122.99				153.474			195.405			
			17.09286				19.15087			20.11465			
			2.463226				2.447417			2.879852			
			0.320249				0.283422			0.32956			
			0.252918				0.264108			0.244159			

MB_011012	MB_012013	MB_013014	MB_014015	MB_015016	MB_016017	MB_017018	MB_018019	MB_019020	MB_020021	MB_021022	MB_022023	MB_023024	MB_024025
535.636	278.959	372.389	417.294	429.28	158.048	187.984	4.8926	177.054	183.027	5.07626	157.845	145.803	65.5462
251.556	229.942	275.038	421.442	441.666	65.9388	92.2725	3.40979	26.2516	55.6773	3.47162	36.765	21.9248	6.5532
223.4	223.4	471.14	824.519	824.519	471.14	471.14	9.37129	517.2	517.2	13.6092	471.14	471.14	168.872
2.12929	1.21317	1.35395	0.990156	0.971956	2.39689	2.03727	1.43487	6.74451	3.28728	1.46222	4.29335	6.65015	10.0022
587.068	191.565	268.523	324.39	339.016	180.995	202.272	4.43489	229.668	214.673	4.70036	192.569	196.218	115.635
2.33374676	0.8331014	0.976312364	0.769714457	0.767584555	2.7448938	2.192115744	1.30063435	8.74872389	3.8556647	1.35393851	5.2378349	8.94959133	17.6455777
344648	36697.1	72104.4	105229	114932	32759.2	40913.8	19.6683	52747.4	46084.6	22.0934	37082.8	38501.7	13371.4
109.602	68.6713	72.1082	77.7365	78.9732	114.519	107.601	90.6449	129.716	117.29	92.595	121.999	134.578	176.417
1.49752	1.50439	0.640748	0.257443	0.155008	0.959088	0.659451	0.928189	0.864239	0.74083	0.82089	0.926511	1.07543	2.05951
0.630659	2.81574	-0.560427	-1.34235	-1.44359	-0.282293	-0.990445	-0.148463	-1.01231	-1.17605	-0.481083	-0.556128	-0.416184	3.24235
	571					176						109	
	2					1						0	
							0.46						
							6.37						
						4.433							
						2.372551							
						0.917							
						2.242989							
						1.521615							
						1.680488							
						52.551							
						7.349218							
						14.337							
						7.299384							
						1.750353							
						0.50998							
						0.084356							

MB_025026	MB_026027	MB_027028	MB_028029	MB_029030	MB_030031	MB_031032	MB_032033	MB_033034	MB_034035	MB_035036	MB_036037	MB_037038
469.198	422.394	468.343	185.699	237.228	132.64	177.157	433.991	400.2	959.34	252.06	400.122	257.609
481.641	469.077	495.623	58.7891	63.281	44.0979	67.0977	378.358	417.995	824.586	216.999	351.096	218.463
905.126	905.126	905.126	390.961	471.14	223.4	517.2	993.613	905.126	1908.87	567.763	824.519	567.763
0.974164	0.90048	0.944959	3.15873	3.7488	3.00786	2.64028	1.14704	0.957427	1.16342	1.16157	1.13964	1.17919
363.774	357.218	370.95	186.849	259.409	164.215	200.754	370.197	342.889	699.437	226.237	324.002	232.276
0.755280385	0.761533821	0.748451948	3.178293255	4.099318911	3.723873472	2.991965447	0.97843048	0.82031842	0.84822808	1.04257163	0.922830223	1.0632281
132332	127605	137604	34912.7	67293.2	26966.7	40302.4	137046	117573	489212	51183.3	104978	53952.3
77.5311	84.5698	79.2048	100.619	109.35	123.805	113.32	85.3006	85.6794	72.9081	89.7552	80.976	90.1663
0.114336	0.110037	0.117308	0.179466	0.563771	1.23707	0.805316	0.479145	0.280755	0.109468	0.312979	0.419463	0.280351
-1.28889	-1.54444	-1.22138	-1.84719	-1.2001	0.537682	-0.772804	-0.979356	-1.40882	-1.52012	-1.43311	-0.971527	-1.5021
			125					127				
			1					0				
							10.379					
							3.406905					
							1.761					
							3.315569					
							1.40868					
							0.941342					
							52.925					
							7.376246					
							14.533					
							7.325776					
							1.757085					
							0.510487					
							0.196108					

MB_038039	MB_039040	MB_040041	MB_041042	MB_042043	MB_043044	MB_044045	MB_045046	MB_046047	MB_047048	MB_048049	MB_049050
454.548	257.209	184.419	259.056	147.655	83.799	343.25	198.559	259.043	282.349	310.728	278.974
427.547	193.879	144.869	202.789	39.3697	19.5588	245.383	157.987	194.649	221.951	252.095	214.433
905.126	751.091	269.215	245.24	269.215	245.24	905.126	245.24	751.091	751.091	751.091	751.091
1.06315	1.32665	1.27301	1.27746	3.75047	4.28446	1.39883	1.25681	1.33082	1.27212	1.23258	1.30098
353.886	269.997	195.309	261.607	180.63	105.017	333.428	205.903	261.467	268.591	272.78	267.171
0.82771251	1.392605697	1.348176629	1.290045318	4.58804614	5.369296685	1.358806437	1.303290777	1.343274304	1.210136472	1.082052401	1.245941623
125236	72898.6	38145.6	68438.3	32627.3	11028.7	111174	42395.9	68364.8	72141.3	74409.2	71380.3
77.8546	104.972	105.905	100.985	122.333	125.321	97.1387	103.698	100.936	95.1273	87.7876	95.7692
0.261946	0.891848	0.928421	0.919956	1.09353	0.977891	0.697267	0.952274	0.899626	0.766973	0.644686	0.798419
-1.22817	-0.340575	0.0198098	-0.166228	0.0427498	-0.557837	-0.726399	0.0126436	-0.267626	-0.513752	-0.705515	-0.445232
153					115					170	
0					0					0	
	0.53										
	6.43										
		8.652									
		3.137515									
		1.946									
		3.041052									
		1.580376									
		1.183904									
		95.774									
		9.86215									
		34.068									
		9.824357									
		2.104204									
		0.464706									
		0.090338									

MOAT1	MOAT2	ABS	ADS	MD1	MD2	MD3	AT10BAG4	AT10BAG5	Caesarea -4m/US1
251.997	290.466	267.548	245.862	231.957	230.395	238.349	202.718	219.204	256.595
228.465	245.668	253.455	235.949	223.272	223.405	227.596	193.974	206.225	237.267
223.4	223.4	245.24	223.4	223.4	223.4	223.4	203.505	203.505	223.4
1.103	1.18235	1.0556	1.04202	1.0389	1.03129	1.04724	1.04508	1.06293	1.08146
97.6522	157.017	80.8977	66.6714	62.3481	56.6444	67.5365	75.7922	74.0852	90.4699
0.427427396	0.639143071	0.319179736	0.282566995	0.279247286	0.253550279	0.296738519	0.39073381	0.359244515	0.38129997
9535.96	24654.4	6544.44	4445.08	3887.29	3208.59	4561.18	5744.46	5488.61	8184.81
38.7514	54.057	30.2367	27.1174	26.8792	24.5858	28.3352	37.388	33.7974	35.2579
1.61446	1.08098	1.02359	0.832655	0.733513	0.621078	1.20907	1.28761	1.7984	1.67854
2.97985	1.53706	1.29632	0.772242	0.39587	0.0976508	2.58239	4.90829	5.62417	3.92355
470	520	356	344	140	319	255	725	686	494
3	10	4	3	1	4	1	46	24	14
			0						
			1.33						

CS2018 US2	CS2018 US3	J6/2018 2.9m	A025030	A040045	A055060	A070075	A085090	X100105	A105110
214.843	205.342	226.778	685.303	688.857	378.725	481.098	665.457	221.205	678.011
202.56	193.141	210.392	506.226	449.355	278.038	276.996	348.961	213.173	386.634
203.505	185.382	203.505	1442.95	1908.87	245.24	223.4	223.4	245.24	223.4
1.06064	1.06317	1.07788	1.35375	1.53299	1.36213	1.73684	1.90696	1.03768	1.75363
91.5534	88.2285	79.1905	560.151	572.632	258.036	454.165	598.42	178.104	582.535
0.451981635	0.456808756	0.376395015	1.106523569	1.274342113	0.928060193	1.639608514	1.714862119	0.835490423	1.506683323
8382.03	7784.28	6271.14	313769	327907	66582.7	206266	358107	31721.2	339347
42.6141	42.9667	34.9198	81.7377	83.1279	68.1329	94.4018	89.9263	80.5153	85.9181
0.864247	1.00869	1.50644	0.493716	0.896299	0.655166	1.65411	0.925329	0.428157	0.882107
2.02883	2.48063	2.55525	-1.12397	-0.588836	-0.509153	1.74875	-0.64849	-0.712175	-0.63623
45	29					172			
0	0					0			

A120125	A135140	X140145	A150155	A165170	A185190	A195200	A200205	A205210	A215220	X220225	A225230
234.745	258.279	558.44	218.994	233.828	525.32	240.552	241.441	248.068	248.375	238.96	298.773
221.131	224.572	300.838	204.676	221.981	323.435	227.768	226.01	227.395	227.733	225.088	227.865
223.4	223.4	223.4	223.4	245.24	1197.39	223.4	223.4	223.4	223.4	223.4	223.4
1.06157	1.15009	1.85628	1.06996	1.05337	1.62419	1.05613	1.06828	1.09091	1.09064	1.06163	1.31119
100.594	175.163	533.606	183.357	180.964	424.767	73.4426	80.3572	97.0742	97.4901	76.8275	288.273
0.45490682	0.779985929	1.773732042	0.895840255	0.815222925	1.31329943	0.32244477	0.35555	0.4268968	0.428089473	0.341322061	1.265104338
10119.1	30682.2	284735	33619.6	32747.9	180427	5393.81	6457.28	9423.4	9504.31	5902.46	83101.6
42.8524	67.8196	95.5529	83.7267	77.3919	80.8587	30.5309	33.2823	39.132	39.2511	32.1507	96.4858
0.870847	4.78287	1.39622	0.493486	0.507339	0.835139	1.27887	1.54571	2.29638	2.35036	1.54628	4.16861
2.20093	31.7568	0.563379	-0.768267	-0.363302	-0.884518	2.66294	3.7133	8.59291	9.02922	4.22465	17.5048
266				131	406	1651	1482		762		
6				2	0	6	13		11		

SY1 0m	Caesarea -5m
1875	1104
90	38
	0.02
	1.98

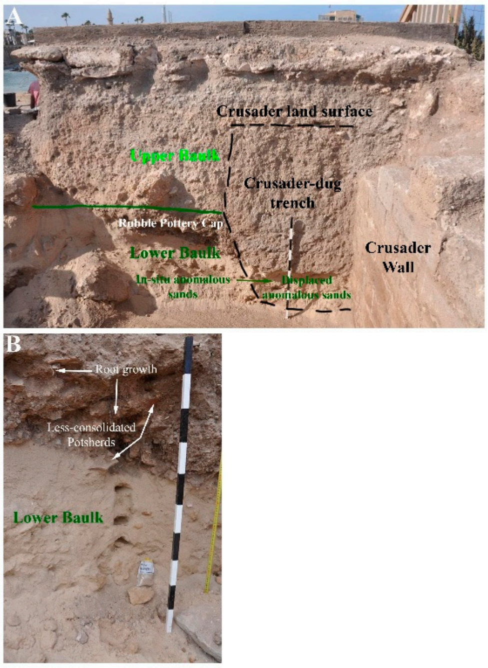

Figure S3. Sampling the 'LL Southern Baulk' section, looking southwest. (**A**) The lower section, consisting of clean sand, is outlined in dark green. This part of the construction fill shows an angle of repose from the east and abuts the Crusader wall on the west. (**B**) A close-up of the Lower Baulk shows the anomalous sands beneath a rubble cap with potsherds and exhibiting root growth. This baulk was sampled in ~5-15 cm intervals and bagged.

Table S2. All possible earthquakes that fit the chronology. A list of all earthquakes that could chronologically fit with the deposition of the anomalous unit, along with estimated strength, epicenter, and historical mentions of coastal flooding.

Recorded Earthquake	Inferred Epicenter/Cause	Estimated magnitude	Evidence?	Likely to have caused damage to southern Levant?
634 CE	DSF?	5.5	Several historical references (Theophanes (closest to event), Michael the Syrian, al-Makin, Abu'l Fara)	Yes, damage reported in Jerusalem
659/660 CE	DSF earthquake in Israeli section	6.0-7.0	Several historical references; possible evidence in Dead Sea sediments	Yes, damage reported in Jericho and Jerusalem
746/749 CE	DSF earthquake with epicenter on the Jericho segment between the Dead Sea and Sea of Galilee	6.0-7.0, or greater	Several historical references (Theophanes, Michael the Syrian); archaeological evidence; geological evidence; possible Dead Sea sedimentary evidence	Archaeological evidence of earthquake damage at Tiberias, Bet She'an, Caesarea Maritima, Ein Keshatot
756/757 CE	?	6	Several historical references ((al-Dhahabi, al-Suyuti, Mujir al-Din, and al-Ulaimi)	Yes, damage reported in Jerusalem
796 CE	Hellenic Arc?	?	Historical reference	No
802/803 CE	Cypriot Arc/East Anatolia Fault	Unknown, probably small	Historical reference	Probably not
853/854 CE	?	Small, <6.0	One secondary historical reference	Reportedly damaged Tiberias, no archaeological evidence for this
859/860 CE	Earthquake along Hellenic Arc or Northern DSFT; local landslide between Antioch and	>6.0	Historical references	No
873 CE	DSF?	?	Archaeological evidence, no historical evidence	Archaeological evidence for earthquake damage at Qasr Tilah,
881/882 CE	?	?	Historical references to tsunami at Akko and coastal flooding at Alexandria	?

Recorded Tsunami/coastal flooding?	Tsunami likely along southern Levant	Likely responsible for this deposit?	Reference
No	No	No (fits radiocarbon data, but does not fit archaeological constraints)	[108,125]
No	Possible	Unlikely (too soon for Umayyad archaeological fill to develop)	[108,126]
Yes, but specific coastline not named by chronicler (Michael the Syrian); Severus ibn al-Muqaffa' says: it affected the entire near east from Gaza to the furthest extremity of Persia, many ships	Yes	Yes (fits radiocarbon data and stratigraphic constraints, and associated with historical mention of coastal flooding/tsunami)	[108,126]
No	Unlikely, but possible	Unlikely (no historical mention of coastal flooding/tsunami and the estimated earthquake magnitude is barely enough to generate a	[125]
No	Unlikely	No (no tsunami reference or damage reported in the Levant)	[125]
Yes, tsunami said to have affected Iskenderun Bay, Asia Minor	Unlikely	No (a small earthquake that far away would be unlikely to have generated a tsunami along Israel's coast)	[108]
No	Unlikely	No (no tsunami reference, earthquake event not reliable, earthquake probably too small)	[108,125]
Yes, but in far northern Levant coast	Possible	No (tsunami too localized to reach Israel)	[108,125]
No	No	No (no historical mentions of tsunami, or even of an earthquake)	[127]
Possible tsunami at Akko	Possible	Unlikely (too late in the ninth century)	[108]


A
B

Figure S4. Coring the anomalous sediment. (**A**) The process of coring with a fence driver. (**B**) Aluminum coring pipe waiting for exposure during the excavation.

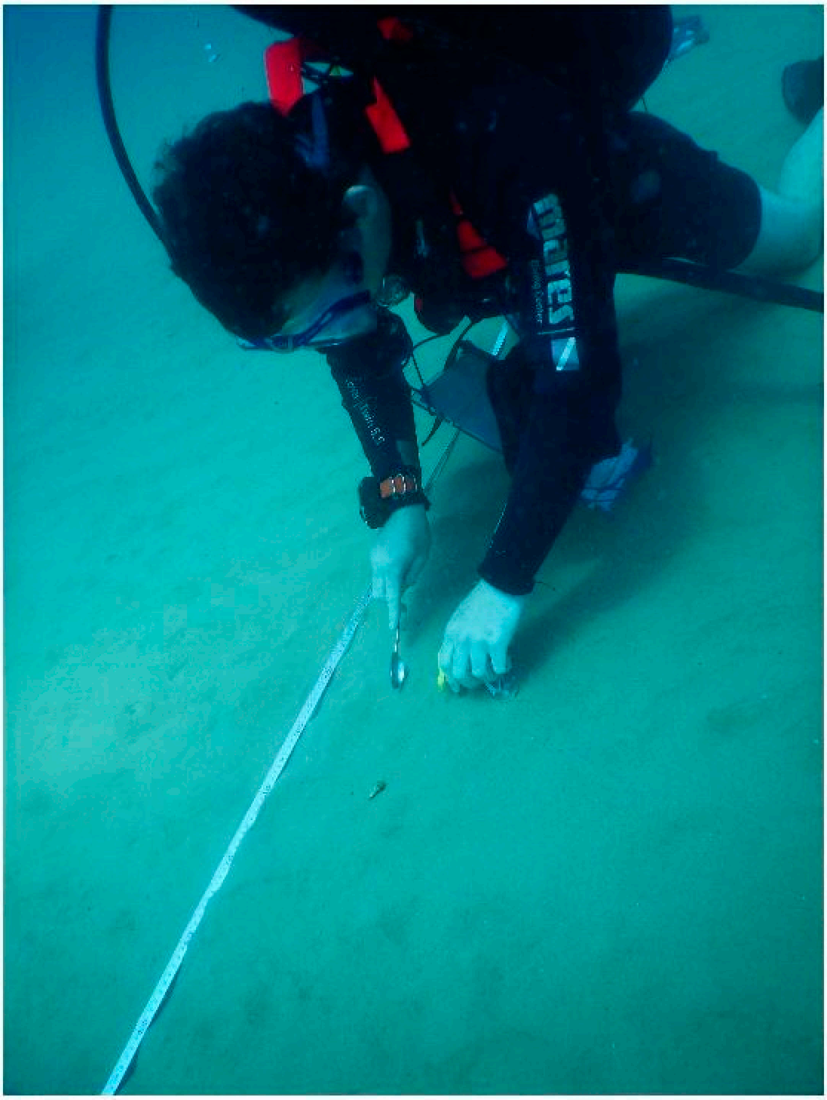

Figure S5. Shallow marine surface sample collection. Several surface samples were collected by diving to the seafloor at ~10 meters' depth offshore Sdot Yam, Israel. The upper centimeter of sediment was collected with a spoon and bagged.

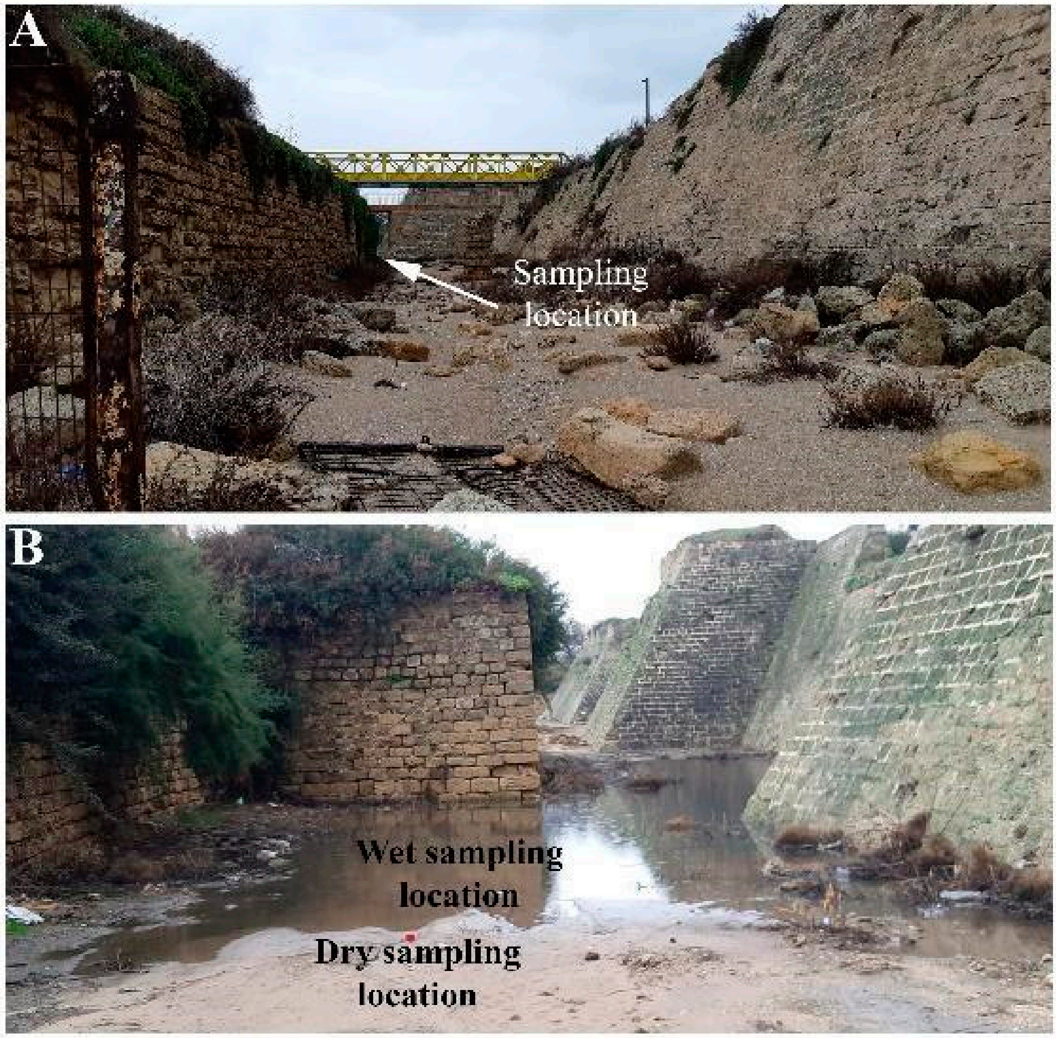

Figure S6. Storm-deposited sample collection. (**A**) Surface sediment collection site within the northern wall of the Crusader moat surrounding Caesarea Maritima National Park. (**B**) Samples were collected after a winter storm in January 2020 that transported and deposited a sand layer within the moat (one sample from the dry surface of the fresh deposit and one from the submerged surface).