# 六、通天河活动断裂

通天河活动断裂（$F_{36}$, $F_{34}$）总体走向北西，发育线性分布的断层陡坎和泉华台地，切割晚更新世—全新世泉华堆积，控制 4-6 级地震和低温温泉分布（吴珍汉等，2003d，2005）。在青藏公路西侧，沿通天河活动断裂发育近东西向小型拉分盆地，在拉分盆地边界发育近东西走向的张扭性分支断裂。在九十四道班西南，沿通天河活动断裂（$F_{36}$）发育 500-600m 宽的断层谷地，其中分布 4 条近东西走向的泉华垄，长 200-400m，宽 20-40m；在泉华垄之间形成线性排列的多个上升泉泉眼，在泉华垄顶部发育近东西走向的构造裂缝，局部形成串珠状排列的冻胀土丘、热融泥塘和较大规模的冰丘。

## PART 6 TONGTIANHE ACTIVE FAULT

The Tongtionhe active fault ($F_{34}$, $F_{36}$) trends in NW direction and controls linear distribution of fault scarps, Late Pleistocene-Holocene sinter deposits and epicenters of Ms 4.0-5.0 earthquakes (Wu et al., 2003d, 2005). E-W trending pull-apart basins, sinistral offset of streams and branch fractures formed along Tongtianhe active fault zone. In southwest of the 94th station of the Highway, fault valley of 500-600m wide formed along $F_{36}$, accompanied by 4 sinter ridges of 200-400m long and 20-40m wide together with low temperature springs in summer, en-echelon pingos in winter, surface fractures and thawing ponds.

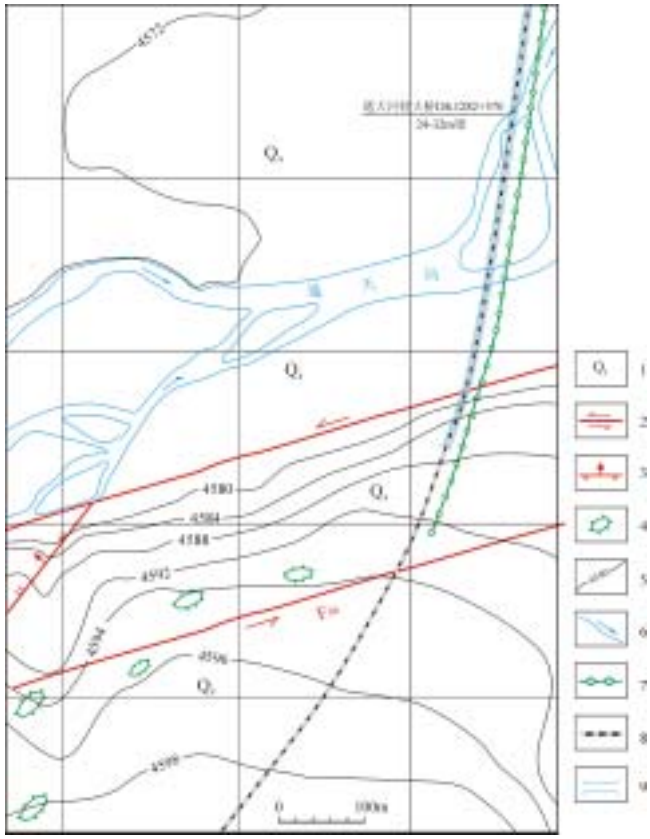


图 58 通天河断裂平面地质图

图例说明：1-全新世冲洪积；2-走滑断裂；3-张扭性分支断裂；4-冰丘；5-等高线 (m)；6-河流及流向；7-

电法勘探测线；8-铁路线；9-铁路大桥

Fig.58 Quaternary geological map of Tongtianhe active fault zone based on 1:2000 mapping in January-February of 2002. Explanation: 1-Holocene deposits; 2-strike-slip fault; 3-shear-extensional branch fault; 4-pingo in winter; 5-elevation contour (m); 6-river and flow trend; 7-geophysical profile; 8-railway line; 9-railway bridge



图 59 通天河活动断裂陡坎与泉华台地

（镜头向北东东，摄于 2002 年 2 月）

Fig.59 View east northeastward at Tongtianhe active fault controlling linear distribution of sinters in February 2002



图 60 通天河沿 94 道班西南沿断裂分布的泉华垄

铁路西侧沿 $F_{36}$ 断裂破碎带发育长条状泉华垄和冰丘、热融湖塘；镜头方向 100°，摄于 2002 年 6 月。

Fig.60 View eastward at sinter ridges along Tongtianhe active fault ($F_{36}$), partial thawing pingo and thawing ponds in June of 2002



图 61 通天河沿 94 道班西南断层地貌与构造裂缝

铁路西侧沿断裂破碎带发育泉华垄和断层谷地，在泉华垄轴部发育构造裂缝；镜头向西，摄于 2002 年 7 月。

Fig.61 View westward at sinter ridges and surface fractures in tongtianhe fault valley in July of 2002



图 62 通天河断裂热融湖塘与半消融冰丘

（镜头向北东，摄于 2002 年 6 月）

Fig.62 View northeastward at partial thawing pingos in Tongtianhe fault valley in June of 2002



图 63 通天河活动断裂构造融区

（镜头向东，摄于 2002 年 7 月）

Fig.63 View eastward at thawing ponds and low temperature springs along Tongtianhe fault ($F_{36}$) in July of 2002