Domain	TRANSBOUNDARY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	8
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Alba Iulia, 31.07.2006
RMGC internal unique code	MMGA_0038
Proposal	A description of the transboundary impact affecting certain important natural areas, such as the National Park of Koros-Maros, Hungary, located along Mures Valley, in case of an accident.
Solution	We appreciate that there is concern about transboundary impacts and have worked extensively with independent experts and scientists to fully assess all possibilities. These assessments, including a just-completed study of catastrophic failure scenarios by The University of Reading, have concluded that the Roşia Montană Project has no transboundary impact. A full copy of the University of Reading study can be found in the reference documents included as an annex to this report. The Environmental Impact Assessment Report (EIA) (Chapter 10 *Transboundary Impacts*) assesses the proposed project with regard to potential for significant river basin and transboundary impacts downstream which could, for example, affect the Mureş and Tisa river basins in Hungary. The Chapter concludes that under normal operating conditions, there would be no significant impact for downstream river basins/transboundary conditions. The issue of a possible accidental large-scale release of tailings to the river system was recognized to be an important issue during the public meetings when stakeholders conveyed their concern in this regard. As a result, further work has been undertaken by RMGC to provide additional detail to that provided in the EIA on impacts on water quality downstream of the project and into Hungary. This work includes modelling of water quality under a range of possible operational and accident scenarios and for various flow conditions. The model used is the INCA model developed over the past 10 years to simulate both terrestrial and aquatic systems within the EUROLIMPACS EU research program (www.eurolimpacs.ucl.ac.uk). The model has been used to assess the impacts from future mining, and collection and treatment operations for pollution from past mining at Roşia Montană. The modelling created for Roşia Montană simulates eight metals (cadmium, lead, zinc, mercury, arsenic, copper, chromium, manganese) as well as Cyanide, Nitrate, Ammonia and dissolved oxygen. The model has been applied to the upper catchments at Roşia Montană as well as the complete Abrud-Arieş-Mureş river system down to the Hungarian Border and on into the Tisa River. The model takes into account the dilution, mixing and physico-chemical processes affecting metals, ammonia and cyanide in the river system and gives estimates of concentrations at key locations along the river, including at the Hungarian Boarder and in the Tisa after the Mureş joins it. Because of dilution and dispersion in the river system, and of the initial European Union Best Available Techniques (EU BAT)-compliant technology adopted for the project (for example, the use of a cyanide destruct process for tailings effluent that reduces cyanide concentration in effluent stored in the Tailings Management Facility - TMF - to below 6 mg/l), even a large scale unprogrammed release of tailings materials (for example, following failure of the dam) into the river system would not result in transboundary pollution. The model has shown that under worse case dam failure scenario all legal limits for cyanide and heavy metals concentrations would be met in the river water before it crosses into Hungary. The INCA model has also been used to evaluate the beneficial impacts of the existing mine water collection and treatment and it has shown that substantial improvements in water quality are achieved along the river system under normal operational conditions.

For more information, an information sheet presenting the INCA modeling work is presented under the title of the *Mureș River Modelling* Program and the full modelling report is presented as **Annex 5.1.**

Domain	TRANSBOUNDARY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	233
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Cluj Napoca, 07.08.2006
RMGC internal unique code	MMGA_0472
Proposal	The questioner would like to know why there is no chapter on Transboundary Impact in the EIA Report, to describe the consequences of the dam failure, which might cause cyanide pollution, as well as other compounds' pollution. Which are the toxic compounds that liquids within the tailings contain (heavy metals, acid waters) and their quantity? Should Corna dam fail, the cyanide reacts with the heavy metals settled during decades on the rivers' bed and, by dissolving them, the cyanide contributes to the pollution of the aquatic ecosystems; this issue is not described by the Transboundary Impact, neither is the impact caused by the acid waters and suspensions. This impact is considered of great importance, due to the size of Corna dam.
Solution	All details related with the aspects mentioned in the above question (dam failure) are described in section 7 of the Environmental Impact Assessment Report (EIA) report includes an assessment and analysis of risks and includes various dam break scenarios. The dam break modeling showed that, in the extraordinarily unlikely event that the dams, the spillways and catch basin all fill, and then any tailings run out would be extremely diluted. The design criteria for the dam have been established to address consequence of a dam failure. The proposed dam at the Tailings Management Facility (TMF) and the secondary dam at the catchment basin are rigorously designed to exceed Romanian and international guidelines, to allow for significant rainfall events and prevent dam failure due to overtopping and any associated cyanide discharge, surface or groundwater pollution. Specifically, the facility has been designed for two Probable Maximum Precipitation (PMP) events and the associated Probable Maximum Flood (PMF). The design criterion for TMF includes storage for two PMF flood events, more rain than has ever been recorded in this area. The construction schedule for embankment and basin staging will be completed to ensure that PMP storage requirements are available throughout the project life. The Roşia Montană TMF is therefore designed to hold a total flood volume over four times greater than the Romanian government guidelines. In addition, an emergency spillway for the dam will be constructed in the unlikely event that another event occurs after the second PMP event. A spillway is only built for safety reasons to ensure proper water discharge in an unlikely event and, thus, avoid overtopping which could cause a dam breach. The TMF design therefore very significantly exceeds required standards for safety. This has been done to ensure that the risks involved in using Corna valley for tailings storage are well below what is considered safe in every day life. Additional study was done regarding earthquakes, and, as indicated in the EIA the TMF is engineered to withstand the Maximum Credible Earthquake (MCE). The MCE is the largest earthquake that could be considered to occur at the site based on the historical record. In addition, Section 7 of the EIA report includes an assessment of the risks cases that have been analyzed and include various dam break scenarios. Specifically, the dam break scenarios were analyzed for a failure of the starter dam and for the final dam configuration. The dam break modelling results indicate the extent of tailings run out. Based on the two cases analyzed, the tailings will not extend beyond the confluence of the Corna valley stream and the Abrud River. However, the project recognizes that in the highly unlikely case of a dam failure that a Emergency Preparation and Spill Contingency Management Plan must be implemented. This plan was submitted with the EIA as Plan I, Volume 28. For a more detailed technical analysis, please refer to Chapter 7, Section 6.4.3.1, "*TMF Potential Failure Scenarios" of the EIA*.

In order to assess the TMF water quality - decant water and seepage through the and under the tailings dam - specific test work was conducted summarized in the „Tailings management facility geochemistry and water quality Report 2005" by the MWH Inc Mining Group

The tailings facility water will not be acidic; however, it will be mildly alkaline. It is not chemically possible for the form of cyanide in the TMF to cause mobilization or leaching of the heavy metals downstream. RMGC will carry out all activities in accordance with the International Cyanide Management code, an internationally recognized practice for cyanide management in the gold mining industry.

The EIA Report (Chapter 10 Transboundary Impacts) assesses the proposed project with regard to potential for significant river basin and transboundary impacts downstream which could, for example, affect the Mureş and Tisa river basins in Hungary. The Chapter concludes that under normal operating conditions, there would be no significant impact for downstream river basins/transboundary conditions.

The issue of a possible accidental large-scale release of tailings to the river system was recognized to be an important issue during the public meetings when stakeholders conveyed their concern in this regard. As a result, further work has been undertaken by RMGC to provide additional detail to that provided in the EIA Report on impacts on water quality downstream of the project and into Hungary. This work includes modeling of water quality under a range of possible operational and accident scenarios and for various flow conditions.

The model used is the INCA model developed over the past 10 years to simulate both terrestrial and aquatic systems within the EUROLIMPACS EU research program (www.eurolimpacs.ucl.ac.uk). The model has been used to assess the impacts from future mining, and collection and treatment operations for pollution from past mining at Roşia Montană.

The modeling created for Roşia Montană simulates eight metals (cadmium, lead, zinc, mercury, arsenic, copper, chromium, manganese) as well as Cyanide, Nitrate, Ammonia and dissolved oxygen. The model has been applied to the upper catchments at Roşia Montană as well as the complete Abrud-Arieş-Mureş river system down to the Hungarian Border and on into the Tisa River. The model takes into account the dilution, mixing and physico-chemical processes affecting metals, ammonia and cyanide in the river system and gives estimates of concentrations at key locations along the river, including at the Hungarian Boarder and in the Tisa after the Mureş joins it.

Because of dilution and dispersion in the river system, and of the initial European Union Best Available Techniques (EU BAT) -compliant technology adopted for the project (for example, the use of a cyanide destruct process for tailings effluent that reduces cyanide concentration in effluent stored in the TMF to below 6 mg/l), even a large scale unprogrammed release of tailings materials (for example, following failure of the dam) into the river system would not result in transboundary pollution. The model has shown that under worse case dam failure scenario all legal limits for cyanide and heavy metals concentrations would be met in the river water before it crosses into Hungary.

The INCA model has also been used to evaluate the beneficial impacts of the existing mine water collection and treatment and it has shown that substantial improvements in water quality are achieved along the river system under normal operational conditions.

For more information, an information sheet presenting the INCA modeling work is presented under the title of the Mureş River Modeling Program and the full modeling report is presented as Annex 5.1.

Test work aimed at identifying the main factors influencing the water quality during both the operational and after-closure phase of the waste facility. A detail characterization of tailings and decant water chemistry discharged in TMF is presented in section 3.2 and 3.3 of the EIA report (Table 3-1, 3-2 and 3-3) Plan F - Tailings Facility Management Plan.

Domain	TRANSBOUNDARY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	259, 260, 270, 271, 283, 284, 285, 287, 1778, 1779, 1821, 1822, 1823, 1824, 1825, 1826, 1827, 1828, 1829, 1864, 10/D;5465/B, 15/D;5470/B, 16/D;5471/B, 17/D;5472/B, 18/D;5473/B, 5599, 5600, 5601, 5602, 5603, 5604, 5605
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	No. 108928/04.08.2006 and No. 74465/07.08.2006, No. 109005/07.08.2006 and No. 74477/08.08.2006, No. 109015/07.08.2006 and No. 74487/08.08.2006, No. 109016/07.08.2006 and No. 74488/08.08.2006, No. 109029/07.08.2006 and No. 74500/08.08.2006, No. 109030/07.08.2006 and No. 74501/08.08.2006, No. 109031/07.08.2006 and No. 74502/08.08.2006, No. 109032/07.08.2006 and No. 74504/08.08.2006, No. 110754/25.08.2006 and No. 76073/05.09.2006, No. 110753/25.08.2006 and No. 7607405.09.2006, No. 110982/25.08.2006 and No. 165076/07.09.2006, No. 110981/25.08.2006 and No. 165077/07.09.2006, No. 110980/25.08.2006 and No. 165078/07.09.2006, No. 110979/25.08.2006 and No. 165079/07.09.2006, No. 110978/25.08.2006 and No. 165080/07.09.2006, No. 110977/25.08.2006 and No. 165081/07.09.2006, No. 110976/25.08.2006 and No. 165082/07.09.2006, No. 110975/25.08.2006 and No. 165083/07.09.2006, No. 110974/25.08.2006 and No. 165084/07.09.2006, No. 110939/25.08.2006, No. 114722/31.08.2006, No. 114730/31.08.2006, No. 114729/31.08.2006, No. 114728/31.08.2006, No. 114734/08.09.2006, No. 112999/25.08.2006, No. 113000/25.08.2006, No. 112929/25.08.2006, No. 112988/25.08.2006, No. 112954/25.08.2006, No. 112953/25.08.2006, No. 112877/25.08.2006
RMGC internal unique code	MMGA_1076
Proposal	The EIA report does not describe the cross-border impact in case of a spillage affecting important natural areas, such as KOROS MAROS national park located in Hungary, along the Mures Valley. SEE CONTENT CONTESTATION TYPE 3
Solution	We appreciate that there is concern about transboundary impacts and have worked extensively with independent experts and scientists to fully assess all possibilities. These assessments, including a just-completed study of catastrophic failure scenarios by The University of Reading, have concluded that the Roşia Montană Project has no transboundary impact. A full copy of the University of Reading study can be found in the reference documents included as an annex to this report. The Environmental Impact Assessment Report (EIA) (Chapter 10 Transboundary Impacts) assesses the proposed project with regard to potential for significant river basin and transboundary impacts downstream which could, for example, affect the Mureş and Tisa river basins in Hungary. The Chapter concludes that under normal operating conditions, there would be no significant impact for downstream river basins/transboundary conditions. The issue of a possible accidental large-scale release of tailings to the river system was recognized to be an important issue during the public meetings when stakeholders conveyed their concern in this regard. As a result, further work has been undertaken to provide additional detail to that provided in the EIA Report on impacts on water quality downstream of the project and into Hungary. This work includes modelling of water quality under a range of possible operational and accident scenarios and for various flow conditions. The model used is the INCA model developed over the past 10 years to simulate both terrestrial and aquatic systems within the EUROLIMPACS EU research program (www.eurolimpacs.ucl.ac.uk). The model has been used to assess the impacts from future mining, and collection and treatment operations for pollution from past mining at Roşia Montană. The modelling created for Roşia Montană simulates eight metals (cadmium, lead, zinc, mercury, arsenic, copper, chromium, manganese) as well as Cyanide, Nitrate, Ammonia and dissolved oxygen. The model has been applied to the upper catchments at Roşia Montană as well as the complete Abrud-Arieş-Mureş river system down to the Hungarian Border and on into the Tisa River. The model takes into account the dilution, mixing and physico-chemical processes affecting metals, ammonia and cyanide in the river system and gives estimates of concentrations at key locations along the river, including at the Hungarian Boarder and in the Tisa after the Mureş joins it.

Because of dilution and dispersion in the river system, and of the initial European Union Best Available Techniques (EU BAT) - compliant technology adopted for the project (for example, the use of a cyanide destruct process for tailings effluent that reduces cyanide concentration in effluent stored in the Tailings Management Facility -TMF- to below 6 mg/l), even a large scale unprogrammed release of tailings materials (for example, following failure of the dam) into the river system would not result in transboundary pollution. The model has shown that under worse case dam failure scenario all legal limits for cyanide and heavy metals concentrations would be met in the river water before it crosses into Hungary.

The INCA model has also been used to evaluate the beneficial impacts of the existing mine water collection and treatment and it has shown that substantial improvements in water quality are achieved along the river system under normal operational conditions.

For more information, an information sheet presenting the INCA modelling work is presented under the title of the Mures River Modelling Program and the full modelling report is presented as Annex 5.1.

Domain	TRANSBOUNDARY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	3114, 3122
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	No. 112980/25.08.2006, No. 112979/25.08.2006
RMGC internal unique code	MMGA_1384
Proposal	In the case of an ecological accident, there is no a description of the trans-boundary impact on some natural protected areas as Koros-Maros national Park from Hungary
Solution	We appreciate that there is concern about transboundary impacts and have worked extensively with independent experts and scientists to fully assess all possibilities. These assessments, including a just-completed study of catastrophic failure scenarios by The University of Reading, have concluded that the Roşia Montană Project has no transboundary impact. A full copy of the University of Reading study can be found in the reference documents included as an annex to this report. The Environmental Impact Assessment Report (EIA) (Chapter 10 *Transboundary Impacts*) assesses the proposed project with regard to potential for significant river basin and transboundary impacts downstream which could, for example, affect the Mureş and Tisa river basins in Hungary. The Chapter concludes that under normal operating conditions, there would be no significant impact for downstream river basins/transboundary conditions. The issue of a possible accidental large-scale release of tailings to the river system was recognized to be an important issue during the public meetings when stakeholders conveyed their concern in this regard. As a result, further work has been undertaken by RMGC to provide additional detail to that provided in the EIA Report on impacts on water quality downstream of the project and into Hungary. This work includes modelling of water quality under a range of possible operational and accident scenarios and for various flow conditions. The model used is the INCA model developed over the past 10 years to simulate both terrestrial and aquatic systems within the EUROLIMPACS EU research program (www.eurolimpacs.ucl.ac.uk). The model has been used to assess the impacts from future mining, and collection and treatment operations for pollution from past mining at Roşia Montană. The modelling created for Roşia Montană simulates eight metals (cadmium, lead, zinc, mercury, arsenic, copper, chromium, manganese) as well as cyanide, nitrate, ammonia and dissolved oxygen. The model has been applied to the upper catchments at Roşia Montană as well as the complete Abrud-Arieş-Mureş river system down to the Hungarian Border and on into the Tisa River. The model takes into account the dilution, mixing and physico-chemical processes affecting metals, ammonia and cyanide in the river system and gives estimates of concentrations at key locations along the river, including at the Hungarian Boarder and in the Tisa after the Mureş joins it. Because of dilution and dispersion in the river system, and of the initial European Union Best Available Techniques (EU BAT) - compliant technology adopted for the project (for example, the use of a cyanide destruct process for tailings effluent that reduces cyanide concentration in effluent stored in the Tailings Management Facility -TMF- to below 6 mg/l), even a large scale unprogrammed release of tailings materials (for example, following failure of the dam) into the river system would not result in transboundary pollution. The model has shown that under worse case dam failure scenario all legal limits for cyanide and heavy metals concentrations would be met in the river water before it crosses into Hungary. The INCA model has also been used to evaluate the beneficial impacts of the existing mine water collection and treatment and it has shown that substantial improvements in water quality are achieved along the river system under normal operational conditions.

For more information, an information sheet presenting the INCA modelling work is presented under the title of the *Mureș River Modelling Program* and the full modelling report is presented as Annex 5.1.

Domain	TRANSBOUNDARY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	3115
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	No. 112129/25.08.2006
RMGC internal unique code	MMGA_1391
Proposal	As regards the trans-boundary impact it is known that Hungary from beginning did not agree to this mining operation
Solution	There has been, and will continue to be, extensive consultation between Romanian and Hungarian authorities regarding this project, and S.C. Roşia Montană Gold Corporation S.A. (RMGC) is committed to addressing transboundary concerns. The Environmental Impact Assessment Report (EIA) process as administered by the Ministry of Environment and Water Management (MEWM) takes into account Romania's obligations under the Espoo Convention. The RGMC project is located entirely within Romanian boundaries, and although MEWM has agreed on a consultation process, Hungary's agreement is not required. We have worked extensively with independent experts and scientists to fully assess all transboundary issues. These assessments, including a just-completed study of catastrophic failure scenarios by The University of Reading, have concluded that the Roşia Montană Project has no transboundary impact. A full copy of the University of Reading study can be found in the reference documents included as an annex to this report. The EIA Report (Chapter 10 *Transboundary Impacts*) assesses the proposed project with regard to potential for significant river basin and transboundary impacts downstream which could, for example, affect the Mureş and Tisa river basins in Hungary. The Chapter concludes that under normal operating conditions, there would be no significant impact for downstream river basins/transboundary conditions. The issue of a possible accidental large-scale release of tailings to the river system was recognized to be an important issue during the public meetings when stakeholders conveyed their concern in this regard. As a result, further work has been undertaken to provide additional detail to that provided in the EIA Report on impacts on water quality downstream of the project and into Hungary. This work includes modelling of water quality under a range of possible operational and accident scenarios and for various flow conditions. The model used is the INCA model developed over the past 10 years to simulate both terrestrial and aquatic systems within the EUROLIMPACS EU research program (www.eurolimpacs.ucl.ac.uk). The model has been used to assess the impacts from future mining, and collection and treatment operations for pollution from past mining at Roşia Montană. The modelling created for Roşia Montană simulates eight metals (cadmium, lead, zinc, mercury, arsenic, copper, chromium, manganese) as well as Cyanide, Nitrate, Ammonia and dissolved oxygen. The model has been applied to the upper catchments at Roşia Montană as well as the complete Abrud-Arieş-Mureş river system down to the Hungarian Border and on into the Tisa River. The model takes into account the dilution, mixing and physico-chemical processes affecting metals, ammonia and cyanide in the river system and gives estimates of concentrations at key locations along the river, including at the Hungarian Boarder and in the Tisa after the Mureş joins it. Because of dilution and dispersion in the river system, and of the initial European Union Best Available Techniques (EU BAT) -compliant technology adopted for the project (for example, the use of a cyanide destruct process for tailings effluent that reduces cyanide concentration in effluent stored in the Tailings Management Facility -TMF- to below 6 mg/l), even a large scale unprogrammed release of tailings materials (for example, following failure of the dam) into the river system would not result in transboundary pollution. The model has shown that under worse case dam failure scenario all legal limits

for cyanide and heavy metals concentrations would be met in the river water before it crosses into Hungary.

The INCA model has also been used to evaluate the beneficial impacts of the existing mine water collection and treatment and it has shown that substantial improvements in water quality are achieved along the river system under normal operational conditions.

For more information, an information sheet presenting the INCA modelling work is presented under the title of the Mureş River Modelling Program and the full modelling report is presented as Annex 5.1.