Polymict peridotites, rare xenoliths in kimberlite worldwide, are metasomatised ilmenite, rutile, phlogopite, sulphide (IRPS) and orthopyroxene bearing rocks, sampled by Group I kimberlites. Xenolith DU-1 (Bultfontein Pipe, Kimberley district, South Africa) is an IRPS-veined spinel harzburgite containing olivine, garnet, orthopyroxene and clinopyroxene xenocrysts. Coherent mineral chemical trends for the IRPS phases are attributed to a process of percolative fractional crystallisation of a HFSE, K, Al, Mg, Fe, S and H₂O-enriched IRPS silicate melt. Xenocrystic clinopyroxene grains are intensely resorbed, indicating that this melt was initially depleted in Ca, Na, and Sr. However, late stage garnet and orthopyroxene overgrowths suggest later melt evolution towards Si, Ca, Cr enrichment. Although differences in chemistry between the (low-Ca) initial IRPS melt and the (high-Ca) host kimberlite rule out any direct relationship, the preservation of disequilibrium textures indicates that IRPS metasomatism occurred immediately prior to kimberlite entrainment. IRPS ilmenite εHf values, which are characteristic of the parental melt, fall within the range of South-African Group I kimberlite. In addition, the trace element chemistry of metasomatic olivine suggests that the IRPS parental melt was broadly kimberlitic. Liquid immiscibility (and separation) between carbonatite and silicate melt at the onset of olivine crystallisation is proposed to account for the initial low-Ca IRPS melt. Finally, xenolith DU-1 preserves evidence of multiple metasomatic enrichments prior to the IRPS event (i.e. silica re-enrichment; K-rich metasomatism). This suggests that lithospheric mantle metasomatism and kimberlite volcanism both follow pre-existing zones of mechanical weakness.