

AIRSTRIP BLOCK - MITCHELTON SHIRAZ

OCHRE RED DUPLEX SOILS

The Airstrip Block, along with Block D, are located on the oldest soils on the estate formed 100 thousand years ago. The higher plateau on which these blocks are located was left behind by an ancestral Goulburn River that flowed in a wetter climatic phase and, through regular annual high impact flooding events, deposited a mixture of sand, silt and clay slowly building up the plateau. Over the last one hundred thousand years surrounding areas were eroded away leaving the plateau standing proud. Annual rainfall over thousands of years has slowly leached the clay down the soil profile leaving a subtle soft sandy loam topsoil that the vine roots thrive in. The clay has been leached down a foot below the surface and constant wetting in winter and drying in summer has formed a tough but well-structured blocky chunky bright red clay subsoil (see Figure 1). Natural wetting and drying cycles have 'rusted' or oxidised the iron in the soil to form a distinct ochre red colour in the subsoil. While not as hospitable as the topsoil, some roots penetrate this subsoil layer interacting with the iron and other minerals present. This subsoil layer would crack and strain against the roots when dry stressing the vine, but would also hold precious water reserves at other times.



Ochre Red Duplex Soil
Airstrip Block
Block D
Shiraz

Soft Sandy Loam Topsoil

Vine roots thrive in this layer which provides an ideal medium for root growth and function. Soft soil with good water and nutrient holding and good drainage

Chunky Ochre-Red Clay Subsoil

Some roots penetrate this well structured blocky layer interacting with the chunky clay as it swells and shrinks and interacting with the red iron oxides.

Ochre Red Duplex Soil - 100 thousand years old - Friable soft sandy loam topsoil overlying well-structured blocky ochre-red medium clay subsoil.



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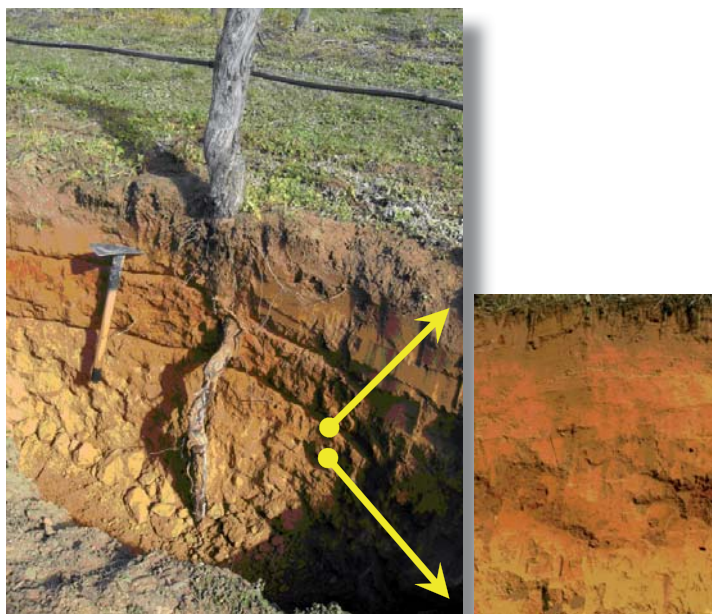


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CRESCENT BLOCK - PRINT SHIRAZ

DEEP SANDY ALLUVIAL SOILS

The Crescent Block was formed when the old prior stream or ancestral course of the Goulburn River that encompasses the southern boundary of the estate was an active and fast flowing juvenile river in a wetter climatic phase. The Crescent Block is uniquely located on the inside of a vast sweeping river meander giving the block its shape and hence its name. The inside of extensive river bends such as this, where water flowed relatively rapidly from the surrounding eroding mountain ranges, were where sand was deposited and collected to form a sandbar - just as the present rivers do today. The river has long since changed courses but has left the remnants of this ancient rivers' stranded sandbar - and this forms the Crescent Block on Mitchelton Estate. The soils here consist of fine to coarse washed river sands that extend to great depths. The old shiraz vines, which are hardly watered on this block, drive their gnarled roots deep down through the sandy soil layers in search of moisture. As these sand have been here for up to fifty thousand years, some millimeter thin layers of bright red iron-oxidised clayey sand have started to form and meander across the soil profile interacting with the roots of the vines.



Deep Sandy Alluvial Soil Crescent Block Shiraz

Sand, sand & more sand ! Deep, deep sand !

Ranging from fine sands to coarse almost gravelly sands layer upon layer of washed river sands extend to great depths. The shiraz vines drive their old gnarled tap roots deep down through the sandy layers in search of moisture.

Note in close up the thin layers of bright red iron-oxidised clayey sand veins that are interspersed throughout the sandy soil layers

Deep Sandy Alluvial Soil - 40 thousand years old - Very friable soft permeable deep sandy soil profile - note thin layers of bright red iron-oxidised clayey sand.



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CLARKES BLOCK - BLACKWOOD PARK RIESLING

TAWNY GREY PRIOR STEAM SOILS

While some of Clarke's Block is located on the plateau soils described above, other areas of this block slope down into the old prior stream or ancestral course of the Goulburn River that encompasses the southern boundary of the estate and also crosses the driveway - this is the dip the driveway first plunges into as you come through the main gates. The soils along this old course of the river were deposited by much slower flowing water over the last twenty to thirty thousand years. As the river took on a new course, the heavier sandier material was deposited in the main Goulburn River stream and this old river course took on the role of billabong and swamp, only periodically filling with slow moving water that carried and deposited clay. This has resulted in soils with a much higher clay content that developed a shallow yellow-brown clay loam topsoil overlying a tough dense plastic dull-grey heavy clay subsoil. This high water holding capacity soil often starves the vines of oxygen in the wetter winter months and the clay subsoil sets very hard restricting root penetration in the dry summer months.



Tawny-Grey Prior Steam Soil Clarke's Block Riesling

Organic Layer

Dark surface layer indicating good mulching practices

Clay Loam Topsoil

Shallow thin layer with moderate drainage and majority of roots

Heavy Clay Subsoil

Tough dense plastic dull-grey heavy clay subsoil layer that extend deep into the soil profile. This layer restricts root penetration but some larger tougher vine roots penetrate. This layer often starves the vines of oxygen in the wetter winter months when it gets waterlogged and sets very hard restricting root growth in the dry summer months.

Deep Sandy Alluvial Soil - 40 thousand years old - Very friable soft permeable deep sandy soil profile - note thin layers of bright red iron-oxidised clayey sand.



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THE DISTINCTIVE SOILS OF THE MITCHELTON ESTATE



The ever present influence of the Goulburn River has, over the past 100 thousand years, deposited sediments, molded the distinct gently undulating landforms, slowly segregating and grading the diverse and unique soils that now occur across the Mitchelton Estate. The alluvial river sediments on which the Mitchelton Estate is founded come from a wide range of sources; from the granite Strathbogie Ranges in the east; from the mudstone sediments of the Graytown Hills and from the ancient marine deposits of the mountains to the south. This diverse origin of soils, combined with the slow methodical deposition process of the riverine landscape has resulted in the diverse range of soils on Mitchelton Estate. The surrounding mountains and hills contain minor traces of gold resulting in traces of fine washed alluvial gold interspersed in the Goulburn River sediments. Who knows, maybe it is the interaction of the vine roots with fine flakes of alluvial gold that give the wines that unique gilded edge?

The unique characteristics of each of the soil types interact in a variety of complex ways with the vine roots. This soil vine interaction changes with each combination of grape variety distinctly matched to each soil type. The complexities of water, soil and canopy management that Viticulturist John Beresford and Winemaker Ben Haines apply enhance this intricate interaction even further. The result is truly unique wines that are derived from these complex interactions; some of these interactions are scientifically exacted, while with other interactions that we know influence the wines in powerful ways; the details of just how are still to be discovered.



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