

# Noddsdale Volcaniclastic Member

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## Noddsdale Volcaniclastic Member, **(NODV)** Renfrewshire Hills, Carboniferous, Midland Valley of Scotland

The Noddsdale Volcaniclastic Member is part of the [Clyde Plateau Volcanic Formation](#).

### Name

Previously named the Noddsdale Volcaniclastic Beds (Paterson et al., 1990<sup>[1]</sup>; Monro, 1999<sup>[2]</sup>). Part of the 'Lower Group' of Richey (1928)<sup>[3]</sup> and 'unit 1' of Johnstone (1965)<sup>[4]</sup>.

### Lithology

Purple basaltic tuff, agglomerate and pyroclastic-breccia with some bedded volcaniclastic sandstone. A complete section through the unit is recorded in the Largs Borehole (BGS Registration Number NS25NW/5) (NS 2158 5936) with about 44 m of volcanic detritus, fine- to coarse-grained with basaltic lava blocks up to 0.2 m long, bedded in places. Fine-grained with accretionary lapilli in basal 3 m. The volcanic detritus is underlain by 11 m of silty mudstone and then 7 m of tuffaceous sandstone containing clasts of lava and quartz. Clasts of lava in sandstones and agglomerates are locally derived. Fine-grained tuffs are commonly well bedded and grade into water-laid volcaniclastic and quartzose sandstones containing some carbonised plant debris.

### Stratotype

The type section comprises a complete sequence, about 62.1 m thick, through the Noddsdale Volcaniclastic Member in the Largs Borehole (see above) from about 107.4 to 169.5 m depth. See description above and Paterson et al. (1990)<sup>[1]</sup>.

## Lower and upper boundaries

In the area between Loch Thom (NS 26 72) and Largs (NS 20 59) east of the Largs Fault-zone, the basal tuffs, agglomerates and breccias of the Noddsdale Volcaniclastic Member rest upon 'cornstone'-bearing sandstones of the [Kinnesswood Formation](#). Farther north and to the west of the Largs Fault-zone between Outerwards Reservoir (NS 232 654) and Rottenburn Bridge (NS 25 69), the Noddsdale Volcaniclastic Member overlies strata from the [Clyde Sandstone Formation](#) of late Devonian to Tournaisian to early Visean age. This basal contact represents a regional erosional unconformity prior to the onset of the mid Visean volcanism in the Renfrewshire Hills.

The tuffs, agglomerates and pyroclastic breccias of the Noddsdale Volcaniclastic Member are overlain by the olivine-microphyric basalt ('Dalmeny') lavas of the [Largs Lava Member](#). In the Largs Borehole (see above) about 107 m of grey feldspar-phyric lava of the [Largs Lava Member](#) overlie the volcaniclastic sedimentary rocks of the Noddsdale Volcaniclastic Member.

## Thickness

Between 0 and 200 m.

## Distribution and regional correlation

Renfrewshire and Kilbirnie hills. The member forms the base of the [Clyde Plateau Volcanic Formation](#) in the area between Loch Thom (NS 26 72) and Largs (NS 20 59). It does not crop out south of Largs but is inferred to occur beneath the Largs Lava Member as far as the A760 road (NS 21 57).

## Age

Mid Visean (Arundian to Asbian).

## References

1. ↑ <sup>10</sup> <sup>11</sup> Paterson, I B, Hall, I H S, and Stephenson, D. 1990. Geology of the Greenock district. Memoir of the British Geological Survey, Sheet 30W part 29E (Scotland)
2. ↑ <sup>1</sup> Monroe, S K. 1999. Geology of the Irvine district. Memoir of the British Geological Survey, Sheet 22W, part 21E (Scotland)
3. ↑ <sup>1</sup> Richey, J E. 1928. The north Ayrshire sequence of Calciferous Sandstone volcanic rocks. Transactions of the Geological Society of Glasgow. Vol. 18, 247-255
4. ↑ <sup>1</sup> Johnstone, G S. 1965. The volcanic rocks of the Misty Law-Knockside Hills district, Renfrewshire. Bulletin of the Geological Survey of Great Britain, No. 22, 53-64

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