Water resources

Current situation

- The ESIA study area includes the catchments of the Arpa, Vorotan and Darb rivers (see map below). The Arpa River feeds the Kechut reservoir and then flows into the Darb river catchment; the Vorotan River feeds the Spandaryan reservoir. The two reservoirs are linked by a non-operational underground tunnel. The Kechut reservoir is artificially linked by a tunnel to Lake Sevan.
- Baseline studies collected prior to Lydian's operations show the Arpa and Vorotan rivers exceed Armenian Maximum Allowable Concentrations for several metals.
- The groundwater around the site does not supply Jermuk's mineral spring water, which is supplied from different watershed and aquifers.

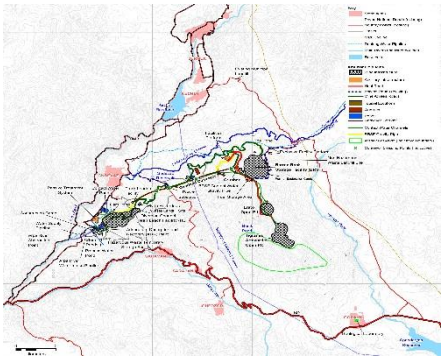
Groundwater: water beneath the earth, often in soil and rock crevices

Surface water: above-ground water

Watershed: an area of land separating waters flowing to different rivers, basins or seas

What are the potential issues and impacts?

- Some springs at high elevation could dry up for parts of the year due to changes to groundwater flow.
- Groundwater quality could change, although studies show the effect would be minimal in most cases. Among the unlikely potential risks would be impacts from damage to the Heap Leach processing Facility (HLF) or acid rock drainage from the Barren Rock Storage Facility (BRSF). Measures will be put in place to prevent this.



How will Lydian manage these potential impacts?

- No water discharge to the environment is will occur until year 5 of operations, after which contact water will pass through a wetland system and discharge to land.
- The HLF will be constructed with a tested composite lining system to prevent any solution containing cyanide from discharging into the environment. Similarly, the BRSF is designed to prevent discharge of any contaminated water.
- Water monitoring will take place during all phases of the mine, including post-closure.

What impacts might remain?

- During closure localised groundwater levels are likely to increase. Long term changes to groundwater in isolated areas on site, and to surface water in permanently flowing springs at high elevation, are not probable.
- Flow paths of some streams in high altitude will permanently change but major water courses will remain unaltered. No impact on downstream users has been predicted.

For further information please see the ESIA and the Non-Technical Summary, http://www.geoteam.am/