The foreland thrust belt in northwestern margin of Junggar basin is a large-scale imbricated thrust system. It developed since Late Carboniferous – Triassic and was gradually buried and became the leading monoclinic which plunged to the basin in the Jurassic – Cretaceous. This system has been subdivided into three segments: Hong-Ché fault zone, Ke-Bai fault zone and Wu-Xia fault zone, with distinctive structural style. The regional structure of Karamay Oilfield is located in Ke-Bai Overthrust Zone of northwestern margin of Junggar basin. The sixth, ninth area, Karamay Oilfield is located in the topwall of Ke-Wu fault and the footwall of west Baibai fault, the middle of Ke-Bai fault zone which belongs to the uplift of the western part of the Junggar basin. It is also separated by Baijiantan fracture. As Carboniferous base rocks of this area’s target layer, after a long-term weathering and denudation, Weathering crust developed, covered by Mesozoic sedimentary. Faults are well-developed in Carboniferous base rocks, the Formation dips are also steep.

Do in-depth studies of the structure in this area, find out the distribution law and distribution characteristics of the faults and traps, and explore master factors of hydrocarbon accumulation, conclusions are as follows. 1. The sixth, ninth area mainly developed pressure structural styles and twist structural style. Pressure structural styles have imbricate structure and up structures, which mainly distributed in the south of the area. Twist structural style include positive flower structures and similar flower structure which mainly distributed in the middle and north of the area. 2. According to the fine structure interpretation of the sixth and ninth area, clear the development characteristics and plane distribution characteristics of fracture and trap in the top surface and internal unconformity of the Carboniferous. It has lay a solid foundation for hydrocarbon detection, crack detection and production deployment. 3. The more development of nose structure, fracture and its associated fault block, broken nose, broken anticline in the north of the area, which not only provide a favorable environment for the oil and gas accumulation favorable structural positions, but also the micro-fracture and cracks in more developed areas. Therefore, in the north sixth and ninth area, most of the top of the Carboniferous zones are in the oil and gas accumulation favorable structural positions. What’s more, under the action of pressure torsional stress, layers develop the fracture and tension-shear joints, which form the situation of the overall oil and local enrichment at the top of the Carboniferous. 4. Carboniferous oil reservoir is mainly the fractured oil reservoir which controlled by faults, cracks and micro-cracks fractured, secondly the fracture-pore reservoir controlled by the antiquity erosion surface. Pore-based oil and gas reservoir is more develop within the scope of 100m below Ancient weathering crust in the north of the area. 5. In the north of the sixth, ninth area, the top surface and internal unconformity of the Carboniferous are good channel for oil and gas migration which control the distribution range of the areas in the longitudinal direction.

Key words: Junggar basin, Karamay Oilfield, Carboniferous, hydrocarbon accumulation

References:
Li xibin, A new exploration progress of fault zone in the Northwestern Margin of Junggar Basin [J], Oil & Gas Geology, 1990, (03).
Chen Liyu, The structural characteristics of each tectonic development stage in Karamay [J], Xinjiang Petroleum Geology, 1983, (01).
Du Shekuan, The study of the characteristics of the foreland thrust belt basin and oil-gas accumulation effect in the Northwestern Margin of junggar [D], Graduate University of Chinese Academy of Sciences (guangzhou institute of geochemistry). 2007.08.
Xie Hong, Zhao Bai, Lin Longdong, etc, The oil bearing characteristics of overthrust fracture zones in the Northwestern Margin of Junggar Basin [J], Xinjiang Petroleum Geology, 1984,(03).