

INTEGRATED SEQUENCE STRATIGRAPHIC FRAMEWORK OF WARCHHA AND SARDHAI FORMATION, SALT RANGE, PAKISTAN

Subhan Ullah^{1,2}, Majid Ullah^{1,2}, Sajjad Ahmad (Jr.)², Yahya Khan², Attaullah^{1,2}, Sohaib Jan² and Umair Mussawar^{1,2}

¹*National Centre of Excellence in Geology, University of Peshawar.*

²*Department of Geology University of Peshawar.*

subhanullah873@gmail.com

Abstract

The Lower to Lower-Upper-Permian clastic sequence of Nilawahan Group includes Warchha and Sardhai Formations which are studied in Eastern Salt Range (Chao-Khewra section) and Western Salt Range (Zaluch Nala section). It consists predominantly of sandstone and shale. Outcrop based identified lithofacies in the Warchha Sandstone includes; coarse grained planar cross-bedded sandstone facies (Sp), trough cross-bedded sandstone facies (St), massive mudstone facies (Fm) and sand, silt and mudstone facies (Fl) suggesting meandering fluvial depositional environment. The reported facies of Sardhai Formation shows shallow marine environment. Petrographic study reveals feldspathic wacke in Warchha Sandstone. On the basis of previous literature the assigned stages are; Artinskian to Warchha and Kungurian to Wordian stage to Sardhai Formation. The sequence stratigraphic framework correspond one second order composite sequence with time span of 25 Ma. Warchha Formation is composed of regressive system tract (RST) while Sardhai Formation comprised of transgressive system tract (TST). The long term sea level changes describe fall in Artinskian followed by subsequent rise associated with demise of glaciation to Wordian Age, which is approximately equivalent to Haq et al., (1987) curve. The slight deviation in Artinskian may be attributed to local tectonics.