

Explanatory Note to Chapter 3 – Wastes

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Author

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Detailed Contents:

1. Assessment of the impact on the Project and/or EIA Report due to the alteration of the relevant legal framework

As an introductory note, it must be stated that the domestic norms in force at the date of the document and the applicable community norms on wastes management, together with the international treaties applicable for this field have been considered upon developing Chapter 3 “Wastes”.

The direct consequence of this model of development consist of the fact that the Project has been prepared even before the adhesion of Romania to European Union, based on several provisions compliant with the norms implemented subsequently within Romania.

At the same time, the alterations of domestic regulations, as presented under Chapter 3, which entered into force after its completion date, consider usually either the establishment of a duty of the competent authorities to send reports to the European Commission or the reformulation of some text in order to clarify the regulation, but with no major alterations.

Thus, when the section on extractive wastes has been prepared, the main applicable community norms of this field have been considered, as follows:

- Directive 2006/21/EC regarding the management of extractive wastes and amending Directive 2004/35/EC, transposed into domestic legislation through Governmental Decision no. 856/2008¹ – thus, in the case of the regulations on extractive wastes management, the development of the Project anticipated the laws that were to be transposed into Romanian legislation at a latter moment. Moreover, Governmental Decision no. 856/2008 has not been altered after its publication;
- Directive 85/337/EEC on the assessment of the effects of certain public and private projects on the environment (EIA Directive);
- Directive 96/61/EC concerning integrated pollution prevention and control (IPPC Directive), transposed into domestic legislation through Governmental Emergency Ordinance no. 152/2005² – IPPC Directive has been abrogated by the Directive 2008/1/EC concerning integrated pollution prevention and control. The new directive does not bring fundamental alterations, its aim being to code the provisions of IPPC Directive and of its subsequent alterations by updating the referencing between the articles of the regulation and alteration/adaptation

¹ Governmental Decision no. 856/2008 on extractive wastes management, published in the Official Gazette, Part I no. 624 of 27 August 2008.

² Governmental Emergency Ordinance no. 152/2005 on integrated pollution prevention and control, published in the Official Gazette, Part I no. 1078 of 30 November 2005.

from linguistics point of view of several terms. Within this context, it must be noted that since 2003, IPPC Directive has not been altered. Thus, it results that within Project assessment, the current Romanian applicable norms have been considered. Following the adoption of Directive 2008/1/EC, in April 2010, Governmental Emergency Ordinance no. 152/2005 was altered in order to accurately transpose several cross references, replacement of some collocations or completion of some formulations, usage of some more adequate translations;

- Directive 96/82/EC on the control of major-accident hazards involving dangerous substances (Seveso II Directive), transposed into domestic legislation through Governmental Decision no. 95 of 2003 abrogated by the Governmental Decision no. 804/2007³ – the decision has been altered in 2009 when the provisions under Directive 2003/105/EC (Seveso III) have been transposed into domestic legislation, provisions altering the Seveso II Directive on the major accident hazards involving hazardous substances. The legislative alterations implemented through Governmental Decision no. 804/2007 and Governmental Decision no. 79/2009 do not impact the Project due to the fact that at the date of EIA Report the provisions of Directive 2003/105/EC have been considered, together with the provisions of Aarhus Convention on Rights of Information, Public Participation and Access to Justice on environmental issues (ratified through Law no. 86/2000) and Espoo Convention on Environmental Impact Assessment in a Transboundary Context (ratified through Law no. 22/2001).

With respect to the preparation of the sub-chapter on non-extractive wastes presented within the EIA Report, both national and community regulations of this field have been considered, also anticipating the fact that the European norms shall be transposed into domestic legislation. Thus, by observing the provisions of the community directives, the EIA Report considered provisions that have been transposed into domestic legislation subsequent to its date (for instance, Directive 75/439/EC on the disposal of waste oils transposed through Governmental Decision no. 235/2007⁴; Directive 91/157/EEC on batteries and accumulators containing certain dangerous substances transposed through Governmental Decision no. 1132/2008⁵ or Regulation no. 259 of 1 February 1993 on the supervision and control of shipments of waste within, into and out of the European Community).

At the same time, certain regulations applicable to the sub-chapter on non-extractive wastes have not been altered subsequently to the EIA Report (for instance, Governmental Decision no. 170/2004⁶; Order no. 219/2002⁷; Order no. 863/2002; Order no. 757/2004⁸, Order no. 95/2005⁹; Order no. 901/2005¹⁰).

If legislative alterations exist on the legislative framework quoted within the EIA Report, as a rule, they have been focused on the followings:

- The duty of competent authorities to send notifications or reports periodically to the European Commission/other authorities or to establish records; these alterations were implemented due to the adherence to European Union;
- Alterations of the civil fine values as established under the respective regulations;
- Sending reports from operators to national competent authorities with regard to the emission of certain substances, in case an environmental accident occurs;
- Packaging, labeling criteria of hazardous chemicals in accordance with REACH Regulation, applicable at community level;
- Regulation of the marketing of some types of equipments (vehicles, tires, batteries, accumulators, electrical and electronic equipments), takeover of these equipments by their producers/distributors, as the case may be, and the duty of users to deliver these at the special collection sites.

Governmental Emergency Ordinance no. 68/2007 on the environmental liability with reference on prevention and remedying of environmental liability. This regulation implements the provisions of Directive 2004/35/EC on

³ Governmental Decision no. 804/2007 on the major accident hazards involving hazardous substances, published in the Official Gazette, Part I no. 539 of 08 August 2007.

⁴ Governmental Decision no. 235/2007 on waste oils management, published in the Official Gazette, Part I no. 199 of 22 March 2007.

⁵ Governmental Decision no. 1132/2008 on batteries and accumulators and batteries and accumulators wastes, published in the Official Gazette, Part I no. 667 of 25 September 2008.

⁶ Governmental Decision no. 170/2004 on used tires management published in the Official Gazette, Part I no. 160 of 24 February 2004.

⁷ Order of Minister of Health and Family no. 219/2002 on the endorsement of the technical norms regarding management of the wastes resulted from medical activities and the methodology on collecting data required for the national database on wastes resulted from medical activities, published in the Official Gazette, Part I no. 386 of 06 June 2002.

⁸ Order of Minister of Environment and Water Management no. 757/2004 on the approval of the technical norm regarding storage of wastes, published in the Official Gazette, Part I no. 86 of 26 January 2005.

⁹ Order of Minister of Environment and Water Management no. 95/2005 on establishing the acceptance criteria and the preliminary procedure on accepting wastes for storage and the national list of accepted wastes within each class of wastes deposit, published in the Official Gazette, Part I no. 194 of 08 March 2005.

¹⁰ Order of Minister of Environment and Water Management no. 901/2005 on the approval of the specific measures to collect wastes of electric and electronic equipments with risks through contamination against personnel health and safety at the collection points, published in the Official Gazette, Part I no. 910 of 12 October 2005.

environmental liability with regard to the prevention and remedying of environmental damage, as it was amended by art. 15 of Directive 2006/21/EC of the European Parliament and of the Council Directive of 15 March 2006 on the management of waste from extractive industries and amending Directive 2004/35/EC. This regulation regulates the preventive and remedying measures that may be taken to prevent/remedy the environmental liabilities, as well as to pay and recover the costs associated with the implementation of preventive or remedying measures, as the case may be.

Art. 33 and 34 of Governmental Emergency Ordinance no. 68/2007 stipulate the establishment of a system aimed at ensuring financial guarantees on environmental liability that will allow operators to use these to warrant their duties regulated under this regulation. The establishment of such a system is to be performed through a Decision of the Romanian Government (the decision hasn't been yet issued). However, we believe that this guaranteeing system has a general feature – aiming all fields of activity – by referencing similar regulations existing at this moment within mining industry (the guarantee established by Law no. 85/2003 and the one established by art. 50-53 of Governmental Decision no. 856/2008) that we believe to have a special character. Within this context, we believe that the provisions under Governmental Emergency Ordinance no. 68/2007 – at least now, when its enforcement norms haven't been issued yet – does not establish additional guaranteeing duties for mining industry.

Law no. 349/2007 concerning the reorganization of the institutional frame in the domain of chemical substances management – this regulation provides for the decommissioning of National Agency for Hazardous Chemical Substances and Preparations, its duties being undertaken by the National Environmental Protection Agency and National Environmental Guard

Order no. 1349/2007 of Minister of Environment and Sustainable Development on the abrogation of art. 2¹-2³ of the Regulation regarding the organization and operation of the Secretary for designated compounds, endorsed by the Order of Minister of Environment and Water Management no. 1.018/2005 regarding the establishment of the Secretary for designated compounds within the Wastes and Chemical Substances Directorate, published in the Official Gazette, Part I no. 629 of 13 September 2007 – due to the fact that articles 2¹-2³ are abrogated, the provisions under the Organization and Operation Regulation established for the Secretary of designated compounds are removed with respect to:

- The duty to remove and collect in a separate manner the equipment containing PCBs that are not inventoried in a separate manner as per art. 7 of Governmental Decision no. 173/2000, when the equipment is decommissioned, recycled or removed;
- The definitions of the following terms: “removal”, “decontamination” and “owner of PCBs”;
- Requirements on the equipments containing fluids with PCBs of 0.05 % and 0.005 % from their weight.

It must be underlined the fact that specific PCB regulations are maintained through Governmental Decision no. 173/2000 on regulating the special regime of the management and control of PCBs and other similar compounds with its subsequent alterations.

Governmental Decision no. 856/2008 regarding extractive wastes management – transposes into domestic legislation the Directive 2006/21/EC regarding the management of extractive wastes and amending Directive 2004/35/EC published in the Official Journal of the European Community no. L102 of 11 April 2006. This is aimed at establishing the norms applicable to the management of wastes resulted from prospecting, exploration, underground extraction or open pit mining, treatment and storage of mineral resources, as well as the legal framework regarding the guidelines, measures and procedures and for the prevention and mitigation as much as possible of any adverse environmental impacts. Thus, the Governmental Decision no. 856/2008 is a special regulation within the assembly of regulations on wastes and their management.

In accordance with this decision, the operators (natural or legal persons responsible with managing extractive wastes, with temporary storage of extractive wastes, as well as with the operation and post-closure stages) have duties that, among others, consist of:

- Adopting necessary measures to prevent or mitigate any adverse impacts on population health and on environment due to the management of extractive wastes based on the best available practices;
- Preparing the extractive wastes management plan based on the objectives and mandatory elements under the decision;
- Prevention of major accidents and public disclosure in case of emergency, as the case may be, based on art. 13-20 of the decision (for A category wastes installations) or based on Governmental Decision no. 804/2007 regarding control of major accident hazards involving hazardous substances;
- Development of activities/operation based only on environmental integrated permit;
- Observance of the norms on backfilling excavation pits and construction and management of wastes installation, as well as closure and post-closure procedures of wastes installations;

- Observance of the environmental standards on the prevention of water quality impacts, air and soil pollutions;
- The establishment of the applicable financial guarantee before launching any operation involving accumulation or storage of extractive wastes within a wastes installation;
- Undergoing inspections that are to be conducted by representatives of Ministry of Environment and Environmental Guard as well as performance of daily recordings on the wastes management activity that are to be made available to competent authorities upon control.

Directive 2008/98/EC of the European Parliament and Council on wastes (Wastes Framework Directive) and abrogation of certain directives – the directive establishes a community legislative framework for wastes that needs to be transposed by the Member States. The term for transposing this directive is 12 December 2010, and it is expected that until that date alterations to be made to the current relevant domestic legislation (starting with Governmental Emergency Ordinance no. 78/2000 on wastes status). At the same time, Directive 2008/98/EC provides that, starting with 12 December 2010, the following directives 75/439/EEC, 91/689/EEC and 2006/12/EC are abrogated.

The main provisions of Directive 2008/98/EC consider the followings:

- Establishes criteria aimed at founding the difference between wastes and substances/products that are not wastes. From this point of view, the directive provides that substances/products resulted after conducting industrial processes cannot be considered wastes if there is a certainty as to their subsequent use. Moreover, substances and products that represent wastes may exit the scope of the “waste” allocation under certain conditions (are commonly used for certain purposes, there is a market demand for them, they observe applicable standards, and their usage do not impact the environment or the human health);
- Establishes the principles of waste management and their priority (preventing waste generation, preparing for reuse, recycling or for other recovery options, storage);
- Establishes the principle of extended responsibility of the producers of wastes generated atfe rusing their products; treatment of wastes can be performed through personal means or by transferring the responsibility to certified processors;
- Establishes wastes recycling aims (50 % of the total mass for paper, metal, plastic and glass wastes resulted from households, and 70 % of the total mass for the non-hazardous wastes resulted from constructions and demolitions), these being thresholds to be reached by 2020;
- Establishes rules to be followed by the authorities of member states upon preparing wastes management plans and waste generation prevention plans.

With respect to the above-mentioned statements, the alterations of the legislation shouldn't be considered as impacting the Project conclusions.

In other cases – like the field of transporting hazardous and non-hazardous wastes within Romania, the activity of public utilities and cleaning services – the regulations indicated within the EIA Report have been replaced with new regulations. However, considering the specifics of the activities, the new regulations for these fields are not impacting the conclusions of the EIA Report, due to the fact that the operator shall not performr wastes transportation or cleaning operations; the hazardous and non-hazardous or domestic wastes shall be delivered to certified operators for transport and/or final removal.

To conclude, the regulating alterations occurred after preparing Chapter 3 are not going to impact the conclusions related to the Project because these consider, especially, (i) clarification and/or referencing of the duties of competent authorities; (ii) clarification, replacement and completion of several statements or allocations; (iii) transposing accurately the cross references; or (iv) usage of some more adequate translations of the text from the respective directives, as well as of the Aarhus Convention on Access to Information, Public Participation in Decision-making and Access to Justice in Environmental Matters (ratified through Law no. 86/2000) and Espoo convention on Environmental Impact Assessment in a Transboundary Context (ratified through Law no. 22/2001) At the same time, the implementation laws of the two abovementioned conventions (Aarhus and Espoo Conventions) have not been altered. Thus, there is no impact on EIA Report whatsoever.

Referring to the domestic regulations governing preparation of an EIA Report, relevant for this matter is Order no. 863/2002¹¹ that has not been altered subsequently to the preparation of the EIA Report.

Consequently, one cannot reasonably conclude that with respect to the sub-chapter on extractive wastes, EIA Report anticipated the domestic regulations that are applicable at this moment, and the legislative alterations have no impact on this section of EIA Report.

¹¹ Order of Minister of Waters and Environmental Protection no. 863/2002 on the approval of the methodological guidelines applicable to the framework procedure stages on assessing the environmental impact, published in the Official Gazette, Part I no. 52 of 30 January 2003.

2. Updates to Chapter 3 – “Wastes”

2.1. General foundation

In order to define waste flows produced during Project life, upon preparing the EIA Report – May 2006 – a distinction was made between extractive and non-extractive wastes. The alterations of the regulations occurred subsequent to the preparation of Chapter 3 “Wastes” are not going to impact the conclusions related to the Project, because these consider mainly the followings:

- clarification and/or referencing the duties of competent authorities;
- clarification, replacement or completion of several sentences or allocations;
- transposing accurately some crossed references;
- usage of some more adequate translations of the text from the respective directives.

The technological processes described in the 2006 EIA Report identified as flows that generate different types of wastes have remained unchanged. The current project being in fact the one based on which the environmental impact assessment has been performed. Consequently, one can conclude in a reasonable manner that with respect to the wastes chapter and their management plans (Plan B – Wastes Management), EIA Report anticipated the domestic regulations applicable at this moment, therefore the legislative alterations having no impact on this section of the EIA Report. Once the EIA Report was sent to the competent environmental authority (May 2006), several plans/reports have been sent, plans/reports that were prepared in accordance with the provisions under Directive 2006/21/EC on extractive wastes management as follows:

- Plan B – Waste Management Plan
- Plan F – Tailings Facility Management Plan
- Plan J – Mine Closure and Rehabilitation Plan
- Plan I – Emergency Preparedness and Spill Contingency Plan

Being prepared in accordance with the provisions under Directive 2006/21/EC, these management plans do not require updates, due to the fact that the provisions under the directive on wastes management plans, prevention of major accidents, water contamination, air pollution and soil contamination, establishment of the financial guarantees, preparation of a closure plan/procedure and a post closure monitoring after closing the wastes management installations have been fully transposed through Governmental Decision no. 856/2008 art. 8-20 and art. 38-56.

2.2. Extractive wastes

Upon preparing the 2006 EIA Report, the provisions under Directive 2006/21/EC on preparing the waste management plans, prevention of major accidents, water contamination, air pollution and soil contamination, establishment of the financial guarantees, preparation of a closure plan/procedure and a post closure monitoring after closing the wastes management installations have been transposed through Governmental Decision no. 856/2008 art. 8-20 and art. 38-56.

The provisions under art. 5 (3) have also been considered together with Annex II of Mine Wastes Directive that are requiring as an integrant part of the wastes management plan, the characterization of wastes and the classification of wastes installations in accordance with the criteria presented under Annex III of the Directive, which have been transposed into domestic legislation through art. 8, and Annexes 2 and 3 of Governmental Decision no. 856/2008.

In order to illustrate the way in which Chapter 3 “Wastes” of EIA Report together with associated management plans have considered these provisions, and please find below in the Table 3-1 Wastes and Wastes Installation Ranking in accordance with Governmental Decision no. 856/2002, Art. 5(3), Art. 3(15), Annex II and Annex III of the Directive on Mine Wastes partially transposed by Governmental Decision no. 856/2008; this table is taken from Chapter 3 “Wastes” (pg. 11), and updated in accordance with the provisions under Governmental Decision no. 856/2008.

Waste classification and the classification of a waste facility in accordance with Commission Decision 2000/532/EC , Article 5(3), Article 3 (15), Annex II and Annex III of the Mine Waste Directive

Extractive Wastes Flow	Type/category of wastes	Classification in accordance with Governmental Decision no.	Storage Site	Storage time in years, in accordance with Article 15	Category A Installation (according to Annex III of
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		856/2002		(15)of Governmental Decision no. 856/2008	Governmental Decision no. 856/2008 transposing the Directive 2006/21/EC
Tailings	Hazardous	01 03 07*	TMF	No time limit	Yes
Waste rock (potentially ARD generating)	Inert	01 01 01 (potentially ARD generating)	Backfilled pits, Waste rock dumps	> 1 year	No
ARD treatment sludge	Hazardous	01 03 07*	During operations and early closure stage: TMF closure and postclosure stage: Open pit (flooded)	No time limit	TMF: yes; Open Pit: no
Sludge resulted from acid waters treatment plan (only during closure)	Hazardous	01 03 07*	Open pit (flooded), using pit as settlement for sludge	No time limit	No
Unpolluted and top soil	Inert	01 01 01	Topsoil and soil stockpiles	> 3 years	No

Analysis of the chemical characteristics of wastes as per Annex 2 of Governmental Decision no. 856/2008 and Directive 2006/21/EC respectively

In order to answer the requirements described under Annex 2 of Governmental Decision no. 856/2008, the requirement was undertaken and presented under sections 2.8.1.3 and 2.8.2.3 of Chapter 3 “Wastes” from 2006 EIA Report and a comprehensive program has been prepared and implemented to conduct assays necessary for the assessment of the geochemical characteristics of the waste rock. The result of the researches conducted during 2003-2005 is presented in the EIA Report. The testwork consisted of:

- Mineralogical assessment;
- Acid-base ratio (ABA) testing on the samples collected from waste rocks, tailings, low-grade ore and construction rocks;
- Laboratory testing of column leavitation on long term on waste rock samples;
- Onsite testing of column leavitation on long term on a representative series of waste rocks;
- Laboratory testing within wet cells of the tailings collected from different ore grades, still in development.

The testwork is aimed at providing data specific to the site on the ARD potential and initiation date, if that is the case, of the mine waters production process that would have to be reflected within the operational planning of the work. The monitoring process of ARD generation continued until 2008 (a summary of the results is presented within the Annex of Explanatory Note 4.1 “Water”).

The results of the monitoring confirm the conclusions presented under 2006 EIA Report, and bring no new elements to induce a supplementary analysis of the impact, from this particular point of view. The testwork conducted to date produced sufficient results to allow characterization and preparation of the plans of the Project. In accordance with art. 8 of Governmental Decision no. 856/2008 transposing art. 5 of Directive 2006/21/EC on mine wastes, the operator of a mining activity needs to prepare a Wastes Management Plan to minimize, treat, recover and remove extractive wastes, considering the principle of sustainable development.

Within sub-chapter 5.16 of Plan B – Wastes Management Plan – the way in which these objectives are met is presented in short. The information is summarized within the following table to illustrate the compliance with the requirements provided under Directive 2006/21/EC transposed through Governmental Decision no. 856/2008. Please find below a summary of the Plan and its objectives.

Table. Accomplishing the objectives from the Wastes Management Plan for Extractive Wastes

Art 8. Governmental Decision 856/2008	Objectives	Meeting the objectives
(a) prevention or mitigation of the wastes quantities and toxicity		
I	Choosing the extraction and treatment methods	The extraction and processing technologies correspond to the best available technique (BAT) at international level (the EU BREF document regarding the management of tailings and waste rocks, 2004 – adopted in 2009)
II	Amendments that the extractive wastes can undergo	<p>Tailings acidification is mitigated by their storage in saturated status during the operational phase. During and after closure, the tailings are going to be covered with a physical barrier to prevent tailings contact with the oxygen and a layer necessary to reduce infiltrations.</p> <p>For waste rocks, a screening and bench stockpiling strategy is going to be implemented, in order to mitigate the impact of the material having acid waters generation potential. The material having acid waters generation potential stockpiled on the slope is going to be covered with a physical barrier to prevent tailings contact with the oxygen and a layer necessary to reduce infiltrations.</p> <p>The mud from the acid waters treatment station will be stored under water in the water from Cetate open pit which will be flooded, therefore preventing the oxidation and increasing the neutralization potential for the water from the open pit.</p>
III	Placing the extractive wastes back in the excavation cavities	Backfilling the space mined during the mining period is considered to be BAT, as soon as it is doable and feasible from an economic point of view. This is the case for Cârnic, Orlea and Jig open pits, which will be care partially or totally backfilled.
IV	Placing again the topsoil after closing the wastes storage area	The topsoil and the dirt that is located below the topsoil are stockpiled for subsequent usage during the closure phase, when these soils are to be placed on TMF and on the waste dumps, in order to reduce infiltration, oxygen admission, accidental contact and make a layer for growing vegetation.
V	Using certain less hazardous substances in order to treat the ore	The substances used for the treatment of gold ore are from the category of those used in best international practices. It is in RMGC's interest to use the quantities minimum necessary from a technological point of view.
(b)	Encouraging the recovery, recycle, reuse and recirculation	The discharged water (supernatant) from the tailings thickener will be directed to the grinding circuit in order to reuse and recover the cyanide content.
(c)	Long and short term safe discharge, managing wastes in operational stage	<p>During the operational stage, the tailings are saturated, a fact that prevents their acidification. At closure, when the tailings are being dehydrated and can be exposed to atmospheric oxygen, the TMF is going to be covered in compliance with BAT with a „store and release cover” type superior layer (water retention from rainfall and its release through evapotranspiration - SRC, plus a physical barrier).</p> <p>Waste rocks having acid rock drainage potential are screened and stockpiled on bench.</p> <p>The material stockpiled on the slope is covered with a SRC superior layer, plus a physical barrier.</p> <p>PAG waste rocks having that are used in order to backfill the open pit, are covered with a NAG material layer having a thickness of at least 10m (without ARD potential).</p> <p>During operational stage, the sludge from the acid waters treatment station is pumped towards the TMF. Ring the closure and post-closure stage, the sludge from the acid waters treatment plant is pumped to the flooded pit for settling. Underwater submersion prevents its contact with oxygen and initiation of oxidation.</p>

Art 8. Governmental Decision 856/2008	Objectives	Meeting the objectives
I	Minimum or no maintenance requirements	The topsoil placed on tailings mitigates the erosion and facilitate evapotranspiration (thus mitigating the rainfall water seepage). In Corna and Rosia Vallies semi-passive water treatment lagoons will be installed.
II	Long term negative impact mitigation	See c (I). Moreover, hydro-observation wells are to be placed in Corna Valley, which may operate as underground water recovery wells, downstream from the secondary retention system, allowing underground contaminated water to be pumped towards the water treatment system. The specific hydro-geological characteristics of the site contribute to the long term safety.
III	Long term geotechnical stability	The TMF dam will be built-up and operated in compliance with all national and international applicable standards. The slopes of the waste rock stockpiles will be re-profiled and covered in order to ensure the long term stability. Erosion control measures consist in re-vegetation and hydraulic measures as diversion and drainage channels would be. The erosion control measures consist of re-vegetation and hydraulic measures like the performance of diversion and drainage ditches. A geotechnical monitoring program shall be implemented to ensure that all geotechnical parameters are meeting the designed limit values range.

Being prepared in compliance with the provisions under Directive 2006/21/EC, this management plan does not require update due to the fact the provisions of the Directive on the way in which the waste management needs to be prepared have been fully transposed through Governmental Decision no. 856/2008 art. 8-12.

2.2.3. The way in which the Best Available Techniques (BAT) and the Best Environmental Practices (BEP) are to be used

Based on the assessment from the Mining Project, the open pits contain approx. 256.9 million t of waste rocks, within a waste-ore ratio of 1.2:1. The rock from aggregate quarries and the waste rock obtained from the preparatory works conducted before extraction shall be used, as the case may be, for enclosures at the construction of Corna Dam. If the waste rock is not necessary for construction purposes, it shall be hauled to Cetate and/or Cîrnic Dumps and by implementing closure and progressive rehabilitation of the site, it shall be backfilled in the open pits where operations ceased (especially, Carnic, Orlea and Jig), starting with year 5 or starting with year 9 of operations. BATⁱ provides for the use of mining wastes (waste rocks) as backfill of pits during operations so as to avoid the production of an additional impact during closure due to hauling and stockpiling operations. This approach has been presented within the 2006 EIA Report and no changes occurred for the closure and progressive rehabilitation strategy and to the BREF document established for mining sector, where the BAT technologies are described, even though it is a document that was prepared in 2004 (the final version in July 2004) and adopted only in January 2009.

In order to illustrate the compliance of wastes management strategy or the site closure and rehabilitation one, as presented under EIA Report, Chapter 3 “Wastes” and under the associated management plans, and considering the BREF provisions were adopted in 2009 and considering the Governmental Decision no. 856/2008, we will reproduce several relevant sections in the following paragraphs from the Wastes Management Plan and from Chapter 3 “Wastes”, as they were presented in the 2006 EIA Report.

Backfilling of open pits

It is a BAT to backfill waste rock into mine pits if transfer mining can be used, i.e., during the mining process, transferring the waste rock from the active pit to another pit which is already mined out.

In the Roşia Montană Project, according to the waste rock balance of the mine plan, the following scheme has been adopted:

- the Jig pit will be fully backfilled by transfer mining
- the Orlea and Cîrnic pits will be partially backfilled by transfer mining so that some parts of the pit walls will not be covered with backfilled waste material

- transfer mining is not applicable to the Cetate pit which will be mined last and will be flooded (only a small amount of waste rock will be backfilled onto the southern rim of the pit).

Waste segregation strategy

In order to reduce the ARD potential, a strategy on waste rock selective management/storage shall be implemented, which is presented in the EIA Report and summarized below:

- Waste rock dumps will be piled up using a combination of end-dumping and stackdumping. End-dumping will be used for the dumps basements and for the outer rim of the dump, where the NAG material will be used, while stack-dumping, which leads to higher compaction, will be used for the inner parts of the dump, where the PAG material will be deposited. The compaction associated with stack-dumping minimises exposure to oxygen and water around the body of compacted PAG material. Stackdumping allows the use a relatively thin cover system without strict requirements to be applied on the waste dumps.
- End-dumped PAG material will be deposited in a small section along the outer rim of the waste dumps and covered with a less permeable cover system than the (larger) NAG portion where the water balance and oxygen ingress is less of a concern. The material which will be backfilled to the open pits will be sorted in a way, that PAG material will predominantly be placed at the bottom of the backfill or be covered by at least 10 m of NAG material, so that oxygen contact with the PAG material is minimized.

Several details regarding the extractive wastes management strategy have been presented within Mine Closure and Rehabilitation Plan, 2006 EIA Report, a plan prepared in compliance with the provisions under Directive 2006/21/EC, which have been fully transposed into domestic legislation through Governmental Decision no. 856/2008 art. 38-43. We believe that the wastes management strategy and the conclusions of EIA Report do not need additional updates and clarifications.

Subchapters 2.4-2.7 of Chapter 3 – “Wastes” of EIA Report do not need updates.

2.2.8. Extractive Waste Streams

Description of the preventive measures taken to minimize impacts provided by Directive 2006/21/EC and transposed by GD 856/2008.

In the 2006 version of Chapter 3 – “Wastes”, were described in particular measures for the prevention of water status deterioration in accordance with Directive 2000/60/EC based on Art. 13 of the Directive, art. 44 – 49 of GD 856/2008, respectively and for the prevention or minimization of air and soil pollution during construction, operation and closure of the waste facilities.

Groundwater could be affected by any of the surface waters. Impacts could potentially be related to acid rock drainage, trace quantities of cyanide or other process related constituents migrating to groundwater.

As described in the EIA Report submitted with the competent environmental authority in May 2006, in order to prevent any such impacts, a number of engineering measures have been incorporated into the designs for the waste rock and low-grade ore stockpiles and the TMF. These measures exploit the favorable natural hydrogeologic conditions of the site, which include gaining stream conditions (i.e., groundwater discharges lowest point of the valley), a low permeability subsurface geology and locally, old mine workings that act as groundwater drains. Such favorable hydrogeologic conditions will, in combination with selected engineering measures, result in all process flows being contained and managed.

The hydrogeologic conditions at the site have been extensively studied during 2000 - 2010 with the findings of the geotechnical studies prepared up to 2006 being presented in Section 4, sub-section 4.5 Geology and in the Hydrogeology baseline report of the EIA Report. The review and interpretation of the researches conducted after 2006 have not led to findings different from those already presented in the EIA Report or which to require further assessment of the potential impact of the Project in its various development stages. Groundwater-monitoring systems will be installed, including monitoring wells downstream of the TMF and at other key locations during Project construction, operation and post-closure monitoring; details related to the location of the monitoring system in the various stages of the Project were provided in Section 4, sub-section 4.1 Water, Section 6 Monitoring and in the associated management plans (Plan C - Water Management and Erosion Control, Plan F – TMF Management, Plan A and N – Environmental Monitoring and Management Systems). The findings and interpretations of the researches conducted after 2006 and to date are not of a nature to require updates or additions to the above mentioned plans against the version already presented in the 2006 EIA Report.

Article 11 (2b) of the Mine Waste Directive, art. 34 of GD 856/2008, respectively requires the operator to demonstrate that suitable waste facility construction, management and maintenance methods are applied. In order to illustrate the way in which these provisions / requirements were incorporated in the EIA Report and associated management plans, we show in facsimile a few relevant paragraphs from chapter 3 Wastes of the 2006 EIA Report.

All these provisions were included in the 2006 EIA Report and are in compliance with the provisions / requirements of GD 856/2008, with an update thereof not being required since these aspects / requirements were transposed fully from the Directive into the GD by transposing this Directive into national regulations.

The TMF will be designed as a depository for the treated (detoxified) or partly dehydrated tailings residue. The Corna Valley TMF site provides the required design storage capacity for the life of the mine, plus an additional contingency capacity. In addition it has the advantage of being close to the process plant and open pit sites, thus minimizing the project footprint.

Drainage systems will also be constructed for each of the waste rock dumps. The near-surface foundation conditions within the stockpile areas and the low-grade ore stockpiles are composed of black shales; surface soils consist of colluvium and/or weathered shale.

As part of the site preparation, topsoil and dirt materials will be removed and stockpiled for use during closure. The foundation soils beneath the waste rock and low-grade ore stockpiles consist of weathered black shale or colluvial deposits consisting of clayey, silty sands to silty clays. Recompacted samples of these materials have exhibited low permeabilities (in the range of 1×10^{-7} to 1×10^{-10} m/sec) when tested in the laboratory. Therefore, stripping topsoil and dirt materials while leaving the weathered bedrock and/or colluvial deposits will result in a low permeability layer beneath these stockpiles.

The stockpiles will all include a designed drainage layer at their bases. The drainage layer will be constructed out of coarse-grained, durable rock from mine pre-stripping or waste rock material. Such coarse, free draining material will provide a large contrast in permeability relative to the low-permeability native soils, and will facilitate the lateral drainage of any seepage to the perimeter of the stockpile.

Diversion channels around the waste rock piles will capture potential surface waste run-on and divert it around the piles. Run-off from the waste rock piles reports to the water management system and will be collected within the TMF or one of the water management impoundments, which will allow pumping to the Wastewater Treatment Plant or the process plant.

The use of low permeability foundation soils in combination with the lateral drainage at the base of the stockpiles will minimize the potential for infiltration of acid rock drainage if it occurs into the groundwater. The potential seepage from the waste rock or low-grade ore stockpiles will either flow to the Corna Valley (TMF) or Roşia Valley (Cetate dam).

Art. 13 (5) of the Mine Waste Directive, art. 32 of GD 856/2008 stipulates that, when placing extractive waste back into excavation voids which will be allowed to flood after closure, the operator shall take the necessary measures to prevent or minimize water status deterioration and soil pollution.

Impacts are minimized by favorable natural conditions and engineering methods which are described in Section 2.8.1.9 and 2.8.3.9 of Section 3 Wastes of the EIA Report.

Identification of possible accident hazards

All these provisions were included in the 2006 EIA Report and are in compliance with the provisions / requirements of GD 856/2008, with an update thereof not being required since these aspects / requirements were transposed fully from the Directive into the domestic regulations.

Section 7 ("Risks") of the EIA and the *Emergency Preparedness and Spill Contingency Plan* are devoted to major risks and accident hazards such as TMF dam failure.

Major accident prevention policy and information to be communicated to the public

All these provisions were included in the 2006 EIA Report and are in compliance with the provisions / requirements of GD 856/2008, with an update thereof not being required since these aspects / requirements were transposed fully from the Directive into the domestic regulations.

All the safety measures for incidents or accidents are presented and described in the *Emergency Preparedness and Spill Contingency Plan – Plan I, submitted in May 2006 as part of the EIA Report*.

Under Art. 6 of the Mine Waste Directive, the tailings management facility is also subject to the regulations of the Seveso II Directive (Directive 96/82/EC, amended by Directive 2003/105/EC). Transboundary impacts are dealt with in Art 16 of the Mine Waste Directive.

A major accidents response plan is presented within the updated 2010 Security Report – annex NE_Cap 7_03. An Emergency Response Plan needs to be subsequently prepared and made available before mine site startup, in compliance with the law (Governmental Decision no. 856/2008).

2.2.10. Closure of Waste Facilities

Mine Closure Plan

Under Art. 5 (3f) of the Mine Waste Directive, art. 38 of GD 856/2008, respectively, the operator has to propose a plan for closure, including rehabilitation, after-closure procedures and monitoring.

The environmentally safe closure and decommissioning measures of the extractive waste facilities including the Tailings Management Facility (TMF) are described in the *Mine Rehabilitation and Closure Management Plan attached to the 2006 EIA Report*.

All these provisions were included in the 2006 EIA Report and are in compliance with the provisions / requirements of GD 856/2008, with an update thereof not being required since these aspects / requirements were transposed fully from the Directive into the domestic regulations.

Financial Guarantee

According to the Preamble (Point 25) and Art. 14 of the Mine Waste Directive, which were transposed in chapter XI art. 50 of GD 856/2006, the financial guarantee should be sufficient to cover the cost of rehabilitation of the land affected by the waste facility; rehabilitation costs should be estimated and rehabilitation works completed by an independent and qualified third party. Mine rehabilitation procedures are described in the Waste Management Plan and in Chapter 3 “Wastes” of the EIA Report.

The provisions of Art. 7 (2 d) of the EU Mine Waste Directive and the guidelines for establishing the scope of assessment of the EIA Report, forwarded to the Ministry of Environment in 2005, requires that the proponent has adequate arrangements by way of a financial guarantee or equivalent, as required under Article 50 - 53 of GD 856/2008, so that "all obligations under the permit issued pursuant to this Directive, including after-closure provisions, are discharged".

The method for calculating the environmental securities is described in the Mine Rehabilitation and Closure Management Plan attached to the 2006 EIA Report.

During 2007 – 2010 all data regarding the costs for the Rosia Montana mine closure and rehabilitation were updated. The USD 76 mil figure stated in the Environmental Impact Assessment (EIA) was based on the basic engineering and unit price applicable at the end of 2005. As from early 2006 until mid 2008 the costs for machinery, materials, consumables and goods have gone up. This required that the company review its Project cost estimation including the operating costs, as well as the capital, operating and closure and post-closure monitoring costs.

Although the basic engineering, as well as the closure and rehabilitation technologies described and assumed in the EIA report remain identical, the same were revised and the work schedules and methods optimized. Consequently, the costs associated to the unit prices were changed and increased.

Based on the above elements, the updated closure cost was assessed in March 2009 and amounted to USD 128 mil. This is the initial capital cost for closure which will be spent during the life of the Project and closure and final rehabilitation of the Project site. The ongoing operating costs for years 22 and 26 are estimated at USD 18 million, however this sum will be spent during the active closure phase. The post-closure phase starts in year 27. The Environmental Rehabilitation Plan and Closure Basic Engineering - Rosia Montana Mine, prepared by SC IPROMIN SA and forwarded to the NAMR in February 2010 detail the updated closure costs for the Rosia Montana Mine. Extracts of these reports, regarding the updated rehabilitation costs, are presented to the TAC with NAMR’s approval. The total rehabilitation costs for the Rosia Montana Mine amount to USD 127,614,647. We present below a summary table regarding the closure and post-closure monitoring costs as well as the environmental rehabilitation costs for the Rosia Montana Mine.

Table summarizing closure and post-closure monitoring costs for the Rosia Montana Project

CATEGORY OF EXPENSES	VALUE [USD].....
YEAR 5 - 9	3,551,255
YEAR 10 - 13	12,732,130

YEAR 14 - 16	13,773,116
YEAR 17 - 18	62,495,868
YEAR 19 - 21	12,556,719
YEAR 22 - 26	18,492,000
YEAR 27	4,013,559
TOTAL COSTS	127,614,647

The increase of the total mine rehabilitation and clean-up costs (shown in Volume 3 – Annexes, *Annex Ne_Cap 2_01*) occurred at the date of the EIA preparation to date is not of a nature to change in any way the contents of the Chapter.

2.3. Non-Extractive Waste

Domestic Waste

There is a waste collection system organized in Rosia Montana area (as a division under the authority of the Rosia Montana Municipality). Currently, collected waste is transported and disposed of in a local non-compliant landfill (Ciuruleasa landfill operated by the specialized division organized under the authority of the Abrud Municipality).

Another potential waste destination is the Sibiu landfill which is environmentally compliant or the Alba Landfill but which is scheduled to be closed by 2015.

The County Waste Management Plan (CWMP) - Alba County developed under the “Guidelines for preparation of county waste management plans” approved by Order of the Minister of Environment and Sustainable Development No. 951/2007 - **the Plan was adopted following the Decision of the Alba County Council No. 192 / 28.08.2008 after having secured the environmental endorsement No. SB 24 / 23.07.2008 issued by the Sibiu Regional Agency for Environmental Protection following the completion of the environmental assessment procedure.**

The timeframe covered by PJGD Alba is 2005 - 2013. The solution, as recommended and approved with the plan implementation, for waste disposal was storage.

PJGD Alba does not propose solutions regarding the site for waste treatment or disposal facilities. A number of local or micro-zonal projects were implemented at county level, which resolve some of the problems related to waste collection and transfer.

Thus, at local level the following facilities¹² with relevance for the Project area are under implementation or even operation:

- **Abrud:** “Selective waste collection system and transfer facility in Abrud, Rosia Montana, Bucium, Ciuruleasa area” – completed under Phare CES 2003 program. The facility is operational and was issued with environmental permit No. 149 / 12.08.2009, with waste being transferred in Sibiu County at Cristian waste site.
- **Baia de Aries:** The Project “Selective waste collection in Baia de Aries area and five adjacent villages - Transfer station” is under implementation under Phare CES 2006 Program. The partner localities are the Bistra, Lupşa, Sălciua, Poşaga and Ocoliş communes.
- **Sohodol:** The Project “Waste storage platform” (transfer station) funded under Ordinance 7/2006 is under implementation. The project was only partially completed, being stopped due to lack of funds.

The solutions proposed by PJGD Alba will be implemented under the project undertaken by the Alba County Council with financial support from POS Environment.

The Project-related waste streams do not require application of other technical waste management solutions and implicitly do not require revision of the management strategy presented in the 2006 EIA Report. Once the temporary transfer stations within the Project area will be completed and commissioned, there will be sufficient capacity to accommodate the waste volumes generated by the Project and its related activities in various

¹² Information taken from the Environment Status in Alba County, Alba EPA, 2009.

development stages. The transfer station already completed at Abrud in 2009, which will be most likely commissioned in 2011 is able to accommodate the entire stream of municipal or similar municipal waste collected mixed (domestic waste) or selectively (packaging waste) generated in the Project area. In terms of all the other types of waste generated by the Project in various development stages (dangerous waste, Waste Electrical and Electronic Equipment (WEEE), packaging, batteries and rechargeable batteries, medical waste, etc) there are no changes from the management strategy presented in the 2006 EIA Report to require updates or further clarifications.

ⁱ Best Available Techniques for Management of Tailings and Waste-Rock in Mining Activities (cele mai bune practici disponibile de gestionare a sterilului de prelucrare și rocilor sterile provenite din activități miniere) – Comisia Europeană; Direcția Generală JRC, Centrul Comun de Cercetări, Institutul pentru studii tehnologice, Tehnologii de dezvoltare durabilă, European IPPC Bureau, Raport final, iulie 2004 (<http://eippcb.jrc.es/pages/FActivities.htm>)