Figure F1. Site map. Red = Site U1594, yellow = other sites. Inset: location map. See Figure F1 in the Site U1589 chapter (Druitt et al., 2024) for citations for the swath data on which this map is based. KVC = Kolumbo volcanic chain.

Figure F2. Top: seismic profile across the Santorini caldera with Seismic Units S1–S4, Sites U1594–U1597. Depths in meters. TWT = two-way traveltime. Bottom left: profile of Sites U1594 and U1595. Right: locations of the four intracaldera sites. Red = Site U1594, yellow = other sites.

Figure F3. Lithostratigraphic summary, Site U1594. Unit color = dominant lithology.

Figure F4. Relative percentages of volcanic, tuffaceous, and nonvolcanic lithologies, Hole U1594A. Unit I is volcanic dominated.

Figure F5. Grain size distribution of volcanic, tuffaceous, and nonvolcanic sediments, Site U1594. Length of colored bars = relative grain size (ash = <2 mm; lapilli = 2–64 mm; mud = <63 µm; sand = 0.063–2 mm), with separate scales shown for volcanic grain size (top) and nonvolcanic grain size (bottom; used for tuffaceous and nonvolcanic sediments). Mixed lithologies such as lapilli-ash (dark pink) that have relative grain sizes between two categories are plotted between ticks.

Figure F6. Core disturbances, Site U1594. A. Fall-in. B. Soupy.

Figure F7. Common lithologies, Hole U1594A. Subunit Ia: (A) mud and intercalated ash and (B) ash with subrounded gray lapilli. Subunit Ib: (C) lapilli with gray pumice, mafic enclave, and banded pumice and (D) tan-colored pumice lapilli with some of the lapilli containing mafic enclaves.

Figure F8. Representative lithologies from Subunit Ia, Hole U1594A. A. Volcanic ash characterized by transparent blocky, nonvesicular, and pumiceous glass shards. B. Tuffaceous mud showing blocks and vesicular glass shards, crystals, microfossils (e.g., foraminifera) and lithic clasts.

Figure F9. Selected XRD spectra of Subunit Ia volcanic lithologies (ash), Hole U1594A. A, B. Characteristic hump at low °2θ indicates the presence of volcanic glass. Identified crystalline phases are Ca-rich plagioclase, augite, clay minerals typical of the illite group and smectite group (montmorillonite), and zeolite. Il = illite, Ze = zeolite, Pl = Ca-rich plagioclase, Aug = augite, Sm = smectite.

Figure F10. Planktonic foraminifera. *Globoturborotalita rubescens* (398-U1594A-1H-CC, 0–8 cm).

Figure F11. Calcareous nannofossils (398-U1594A-2H-CC, 17–19 cm). 1. *Emiliania huxleyi* (Lohmann) Hay and Mohler. 2. *Gephyrocapsa* spp. (small form).

Figure F12. Physical properties, Site U1594. Dots = whole-round measurements, open symbols = discrete sample measurements. cps = counts per second.

Figure F13. Discrete physical properties measurements, Hole U1594A.

Figure F14. ICP-AES analyses of selected volcaniclastic units used to discriminate between potential volcanic sources, Hole U1594A. A. Total alkali vs. SiO_2 plot with the rock nomenclature of Le Maitre et al. (2002) overlain used for sample naming. Ol = olivine. B. Ba/Y vs. Ba/Zr plot used to correlate samples.

Figure F15. IW salinity, alkalinity, and pH, Site U1594. Lithostratigraphic Unit I is described in Lithostratigraphy.

Figure F16. IC and ICP-AES concentrations of Br, Cl, B, Na, K, Mg, Ca, and SO_4^{2-} in IW samples, Site U1594. Lithostratigraphic Unit I is described in Lithostratigraphy.

Figure F17. ICP-AES concentrations of Li, Sr, Mn, Ba, and Si in IW samples, Site U1594. Lithostratigraphic Unit I is described in Lithostratigraphy.