Figure F42
Figure F43
Figure F45

Olivine

Mole fraction FeO + MgO + CaO (anhydrous)

Mole fraction SiO$_2$ (anhydrous)

End-member minerals
- Site 1268 peridotite
- Site 1270 peridotite
- Site 1271 peridotite
- Site 1272 peridotite
- Site 1274 harzburgite
- Site 1274 mud in fault gouge
- Site 1274 dunite

Mg-Fe$^{2+}$-Ca pyroxene
Figure F46
Figure F47
Magnetic susceptibility (x 10^-6 SI) vs. Alteration (piece average) (%)

- Site 1274 Bulk density
- Site 1274 Grain density
- Site 1272 Bulk density
- Site 1272 Grain density

\[ \rho = 3.18 - 0.0065 \text{ alt} \quad R^2 = 0.64 \]
\[ \rho = 3.04 - 0.0044 \text{ alt} \quad R^2 = 0.60 \]

Magnetic susceptibility (x 10^-6 SI) vs. Alteration (piece average) (%)

- Site 1274 Susceptibility
- Site 1274 Volume corrected
- Site 1272 Susceptibility
- Site 1272 Volume corrected

\[ \text{Susceptibility} = 194 e^{0.0480 \text{ alt}} \quad R^2 = 0.66 \]
\[ \text{Susceptibility} = 204 e^{0.0489 \text{ alt}} \quad R^2 = 0.85 \]

\[ \text{Susceptibility} = 195 e^{0.0484 \text{ alt}} \quad R^2 = 0.84 \]

\[ \rho = 3.18 - 0.0065 \text{ alt} \quad R^2 = 0.64 \]
\[ \rho = 3.04 - 0.0044 \text{ alt} \quad R^2 = 0.60 \]
Figure F49
Figure F50
Figure 52

\[ y = 1.004 \times \quad R^2 = 0.82 \]

Calculated pressure (kbar) vs. Experimental pressure (kbar). The linear regression line is shown with the equation and the coefficient of determination. The data points are scattered around the line, indicating some variability in the measurements.
Figure F53
Figure 54

Fractional crystallization of olivine
Olivine in Samail and Wadi Tayin MTZ, Oman
Sites 1270-1274 olivine [Ni], 30% opx in harzburgite
Sites 1270-1274 olivine [Ni], 10% opx in harzburgite
Sites 1271-1274 dunite compositions
Estimated olivine compositions in 1275 troctolite

Ni (ppm)
Molar Mg#
Figure F58

Zr (ppm) vs Molar Mg#

- MAR MORB
  - N-MORB (Hofmann, 1988) & average MAR glass (PetDB) Mg# 59-60%, Zr 104-105 ppm

- Hybrid brown amphibole gabbro
- Hole 1268A gabbronorites
- Site 1270 gabbronorites ± oxide
- Site 1271 gabbronorite & hybrid gabbro
- Site 1272 diabase & miarolitic gabbro
- Site 1275 diabase
- Site 1275 gabbroic rocks ± oxide
- Site 1275 troctolite

921 & 923 average
735B average
921 & 923 average w/o 4 highest Zr

Primitive cumulates required for MORB fractionation
Figure F59