# Online Resource 1: Sample Location Details and Petrography

| Sample Number | Voyage Number | Sampling Method | Latitude (°N) | Longitude (°E) | Depth (mbsl) | Top Depth (m CSF) | Bottom Depth (m CSF) | Latitude (°N) on Bottom | Longitude (°E) on Bottom | Depth (mbsl) on Bottom | Latitude (°N) off Bottom | Longitude (°E) off Bottom | Depth (mbsl) off Bottom |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| TAN1213-45-3 | TAN12-13 | Dredge | | | | | | -34.8897 | 179.0388 | 1680 | | | |
| TAN1007-6 | TAN10-07 | Dredge | | | | | | -34.824 | 179.142 | 2314 | -34.821 | 179.137 | 2150 |
| SO253-081-12B | SO253 | ROV Grab | -34.861 | 179.0572 | 1578 | | | | | | | | |
| J2-1041-6-R1 | TN350 | ROV Grab | -34.8788 | 179.0714 | 1330 | | | | | | | | |
| U1529A-1R-1-W | IODP Expedition 376 | Drillcore | -34.8753 | 179.0586 | 1735 | 0.67 | 0.81 | | | | | | |
| U1531B-3R-2-W | IODP Expedition 376 | Drillcore | -34.8795 | 179.0702 | 1352 | 20.03 | 20.23 | | | | | | |
| U1531B-3R-3-W | IODP Expedition 376 | Drillcore | -34.8795 | 179.0702 | 1352 | 20.35 | 20.53 | | | | | | |

**Table OR1.1.** Location details for samples analysed in this study. Location details for IODP drill sites are from de Ronde et al. (2019a); other locations are compiled from unpublished voyage reports. mbsl = Metres below sea level. m CSF = Depth of core below sea floor in metres.

| Sample Number | Location | Rock Type | Description | References |
|---|---|---|---|---|
| TAN1213-45-3 | BWR | Basalt | Black, unaltered, vesicular (~30 vol%), porphyritic lava. ~10 vol% phenocrysts, dominantly euhedral-subhedral olivine (≤5 mm, occasionally with Cr-spinel inclusions) with minor euhedral clinopyroxene (≤1 mm) and rare euhedral plagioclase (≤1 mm). ~1 cm-thick glassy crust and microcrystalline interior (plagioclase + clinopyroxene + olivine microlites). | Brandl et al. (2023) |
| TAN1007-006 | BNER | Basaltic Andesite | Black, unaltered, vesicular (~30 vol%), porphyritic lava. ~5 vol% phenocrysts: dominantly plagioclase (≤1 mm, euhedral-anhedral, occasional sieve textures), with minor euhedral-subhedral olivine (≤2 mm) and euhedral clinopyroxene (≤0.5 mm), and sparse magnetite (≤0.5 mm). Plagioclase, clinopyroxene and magnetite common as glomerocryst clots with brown interstitial glass. Glassy margin with microcrystalline interior (plagioclase + clinopyroxene + olivine + Fe-Ti oxide microlites). | Wysoczanski et al. (2012); Brandl et al. (2023) |
| SO253-081-12B | Northwest caldera wall | Dacite | Black, unaltered, vesicular (~40 vol%), sparsely glomeroporphyritic bomb. ~5 vol% phenocrysts, dominantly euhedral-subhedral plagioclase (≤1 mm) with minor clinopyroxene ( <1 mm), orthopyroxene (<1 mm) and scattered Fe-Ti oxides. Hypohyaline groundmass (~50-60 vol% glass) with plagioclase + pyroxene + Fe-Ti oxide microlites.<br>[Thorough search for magmatic sulphides not conducted] | |
| J2-1041-6-R1 | Saddle between Upper and Lower Cones | Dacite | Black, unaltered, sparsely vesicular (~20 vol%), glomeroporphyritic lava. ~15 vol% phenocrysts, dominantly euhedral-subhedral plagioclase (≤1 mm) with minor clinopyroxene ( <1 mm), orthopyroxene (<1 mm) and scattered Fe-Ti oxides. Hypohyaline groundmass (~50-60 vol% glass) with plagioclase + pyroxene + Fe-Ti oxide microlites. [Thorough search for magmatic sulphides not conducted] | |
| U1529A-1R-1-W | Caldera floor | Dacite | Black, unaltered, slightly vesicular (~10 vol%), glomeroporphyritic lapilli. ~10 vol% phenocrysts, dominantly euhedral-subhedral plagioclase (≤5 mm) with minor subhedral-anhedral clinopyroxene ( ≤1 mm) and scattered Fe-Ti oxides (titanomagnetite > ilmenite, <0.3 mm). Hypohyaline groundmass (~50-60 vol% glass) with plagioclase + pyroxene + Fe-Ti oxide microlites. Trace magmatic sulphides. | de Ronde et al. (2019b) |
| U1531B-3R-2-W<br><br>U1531B-3R-3-W | Saddle between Upper and Lower Cones | Dacite | Black, unaltered, slightly vesicular (~10 vol%), glomeroporphyritic lapilli. ~15 vol% phenocrysts, dominantly euhedral-subhedral plagioclase (≤2 mm) with minor euhedral-anhedral clinopyroxene (≤1 mm), euhedral orthopyroxene (<1 mm), and scattered Fe-Ti oxides (titanomagnetite > ilmenite, <0.3 mm). Hypohyaline groundmass (~50-60 vol% glass) with plagioclase + pyroxene + Fe-Ti oxide microlites. Trace magmatic sulphides. | de Ronde et al. (2019c) |

**Table OR1.2.** Petrographic details for rocks from this study.

## References


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