Domain	HYDROGEOLOGY
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_0033
Proposal	A description of the impact and mitigation measures of the impact produced by tailings facility on resources of underground water.
Solution	The comprehensive Tailings Management Facility (TMF) incorporates a series of measures to be protective of the groundwater. That includes an engineered liner system within the TMF basin – the Best Available Techniques as defined by EU Directive 96/61/EC (IPPC) – a cut-off wall within the foundation of the starter dam to control seepage, a low permeability core for the starter dam to control seepage, and a seepage collection dam and sump below the toe of the tailings dam. In addition, we will be able to continually monitor the groundwater through a series of wells below the toe of the secondary containment dam. These wells can be converted to extraction wells as a final "fail-safe", if impacted groundwater is identified. A comprehensive series of hydrogeologic studies demonstrate the suitability of the site for this type of collection and containment system. Moreover, the design of the TMF dam incorporates all International, EU, and Romanian design criteria. It is also consistent with similar tailings facilities that have been successfully constructed and operated in ecologically sensitive and highly regulated locations (e.g., the Fort Knox gold mine in Alaska, USA).

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	14
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Rosia Montana, 24.07.2006
RMGC internal unique code	MMGA_0072

Proposal	How the soil and underground waters are going to be protected, because there is no protection lining in place for the tailings management facility.
Solution	In fact, a protective liner is incorporated into the design of the overall Tailings Management Facility (TMF) and designed to Best Available Techniques (BAT) as defined by EU Directive 96/61/EC (IPPC). It is one of several measures to protect groundwater: The TMF design includes a clay liner system within the TMF basin to reduce leakage; a low permeability core for the starter dam and a cut-off wall within the foundation of the starter dam to further control seepage; and finally a seepage collection dam and sump below the toe of the tailings dam to collect and contain any residual seepage that might extend beyond the dam centerline. A comprehensive monitoring program will continually confirm that the design and operational parameters are being met; a series of monitoring/extraction wells below the toe of the secondary containment dam will monitor groundwater quality, and extract groundwater should any tailings impacted groundwater be detected. Further, hydrogeologic baseline studies have confirmed that the existing hydrogeologic system is favorable for this type of groundwater collection and contaminant control system.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	46
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Abrud, 25.07.2006
RMGC internal unique code	MMGA_0148
Proposal	Why the precipitation included in the impact study is only the one known until year 2004, and the year 2005 is not included, an year when the largest floods occurred? This is the reason that could lead to a dam failure.
Solution	In fact, the Environmental Impact Study encompasses precipitation events from 2000 to 2005. In addition, the Tailings Management Facility (TMF) – the facility most impacted by significant rainfall – has been designed to accommodate much larger rainfall events than occurred in 2005. The year 2005 was characterized by significant precipitation and flood events throughout Romania. However, these events only correlated to events with 100-year, or in some rare cases 200-year return frequencies (i.e., it is probable that rain events of this size occur once every 100 to 200 years). The TMF was designed based on simulated 24-hour, Probable Maximum Flood (PMF) event (an event so extreme it should never occur) derived from estimated probable Maximum Precipitation (PMP) events as defined by the WMO-1986 manual (World Meteorological Organization). In fact, the designs were developed on their ability to hold against two back-to-back PMF events. Roşia Montană will be the first project in Romania to be designed based on the demanding PMF criteria.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	122
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_0275
Proposal	No matter how many advantages would the project have, Romania remains with the cyanide and no spring may be found from which clean water could be drunk.
Solution	Cyanide is used in hundreds of gold mines and many industries around the world. The cyanide used in operations at Roşia Montană will be carefully handled according to EU guidelines and safely contained. Cyanide rapidly breaks down to harmless substances under normal atmospheric conditions, i.e. it is short-lived in the environment. The cyanide used in the project will be subject to a cyanide destruct process and residual cyanide deposited with the process tailings in the Tailings Management Facility will degrade rapidly to levels well below maximum regulatory levels. This system of use and disposal of cyanide in gold mining is classed as Best Available Techniques by the EU. There will be no cyanide discharged from the plant site at a level to pollute water sources. Trace amounts of cyanide will be released with the tailings slurry into the tailings management facility (TMF) – at a level below the new EU Mine Waste Directive (2006/21/EC) of 10 parts per million (ppm), which itself is well below international standards on cyanide management levels considered safe for wildlife (50 ppm).

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	160
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Zlatna, 02.08.2006
RMGC internal unique code	MMGA_0345

Proposal	How can the quantity of cyanide that enters soil be monitored and how can the existence of fractures that determine cyanides' migration be controlled?
Solution	The process plant is designed to destroy the cyanide used in the process of producing gold. Trace amounts of cyanide will be released with the tailings slurry into the tailings management facility (TMF) – at a level below the new EU Mine Waste Directive (2006/21/EC) of 10 parts per million (ppm), which is well below international standards on cyanide management levels considered safe for wildlife (50 ppm). As part of the initial TMF basin construction, the surface vegetation and topsoil will be removed and the clay layer will be compacted to achieve a permeability of $1x10^{-6}$ cm/sec or less which is designed to comply with EU Best Available Techniques (BAT) standards as defined by EU directive 96/61/EC (IPPC). This operation will identify large fractures or other potential pathways for seepage migration, which will then be mitigated. In addition, a low-permeability cut-off wall and starter dam, and seepage collection will be constructed to further restrict and contain groundwater seepage through fractures or diffuse flow. Another important consideration is that the cyanide, which will already be presented in relatively low concentrations in the tailings, will degrade and attenuate through recognized chemical and biological processes. Therefore, any groundwater seepage that enters the seepage collection system is also expected to have cyanide concentrations considerably below that in the TMF. During operations, the concentration of cyanide within the tailings slurry that is pumped to the TMF will be monitored on a weekly basis. Seepage of tailings water into the subsurface will be contained, and recovered through hydraulic controls located on the downstream edge of the tailings dam. The seepage water collected in the containment will be pumped back to the TMF reclaim pond on a continual basis. The hydro-geologic studies have indicated that the local hydrogeologic conditions will support this type of containment and collection, and monitoring will be used to confirm that the system is operating correctly.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	196
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_0385

Proposal	The tailings pond is going to pollute underground waters, through infiltration, and in the case of failure it will generate catastrophic consequences for downstream life.
	The tailings pond and tailings dam have been designed to all industry and regulatory standards to prevent pollution of groundwater, and to continually monitor the groundwater and extract any pollution detected – a system whose suitability is verified by hydro-geologic studies. Specifically, the design features include an engineered clay liner system within the TMF basin to meet a permeability specification of $1x10^{-6}$ cm/sec designed to comply with Best Available Techniques as defined by EU Directive 96/61/EC (IPPC), a low permeability core and a cut-off wall within the foundation of the starter dam to control seepage, and a seepage collection dam and pond below the toe of the tailings dam to collect and contain any seepage that does extend beyond the dam centerline. A series of monitoring/extraction wells below the toe of the secondary containment dam will monitor groundwater quality and extract any contamination.
Solution	The design of the TMF dam incorporates all International, EU and Romanian design criteria, Tailings deposited in the TMF will be treated to contain levels of cyanide below the new EU Mine Waste Directive (2006/21/EC) of 10 parts per million (ppm), and well below international standards of 50 ppm considered safe for wildlife. The dam is designed to contain up to two Probable Maximum Flood (PMF) events derived from calculated probable maximum precipitation events as defined by the WMO-1986 (World Meteorological Organization) manual. However, a risk assessment contained in the EIA report indicates that even in the very unlikely event of a dam failure, the majority of the tailings solids would not extend beyond the confluence of the Corna Valley stream and the Abrud River for the assumed failure conditions. Impacts to the water quality from the assumed failures has also been modeled and is reported in (A copy of the University of Reading studies on this are attached to the Annex of the EIA – Report on the Environmental Impact Assessment Study).

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	196
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_0387
Proposal	Within Rosia Montana underground of the gold deposit, there are voids, huge corandas artificially created through mining, runoffs from the tailings ponds, cyanides which are going to be collected deep in the underground and they will never be drained; consequently they be a permanent pollution source of the upstream waters, inflowing the biological chain.
Solution	No planned levels of cyanide will leave the plant site and enter the water system or tailings dam over and above safe levels as directed by the EU directives (EU Mine Waste Directive 2006/21/EC) and Romanian laws. There will be no cyanide discharged from the plant site at a level to pollute water sources. In addition the majority of the underground workings within the Roşia Valley will be eliminated as a result of mining the four open pits. The base of the open pits will be below the existing groundwater levels, acting as a collection point for groundwater. A mine pit dewatering program will collect all water and recycle it or send it to the ARD wastewater treatment plant for treatment prior to discharge. In case a small flow of tailings water seep toward the open pit mines late in the mine life, it will be collected by the pit dewatering system and treated or used in the processing. Treatment will also continue once the mine is closed. Moreover, it is important to keep in mind that cyanide is not a stable compound, and naturally degrades, especially if blended with the Roşia Montană mine water. It is unlikely that any small volume of tailings water that may seep toward the mines would persist as a pollution source; in any event it would be contained or treated and discharged during both operations and closure – as described in EIA, *Report on the Environmental Impact Assessment Study*, Section 2, *Technological Processes*, Section 4.1, *Water* and Plan J, *Closure Management Plan*.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	202
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_0403
Proposal	How can the quantity of cyanide that enters soil be monitored and how can the density of certain fractures, that may allow cyanide infiltration, be supervised?
Solution	During operations the concentration of cyanide within the tailings slurry that is pumped to the Tailings Management Facility (TMF) will be monitored on a weekly basis to confirm it meets all EU Directives and Romanian Governmental Decisions. Monitoring will be independently validated. As part of the initial TMF basin construction, the surface vegetation and top soil will be removed and the clay layer will be compacted to achieve a permeability of $1x10^{-6}$ cm/sec or less as is considered compliant with EU Best Available Techniques (BAT) as defined by EU Directive 96/61/EC (IPPC). This layer is designed to provide a barrier to limit seepage into fractures. During removal of the vegetation and topsoil large fractures or other surface feature that could be a potential pathway for seepage migration will be identified. Potential pathways identified will be addressed as appropriate and covered with the natural clay liner to limit seepage. The natural clay liner is designed to BAT (Best Available Techniques) as defined by EU directive. Seepage that extends beyond the tailings dam will be collected in the Secondary Containment Dam and sump. Hydrogeologic baseline studies have indicated that this type of control and containment is viable. Groundwater will be monitored hydraulically downgradient of the TMF and secondary containment to confirm that groundwater is not being contaminated. If tailings contaminated groundwater is detected there is a commitment to implement a third level of containment and collection using extraction wells.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	212
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_0426
Proposal	Regarding the impact of the cyanides lake/tailings resulted during the project:- the questioner mentions that the entire Apuseni Massif is formed from fractured rock. Not far from Rosia Montana starts the National Apuseni Mountains Park. There are soil infiltrations, and aerosols. The questioner wants to know whether the impact of cyanide infiltration in water, all over the karstic system from the Northern half of the Apuseni Mountains, where karstic monuments may be found, UNESCO's natural monuments such as Pestera Vantului, Pestera Ursilor has been analysed and whether it has been developed a study regarding the project's impact.
Solution	The feasibility study and the EIA (*Report on the Environmental Impact Assessment Study*) of the Roşia Montană project, which is situated in the Southern Apuseni Mountains included several studies of the possible impact on water, and comprehensive plans have been designed to prevent seepage migration. As part of the initial Tailings Management Facility (TMF) basin construction, the surface vegetation and top soil will be removed and a clay layer – designed to BAT (Best Available Techniques) as defined by EU Directive 96/61/EC (IPPC) – will be compacted to achieve a permeability of $1x10^{-6}$ cm/sec or less. In part, this operation is designed to identify any fractures or other surface features that could be a potential pathway for seepage migration. Any potential pathway identified will be backfilled and covered with the natural clay liner to reduce seepage. Other measures are included into the design, such as a low permeability cut-off wall below the TMF dam, and a Secondary Containment Dam and sump, which will collect possibly impacted groundwater that may seep outside of the TMF boundary. The rocks situated under the TMF consist of Cretaceous Age flysch sediments dominated by shales with lesser quantities of sandstones and conglomerates. A couple of small limestone blocks have been identified near the dam alignment. These blocks have been investigated and found to be olistoliths (exotic blocks that slid into the Cretaceous basin). These are isolated blocks rooted in shale, and karst is not a concern associated with this limestone. There is no karst topography similar to the Northern Apuseni Mountains in the TMF or general project area. Studies of the possible impact on water include the *Water Baseline Study* (Chapter 2), *Water Impact Assessment Study* in the potential impacts section of the EIA (Chapter 4, in Sub-Chapter 4.1), and *Water Management Plan* (Plan C). The planned monitoring of water is included in the *Environmental Monitoring Plan*, (Plan N), and within the EIA in Chapter 6 of the EIA. It has been found that due to removal or treatment of existing pollution sources, impacts to water outside of the project area will be an improvement to current conditions.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	229
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_0459
Proposal	The questioner wants to know if the hydrological investigation methods have ended for the sites where the tailings facility is going to be built, as well as the area where are going to be collected waters in the final phase (Cetate area, which was a mined area). The questioner makes the remark that because of the 2000 years old galleries there may also be some unknown galleries and soil, with its impermeability features, may have fractures that through specific hydro geological methods might decelate.
Solution	Extensive hydrological investigations have been conducted, allowing a Tailings Management Facility (TMF) to be designed consistent with the state of the industry and with all regulatory criteria. As of March 2007 field investigations are still being completed in the Corna and Roşia valleys to determine the geotechnical characteristics of the clay layer to be prepared within the TMF basin. Borings are planned within the footprint of the waste rock stockpiles (Cetate, Cârnic, and the low grade ore) to determine geologic conditions. Of course, water quality monitoring is an ongoing program. Any old mine workings will be exposed and plugged. During development of the TMF basin the topsoil material will be removed and stockpiled – exposing any old mine workings within the Corna valley, which would be plugged to prevent infiltration of tailing seepage water. Any adits or underground workings that are exposed in the final pit highwalls in the Roşia Valley during the mining of the four open pits will also be plugged. Because of the geological and ore body configuration it is unlikely that unknown underground mine workings extend outside the known area of mining impacts; long tunnels that would provide conduits for water to escape to adjacent areas are highly improbable. Historic mining is unlikely to have advanced long mine workings through barren rock.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	277
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_0591
Proposal	As for the flows used, the questioner considers that these are average water flows, the minimum or maximum flows of the hydrographical network in the area are not taken into account.
Solution	The EIA (*Report on the Environmental Impact Assesment Study*) included a comprehensive examination of water flow rates – in real time, historically, and under all conditions. Flow rates are based on data collected every 15 seconds from weirs situated in the Corna and Roşia Montană Valleys. This is recorded as actual real time data to cover minimum and maximum flow rates. Also included is historical data based on average daily and monthly flows. The Tailings Management Facility (TMF) was design for sufficient capacity to store 2 x PMF (Possible Maximum Flood) events derived from Probable Maximum Precipitation (PMP) events as defined in the WMO-1986 (World Meteorological Organization) manual. The PMF is calculated from a storm with a reoccurrence internal greater than a 1:10,000 years. The water balance all considered wet, dry and average annual rainfall conditions. In addition, the model was set up to do a probabilistic simulation of monthly rainfalls (ranging from the maximum to the minimum recorded). The simulation was done for 1,000 iterations to determine the 95% and 5% volumes in each of the storage ponds at the site. Section 4.1 of the EIA report summarizes the rainfall records for the site and includes precipitation events from 2000 to 2005 (see Table 4.1 -2).

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	379
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Bucuresti, 21.08.2006
RMGC internal unique code	MMGA_0781
Proposal	Taking into consideration that the bedrock of Corna Valley, which is the proposed location of the tailings management facility, is made up of sedimentary formations in flysch facies with permeable micaceous sandstones, we challenge the conclusion presented in the report on the environmental impact assessment study, according to which the pollution of underground water and overflow of the tailings management facility dam is impossible to occur.
Solution	The comprehensive Tailings Management Facility (TMF) incorporates several measures to provide protection of the groundwater, prevent an overflow, and cope with any overflow in the unlikely event one were to occur. These measures include an engineered clay liner system within the TMF basin – recognized as being BAT compliant (Best Available Techniques) as defined by EU Directive 96/61/EC – compacted to meet a permeability specification of $1x10^{-6}$ cm/sec; a cut-off wall within the foundation of the starter dam to control seepage; a low permeability core for the starter dam to control seepage and a seepage collection dam and pond below the toe of the tailings dam to collect and contain any seepage that may extend beyond the dam centerline. In addition, a series of monitoring/extraction wells are planned below the toe of the secondary containment dam. These will be used to monitor groundwater quality and extract groundwater if tailings water contamination is detected. This overall design is supported by baseline hydrogeologic studies that indicate that the geology and hydrogeology of the Corna Valley are favorable for this system of containment, collection and monitoring. The design of the TMF dam incorporates all International, EU and Romanian design criteria (see Section 3.0 and the TMF management plan). A comprehensive monitoring program as outlined in Section 6 of the TMF report will be established to confirm the design and operational parameters are being met. Tailings deposited in the TMF will be treated to contain levels of cyanide (10ppm) well below current EU Directives (Mine Waste Directive 2006/21/EC) and International Code levels (50ppm) which are considered safe for wildlife. The TMF is designed to store 2 x PMF (Possible Maximum Flood) events derived from Probable Maximum Precipitation (PMP) as defined in the WMO-1986 manual – which is greater than the runoff volume from a 1;10,000 year maximum rainfall event – in a 24 hour period. While it is extremely unlikely that 2 PMF rainfall events would occur, the TMF dam is designed with a spillway to safely pass any overflow and prevent overtopping of the main dam structure. Any such overflow would be subject to a large amount of dilution from the storm event, and water quality standards would not likely be exceeded (e.g., TN001). No one has stated that it is impossible for the TMF to overflow. The TMF has been designed to safely cope with the unlikely possibility of an overflow. It should be noted that the conditions in which an overflow would occur are so extreme that a discharge from the TMF would be minor compared to the regional flooding that would occur. In fact, by storing a large volume of the storm water, the TMF would help mitigate the flooding that would occur as the result of such a large storm event.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	389
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Bucuresti, 21.08.2006
RMGC internal unique code	MMGA_0811
Proposal	On the left slope of the Corna Valley, on Bunta, and also on Buciumul Valley, there are several streams forming mainly in spring. The difference in altitude is of about 7-8 m, in favour of the springs on Bunta, which are thus above the springs appearing on Buciumul Valley. There is the risk of migration of the water with heavy metal content, from the future tailings management facility located in the Corna Valley, to Buciumul Valley. Therefore, although a solution to render impermeable the base of the tailings management facility is required, this is not included in the impact assessment study or in the project presentation report.
Solution	The adjacent valleys are not threatened by groundwater seepage. The Hydrogeology Baseline Report – based on the results of monitoring water levels in piezometers within the base of the Corna Valley as well as piezometers on the sides of the Corna Valley – indicates that groundwater contours are above the 840 meter level, which is the maximum height of the Tailings Management Facility (TMF) embankment. The piezometeric data indicate that groundwater flow is from a groundwater divide near the tops of the ridges to the valley bottoms. There is no evidence that groundwater flow occurs through the ridges to adjacent valleys, nor will conditions develop as the TMF is constructed that will result in flow through the ridges. The design of the TMF basin includes a low permeability soil liner, compacted as needed – to meet a permeability specification of $1x10^{-6}$ cm/sec which conforms with the EU Directive on using Best Available Techniques (BAT) as defined in EU Directive 96/61/EC (IPPC) – a cut-off wall within the foundation of the starter dam to control seepage, a low permeability core for the starter dam to control seepage and a seepage collection dam and pond below the toe of the tailings dam to collect and contain any seepage that extends beyond the dam centerline.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	389
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Bucuresti, 21.08.2006
RMGC internal unique code	MMGA_0812
Proposal	The number of geotechnical drillings is not sufficient for an exact definition of the configuration of the subsoil from the Corna area. Even if the dam is properly designed and tested, such as to be absolutely safe, the rest of the tailings management facility system is precarious. Any prudent and responsible manager or any prudent and responsible management would adopt a solution to render impermeable the base of the Corna Valley, in order to avoid any possible problems in the future.
Solution	The hydrogeology of the Project area has been evaluated through extensive drilling programs conducted at the site between 2000 and 2003 (to support the EIA – Report on the Environmental Impact Assessment Study). These included boreholes along the centerline of the Corna Valley TMF dam and the secondary containment dam and sump. In addition, it included borings and test pits within the TMF basin to characterize the near surface soils. Further investigation studies on the continuity, thickness and permeability characteristics of the near surface soils within the basin are ongoing as of March 2007 (to support detailed design studies). These are specifically focused on determining the requirements for constructing a low permeability soil layer throughout the TMF basin in the Corna Valley. In addition, hydrogeologic evaluation has shown that the groundwater is relatively shallow, mirroring the ground surface topography up to the ridge tops. This indicates low permeability subsurface geological and provides a natural containment system. To make the facility even more robust and provide additional redundancy, the design includes recompaction of the surface colluvial layer to achieve a permeability of $1x10^{-6}$ cm/sec or less which conforms with EU Best Available Techniques as defined by EU Directive (96/61/EC). This will reduce the potential for seepage out of the TMF. For the geotechnical investigation all locations for facilities have been tested with the appropriate level of core drilling, geophysical surveying, and test pitting with rock core samples collected as well as soil samples for geotechnical test work. All of this is work is covered under the feasibility and engineering study, with the results used for the design of the facilities. The results of this were used for the EIA but not all of the details for all drill holes, test pits, surveys and test work are reported in the EIA as this is outside its scope. In total 259 geotechnical drill holes have been completed for 10,731.22 metres of core as well as 232 test pits. In addition 886 other drill holes to test the various aspects of the project including geotechnical aspects and data have been drilled for 127,195.74 metres and approximately 70,000 meters of underground workings have also been geotechnically logged and tested. The details of this work are included in the feasibility study.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	398
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	Bucuresti, 21.08.2006
RMGC internal unique code	MMGA_0852
Proposal	The environmental impact assessment study mentions that seepages are contained by the containment pond, but what happens with side seepages, which cannot be contained by the containment pond? There are seepages into the soil at the base of the pond, which is not tight.
Solution	Any seepage that occurs on the abutments (side seepage) of the Tailings Management Facility (TMF) dam will be collected and contained within the secondary containment dam and associated sump. The Hydrogeology Baseline report – based on actual field measurement of groundwater between 2002 and 2005 – indicates that groundwater flow contours are toward the base of Corna Valley. This groundwater flow direction is expected to be maintained during the operation and closure of the TMF facility due to the pervious dam concept, which will maintain a low groundwater elevation at the face of the dam. Therefore, any side seepage would be toward the base of the valley, where it can be collected in the secondary containment sump. In addition, the water level in the secondary containment dam sump will be maintained at a very low level. This will create a low point in the groundwater table, a hydraulic sink that will act as a collection point for any groundwater from the TMF and the side slopes of the Corna Valley. Since the base of the secondary containment dam sump will be a hydraulic sump (groundwater inflow), this area does not require a low permeability liner to prevent the outflow of seepage water.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	3239
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	No. 111073/25.08.2006
RMGC internal unique code	MMGA_1424
Proposal	The conclusions of the study, comprised within the hydro geologic model, are unproven and hypothetic;
Solution	The hydrogeologic characterization and model of the Corna Valley are based on surface water monitoring, groundwater monitoring, drilling, test pitting and field mapping programs that were carried out between 2000 and 2005. The model that has been developed and is presented in the EIA (Section 4.1, Section 3.0, the *Hydrogeology Baseline Report* and *TMF Management Plan*) is based on the results of these field studies and is consistent with standard engineering practice for these types of facilities. The studies have been conducted and signed off on by registered and competent engineers suitably qualified to perform this test work, evaluation and studies.

Domain	HYDROGEOLOGY
MMDD's item no. for the question which includes the observation identified by the RMGC internal code	3239
MMDD's identification no. for the question which includes the observation identified by the RMGC internal code	No. 111073/25.08.2006
RMGC internal unique code	MMGA_1426
Proposal	The study is elaborated by a team having hydro geologic knowledge but not necessarily specialists
Solution	The hydrogeological team was led by an accredited engineer (P.Eng) and vice-president and director of MWH, one of the most highly recognized designers of dams in the world. The hydrogeologic work was based on surface water monitoring, groundwater monitoring, drilling, test pitting and field mapping programs that were carried out between 2000 and 2005, conducted and signed off on by registered and competent engineers suitably qualified to perform this test work, evaluation and studies. The company has checked and validated the professional standing of all consultants who worked on the project and good standing is a requirement in all contracts.