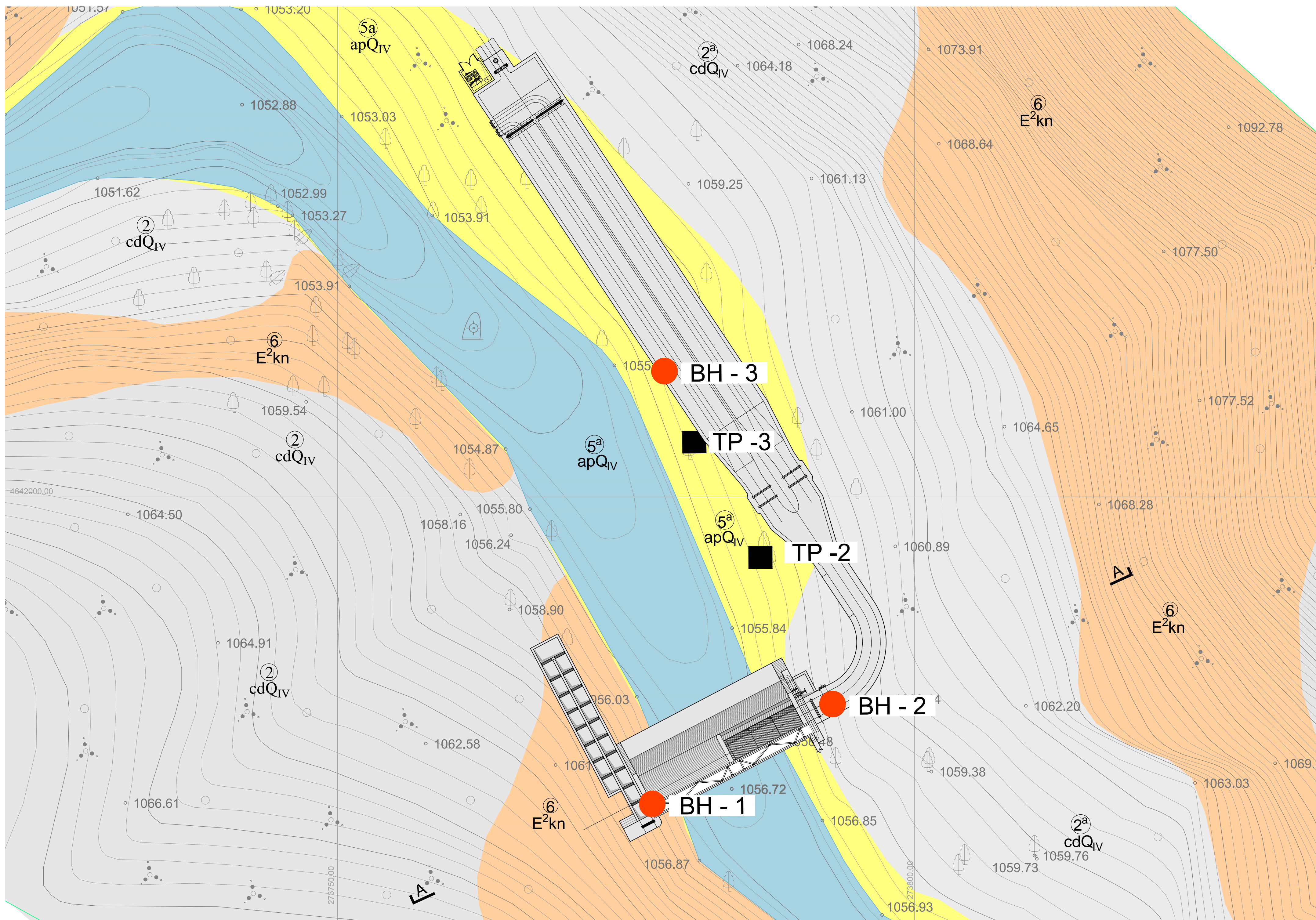












GEOLOGICAL MAP
1:200



- LEGEND:**
- | | | |
|---|-------------------|---|
|  | cdQiv | Sandy, silty-clayey GRAVEL and COBBLES with some boulders. Gravel and cobbles are angular and sub-angular. |
|  | dpQiv | Sandy, silty-clayey GRAVEL and COBBLES with some boulders. Gravel and cobbles are angular and sub-angular. |
|  | apQiv | Sandy, silty-clayey COBBLES with gravel and boulders (at some places with large (1-5m) boulders). Cobbles and gravel are rounded and sub-rounded. |
|  | E ₂ km | Massive lavas of andesite-bazalt composition, lava breccias, tuff breccias and tuffs (Middle Eocene) |
|  | | Groundwater level |
|  | | Presumable border between lithological varieties |
|  | | Completed borehole, its number and depth |
|  | | Suspended boreholes shall be performed prior start of construction works |
|  | | Suspended Trial pit (TP) |
|  | | Suspended seismic refraction line (SRL) |

- LEGEND:**
- ① Intake
 - ② Sandtrap
 - ③ Penstock
 - ④ Road
 - ⑤ Powerhouse

SCALE 1:200



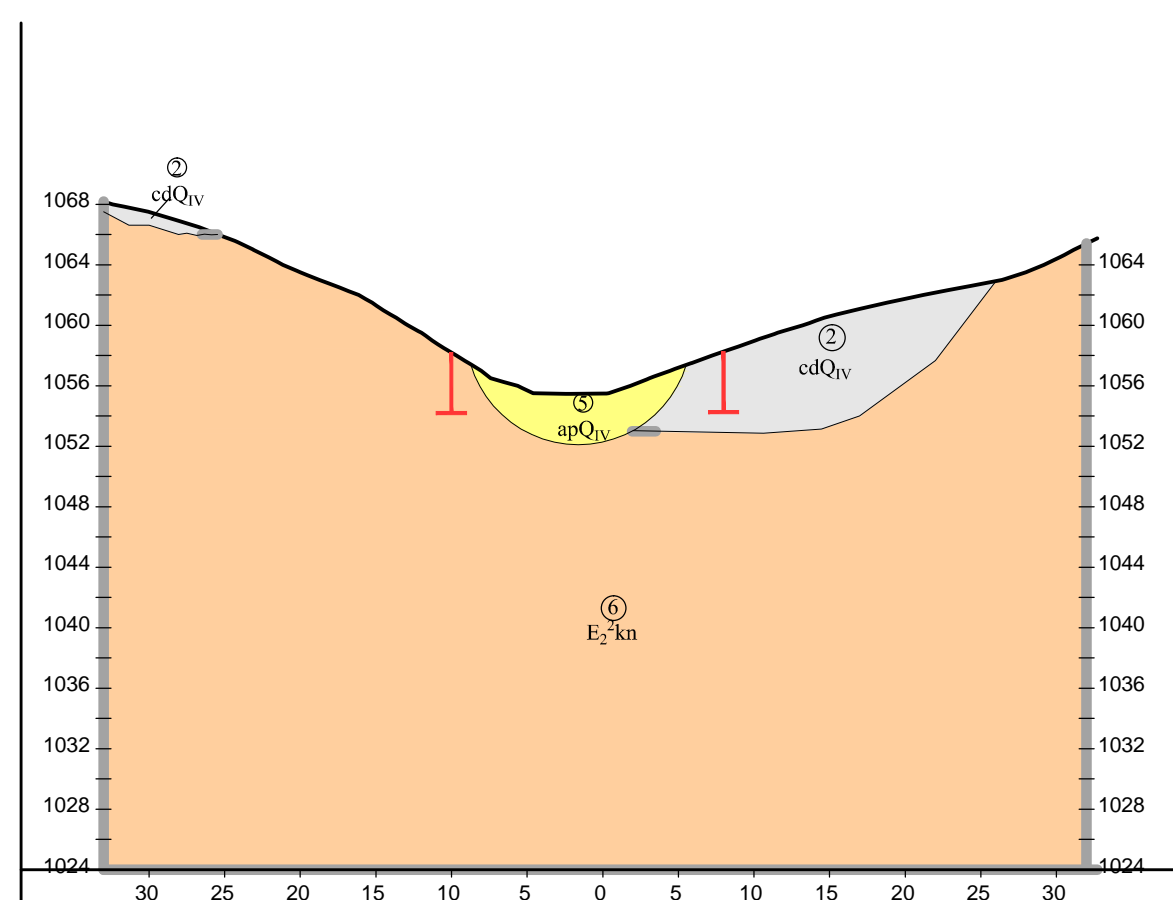
Remark(s):

1. All dimensions are in meters.
2. The maps and coordinates are based on UTM-WGS 84 grid system.

Reference(s):

All geological information comes from geological-geotechnical investigation performed in 2017 by Geoengineering.

SECTION A-A
1:200





**PARAMETER VALUES OF PROPERTIES AND OTHER DESIGN DATA OF SOILS & ROCKS OBSERVED
AT SASHUALA HPP LOCATION AREA**

Stratum #	Description of Strata	Density, ρ t/m ³	Internal friction angle, ϕ°	Cohesion, c kPa	Deformation modulus, E_2 MPa	assumed resistance, R_s kPa	Unitcell compressive strength, R_c MPa	Allowable bedrock stress, water-soluble from 0 to 12 m height	Soil item (group) as per excavation difficulty
1	Moist, brown, stiff, slightly sandy, gravelly (at some places slightly gravelly), silty CLAY. Gravel is angular and sub-angular (d ₅₀ =d ₉₀)	1.88	25.0	13.1	13.37	250	-	1:1.5	p. 33-b Group II (Vol.-1)
2	Sandy, silty-clayey GRAVEL and COBBLES with some boulders. Gravel and cobbles are angular and sub-angular (colluvial/d ₅₀ =d ₉₀)	2.0	33.4	26.0	51.82	450	-	1:1	p. 6-g Group IV (Vol.-1)
3	Sandy, silty-clayey (at some places very sandy, or very silty-clayey) GRAVEL with cobbles and boulders. Gravel and cobbles are angular and sub-angular (d ₅₀ =d ₉₀)	2.0	32.3	28.4	48.24	450	-	1:1	p. 6-g Group IV (Vol.-1)
4	Sandy, silty-clayey COBBLES with gravel and boulders. Cobbles and gravel are sub-angular and sub-rounded (proluvial-p ₉₀)	2.0	32.0	28.0	48.0	450	-	1:1	p. 6-d Group V (Vol.-1)
5	Sandy, slightly silty-clayey, COBBLES with gravel and boulders (at some places with large (1-5m) boulders. Cobbles and gravel are rounded and sub-rounded (alluvial/proluvial-ap ₉₀)	2.2	40.0	10.0	60.0	600	-	1:1	p. 6-d Group V (Vol.-1)
6	Volcanic-sedimented rocks, massive lavas, lava breccias, tuff breccias and tuffs of andesite/bazalt conct (Mid-Eocene-E ₃ /kn)	2.62	-	-	5000	-	44.0	10.2	p. 20-b, Group VI (Vol.-3)

Note: Inclination of up to 12 m high man-made slope above water-table, as well as the inclination of up to 12 m and higher slope below water-table (for saturated soils) should be calculated individually;

d					
c					
b					
a					
-	Initial version	31.10.17	SLGI	TP	REPA
Index	Revisions	Date	Draftsman	Verified	Approved

 ENERGY DEVELOPMENT GEORGIA LTD	
<p style="text-align: center;"><i>SASHUALA HPP 1</i></p>	
<p style="text-align: center;">PHASE 2</p>	
<p style="text-align: center;">GEOLOGY</p>	
<p style="text-align: center;">HEADWORKS SITE</p>	
<p style="text-align: center;"><i>GEOLOGICAL SECTION A-A</i></p>	
<p style="text-align: center;">SCALE 1:250</p>	
<p style="text-align: center;">FORMAT A1</p>	
<p><i>DRAFTSMAN</i> SLGI</p>	<p><i>DATE</i> 31.10.2017</p>
<p><i>VERIFIED</i> TP</p>	<p><i>APPROVED</i> REPA</p>
<p>stucky </p>	
<p>DRAWING N° INDEX</p>	
<p>4117.1902 -</p>	
<p> Rue du Lac 33, P.O. Box Phone + 41 21 637 15 13 E-Mail stucky@stucky.ch 1020 Renens VD 1 - Switzerland Fax + 41 21 637 15 08 Internet www.stucky.ch a Trummer company </p>	