## GSA Data Repository 2019287

Mochizuki, K., et al., 2019, Recycling of depleted continental mantle by subduction and plumes at the Hikurangi Plateau large igneous province, southwestern Pacific Ocean: Geology, https://doi.org/10.1130/G46250.1



Figure S1: a) Interpreted seismic reflection section along the SAHKE MCS transect (Bland et al., 2015). b) MCS section for the SAHKE transect with black lines showing the consistency of layer boundaries from our seismic velocity model (converted to two-way time) with seismic horizons.



Figure S2. Parameter inversion results. The 95% confidence region corresponds to a normalized RMS misfit of 1.6 (F-value 2.6). (A) Trade-off between crustal and mantle velocities. (B) Representative receiver gather (OBS 8 along the SAHKE line).



Figure S3: a) Raw and b) Interpreted receiver-gather for OBS 02 deployed along the SAHKE 01 transect. c) Forward P-wave velocity model and selected ray paths for the predicted travel-times shown in b).



Figure S4: a) Raw and b) Interpreted receiver-gather for OBS 07 deployed along the SAHKE 01 transect. c) Forward P-wave velocity model and selected ray paths for the predicted travel-times shown in b).



Figure S5: a) Raw and b) Interpreted receiver-gather for OBS 10 deployed along the SAHKE 01 transect. c) Forward P-wave velocity model and selected ray paths for the predicted travel-times shown in b).



Figure S6: a) Raw and b) Interpreted receiver-gather for OBS 14 deployed along the SAHKE 01 transect. c) Forward P-wave velocity model and selected ray paths for the predicted travel-times shown in b).



Figure S7: a) Raw and b) Interpreted receiver-gather for OBS 19 deployed along the SAHKE 01 transect. c) Forward P-wave velocity model and selected ray paths for the predicted travel-times shown in b).



Figure S8: a) Raw and b) Interpreted receiver-gather for OBS 23 deployed along the SAHKE 01 transect. c) Forward P-wave velocity model and selected ray paths for the predicted travel-times shown in b).