

CASE STUDY



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| PROJECT | PROCESS & POTABLE WATER FOR COPPER MINE |
| PRODUCT | Multimedia Filtration, UV and Hypochlorite Dosing |
| INDUSTRY | Mining |
| LOCATION | Kazakhstan |

BACKGROUND

Located 3.5 km from the Bozshakol Sulphide Plant, the Bozshakol Clay Plant is part of the Bozshakol Copper Project: the largest single copper mine development in Kazakhstan, owned and operated by KAZ Minerals.

MAK Water had previously supplied the process water and potable water treatment plants for the Bozshakol Sulphide Plant, so it made sense for the client to source the additional water treatment systems for the clay plant from MAK Water. These plants were essentially smaller versions of the original plants supplied a year earlier for the Sulphide Plant, with the exception that they were to be installed outdoors, in ambient temperatures as low as -44.5°C .

SOLUTION

Multimedia filtration (MMF) plant to produce 374 m^3 per hour of filtered water for use as gland seal water. A portion of this filtrate (4.2 m^3 per hour) undergoes further treatment to supply the site's potable/drinking water requirements.

CONTAINERISED FOR COLD CLIMATE

- Ambient design temperature -44.5°C to 39.9°C
- Air conditioned with wall and ceiling insulation, and electric air blower heaters, for protection from harsh operating environment
- Media filters, control system and pipework all fabricated in MAK Water's workshop saving installation time on site
- Process proving and pre-commissioning also undertaken at MAK Water factory enabling simple site commissioning

PROCESS WATER TREATMENT PLANT

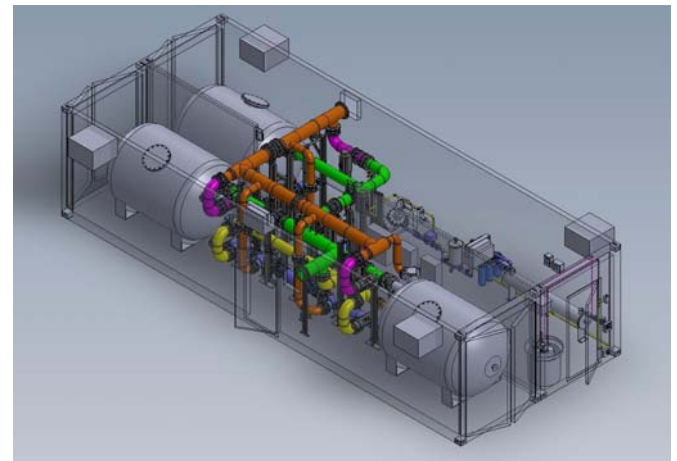
- 3 x auto-backwashing horizontal fibre-reinforced plastic (FRP) multimedia filter vessels
- Accepts pressurised feed water (pumps by client)

POTABLE WATER TREATMENT PLANT

- Cartridge and carbon filters for polishing
- UV steriliser with UV intensity monitoring
- Residual trim hypochlorite dosing

RESULTS AND BENEFITS

- **Integrated Plant Control System.** MAK Water provided the control philosophy to enable the client to program their control system.
- **Project compliance.** Dual language documentation (Russian & English). Obtained GOST-K certification. Complied with project specifications and preferred equipment.



8,800 m³/day MMF plant with side stream potable water plant



MMF plant undergoes Factory Acceptance Testing in MAK Water's workshop