**Table 1** Detail information of the faults

|  |  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- | --- |
| No. | Exposed location | Orientation | Extension  (km) | Width  (m) | Tectonite | Fault type |
| F2-1 | Downstream of the dam axis | N10°~20°W,  SE∠85° | 1.5~3.5 | 8~14 | Crushed rock/  mylonite | Unknown |
| F32 | Left bank and riverbed | N25°E,  SE∠66° | 2.5~3.0 | 8~12 | Breccia/  mylonite | Normal fault |
| F34 | Right bank | N52°~70°E,  SE∠46°~65° | 2.0~2.3 | 10~13 | Breccia/  mylonite | Reverse fault |
| F39 | Right bank and riverbed | N48°~73°E,  SE∠65°~70° | 1.2~1.5 | 2~4 | Crushed rock/  mylonite | Reverse fault |
| f3 | Right bank | N10°~15°E,  SE∠85° | 0.3~0.4 | 0.2~0.3 | Breccia/  scratch | Normal fault |
| f5 | Right bank and riverbed | N45°E,  SE∠62° | 0.55~0.7 | 4~7 | Crushed rock/  mylonite | Reverse fault |
| f6 | Right bank | N10°-15°E,  SE∠55°~60° | 0.2~0.3 | 1.5~2.5 | Crushed rock/  mylonite | Reverse fault |
| f7 | Left bank | N60°E,  SE∠80°~90° | 0.4~0.6 | 3~6 | Cataclastic rock /  intense foliation | Reverse fault |
| f8 | Right bank | N58°E,  SE∠58° | 0.3~0.5 | 1.5~2.0 | Breccia/  mylonite | Normal fault |
| f10 | Right bank | N15°E,  SE∠55° | 0.1~0.15 | 0.1~0.2 | Mylonite/  scratch | Normal fault |
| f11 | Right bank | N13°E,  SE∠45°~50° | 0.1~0.3 | 0.2~0.3 | Crushed rock/  mylonite | Normal fault |

**Table 2** Grading table of faults in hydraulic and hydroelectric engineering

|  |  |  |  |
| --- | --- | --- | --- |
| Grade | Name | Extension (km) | Description |
| Ⅰ | Regional fault | >20 | Large, regional fault zones |
| Ⅱ | Large fault | 1~20 | Faults that run through the project area |
| Ⅲ | Medium fault | 0.1~1 | Interlayer shear zones |
| Ⅳ | Small fault | 0.01~0.1 | Minor faults, long extended joints, fissures |