Figure F1. Multichannel Seismic Profile HV-7-96 showing Eldhø and the adjacent Eldhø Basin (for location see Figure F1D in Planke et al., 2023b). TWT = two-way traveltime.

Figure F2. Lithostratigraphic summary, Site U1574. Ages are derived from biostratigraphic observations (see Biostratigraphy).

Figure F3. Lithostratigraphic columns, Holes U1574A and U1574C. Epochs/periods and informal ages (e.g., early) are constrained by biostratigraphic observations (see Biostratigraphy).

Figure F4. Selected APC-cored sediment intervals, Hole U1574C. A. Unit I–II transition, marked by a change in color and degree of consolidation. B. Uppermost interval of mudstone in Unit III, which is slightly more coarse than the lower part of the unit, with interbedded sandstone. C. Lowermost interval of mudstone in Unit III, which contains less sand and higher organic matter content. D. Unit III–IV transition, marked by an increase in the strength of parallel lamination and organic content.

Figure F5. Carbonated metabreccia at the top of Unit V, Holes U1574A and U1574C.

Figure F6. Core composite of Unit V, 396-U1574A-19R-1, 0 cm, to 38R-3, 95 cm (166.50–258.94 m CSF-A; bottom of hole).

Figure F7. Unit V hyaloclastites. The top of Subunits Va (396-U1574A-19R-2 and 396-U1574C-20X-CC) and Vb (396-U1574A-34R-1) are shown.

Figure F8. Pillow basalt, 396-U1574A-24R. Thirteen pillows are identified in the core from the presence of curved glassy margins (red dashes).

Figure F9. Main basalt facies encountered in Unit V, Hole U1574A. A. Plagioclase-phyric basalt. B. Sparsely vesicular, aphyric, aphanitic basalt. C. Highly vesicular, aphyric, aphanitic basalt. D. Massive, aphyric phaneritic basalt.

Figure F10. Microstructure of the sparsely phyric, plagioclase basalt in Unit V, 396-U1574A-24R-3, 109 cm. Cpx = clinopyroxene, plg = plagioclase.

Figure F11. Examples of pillow lavas in Unit V, Hole U1574A. Formerly glassy altered rims with pipe vesicles and perpendicular radial fractures are shown.

Figure F12. Chemical stratigraphy of the basalts from Unit V, Hole U1574A. Mg# (= Mg/[Mg + Fe^{2+}]*100, assuming FeO/Fe_2O_3 = 0.85). See Lithostratigraphy in the Expedition 396 methods chapter [Planke et al., 2023a] for details.

Figure F13. Eocene planktonic foraminifers, 396-U1574A-18R-CC. 1, 2. *Acarinina* sp.: (1) ~230 µm and (2) ~240 µm. 3. *Acarinina pentacamerata* (~160 µm). 4. *Acarinina* sp. (~200 µm). 5. *Subbotina eocaena* (~210 µm). 6, 7. *Subbotina* sp.: (6) ~230 µm and (7) ~190 µm). 8. *Subbotina* cf. *patagonica* (~200 µm). 9. *Jenkinsina* sp. (~110 µm). 10, 11. *Globoturborotalita bassriverensis*: (10) ~210 µm and (11) ~240 µm.

Figure F14. Eocene benthic foraminifers and other microfossils, 396-U1574A-18R-CC. 1–3. *Cancris auriculus*: (1) ~310 µm, (2) ~190 µm, and (3) ~110 µm. 4. *Fursenkoina* sp. (~80 µm). 5. *Nonionella* sp. (~180 µm). 6. *Cibicidoides* cf. *eocaenus* (~280 µm). 7. *Cibicidoides* sp. (~200 µm). 8. *Bolivina* sp. (~80 µm). 9, 10. *Bulimina* sp.: (9) ~220 µm and (10) ~160 µm. 11. Pteropod (~280 µm). 12. Gastropod (~250 µm). 13. Bivalve (~360 µm). 14. Ichthyolith (width = ~90 µm).

Figure F15. Microspherules, 396-U1574A-18R-CC. Size = approximately 500 µm.

Figure F16. Litho- and magnetostratigraphy, Holes U1574A and U1574C.

Figure F17. Magnetic coercivity parameter for Units I–IV, Hole U1574C.

Figure F18. IW alkalinity, pH, Cl, Br, NH_4^+, and PO_4^{3-}, Holes U1574A and U1574C.

Figure F19. IW contents of alkali and alkali earth metals (Li, Na, K, Mg, Ca, Sr, and Ba), Holes U1574A and U1574C.

Figure F20. IW contents of B, Si, S, Mn, and Fe, Holes U1574A and U1574C.

Figure F21. NGR-derived K, U, and Th content, Holes U1574A and U1574C.

Figure F22. Volcanic rock diagrams based on pXRF data, Hole U1574A. A Ti vs. Zr (5.2a Thol. basalts with CaO + MgO 12%–20%). B. Mg# vs. TiO_2. CA bas = calcalkali basalt, IAT = island-arc tholeiites.

Figure F23. Carbonate, nitrogen, sulfur, and TOC contents from solid squeeze cake samples, Holes U1574A and U1574C.

Figure F24. Physical properties summary, Hole U1574A. Filtered point data is presented alongside interpolated traces for selected data with a running average of 50 cm and a maximum interpolation gap of 50 cm applied (denoted "r" in headers). cps = counts per second, V_P = *P*-wave velocity, G. = SHMG, WR = WRMSL.

Figure F25. Physical properties measurements spanning the pillow lavas, hyaloclastites, and massive basalt lavas of Unit V, Hole U1574A. Filtered point data is presented alongside interpolated traces for selected data with a running average of 50 cm and a maximum interpolation gap of 50 cm applied (denoted "r" in headers). cps = counts per second, V_P = *P*-wave velocity, G. = SHMG, WR = WRMSL.

Figure F26. Physical properties summary, Hole U1574C. Filtered point data is presented alongside interpolated traces for selected data with a running average of 50 cm and a maximum interpolation gap of 50 cm applied (denoted "r" in headers). cps = counts per second, V_P = *P*-wave velocity, WR = WRMSL.

Figure F27. Summary of wireline log traces collected in the open hole interval, Hole U1574A. LCAL = caliper, HSGR = total spectral gamma ray, TC = triple combo, RHOM = wireline bulk density, PEF = photoelectric effect, RLA = resistivity, RT_HRLT = true resistivity, V_P = *P*-wave velocity, V_S = *S*-wave velocity, IU = uncalibrated instrument units.

Figure F28. Wireline GR and MS compared with core-based physical properties, Hole U1574A. Wireline data is plotted on the WMSF depth scale, whereas core-based data is plotted on the CSF-A depth scale; the depths are not matched. Note that the main total spectral gamma ray (HSGR) display is from the FMS tool run, which reached lower in the borehole (256 m DSF) than the previous triple combo (TC) HSGR run that got hung up at 213 m DSF. The TC is also shown because the FMS HSGR run data is affected by the closure of the calipers at ~146 m DSF, resulting in an abrupt reduction in the HSGR signal. r = 50 cm running average. cps = counts per second, WR = WRMSL, LCAL = caliper, IU = uncalibrated instrument units.

Figure F29. Wireline GR, resistivity, and FMS borehole image logging results, Hole U1574A. HSGR = total spectral gamma ray, TC = triple combo, LCAL = caliper, RLA = resistivity, RT_HRLT = true resistivity.

Figure F30. FMS image log example of potential pillow lava structures in Logging Unit 4, Hole U1574A.

Figure F31. FMS image log example showing a potential subaqueous or subaerial lava flow unit and brecciated flow top along with high-GR, low-resistivity sediment layers at the base of Logging Unit 4, Hole U1574A. HSGR = total spectral gamma ray.

Figure F32. Unfilled and calcite-filled highly vesicular basalt near the upper lava flow margin, Hole U1574A. See Figure F31.

Figure F33. FMS image log character of Logging Unit 5, Hole U1574A. HSGR = total spectral gamma ray.

Figure F34. FMS and GR data showing the Logging Unit 5–6 transition, Hole U1574A. The resistivity transition in the subaqueous lava flow unit from 242.6 m WMSF to the base of the FMS data (~248 m WMSF) is highlighted. HSGR = total spectral gamma ray.

Figure F35. APCT-3 temperature measurements, 396-U1574C-4H. RMS = root mean square.

Figure F36. APCT-3 temperature measurements, 396-U1574C-7H. RMS = root mean square.

Figure F37. APCT-3 temperature measurements, 396-U1574C-10H. RMS = root mean square.

Figure F38. APCT-3 temperature measurements, 396-U1574C-13H. RMS = root mean square.