

STRATIGRAPHY AND ECONOMIC GEOLOGY OF KAHA-HARAND SECTION OF MARI ANTICLINE, RAJAN PUR DISTRICT, PUNJAB, PAKISTAN

Nasir Somro¹, M.S. Malkani², T. Zafar³, M.I. Alyani⁴, M.H. Khosa⁵ and Z. Mahmood¹

¹*Geological Survey of Pakistan, Saria Road, Quetta, Pakistan*

²*Geological Survey of Pakistan, Muzaffarabad, Azad Kashmir, Pakistan*

³*Institute of Geology, University of Punjab, Lahore, Pakistan*

⁴*Geological Survey of Pakistan, Lahore, Pakistan*

⁵*Faculty of Marine Sciences, Lasbela University of Agriculture, Water and Marine Sciences, Uthal, Lasbela, Balochistan, Pakistan*

nasirsomro11@gmail.com

Abstract

Rajan Pur District consists of alluvial plain in the east and mountain range in the west. Kaha-Harand section is located on the southern plunge of Mari anticline (trending generally north south). Mari anticline is located in the south of Fort Munro anticlinorium of Sulaiman Range. The oldest strata of Kaha-Harand section is exposed in the core of Mari anticline, where gorge formed by cutting of Kaha river coming from Beakar and Phailawagh areas of Dera Bugti District and Nisau area of Kohlu District, and Vitakri and Rakhni areas of Barkhan District. The stratigraphy in ascending order is Late Cretaceous Fort Munro Group represents Mughal Kot (marl/mudstone), Fort Munro (limestone), and Pab (Sandstone); Paleocene Sangiali Group represents Sangiali (shelly limestone-a few meter thick), Rakhi Gaj (more than 100m of Girdu ferruginous sandstone and Bawata shale) and Dungan (limestone and shale); Early Eocene Chamalang (Ghazij) Group represents Shaheed Ghat (shale), Drug (rubby limestone) and Baska (gypsum and shale); Middle Eocene Kahan Group represents Habib Rahi (limestone, marl and shale), Domanda (mainly shale), Pirkoh (marl/limestone, shale) and Drazinda (mainly shale); Oligocene-Pliocene Vihowa Group represents Chitarwata (ferruginous sandstone, conglomerate and shale), Vihowa (red muds and sandstone), Litra (greenish grey sandstone with some red muds) and Chaudhwan (alternated sandstone and maroon muds); Pleistocene-Holocene Sakhi Sarwar Group represents Dada (conglomerate) and Sakhi Sarwar (clays, sandstone and conglomerates) formations; alluvial terraces, fans and alluvial plains. The economic geology of Kaha-Harand section of Mari anticline represents many economic commodities. The economic mineral commodities are fuller earth, gypsum and other cement raw materials like limestone and shale, building stone and construction materials like Dungan limestone and some beds of Habib Rahi Limestone and conglomerates of Pleistocene Dada and Holocene Sakhi Sarwar formations, millstone and quartzite from Pab, iron from Chitarwata and Girdu member or Gorge beds of Rakhi Gaj Formation. This iron may be used for cement/steel industry like the Satta Post red mud which is being used by D.G.Khan cement industry. Some carbonaceous shale with minor coal is also observed in the Domanda and Chitarwata formations in the eastern limb of Mari anticline. In the Kaha-Harand section the thick Dungan limestone and large Baska gypsum deposits are well exposed. The close occurrence of inexhaustible cement raw materials which will be provided to industry only by belts (and not by trucks), peaceful and favourable locations in the centre of Pakistan and ideal location for all provinces strongly suggests for installation of new cement industries at Kaha-Harand section. The installation of the cement industry at Kaha-Harand section (on the eastern limb of Mari anticline, just close to Harand) will be an accelerated innovation for the sustainable development of the areas, provinces and Pakistan.