ROȘIA MONTANĂ

PROTOCOL REGARDING CHANCE FINDS

S.C. Roșia Montană Gold Corporation S.A.
Strada Piața nr. 321
Roșia Montană
Romania
PROTOCOL REGARDING CHANCE FINDS

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PART I – BACKGROUND DATA AND INFORMATION

1. INTRODUCTION

Considering the specific features of the Mining Project proposed by Gabriel Resources under S.C. Roșia Montană Gold Corporation, an application was submitted to open an open cast gold mine at Roșia Montană, a locality of Alba County, in Transylvania, Romania. The application procedure requires the carrying out of an Environmental Impact Assessment study, according to the guiding principles of the relevant EU legislation. Thus, the Environmental Statement and the supporting Management Plans contain proposals for a comprehensive package of policies aiming to mitigate the adverse impacts of the proposed mining project and associated works, as well as an extensive range of pro-active measures and works for the rescue, capitalisation and management of archaeological heritage assets in this area, with direct results going well beyond the framework of mere mitigation of the potential mine impacts thereon. This is certain proof of the responsible policy Roșia Montană Gold Corporation (RMGC) has adopted and implemented in this respect.

To date, a significant number of preventative and rescue archaeological research work, as well as archaeological heritage preservation works have been undertaken, and extensive areas of land within the Project footprint have been investigated and already undergone the archaeological duty of care discharge process, under the relevant Romanian legislation. Rescue and preventative archaeological research in the 2001-2007 period were conducted in view of documenting the baseline condition of the archaeological heritage in the Rosia Montana area in order to prepare the studies under the environmental impact assessment (EIA) procedure. After an initial assessment stage in the 1999-2000, the first stage of rescue archaeological research was conducted during 2001 – 2003, while between 2004 and 2007, the research was of a preventative character. This whole concept of archaeological research was on one hand subsumed to the concept of “rescue by registration”, while at the same time it led to the establishment of zones where it was decided to preserve the archaeological heritage assets in situ, so that the footprint of the Mining Project underwent some changes during this time. At the same time, rescue and preventative archaeological research provided scientific arguments, which could then underlie the urbanism documentation for the legal establishment of protection areas. This complex process, so far unique in Romania, as it involved in the formulation and implementation of a Management Plan for the archaeological heritage of an area, has been subject to objective constraints dictated by:

- the adoption, after the year 2000, of a legislative package on the protection of the archaeological heritage and its permanent updating throughout the decade in order to harmonise it with the relevant legislative framework applicable in the EU Member States.
- the adoption, after the year 2000, of a legislative package on environmental protection and its permanent updating throughout the decade in order to harmonise it with the relevant legislative framework applicable in the EU Member States.
- the first application of the archaeological duty of care discharge procedure for a large-scale industrial project.
- the first application of the environmental impact assessment procedure for a large-scale industrial project, that might generate an impact on the cultural heritage.
- restricted access for research in certain areas, determined either by the type of ownership, or by the category of land use.

Apart from these issues, it needs to be emphasised that large area of the site on which the mining project is to be implemented are covered by considerable quantities of historic mining waste (especially landfills), which were understandably inaccessible to archaeological research in the pre-construction period (plate 4a - Location of the archaeological sections in relation to the areas inaccessible to research – a plate taken from the EIA report) At the same time, in underground galleries, access is restricted for reasons of safety, the research thereof requiring removal of huge quantities of embankments from diverse historical ages.

All these factors have created the prerequisites for some areas (both above and under-ground), where rescue and preventative archaeological research has already been conducted, to allow the discovery of
more archaeological relics during construction and operations works and activities. It needs to be stressed, however that, based on the results of previous archaeological investigation campaigns conducted on the site, it has been considered that the rescue of such potential archaeological relics ay be managed under two complementary processes, namely:

- archaeological surveillance (a procedure provided by he relevant national, and international, legislation; implementation in the context of mining operations – quarry opening, waste rock pile shifting);
- management of chance finds (a procedure defined in the international legislation on environmental assessment; implementation in the context of mining operations – quarry opening, waste rock pile shifting)).

In this context, specific environmental impact mitigation measures required that a specific procedure should be developed and implemented in the form of a Protocol for chance finds (PPDI) of an archaeological nature. As a consequence, this process requires the implementation – a first in Romania – of a complex mechanism that should allow prevention of any irreversible loss of structures belonging to the archaeological heritage by adequately recording of the site and the characteristics of such archaeological relics, as well as recovery of any movable cultural goods that might exist in such archaeological contexts, all the works of this kind being provided as part of the technical design and pre-construction work related to the mine operation itself.

Therefore, this document is part of the pro-active measures in the management of heritage issues under the mining project proposed by the Company, Roşia Montană Gold Corporation, and represents their public commitment for sustainable development. At the same time, once the environmental impact assessment procedure is completed, the PPDI will become a document of which all the stakeholders in the archaeological heritage of Rosia Montana area will be aware, and a best practice manual to be used by both the contractors involved in technical design and construction works related to the operations, and by the Heritage Department of the RMGC, and not least by the independent teams of archaeologists providing the necessary expertise for subsequent stages of the mining project, so that all these parties may operate based on a mutually agreed on and implemented procedure.

In this light, the PPDI contains 4 specific sections, as follows:

- Part I contains general data and information that define the need to adopt it, the guiding principles and the scope of application, as well as the goal and objectives of the PPDI;
- Part II: a specific section on the general principles in developing the Operational Manual for the Implementation of the PPDI in Open Areas within the Footprint of Rosia Montana Mining Project (a document to be developed at the end of the project permitting procedure under the EIA);
- Part III: a specific section on the general principles in developing the Operational Manual for the Implementation of the PPDI in Underground Areas within the Footprint of Rosia Montana Mining Project (a document to be developed at the end of the project permitting procedure under the EIA);
- Part IV containing annexes with maps and drawings, references, including a list of the main legislative regulations and good practice in the EU and Romania.

2. APLICABLE LEGISLATIVE FRAMEWORK FOR THE ARCHAEOLOGICAL BURDEN DISCHARGE PROCEDURE AND THE IMPLEMENTATION OF A PPDI

The Alburnus Maior National Research Programme (PNC-AM) initiated in the spring of 2001 by the Romanian Ministry of Culture and Religions, in the context of the Rosia Montana Mining Project proposal, aimed to undertake the comprehensive archaeological, historical, ethnographical studies and research needed in order to safeguard the cultural heritage of the region by assessment and research. This research programme was funded by RMGC, under GD No. 43/2000, as further amended, and suspended
by the Ministry of Culture and Religions in the autumn of 2006.

The archaeological research component of the PNC – AM was included under the concept of rescue archaeology and later under that of preventive archaeology, in the sense of conducting ample research — primarily under time constraints— in order to avoid any irreversible loss of archaeological relics (movable or immovable assets) and their context data before the initiation of the construction stage of the mining project. This, as well as the entire cultural strategy developed in constant cooperation by teams of local and international professionals in the field and the Company, was implemented as specifically provided by the relevant national legislation:

- Law No. 5/2000 on the approval of the National Land Use Development Plan – Section III - Protected Areas;
- Law No. 182/2000 on protecting the movable national cultural heritage assets, as subsequently amended;
- Law No. 422/2001, on the protection of historical monuments, amended by Law No. 259/2006 as subsequently amended
- Law No. 311/2002 on public museums and collections, as further amended.

A number of other international regulations in this field have also been considered, including:

- the European Archaeological Heritage Convention (Malta or La Valetta Convention, 1992)
- The UNESCO – ICOMOS recommendations (1964, 1990) regarding the archaeological heritage;
- World Bank Operational Policy No. 11.03 and World Bank Operational Policy No. 4.11, respectively;
- the Equator Principles

Based on all these legal provisions, the stated intention of RMGC has always been to provide the necessary conditions for the research, registration, safeguarding and enhancement – for scientific and public interest purposes – of the cultural heritage of Rosia Montana, as provided in GO No. 43/2000 (and further amended) on the protection of the archaeological heritage and in Law No. 422/2001 on historical monuments (as amended), respectively.

In the first decade after 1990, despite the social and political changes, there was no intention of adopting a set of legal measures to protect the cultural heritage, with a few exceptions in regard to historic monuments, absence of regulation being the rule rather than the exception. However, in the second half of the past decade, in 1996, Romania was signing the Malta Convention, which was ratified by Parliament a year later, and, from a legal point of view, its provisions entered into force in 1998. Based on this generic framework, in the context of the complex EU accession process, in early 2000, Romania adopted the first legal regulation in the field of archaeological heritage protection, i.e. GO No. 43/2000. This document introduced, for the first time after 1989, a number of issues of the first order (such as the permitting regime for archaeological digs and their classification, the definition of the main bodies with a role in the protection of the archaeological heritage and their specific responsibilities, etc.), but the most important provision was elated to the obligation of an investor to bear the full costs of rescue archaeological research triggered by construction works, whether funded from public or from private sources. Thus, the Government decision introduced an fundamentally new concept, that of archaeological burden discharge, a procedure deemed necessary in the context of such works, but with no direct equivalent in the EU or Member State legislation. In most of its content, the framework outlined by this first act remained unchanged to date, despite some successive amendments that gave the ordinance the power of law; the main chronological landmarks for content amendments included: Law No. 378/2001, Law No. 462/2003 (introducing the concept and the definition of preventive archaeological research), Law No. 258/2006 (with mentions of the principle of integrated conservation, the conduct of specific archaeological works in
the context of environmental impact assessment, as well as of the application of *Archaeological Standards and Procedures*. Apart from these laws, the relevant applicable legal framework on the protection of the archaeological heritage and implicitly on rescue/preventive archaeological research, was constantly amended, almost every year during 2000-2008, by Orders of the Minister of Culture and Religions. In regard to the rescue/preventive archaeological heritage, two of these Orders are of utmost importance, namely: MOCR No. 2392/2004 on *Archaeological Standards and Procedures* and MOCR No. 2518/2007 on the implementation methodology for the archaeological burden discharge procedure, document, however, that does not bring any major change to the provisions of Law No. 258/2006.

A matter of interest is that of the legal protection granted under the law to elements and structures of the cultural heritage in the area of concern. After 1991–1992 a new version has been developed, and constantly updated, of the List of Historical Monuments by the National Commission of Historical Monuments, Complexes and Sites (CNMASHI), which in 1995 became the National Commission of Historical Monuments (CNMI), in cooperation with the relevant department of the Ministry of Culture; this document has been in the draft stage for more than a decade (see details at [http://www.cimec.ro/Resurse/Patrimoniu/listaMonIst.htm](http://www.cimec.ro/Resurse/Patrimoniu/listaMonIst.htm)). Actually, the latest version of the official list of monuments – developed for the Romanian territory – dated back to 1955, but it was repealed in 1990, and in this context a new list was initiated, which, however, for a long time, contained many errors and inadvertencies. Still, this list – developed as of 1991-1992 – has not been published in the Official Monitor and hence it has never become really official. The status of this list was partly clarified by the publication of Law No. 422/2001, which meant that the list of 1992 became a provisional document of limited relevance, that could be considered an indicative document, but for a reference period of maximum three years after the law had come into force. In this context, a process of data re-verification and updating, and of redrafting the List of Historical Monuments, respectively, was initiated in 2001-2001, and the document became official after publication under Order of the Minister of Culture and Religions No. 2314/2004 in Official Monitor No. 646/2004.

Of course, this needed to be correlated with the land use development activities, which form the main framework, instrument and implementation mechanism on the ground, for the enforcement of compliance with the specific national cultural heritage protection provisions. In this respect, as of e year 2000, Law No. 5/2000 laid the bases for an adequate legal framework in establishing protection zones around historical monuments, and protected areas thereof, by the development and approval of specialist documentation and studies as an integral part of the urbanism documentation.

Law No. 5/2000 on approving the National Land Development Plan – Section III – Protected Areas thus regulates the guiding principles of protecting land that contain cultural heritage assets, namely by instituting protected areas, which involves a form of controlled intervention. Corroborated with the above, the definition of protected areas associated to historical monuments under Law No. 422/2001 will be based on specialist studies initiated by the local government authorities together with the local specialist bodies of the Department for Historical Monuments of the Ministry of Culture and Religions. Until such studies are completed, and integrated into the urbanism documentation (as provided by Law No. 453/2001 (art. 7), permitting of building works in the proximity of historical monuments must comply with the provisions of Law No. 422/2001 (art. 59) on the measures required for the protection of immovable assets of heritage value.

All this situation created over more than a decade, actually a major *hiatus* in regard to the legislation on heritage protection, especially of the archaeological heritage, and the correlation of this area with the permitting procedures provided by the urbanism legislation and, more recently, by the environmental legislation, has objectively driven the evolution of the Rosia Montana Mining Project. All this can somehow be accounted for if we consider the fact that Romania has undergone complex changes after 1989, so that the year 2000 concluded a full dynamic decade in the plane of deep political, social and economic change. Also, during the same period, a number of legal regulations were passed in the area of land use development (PATN/III - National Territory Development Plan – Section III – Protected Zones, 2000 approved by Law No. 5/2000), also referring, implicitly, to the cultural heritage assets in the Rosia Montana area (PATN/III - National Territory Development Plan – Section III – Protected Zones, approved by Law No. 5/2000 (published in Official Monitor No. 152 of 12.04 2000), Annex 3, Section g –Urban Complexes / item g)3, Section l – industrial architecture; development of communication links / item l)1.), Section m – monuments of folk architecture, village houses / item m)2.), on the base of which future development plans for the community are developed (County Territory Development Plan for
Alba, updating and correlating the existing County Urbanism Plan with the approved sections of the PATN, Project No. 4406/2000 and Masterplan 2002 designating the protected areas and industrial sites, developed by S.C. PROIECT ALBA S.A.).

Therefore, we need to stress that the development of Rosia Montana Mining Project was done in parallel to a number of new regulatory measures which were substantially amended and updated for a period of 15 years, this issue being an objective factor in constantly reconsidering the Project features. Not least, the strategies and mechanisms considered by RMGC in consultation and in collaboration with specialists in the field have also taken into account a number of legal documents regulating environmental protection. It may then be said that the issues related to the protection of the archaeological heritage of Rosia Montana in the context of developing the Mining Project are included under the concept of “integrated conservation” as defined in the three main legal regulation packages currently of relevance for Romania, including:

- the cultural heritage protection legislation
- the urbanism legislation
- the environmental legislation.

In this context, as part of the environmental impact assessment procedure, the main reference points considered in the context of developing management plans for the cultural heritage in the Rosia Montana area data from baseline studies were used to determine the archaeological sites and historical monuments. Under such a perspective, the PPDI is part of a set of environmental impact mitigation measures, which define and refine an additional procedure aimed to implement an efficient tool to ensure the safeguard of the archaeological heritage in the Rosia Montana area in the context of developing the Mining Project, according to the rescue by registration concept.
3. **SUMMARY OF THE ENVIRONMENTAL IMPACT STUDY AND OF THE DOCUMENTATION RELATED TO THE CULTURAL HERITAGE**

Before initiating the current operations proposals, Rosia Montana was already well known to Roman Age archaeology due to the discovery, between the late 19th c. and up until the 1980’s, of more than 70 epigraphic pieces and ancient architectural fragments, but especially of the wax tablets, special artefacts which formed a chance find during the reopening of some old mine galleries in 1785–1855 (all these discoveries presented in an environmental impact study, hereinafter abbreviated as the EIS). All these discoveries gradually built up evidence in identifying the area as having important archaeological potential, but did not trigger, however, the undertaking of archaeological research in the true sense of the word before the year 2000. The only exception was some rescue research on a very limited area, conducted in the mid 1980’s, but not followed by any other consistent on site investigation (see Wollman, 1996, quoted in the EIA). Proposals for the modernisation and expansion of the gold mining activities already present in the area, extending the open cast mining that had started here in the 1970’s, created a basis for a change of situation in relation to researching the archaeological heritage of Rosia Montana.

Starting from the new legal framework that had come into force in 2000, a first stage assessment of the archaeological potential of the area was initiated, and, based on its preliminary findings, the “Alburnus Maior” National Research Programme (hereinafter referred to as PNC – AM) was initiated, Alburnus Maior being an old place name which – most probably – designated the Rosia Montana area in ancient times. The priority objective of the research programme, established by the Ministry of Culture and Religions and funded by RMGC, was to extend the scope of knowledge about the area in terms of its archaeology, history, ethnography architecture and intangible heritage assets. This required participation of a large number of institutions with relevant expertise in the field of cultural heritage who conducted multi-disciplinary research focused on several specific topics. The main components of the PNC – AM are briefly introduced in the following.

- The Archaeological Research Sub-Programme – included two projects, as follows:
  - *The Surface Rescue and Preventive Archaeological Research Project*
  - *The Underground Rescue and Preventive Archaeological Research (or Mining Archaeology) Project*
- The Urbanism and Architecture Research Sub-Programme;
- The Ethnographical Research Sub-Programme;
- The Oral History Research Sub-Programme;
- The Church and Cemetery Inventory and Records Project.

All the assessment, rescue or preventative archaeological research conducted at Rosia Montana starting in 2000 and up to the present date have been developed under a complex research program, under rescue or preventative archaeological research permits issued by the Ministry of Culture and Religions under and on-site assessment or surveillance permits, respectively.

Preventive archaeology research was performed with the participation of a large number of expert and specialised archaeologists, from relevant institutions subordinated to the Ministry of Culture and Religions — national ranking history museums in Bucharest and Cluj, as well as the National Institute of Historical Monuments (Bucharest), the Romanian Academy — research institutes in the field of archaeology in Bucharest ad Cluj, and the Ministry of Education an Research, respectively — the History Department of Bucharest University, and not least from the county history museums of Alba Iulia and Deva. Specific archaeological research in the field of mining archaeology – a field in which there is no professional expertise in Romania – was conducted by the University of Toulouse 2 Le Mirail, the UTAH Laboratory (France).

Overall, the National Research Programme “Alburnus Maior” involved the participation of the following institutions:

- the National History Museum of Romania in Bucharest (MNIR) – Programme Coordinator, rescue and preventative archaeological research, inter-disciplinary studies, restoration of the movable

- the National History Museum of Transylvania, Cluj Napoca – rescue and preventive archaeological research, restoration of the movable assets (2001–2006, 2007**)
- “Vasile Parvan” Institute of Archaeology of the Romanian Academy, Bucharest (IAB) - rescue and preventive archaeological research (2001–2004)
- the National Institute of Historical Monuments, Bucharest - rescue and preventive archaeological research architectural studies (2001–2004)
- Institute of Archaeology and History of Art of the Romanian Academy, Cluj Napoca - rescue and preventive archaeological research (2001–2006, 2007**)
- University of Bucharest, History Department - rescue and preventive archaeological research architectural studies (2002-2005)
- “Iulian Antonescu” Museum Complex, Bacau - rescue archaeological research (2001)
- Technical University of Munich, Germany – geological and mineralogical studies, physical and chemical analyses (2001–2002)
- Centre National de Recherche Scientifique, France (CNRS) – photogrammetry, aerial photography and photographic interpretation (2004)
- the Institute for Cultural Memory (CIMEC), Bucharest – administrator of the database and the digital archive of the programme (2001–2004)
- S.C. Doris Art. S.R.L. București – restoration of stone items (on he premises of Tâu Găuri

During the year 2000, when RMGC had publicly stated their intention to resume and expand mining operations in the Rosia Montana area, a study to assess the archaeological and architectural heritage was developed —at their request—and coordinated by the Design Centre for the National Cultural Heritage (CPPCN), which after 2002 became the National Institute of Historical Monuments (currently reorganised since 2009 under the National Heritage Institute) and conducted in collaboration with the National Union Museum of Alba Iulia, and UTAH (Unité Toulousaine d’Archéologie et Histoire), Toulouse University 2 Le Mirail, CNRS UMR 5608, France. The main purpose of this archaeological diagnosis and of the topographic inventory of archaeological sites in the area was to identify them within the locality, taking account of all the previously known—and often uncertain—information on the location of the finds. The following were mentioned among the conclusions of this study:

- much of the Roman Age sites, both Roman open cast and underground mining operations, and the settlements, necropolises, sacred area, has been irretrievably lost in the destruction caused by modern and contemporary mining works;
- extended areas of the current locality are covered by landfills or occupied by industrial installations;
- the current development area of the locality overlaps with (and has most probably destroyed) a number of archaeological sites;
- before 2000 Rosia Montana area was practically uninvestigated from an archaeological perspective.

The preliminary results of the first archaeological surveys at Rosia Montana were published soon after the diagnostic study was completed. Apart from the architectural asset inventory study, one of the objectives of this diagnostic survey was to assess the archaeological potential.

In regard to the underground archaeological mining research, they were a first for the Romanian archaeology. Thus, between 1999 and 2000, an extensive diagnostic and exploration survey was conducted in the gallery networks of the Cetate, Carnic, Carnicel, Jig Vaidoaia, Tarina and Orlea massifs. The main conclusions of the preliminary diagnosis survey, which was developed under the coordination of Dr. Beatrice Cauuet, were as follows:

- the relics (galleries) have been largely disfigured by modern works;
- the extent and relative repetitiveness of some types of mining work architecture do not justify a need to preserve them as a whole;
- the costs of conservation work in the context of a very extensive underground mining space are an important element to consider;
- destruction, following the scientific study, of the upper parts of the deposit will allow discovery, and ultimately access for the continuation of the scientific study at lower levels, and the fact that they are currently inaccessible increases the possibility of their being in good state of conservation; this may only be achieved with the logistics available to a modern mining operation, only a part of which has been used in the first stages of the study, but that will then allow an important improvement in the knowledge of the site;
- rescue digs allow any modern exploration or operational works to provide for the gradual study of most of the site.
Often ambiguous or permissive formulations in the regulatory documents in force have determined some incongruence in much of the local development perspective and its failure to serve in a balanced manner either of the two major public interests involved — developing extractive activities versus protecting archaeological relics — in the sense that they did not manage to create the necessary basis (i.e. urbanism regulations and concrete action plans derived from them) in order to harmonise the two directions of action by formulating a pertinent proposal that should take into account the potential industrial development of the locality with due consideration to the spatial distribution and actual significance of the immovable cultural assets (historical sites and monuments) in an acceptable and mutually agreed manner for urban developers, architects, archaeologists, and other categories of specialists, the local population, and public opinion. This was to become apparent only after the initiation of the preventive archaeological research programme, in the spring of 2001, a programme that helped refine and improve the initial data made known by the diagnostic survey assessing the archaeological potential of Rosia Montana, as conducted in 2000.

Starting from these coordinates and giving consideration to the intended development of mining activities as proposed by RMGC, under the national legislation in force at that time, as well as under the provisions of European legislation to this effect (La Valetta Convention), in the spring of 2001, the Ministry of Culture and Religions decided to initiate a national research programme for the heritage of Rosia Montana area, namely the “Alburnus Maior” National Research Programme, under the scientific coordination of the Romanian National History Museum (scientific coordinator Dr. Paul Damian). In this context, RMGC complied with the relevant legal obligations and provided – based on a service contract annually concluded with the Romanian National History Museum – the financial resources for a vast programme of preventive archaeological research, and for architectural, ethnographical, oral history and other studies.

The research conducted during each archaeological campaign of 2001 – 2007 was permitted by the Ministry of Culture and Religions based on the annual archaeological research project proposed by the Romanian National History Museum and approved by the National Archaeology Commission.

The main objectives of the “Alburnus Maior” National Research Program – as stated in the Order of the Minister of Culture and Religions – aimed to:

- research of the archaeological heritage, including full recording of the data obtained from digs and pereigesis (archaeological databases and maps, digital picture archives, etc.) as well as full publication of the research results;
- investigate the Roman and medieval mine galleries in the area, inventory and propose conservation or restoration solutions of representative sections;
- define the archaeological and architectural reserve areas to include parts of the mining galleries and architectural monument buildings;
- complete recording and research of the industrial heritage assets;
- develop an ethnographical study of the area of Roșia Montană - Abrud - Corna;
- develop a local oral history study;
- implement the archaeological burden discharge procedure for the sites located in the mining Project impact area, under the law;
- develop a project for the implementation of the future Mining History Museum of the Apuseni Mountains from its beginnings up to the present day.

4.1. The Archaeological Research Sub-Programme

This sub-programme was the most important part of the PNC – AM, so far representing the most complex rescue and preventive archaeological research of multi-disciplinary nature undertaken in Romania.

The rescue, then preventive archaeological research programme was developed based on the statements formulated in the national and European legal framework, on the conclusions stated in the assessment survey of 2000, and also in consideration of a number of aspects derived from the theory and practice of
preventive archaeological investigation (including of the archaeological date archives generated by extensive scale digs) from a number of Western countries with nearly half a century tradition in this respect, but adapted to the situation then current for Romania. Thus, the general approach was governed by the concept of “rescue archaeology” and later “preventive archaeology” in the sense of more extensive research - primarily carried out under objective time constraints — in order to avoid any irreversible loss of archaeological relics (movable or immovable assets) and their context data before the initiation of the construction stage of the mining project. While this is a generally accepted point of view in the relevant European and international practice (recently included under a new concept, generically known as public archaeology), the same is not true about the Romanian situation, where some of the academic environment, and of the public opinion representatives has been much more familiar — in the understanding and management of archaeological issues — with the “model” of systematic research (academic research or research excavations), therefore with a significant gap, at least compared to a good part of Europe where the academic practitioners of archaeology are a small group in relation to what is nowadays considered to be archaeological heritage resource management. The general evolution of society during communist times and in particular that of Romanian archaeology determined this situation in the sense that it did not allow for the definition of a clear distinction between the characteristics and conduct of this type of archaeology – which in recent years is identified in West-European countries with names such as developer-led archaeology, development-led archaeology or commercial/contractual archaeology – from he older and traditional systematic field research, as initiated and conducted by specific entities of the academic, research or museum environments, in line with a number of scientific research programmes. Starting from the relevant legal provisions adopted since 2000 archaeological research under the PNC – AM was first rescue research, but later the archaeological programme gradually turned into a preventative one. This transformation occurred during 2002, in the context where the General Development Plan for Rosia Montana was adopted and designated a large part of its administrative territory for the development of the mining project and so made it necessary to identify and locate more precisely the areas containing archaeological relics – in the perspective of developing zoning plan-type documentation for the protected historic area and for the industrial area – and, with the definition of this type of research, the new relevant legislation became effective in 2003. In the context of this preventive archaeology process, a number of good practice recommendations (La Valetta Convention, Art. 4-7) as stated by the European Archaeological Heritage Protection Convention (1992) were implemented for he first time in Romania as concerns the management of complex archaeological issues in a contractual framework, which also determined, among others, a significant reconsideration of the future mining project in some areas containing archaeological relics.

The archaeological research team was established based on the particulars of the Rosia Montana site, but also taking account of the fact that this archaeological dig was a training exercise for a new generation of professionals in preventive archaeology. Thus, this framework was used to create a basis for cooperation between two of the main research and training centres in Romania – those of Bucharest and Cluj – with museums in Bucharest, Alba Iulia, and Deva, as well as for international collaboration with expert archaeological institutions specialising in mining archaeology in France and Germany, aiming to develop an inter-disciplinary approach (see Section 3 above). All this meant that every year, throughout the research programme period, a comprehensive team of specialists was brought together, the largest archaeological research team ever established in Romania to date.

Looking back on this national research programme, it may be defined by a number of specific features:

- the most important and comprehensive rescue / preventive archaeological research programme conducted in Romania during the past 5 decades;
- a first for Romanian archaeology, considering that it was the first to include specialist research and expert studies in mining archaeology in the underground gallery system beneath some of the Rosia Montana settlement;
- investigations conducted over a vast area, of about 1,600 ha, on rough terrain, visibly bearing the marks of uninterrupted living and mining for at least seven centuries (13th–20th c);
- the involvement of a significant number of institutions – of diverse areas of expertise – within the research team, namely 24 Romanian institutions (8 research institutes, 7 museums, 2 university departments and 7 specialist companies) and 3 foreign ones;
• annual participation on the research team of 80 specialists, as well as a team of field work professionals consisting of 30 engineers, mining foremen and miners, who brought key contributions to the actual development of underground mining archaeological works, plus about 200 unskilled workers and ancillary staff involved in surface archaeological research.

• a pilot project and practical implementation framework for the new approaches of preventive archaeology in Romania, and for research methods and good archaeological management practice that is common at the European level, as provided by international and EU standards, therefore the first “training digs” for this research approach;

• initiation of a monographic series dedicated to the results of research undertaken in the area, which resulted in the publication of a first volume in less than 2 years from the start of the programme inception and, subsequently, in constant issues of new publications;

• conservation and preservation of the more than 10,000 artefacts discovered during the archaeological research, as well as publication and exhibition display of the results of archaeological research in temporary shows at the various participating museums involved in the research programme or the cultural heritage display at Rosia Montana, as a first concrete step toward organising the future Mining Museum;

• an outline of a first public-private partnership on preventive archaeological research in Romania, developed in accordance with the principles and recommendations of the La Valetta Convention;

• confirmation and readjustment of the strategy and schedule of archaeological work based on the possibility of access to the site, the details of the initial project and, not least, on the planning – permanently updated – of the private investor;

• conduct of the first stage of rescue/preventive archaeological research in parallel to the final development of urbanism documentation where the industrial development of the locality was prevailing in relation to the cultural significance of the area;

• adaptation – during its implementation – to the successive changes of the Romanian legislation on the protection of the archaeological heritage, on extractive industries, and especially on environmental protection (development of the first archaeological documentation for an impact study in Romania).

The “Alburnus Maior” National Research Programme was therefore a framework for a new modern, approach to preventive archaeological research in Romania, as it was the first industrial development project that required the application of the legal procedure for the archaeological burden discharge (a unique procedure in relation to the situation of preventive archaeological research in Europe and the specific legal framework, where the period of assessment of the archaeological potential is extremely important) of sites containing archaeological relics. Also, the results of these preventive archaeological research determined – in a second stage – the development of an Archaeological Heritage Management Plan (the first of its kind in our country) and the consideration of building – with funds provided by the private investor under the “polluter pays” principle stated in Article 6 of the La Valetta Convention, but better named “developer pays” nowadays – of a modern museum that should combine the theoretical and practical features of a site museum with those of a themed museum dedicated to the history of mining at Rosia Montana and surrounding areas. At the same time, the programme created the bases for the development of research based on an already well established and perfectly operational European model.

In conclusion, we need to stress that rescue archaeology refers equally to archaeological research and digs conducted in the threatened areas or those found in the course of construction and land use development works such as those involved in diverse commercial or industrial projects in an area where there might exist archaeological sites of concern. Unlike the site assessment (periegesis) and traditional digs (also known as “systematic archaeological research”), rescue archaeology is conducted under time constraints (with the generally accepted idea that this type of research must be conducted at a quick pace) in precisely defined topographical and geographical (strictly defined research area, based on landmarks of the project site or alignment boundaries), as well as financial and other conditions. Especially during the past 20 years, specific theory and practice in this field – of relatively short tradition – of archaeology, a clear
distinction has started to be made, however, between rescue archaeological research and preventive research proper. This concept may be understood to refer on the one hand to the identification and exhaustive research of archaeological relics, more exactly safeguarding through surveys, expert investigations undertaken in the context of a future construction activity or as part of an environmental impact assessment study, a situation covered by the La Valetta Convention, and recently passed into Romanian legislation on the protection of the archaeological heritage (La Valetta Convention, Art. 5/2003 and Law No. 259/2006, respectively, art. 2, para. (7) letter b), as well as the in situ conservation of some finds, as necessary – depending on the characteristics, state of conservation, significance and importance – and a number of preventive measures that may be taken in order to preserve an identified site, that has not been completely excavated. Thus, the term of preventive archaeology defines – in principle - set of specific emergency actions taken in order to rescue a site or sites from imminent threat of disappearance due to the implementation of projects involving significant changes and major disturbances of land configuration in a certain area.

4.1.1. The Surface Rescue and Preventive Archaeological Research Project

Starting with the 2001 campaign, based on the preliminary archaeological diagnosis develop in 2000 and corroborated with archive research, preventive archaeological research was initiated – at the surface and in the underground – in various area of Rosia Montana, with the strategy and planning of archaeological works provided based on the schedule announced for the future investment at the time. The areas considered were those of identified or signalled archaeological potential, established on both archive studies and surveys made during the year 2000, as follows: Valea Nanului, Cetate – Găuri area, Carpeni Hill, Orlea – Țarnarea, the Cârnic Massif and the Tâul Cornei area, Valea Cornei and the area of the Historic Centre of Roșia Montană, including the Jig-Vădoaia Massif.

Before 2000, as only a few archaeological surveys had been conducted and the vast majority of information on the areas of archaeological potential came from chance finds, no pertinent assessment of the conservation state, spatial distribution, or characteristic features of the archaeological relics on Rosia Montana area could be achieved. Only one area, the Roman open cast mines called by the name of the "Roman Courts" on the top of Cetate massif had been known for certain to have been destroyed by the opening of Rosia Montana Mining Operation quarry by the Romanian State after 1970.

Based on this initial set of generic data on the archaeological potential of the Roșia Montană site, extensive preventive archaeological research was conducted during 2001–2006 in the Roșia Montană Mining Project impact area, and it results prompted either the proposal to initiate the archaeological burden discharge procedure of areas to be affected by the industrial development, or the decision to conserve some representative structures and monuments in situ, as provided by the law and by a number of common best practices in the EU Member States, i.e. the designation of certain areas for the establishment of “archaeological reserves” (La Valletta Convention, art. 2 para ii) All this was supplemented by ample architectural, ethnographical, urbanism, geological, environmental and other studies, aimed to improve the knowledge, understanding and protection of the cultural heritage of the area (see below sections 4.2.–4.5.).

The working strategy was developed to keep into account both the distribution and characteristics of the archaeological relics, and the contractual objectives required by the Beneficiary (the mining Company, a.n.). It is worth mentioning that every year it had to be reconsidered, as dictated by a number of objective factors such as the climate conditions and safe access to study the relics, legal possibility of access of the archaeological research team onto the site (noting the refusal of some owners to allow access of the archaeological teams, even if not free of charge, but for a fee, as provided by the law), the financial resources provided by the Beneficiary, the re-siting of some elements of industrial infrastructure within the mining project, legislative amendments on heritage protection, extractive industries and environmental protection, etc. At the same time, the working method had to consider the fact that the research team included specialists from diverse institutions, which required the harmonisation of theoretical and practical approaches in field research, as well as of methodologies in subsequent desk research studies.

The main components of the archaeological management system on he Rosia Montana site took into consideration – in accordance with the national and European good practice standards – the following:
- planning, organisation and management of rescue / preventive (field) research;
- planning, organisation and management of administrative logistics;
- management of digs and field data
- planning and management of post-dig activities (post-fieldwork planning or post-extraction planning);
- planning and ensuring conservation of the found movable archaeological cultural goods;
- legislative compliance;
- dissemination of research results on three strategic directions: public interest communication (with both the competent authorities at the European, national and local level, and the media and the public at large); professional interest communication (within the museum and academic media in the country and abroad), including by organising displays, developing and coordinating the publications plan and, not least, communication with the investor;
- management of the contractually set financial resources;
- on-site management of the human resources made available by the investor for field work;
- scientific coordination of the research team and establishment of inter-disciplinary collaboration;
- management of the research team on two – archaeological and multi-disciplinary – levels.

All this conditioned the organisation of the necessary human resources – scientific staff, ancillary personnel and unskilled work force – into a single working organisational unit, adapted to the specific responsibilities required by the legislative and contractual framework.

Considering the nature and characteristics of the site, the working methodology was adapted and structured into three main stages – documentation and theoretical assessment in the field, field work proper (archaeological digs) and preliminary post-dig analysis – at times coupled with complementary secondary stages.

During the documentation stage, first completed during March-May 2001, with the information subsequently updated on a regular basis and processed throughout the six years, the historical and archaeological data on the respective area available in a wide range of publications and archives were reviewed. Documentation was –primarily – conducted by consulting and critically reviewing the specialist literature referring to the archaeological finds in the Rosia Montana area, as well as of the National Archaeological Registry, and List of Historic Monuments, respectively. Recent and archived photographic images were also analysed, as well as satellite images, coupled with a study of the available historic and contemporary maps of this site, in order to identify the changes of landscape emerged in recent decades, and establish the local topography, s as to provide a preliminary definition of the areas of archaeological potential. The second stage of preventative archaeological field research was initiated in the spring of 2001. Thus, the working stages of the programme included:

**main stages.**

- stage I: resuming and complementing the theoretical and field assessment of 2000 for the surface relics for a better awareness of the archaeological heritage of the area in order to prepare the research project and working strategy;
- stage II: undertaking the preventive archaeological digs proper on the surface ad in the underground;
- stage III: preliminary and post-dig analysis and preventive archaeological research (technical) report drafting;

**secondary complementary stages**

- stage IV: post-dig detailed analysis (by specialty);
- stage V: dissemination and publication of research results;
- stage VI: preparing related archaeological documentation.
The working approach for the surface preventive archaeological research took into consideration a wide range of direct and ancillary investigative methods, according to already established or more recent archaeological research practice, including:

- desk studies (references and archives);
- periegesis (field-walking) and on site investigation (reconnaissance survey);
- archaeological surveys (evaluation trenches);
- aerial reconnaissance (flyover) ad archaeological analysis of aerial and high resolution satellite imagery;
- geophysical surveys;
- exhaustive archaeological research in the areas of identified archaeological potential;
- inter-disciplinary studies – sedimentology, archeo-zoology, geology, mineralogy;
- radio-carbon and dendrochronological dating;
- integrated data management system to record the research and its results into one structure that includes alphanumerical, geographic and graphic information;
- digital topography and GIS project;
- photo-digital archive;
- artefact restoration;
- inventory and digital cataloguing of the collections of the future museum;
- desk studies and expert analyses for the publication of scientific volumes, organisation of exhibitions, development of a website, etc.

In this regard, the issues related to the archaeological heritage of Rosia Montana required the adoption of a consistent working strategy for the field work and for data recording and management – for example under the first archaeological GIS project in Romania – and for the publication of research results.

Rescue and preventative surface archaeological research conducted to date, between 2001 - 2007 includes:

- during the archaeological campaign of 2001 extensive rescue archaeological investigations were conducted in the areas of identified archaeological potential in Rosia Montana area, in points located on Carpeni Hill, Nanului Valley, the Hop-Gauri, Habad and Tau Tapului areas, Cetate Mountain, as well as pereigesis research along Corna Valley;
- during the archaeological campaign of 2002 extensive rescue archaeological investigations were conducted in the areas of identified important potential in Rosia Montana area, in points located on Carpeni Hill, Tau Gauri, the Hop-Gauri area, Carnic Mountain, Gura Rosiei area, the entire Corna Valley and Salistei Valley;
- during the archaeological campaign of 2003 rescue archaeological research was conducted in the areas of identified archaeological potential in Rosia Montana area, in points located on Carpeni Hill, the Tau Gauri area, the Jig-Vadoaia Mountain, Tarina area and the Gura Minei-Balmosesti area;
- during the archaeological campaign of 2004 extensive preventive archaeological research was conducted in the areas of identified archaeological potential in Rosia Montana area, in points located in the Jig-Piciorag area, Tarina area – further research of the Roman incineration necropolis identified during the 2003 campaign, the Parau Porcului – Tau Secuilor area and Tau Anghel area.
- during the archaeological campaign of 2005 preventive archaeological research was conducted in the areas of identified archaeological potential in Rosia Montana area, in points located in the Tarina area – further research of the Roman incineration necropolis identified during the 2003 campaign, the Parau Porcului – Tau Secuilor area further research of the
Roman incineration necropolis identified during the 2004 campaign.

- during the archaeological campaign of 2006, archaeological research continued in the the Parau Porcului – Tau Secuilor area further research of the Roman incineration necropolis identified during the previous campaigns.
- during the archaeological campaign of 2007, a preliminary field assessment of the Orlea area was conducted on all the surface areas not covered by landfills.

Based on the rescue and preventive archaeological research conducted on the archaeological sites in the Rosia Montana area during 200 – 2005, as they were defined, a number of considerations could be formulated in regard to their state of conservation.

They are summarised in Table No. 1.

<table>
<thead>
<tr>
<th>No.</th>
<th>Site name</th>
<th>Evaluation of the state of conservation</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gauri - Hop - Hâbad - Tau Tapului</td>
<td>The site is strongly affected by constant mining. To the east and south, the site was severely impacted by the opening of the Cetate pit and the development of the associated infrastructure. To the south-west and west, in the Tau Gauri and Tau Tapului area, some hydrotechnical works of the Habsburg Era are worth mentioning. Agricultural work undertaken on private properties in the area also affected the archaeological relics.</td>
</tr>
<tr>
<td>2</td>
<td>Valea Nanului</td>
<td>Poor state of conservation, the site severely impacted by constant mining activities and the implementation of primary ore processing during the modern age. Agricultural work undertaken on private properties in the area also affected the archaeological relics.</td>
</tr>
<tr>
<td>3</td>
<td>Carpeni</td>
<td>Overall, the site is in average conservation condition. On the surface, the site was partly affected in the north by the building of the local sports arena and of a residential block. Also the site integrity must have been affected in the ESE by the quarry roads associated to the Cetate pit. Currently the site is partly covered by forest. Underground, the mining sector of Paru Carpeni is relatively well preserved, but the ancient site integrity was significantly disturbed by modern and contemporary re-mining.</td>
</tr>
<tr>
<td>4</td>
<td>Cârnic Massif</td>
<td>Poor state of conservation, the site severely impacted by constant mining activities and the implementation of primary ore processing during the modern age. The opening of the open cast mine of the Romanian State in the 1970’s affected the surface area of the site on the northern, western and southern slopes. Underground, there is a whole labyrinth of modern day galleries (cf. the Pošepny map of 1868), remine adn expanded in the 20th c – especially the rectangular distribution gallery horizon, mined between 1960-1980, ranging between the base level at Sf. Cruce (level +714) all the way below the Cârnic massif (horizon +1046). Mining archaeology research has revealed a concentration of ancient mining works</td>
</tr>
</tbody>
</table>
near the southern slope, the one that dominates Corna village, in the sector named Reteaua Mare and east, the Piatra Corbului sector. Most of the ancient works in Carnic hill were subjected to large scale modern mining operations that have defaced, fragmented, or completely destroyed them. Overall, the complex, consisting of seven ancient networks, and named Reteaua Mare, the mining relics are largely in a relatively good state of conservation from the point of view of mining archaeological research objectives, however, they are distributed in a rather fragmentary pattern. More specifically, most of the old works have been revisited and partly re-operated by a succession of miners for centuries since. Therefore, many of the old works are partly defaced by modern endeavours involving explosives as of the 17th century, the time when European mines witnessed the introduction of blasting technologies. As a result, the general layout of the ancient works may only be reconstructed based on the vestigial ancient walls, still preserved on the ceiling or under the footprint of the works.

The Piatra Corbului sector hosts Roman operation sites dug by fire, extraordinary relics, impressive in their huge size, but partly destroyed by large scale modern remining.

<table>
<thead>
<tr>
<th>5</th>
<th>Cetate Massif</th>
<th>Gravely affected by the Cetate mine of Rosia Montana mining operation, opened in 1970, the site of the open cast Roman mines named the “Roman Courts” was practically totally destroyed.</th>
</tr>
</thead>
<tbody>
<tr>
<td>6</td>
<td>Roşia Montană Historic Area</td>
<td>Surface relics of he ancient and mediacval ages are overlain by the historic centre of the locality, built in late 18th c. Underground, there is a historic gallery network where, in 1785-1855, many of the wax tablets were found. Currently, this historic gallery network is in good conservation state, but relatively difficult to access due to collapse of old mine openings and the plugging and flooding of the galleries.</td>
</tr>
<tr>
<td>7</td>
<td>Jig – Vaidoaia Massif</td>
<td>Poor state of conservation, the site severely impacted by constant mining activities and the implementation of primary ore processing during the modern age. Agricultural work undertaken on private properties in the area also affected the archaeological relics. It is worth noting, though, that in the eastern part of the site, in Vadoaia massif, there are relatively well preserved traces of Roman and middle age open cast mines.</td>
</tr>
<tr>
<td>8</td>
<td>Tarina</td>
<td>Poor state of conservation, the site severely impacted by constant mining activities and the implementation of a residential area and some primary ore processing facilities during the modern age. Agricultural work</td>
</tr>
</tbody>
</table>
undertaken on private properties in the area also affected the archaeological relics. Underground, there is a whole labyrinth of galleries with parts dating back to the Roman Age, but mostly consisting of modern day operations (cf. the Pošepny map of 1868), re-mined and expanded in the 20th c. On older mining plans and maps of the 19th and 20th c, the Tarina sector always appears to be the most heavily mined.

<table>
<thead>
<tr>
<th></th>
<th><strong>Orlea Massif</strong></th>
<th>Poor state of conservation, the site severely impacted by constant mining activities and the implementation of a residential area and some primary ore processing facilities during the modern age. Agricultural work undertaken on private properties in the area also affected the archaeological relics. A significant part of the site area is covered by old waste rock piles, partly re-vegetated, partly exposed and intensely ravined. Underground, there is a whole labyrinth of galleries with parts dating back to the Roman Age, but mostly consisting of modern day operations (cf. the Pošepny map of 1868), re-mined and expanded in the 20th c. Some of the ancient woks complexes no longer show more than bits of works disfigured by intensive modern re-mining and/or by slides and cuts.</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td><strong>Pârâul Porcului - Taul Secuilor</strong></td>
<td>Overall, the site is in average conservation condition. The integrity of the archaeological site within the complex was partly affected by construction works and the superelevation of Tau Secuilor. Thus, the whole initial configuration of the area suffered anthropogenic intervention generated by: modern-day building of Tăul Secuilor reservoir and canal system connected to it; development of the country road connecting the Țarina area to the households of the hilly region around Tăul Secuilor (the road actually crosses the incineration necropolis and impinges on number of funerary complexes); the recent a câtorva gosdevelopment of some household units with out buildings or stables; building the water supply mains in the 1990’s. Agricultural work undertaken on private properties in the area also affected the archaeological relics.</td>
</tr>
<tr>
<td>10</td>
<td><strong>Valea Cornei</strong></td>
<td>Overall, the site is in average conservation condition.</td>
</tr>
<tr>
<td>11</td>
<td><strong>Taul Cornei - Corna Sat</strong></td>
<td>Overall, the site is in average conservation condition. It is worth noting that the Roman incineration necropolis area was affected by construction and maintenance work at the artificial lake known to be of the 18th c and, during the 20th c, by the small farms and gardens of various landowners.</td>
</tr>
<tr>
<td>12</td>
<td><strong>Balmosesti</strong></td>
<td>Overall, the site is in poor conservation condition.</td>
</tr>
</tbody>
</table>

Table No. 1. – State of conservation of the archaeological sites (surface and underground)
Before 2000, as only a few archaeological surveys had been conducted and the vast majority of information on the areas of archaeological potential came exclusively from chance finds, no definition of the archaeological sites of the Rosia Montana could be achieved. By corroborating the results of rescue and preventative archaeological research conducted on the site of Roșia Montană community during 2000–2005 with the data contained in the reference literature and archive studies 13 archaeological sites could be defined (Figure 1).
Figure 1 – Location of the main archaeological sites
All the detailed data regarding the archaeological sites are included in the *Rosia Montana Archaeological Heritage Management Plan*, Part I, of the EIA Report, while the table below shows the main finds and cultural resources associated to the surface and underground archaeological sites.

<table>
<thead>
<tr>
<th>No.</th>
<th>Site name</th>
<th>Main features and associated cultural resources</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Gauri - Hop - Hâbad - Taul Tapului</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Roman habitation elements at Hop-Botar, Hop-Gâuri, Hâbad şi Tâul Tapului</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Roman incineration necropolis at Hop an the circular funerary monument at Tâul Gâuri</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- sacred areas at Hâbad Brâdoaia and Vasinca</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ancient and medieval mining areas in Hâbad – La Studentu</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>In situ conservation and restoration of the circular funerary monument at Tau Gauri and its inclusion on a public tour.</strong></td>
</tr>
<tr>
<td>2</td>
<td>Valea Nanului</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- religious structures at Szekely, Tomuș, Drumuș, Dalea</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Drumuș – Szekely funerary area</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
</tr>
<tr>
<td>3</td>
<td>Carpeni</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- Roman Age public structures at Bisericuță ad Tomuș</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ancient habitation area and funerary area in the western sector of the site</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ancient mining system with drainage system at Pâru Carpeni</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>In situ conservation of the archaeological relics on Carpeni hill and Pâru Carpeni mining sector</strong></td>
</tr>
<tr>
<td>4</td>
<td>Cârnic Massif</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- ancient gallery system “Reteaua Mare” on the southern slope</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- mining areas in the Piatra Corblui sector</td>
</tr>
<tr>
<td></td>
<td></td>
<td>- medieval and modern gallery system</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>In situ conservation of the archaeological relics in the Piatra Corblui area</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>3D model of the mines in Carnic Massif</strong></td>
</tr>
<tr>
<td>5</td>
<td>Cetate Massif</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong></td>
</tr>
<tr>
<td></td>
<td></td>
<td>- mining areas in the Zeus and Gâuri sectors</td>
</tr>
<tr>
<td></td>
<td></td>
<td><strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
</tr>
<tr>
<td>6</td>
<td>Roșia Montană Historic Area</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong></td>
</tr>
<tr>
<td>Location</td>
<td>Research Details</td>
<td></td>
</tr>
<tr>
<td>---------------------------</td>
<td>----------------------------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td>- Catalina Monulesti gallery</td>
<td><strong>Movable and archaeological heritage assets found during archaeological research</strong>&lt;br&gt;<strong>In situ conservation of the complex formed by the historic galleries, ancient open cast mining areas and the development of a tourist centre correlated with the heritage assets defined by the historic monument buildings, industrial heritage assets and the Rosia Montana Historic Centre complex</strong></td>
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<tr>
<td>Jig – Vaidoaia Massif</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong>&lt;br&gt;- Roman incineration necropolis at Jig Piciorag&lt;br&gt;- ancient primary ore processing area at Jig-Piciorag&lt;br&gt;<strong>Movable and archaeological heritage assets found during archaeological research</strong>&lt;br&gt;<strong>Cultural landscape elements on the eastern side of Vaidoaia Massif</strong></td>
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<tr>
<td>Tarina</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong>&lt;br&gt;- Roman incineration necropolis at Țarina&lt;br&gt;- historic mines in the Țarina Massif (at the date this document was drafted, mining archaeology research in Țarina Massif were still in a preliminary stage)&lt;br&gt;<strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
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<tr>
<td>Orlea Massif</td>
<td><strong>The Mining Museum on the RosiaMin premises, including the Roman gallery at level +725 and the movable heritage assets of the open air display</strong>&lt;br&gt;<strong>NB:</strong> Preventive archaeological research conducted on the Orlea site to date, both at the surface and in the underground, are still preliminary, only providing data for a partial assessment of the cultural resources associated to the site, i.e. designation as an area of archaeological potential. Archaeological research is planned to continue in the next stage.</td>
<td></td>
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<tr>
<td>Pârâul Porcului - Taul Secuilor</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong>&lt;br&gt;- Roman incineration necropolis at Pârâul Porcului – Tâul Secuilor&lt;br&gt;<strong>Movable and archaeological heritage assets found during archaeological research</strong>&lt;br&gt;<strong>In situ conservation of the eastern sector of the Roman incineration necropolis – Tau Secuilor area</strong></td>
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<tr>
<td>Valea Cornei</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong>&lt;br&gt;- habitation and primary ore processing areas datable to the modern age&lt;br&gt;<strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
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<tr>
<td>Taul Cornei - Corna Sat</td>
<td><strong>Scientific results (recorded in the site archive) of the research of the following archaeological complexes:</strong>&lt;br&gt;- Roman incineration necropolis at Tâul Corna&lt;br&gt;- modern habitation area at Tâul Cartuș&lt;br&gt;<strong>Movable and archaeological heritage assets found during archaeological research</strong></td>
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Table No. 2 – List of the main sites and archaeological sites

4.1.2. The Underground Rescue and Preventive Archaeological Research (or Mining Archaeology) Project

The deployment of a mining archaeology programme on such a scale and at such extent is a first for Romanian archaeology, while the country still has no available expertise in this particular field of archaeology. Thus, between 1999 and 2007, a team under the scientific coordination of dr. Beatrice Cauuet from the TRACES Laboratory (Laboratoire des Travaux et Recherches Archéologiques sur les Cultures, les Espaces et les Sociétés), (formerly UTAH) and CNRS performed complex field research involving detailed ad complete topographical surveys and investigation of the mining gallery networks in the Rosia Montana massifs as follows:

- The Cetate Massif (1999-2003) – exhaustive study of all the accessible areas;
- The Carnic Massif (2000-2006) – exhaustive study of all the accessible areas;
- The Carnic Massif (2003-2004) – exhaustive study of all the accessible areas;
- The Jig-Văidoaia Massif (2003-2004) – exhaustive study of all the accessible areas;
- The massifs of Tarina and Orlea (2004–2007) – preliminary investigation; a series of further, more detailed works is scheduled for the date when the project review process is resumed;
- The massifs of Păru-Carpeni and Lety-Coș (2004–2006) – preliminary study of the galleries preserving the ancient wooden installations for mine water drainage, areas proposed for in situ conservation and tourism development;
- The Hăbad area (2001) – exhaustive study of all the accessible areas.

In all cases, the works included all the digital topographical measurements, archaeological measurements, manual archaeological digs and exhaustive data recording (text format, but also graphics), and digital information-based analysis, all performed at the highest standards of practice in mining archaeology.

As of 1999, the team from Toulouse University, specialists in mining archaeology, has provided the expertise and multi-disciplinary scientific study of the mining relics on the Rosia Montana site. This made possible a detailed investigation and mapping of the underground mining networks. By way of consequence, it could be established that there are about 7 km of galleries dating from the Roman Age, a number that totals all the works of this kind that have been identified and researched in all the massifs (all the mining sites in Rosia Montana) where research has been conducted to date and not as a consistent whole, considering the length of all the sections hosting vestiges of ancient mining, irrespective of their state of conservation, the scale of the modern and recent mining works and of how accessible the underground works currently are. The study of these structures therefore meant better knowledge and equally determined the scientific documentation for pertinent decision making in regard to their conservation and enhancement. Based on the results of research conducted to date (and finalized for Cetate, Carnic, Jig and ongoing in Orlea and Tarina, respectively), it was decided to preserve and enhance the following areas of old mining works:

- the Catalina Monulesti Gallery – located in the Historic Centre of Rosia Montana, where the most important cache of wax tablets and an ancient mine drainage system had been found in the past;
- mining sector Paru Carpeni – located in the south-eastern part of Orlea, where a multiple chamber mine water drainage system equipped with Roman wooden installations (wheels, channels, etc.) was discovered
- the Piatra Corbului area – located in the south-western part of Carnic, and preserving traces of fire and water mining operations of ancient and medieval age;
• the Jig-Vladoia area – north-west of Rosia Montana village, preserving areas of open cast mining dating back to the medieval and modern ages;

In regard to the old gallery sections in the southern part of Carnic mountain, after full investigation and considering the very difficult access to the site, the state of conservation of the relics, their nature and distribution, and the fact that such works have been known in other areas of the Rosia Montana site and other historic Roman mining sites of the ancient province of Dacia and neighbouring regions, it was considered that the area is too difficult to develop for public access. Considerable hardship was encountered in providing and maintaining safe access to these galleries, primarily by the specialists, and even more difficult and unfeasible the option appears to be in the event of arranging public access.

It is also worth mentioning that the works show fragmentary spatial distribution, as they are intersected by a wealth of later exploration and operation mining works, and sometimes can only be recognised by professionals based on traces on the walls, the bottom or the hearth of an ancient gallery, preserved within modern and contemporary mining works. In regard to the quantification of the length of ancient mining works on the mining sites of Rosia Montana, the EIA Report specifies the following numbers:

- 5 km in the Cetate and Cârnic massifs, of which more than 4 km in the Cârnic mountain (totalled discontinuous fragments);
- 0 km in Carnicel massif;
- non-specified in the Paru Carpeni sector (the research is still ongoing, and the area already designated for in situ conservation);
- non-specified in the Lety and Coş sectors (the research is still ongoing, and the area already designated for in situ conservation);
- 0.12 km in the Habad sector;
- 0 km in the Jig-Văidoaia sector;
- 1.5 km in the Țarina-Orlea sector (the research is still ongoing, and the Țarina area no pit is planned for the future);

An exact quantification of the mining sectors of Pâru-Carpeni, Lety Coş, is not yet available, as both sectors have been designated as protected areas, so that they will not be impacted by the mining project. The same status has been applied for Piatra Corbului sector in Carnic massif, a mining sector where ancient mining works dug out with fire, as well as with chisels and hammers, will be preserved in situ.
4.2. The Urbanism and Architecture Research Sub-Programme

As of 2001, S.C. OPUS – Atelier de arhitectură S.R.L., an architectural office based in Bucharest, have researched the architecture and urban structure of the localities making up Rosia Montana Commune, and developed a detailed set of record sheets of all the buildings, including historic buildings (known under the Romanian legislation as historic monuments) present in the area. Actually, between 2001-2002 OPUS improved and updated the preliminary documentation prepared by the Design Centre for National Cultural Heritage (after 2003 the National Institute for Historical Monuments, since 2009 integrated to the National Heritage Institute, Bucharest) and in 2000 prepared a study of the cultural landscape under the coordination of Dr. Anca Brătuleanu. It is also worth mentioning that the Protected Area of the Historic Centre, designated under endorsements (No. 61 of February 2002, and No. 178 of June 2002) issued for the General Masterplan for the Industrial Zone by the National Commission for Historic Monuments and the Ministry of Culture and Religions (now the Ministry of Culture and the National Heritage), is currently an object of study for the Zoning Plan-type urbanism documentation developed under the name of “Central Historical Zone of Rosia Montana, Zone Urbanism Plan, Protected Built-On Area” prepared at the initiative of the Local Council of Rosia Montana. Based on the recommendations made in the endorsements issued by the National Commission for Historic Monuments, the protected area has been extended from 53 hectares to more than 130 hectares (thus providing a buffer area necessary for the protection of the protected area proper) and includes 317 houses, of which thirty five classified as historic monuments, three churches, and the entrance to Catalina Monulesti mine, classified as a historic monument.

After 2006, architectural works, including expert studies and documentation for the restoration of historic monument buildings in Rosia Montana have been prepared and/or coordinated by S.C. GENERAL GAME S.R.L., Alba Iulia, with the restoration work (so far completed for house No. 325 and near completion and implementation of design documentation for another 9 buildings of the historic centre) being provided by S.C. GRUP CORINT S.A., Alba Iulia, the contractor permitted under the law to conduct restoration work on historic monuments and/or built-on protected areas. In the same respect, S.C. KAMOS S.R.L. has been working on developing expert documentation for historic monument restoration projects/detailed surveys, and the preparation of short-, medium- and long-term strategies and action plans, all the studies corroborated with the development of a project idea generated by S.C. BLIPSZ S.R.L. in regard to the architectural restoration and re-functionalisation of the buildings of the architectural front of the Historic Centre Square in Rosia Montana, proposed for the development of the new Mining Museum.

In regard to urban development and regulations, specialist studies have been developed and/or coordinated by S.C. ASAR GRUP S.A., Deva as of 2008 in the preparation of the PUZ-CP (Zoning Plan) for the Historic Centre of Rosia Montana.

According to the List of Historic Monuments published by the MCR in Official Monitor No. 646 bis, of 16.07.2004, 41 buildings in Rosia Montana have been classified as historical monuments to date, i.e. two churches and 39 houses (HML 2004 code: AB-II-s-B-00269, and then from AB-II-m-B-00271 to AB-II-m-B-00311). These include traditional residential houses of the 19th-20th c. that have been preserved — in their great majority, i.e. 35 buildings — in the complex of the Historic Centre Protected Area of Rosia Montana, as well as the Unitarian and Reformed Churches. All this quasi-urban ensemble preserves the historic image of the settlement of Rosia Montana, closely related to gold mining, throughout three significant periods in defining cultural landscape: antiquity, characterized by the Roman mine system, the Middle Ages, represented by traditional mining, and the modern and contemporary age, characterized by technological impetus and the expansion of previous mining areas.

We need to remember that in the general drafting of cultural heritage management plans for Roşia Montană area, consideration was also given to the conclusions formulated by S.C. OPUS – Atelier de arhitectură S.R.L. that were submitted as document „Additional documentation for the Urban Master Plan Roşia Montană; Study in Restructuring the Historical Center of Roşia Montană”, approved by MCR in 2002.
4.3. The Ethnographical Research Sub-Programme

Between 2001 – 2004, a combined team of the “Dimitrie Gusti” National Village Museum, Bucharest and the Centre for Cultural Training, Lifelong Education and Management, Bucharest conducted field ethnographical research in the area of Rosia Montana, Corna, and Bucium. The results this research have been published a volume (P. Popoiu, 2004), to be followed by two more volumes planned for publication in the next few years. This ethnographical field research included a site visit, coupled with the study and publication of a comprehensive set of information regarding the occupations, customs and traditions of Rosia Montana area. The study also included demographical studies and studies of the house structure, vernacular architecture, types and forms of housing, traditional occupations and tools, traditional skills, aspects of spiritual life, as well as a range of considerations on potential impacts generated by the reopening of the gold mine.

4.4. The Oral History Research Sub-Programme

This type of research was conducted equally by the Oral History Centre of the National Radio Company (SRR), in the perspective of historian Silvia Angelescu (2001–2002) and by a larger team of the Centre for Cultural Training, Lifelong Education and Management, Bucharest coordinated by Dr. Georgeta Stoica, Dr. Paula Popoiu, Dr. Doina Işănioni and Mircea Dumitrescu (2001–2002). Thus, an audio archive of interviews conducted with local people from Rosia Montana, Corna and Bucium, as an unedited resource for studying the oral history of these communities by reconstructing their memory out of a whole range of individual testimonies of respondents of wide ranging socio-professional backgrounds.

4.5. The Church and Cemetery Inventory and Records Project

Between 2000-2001 CPPCN and later, in 2001-2002, OPUS produced an investigation of architecture and brief history of each church in Roşia Montană and Corna. In parallel, for the inventory of movable assets, paintings and other church ornaments in Rosia Montana and Corna, RMGC commissioned an independent company to prepare documentation of this kind for each individual church. Thus, S.C. Construction Projects Services S.A. (CPS) performed this activity and then published an independent report (B. Wilson, 2003). Coupled to these processes, there have been a number of other works that RMGC have publicly committed to undertake under the proposed industrial project.

In implementing the mining project, RMGC neither wants nor intends to destroy churches, monuments or cemeteries. On the other hand, the RMGC principle is not to provide economic benefits (jobs, high living standards, etc.) and ask the community to forsake its cultural and moral values. The Company believe that economic development does not have to be counterbalanced by spiritual life and traditional values.

Based on these principles, of the total of 10 churches and prayer houses included in the villages of Rosia Montana and Corna, only two churches and the two meeting houses in Corna will be affected. None of these structures was classified as a historic monument. Thus, all the possible options have been considered to date and, where it was proven feasible and necessary, the location of industrial facilities has been changed so as to minimize the impact on churches and cemeteries. For the two churches that will be decommissioned, a number of impact minimization measures will be applied, including preventative archaeological research of their sites, and the development of a detailed inventory of all the religious objects in view of relocation under the religious customs.
The churches, along with the other historic monuments of Rosia Montana will be included into a complex restoration programme.

**Note:**

*All the sites mentioned in section 4 are indicated on the map documentation attached to the PPDI. In a first stage, all these areas will be clearly marked and labelled. This is absolutely necessary in order to indicate very clearly that no building works or operations may be undertaken in the absence of archaeological experts, the only people legally empowered to conclude that all the necessary measures have been taken in order to ensure the safeguarding of archaeological heritage assets and adequately record the data and characteristics thereof. Such special care sites will be surrounded by specific buffer areas, as soon as the inception of the construction phase of the mining project, specifically to ensure that the staff discharging archaeological responsibilities can do so in good conditions, should their presence be required. The Operational Manuals for the implementation of the PPDI in surface and underground sites will include specific procedures for the signage of areas of archaeological interest and the ways in which they will be accessible to the conduct of mine construction and operational works.*

The Protocol for Chance Finds (PPDI) represents a new approach to the archaeological heritage protection policies applicable in Romania today. The process of developing such a strategic document takes into consideration all the management plans drafted under the EIA Report, referring to various specialist practices and measures currently operating within the EU environmental impact assessment procedure. From a legislative point of view, such an approach is on the one hand part of a category of expertise commonly known as archaeological *watching brief* – a type of archaeological work stated in the national and other Member State legislation – an on the other hand part of a more general practice associated to the modern archaeological management methods, i.e. management of chance finds, an integral part of specific measures stated under a EIA-type process (see, for example, the operational policy package of the World Bank on tangible cultural resources).

As already stated in the introduction to this document, the PPDI contains 4 specific sections, as follows:

- **Part I** includes general data and information that define the need to adopt it, the guiding principles and the scope of application, as well as the goal and objectives of the PPDI in relation to the Rosia Montana mining project;

- **Part II** a specific section on the *Operational Manual for the Implementation of the PPDI in Open Areas within the Footprint of Rosia Montana Mining Project* (a document to be developed at the end of the project permitting procedure under the EIA);

- **Part III** a specific section on the *Operational Manual for the Implementation of the PPDI in Underground Areas within the Footprint of Rosia Montana Mining Project* (a document to be developed at the end of the project permitting procedure under the EIA);

- **Part IV** – contains annexes with maps and drawings, references, including a list of the main legislative regulations and good practice in the EU and Romania.

Thus, the PPDI aims to formulate and implement a programme devolving from the archaeological research conducted at Rosia Montana during 2000-2005 in the preparation of the EIA documentation. Recognising that the mining project they propose has the potential to generate an impact on the archaeological heritage of the Rosia Montana area, RMGC have publicly committed to adopt concrete mitigation measures. Thus, in a first stage, it funded rescue and preventive archaeological works under the PNC – AM according to the legal provisions, and later decided to go for an extensive involvement in the direction of sustainable development and requested additional expert studies to ensure that the impact on archaeological relics should be minimised in the context of developing the mining project. Thus, the PPDI is the result of cooperation between specialists in Romania, France and the UK, an operational document aimed to strike a fair balance between all the stakeholders in relation to the mineral and cultural
resources of Rosia Montana area.

By way of consequence, it is expected that the PPDI implementation within the footprint of Rosia Montana mining project will be considered to be a pro-active impact mitigation measure in relation to the relics of the relevant area, as a subsequent phase of the initial rescue and preventive archaeological research already conducted in most areas of potential archaeological value previously defined in Rosia Montana area.

PPDI implementation is part of a “safeguard through study” approach, aiming equally to recover – by specific investigation means and skills – all the artefacts that might be found during mine construction and operations works, to record in an exact and detailed manner the archaeological context from which they originate, potential associated structures, and to draft professional reports and build a research archive and extend movable archaeological asset collections from this area, respectively. Not least, by developing and implementing the PPDI and the related Operations Manuals, the aim is to provide diversified dissemination of the new scientific information – among both the academic environment and the public at large – and enhancement of such finds.

The key purpose of the PPDI is to provide the methodological and operational framework as well as the best measures to identify, define, research and record all the archaeological relics and artefacts that might still exist within the footprint of Rosia Montana mining project, thus contributing to their safeguarding according to the best archaeological practice standards of several EU countries, and also causing minimal disturbance of the mine construction and operation plans and of the associated infrastructure.

The development of a PPDI and associated operations manuals is necessary for the harmonisation of two major directions of action involving, on the one hand, the protection of the archaeological heritage, and on the other hand the declared intention of developing the mining project. The current common practice in EU Member States in such cases is to consider a number of key principles defining the two areas of concern. The PPDI therefore targets the following:

- archaeological resources are a finite and non-renewable resource and may emerge practically anywhere, often being fragile and vulnerable to impact or destruction;
- archaeological resources do not have a generally valid and equal significance, there are various assessment criteria and methods to determine their characteristics and importance, but they may not always be exclusively determined by non-destructive methods, requiring proper investigation of the archaeological relics and implicitly the destruction of the “archaeological deposit”;
- mineral resources, including gold and silver, of course, are necessary in the general development context of our society, contributing to the constant infrastructure modernisation and improvement of the quality of life;
- mineral resources are finite, non-renewable resources that exist and can be extracted from a number of sites of certain geological and geographical conditions; development of mining projects must consider, however, that such a process involves acceptable commercial risks;
- both the management of the archaeological heritage and extraction activities are conducted based on national and international regulations, and good practice codes, respectively;
- in establishing their importance, both archaeological and mineral resources require the performance of assessment studies;
- there is an intrinsic conflicting positioning between public interest related to the protection of archaeological assets and the private interest of extracting mineral resources;
- the permitting system for a mining project as provided by the legislation aims to establish a practical reconciliation between the specific needs of protecting the archaeological heritage and those of mining development.

Implementation of the PPDI and associated Operations Manuals will involve a number of specific works (on both surface and underground sites) to achieve:

- a preliminary definition of the archaeological surveillance sites in relation to the mine construction and operations works, i.e. correlation between their scheduling and marking in the field (see Map 1-8)
• the production of GPR and/or LIDAR-type geophysical surveys (to identify potential underground voids);
• periegesis (field-walking) –type investigation of the sites already marked in the field;
• mechanical surveys (coring and/or sampling –type investigation);
• the production of evaluation reports on the archaeological surveillance sites;
• the archaeological surveillance of the construction/operation works;
• a precise definition of areas with potential incidence of archaeological relics;
• rescue archaeological research on the sites where archaeological chance finds occur;
• development of technical archaeological reports on the removal of relics from those sites and he issuance of subsequent notifications to continue construction/operation works.

Therefore, the various archaeological actions will be conducted in one specific area or site, on the surface or underground, individually or in parallel, wherever here is a possibility that the archaeological resources might be disturbed or destroyed. Figure 2 shows the entire area of relevance for the implementation of the PPDI, particularly identifying, by the “red line”, the footprint of the industrial area considered for the development of the Rosia Montana mining project. This is a clear commitment to including all this area under the Protocol for Chance Finds. In the same respect and considering all the archaeological data known to date, and the implementation plans for the mining project, a number of maps have been prepared in order to facilitate a preliminary understanding of potential risks related to it (Maps 1 – 8). In regard to the need to correlate the PPDI with the stages of the mining project, consideration should be given to the study of the detailed industrial operations on plates 2.8, 2.3 – 2.7 taken from the EIA documentation. Therefore, the PPDI and Operations Manuals implementation schedule will lead to the development of specialist technical reports (archaeological assessment and rescue research), as part of a future archive that needs to be well designed and organised. One of the main objectives of such complex archaeological surveillance procedure is to establish and provide data in regard to the archaeological resources potentially present on a site.

All the measures planned to be adopted and implemented under the PPDI and associated Operations Manuals have to be:

• necessary for the protection of the archaeological heritage, in the application of the “rescue by study” principle;
• relevant compliant with the best practice stands applicable in the EU;
• applicable over a well quantified timeline and at affordable cost;
• well defined and precise
• reasonable in relation to other objective limitations under the permits issued to the mining project.
Based on the above, the main objectives of the *Protocol for Chance Finds* are to:

- give the possibility, depending on the limitations associated to each site, to rescue the archaeological relics by identification and research, or by recording the scientific data, respectively, where the nature and presence of such relics could not be established (or could not be defined in a professionally relevant way) prior to the implementation of construction or operation works or of other potentially destructive/disturbing works, for a range of objective reasons;

- allow the archaeologist participating in archaeological surveillance or rescue research, when required by the situation in the field, to notify in an efficient and effective manner – under a clearly established procedure – all the stakeholders on the independent archaeological team and the Heritage Department of the RMGC of the chance find of archaeological relics/artefacts and of the need to temporarily stop construction/operations work so as to be able to adopt and implement with celerity all the measures aimed to avoid the irreversible destruction of such find and to help rescue it by study in satisfactory conditions and as provided by the relevant professional standards, or recover the artefact, respectively;

- resume construction/operations work that has been temporarily stopped in a certain area only after the completion of archaeological rescue works aimed to prevent any irreversible loss of archaeological heritage assets.

The *Protocol for Chance Finds* derives from the analysis of the EIA Report and details the Company commitments regarding the adequate identification/research/capitalisation - for scientific purposes, but also in the public interest – of the archaeological relics found by chance by the archaeologist teams providing the professional expertise in the monitoring of topsoil stripping works and any other works performed in the mining project construction or operation in the areas identified as having potential risk of incidence of archaeological chance finds.
The **Chance Find Protocol** will be guided by the following principles:

- establish well defined monitoring procedures for the identification of archaeological relics potentially still present on the surface and underground;
- organise practical training, need awareness rising, and minimal skill development sessions for the non-archaeological staff;
- prompt assessment by specialists of the characteristics and significance of the archaeological relics/objects when they are found by chance;
- research and adequately record chance finds, considering the work schedule for mine construction and operation, as provided in the Project permits;
- efficient and transparent internal and external communication on chance finds, that might occur during mine construction and operation works;
- define a viable procedure for the management of chance finds;
- report non-compliant situations and immediately adopt corrective and preventive action;
- legislative compliance with the legal norms and best practice standards applicable at the national and EU level.

PPDI implementation will be objectively conditional on the following:

- most sites with confirmed archaeological potential within the mining project footprint have been subjected to the archaeological burden discharge procedure, while others have been designated as archaeological reserves, therefore archaeological surveillance is a complementary measure;
- not all the areas of archaeological interest have been fully accessible to research during 2000-2007, for a number of objective reasons;
- a preliminary series of potential risk maps has been developed for the incidence of chance finds, based on the data and information generated by the rescue and preventive archaeological research conducted during 2001–2007;
- in all the potential chance find risk areas, the necessary measures for the rescue of the archaeological heritage will be exclusively adopted based on the technical expert report of the archaeologist/research team of the independent archaeologist team including representatives of various professional institutions participating in the implementation of the PNC – AM.

The practical approach including the specific procedures and measures to be applied in the management of chance finds will depend, as applicable, on the nature and importance of the find. All chance finds may require rescue archaeological research, and based on the results thereof, may document the necessary decisions, under the law, and in compliance with the preliminary report. Assessment note drafted by the specialist teams providing the archaeological monitoring of mine construction/operation works.

As part of the implementation of the PPDI and associated Operations Manuals, a number of sub-programmes will be established for the identification, research and recording of archaeological chance finds, as well as for the archives custody, relocation, conservation and storage of the archaeological finds. While a first set of such sub-programmes will only be operational during the mine construction and operations stages, a second set of sub-programmes will continue for the duration of the Project lifetime.

The organisational structure in charge with implementing and running the PPDI and associated Operations Manuals includes:

- the independent archaeologist team (including the independent archaeologist teams) for surface and underground sites made up of archaeological staff registered with the Archaeologist Register of Romania, working for the institutions participating in the implementation of the PNC – AM or other relevant professional institutions.
- the specialist staff of the RMGC Heritage Department.

In implementing the PPDI, RMGC will enter into archaeological service contracts with the partner institutions of the PNC – AM or other relevant institutions, observing the rights of the participating
archaeologists under the Rules for Archaeological Digs in Romania and allowing them to sub-contract such works with third parties of recognised experience in the field.

As general procedure, the independent archaeological team, in collaboration with the appointed representatives of the RMGC Heritage Department, will report on the state of works done under the implementation of the PPDI and associated Operations Manuals to the Company management and will promptly be accountable for an efficient management of chance find situations involving relics or artefacts and, as necessary, will issue notifications of temporary work stoppage should additional archaeological research or asset relocation activities be called for. Should the need arise for conducting additional rescue archaeological works, a well defined schedule will have to be established by consultation and agreement of all the stakeholders (the independent archaeological team, the company representatives, the representatives of central and/or local authorities with legal responsibilities in the protection of the archaeological heritage). The entire procedure will be monitored, following the legal procedures, by representatives of the central public administration, is deconcentrated public services and/or subordinated specialist institutions and the local government authorities with specific competencies in protecting the archaeological heritage.

Preliminary details on the Protocol for Chance Finds are given in Section 4.4.10 of Chapter 4.9 - Cultural and Ethnic Conditions – Cultural Heritage, describing the framework content of the Protocol for Chance Finds, which is also included in ad annex to the Cultural Heritage Management Plan (Part 1 – 3).
PART II – GENERAL PRINCIPLES IN DEVELOPING AN OPERATIONS MANUAL FOR PPDI IMPLEMENTATION ON SURFACE SITES

Considering the nature and characteristics of the archaeological site in question, the working approach and digging techniques will be adapted and structures according to the main stages of the archaeological surveillance project, or rescue archaeological research, respectively, i.e. field assessment (also known as detailed diagnosis), field rescue research proper – with the two distinctive components of archaeological surveillance and rescue archaeological research at the time of chance finds of structures/artefacts that could not be previously identified – and the post-dig analysis.

In common practice, assessment (both theoretical and on-site) under the archaeological surveillance procedure is a key stage of a rescue archaeological investigation, that may complement preventive archaeological research and precedes by some time the initiation proper of construction/operations work associated to an industrial infrastructure (mining) project, so that later interruption due to chance finds of archaeological relics might be avoided. Together with preventive archaeological research, archaeological diagnosis is – in general – an efficient way of obtaining – by means of both intrusive and non-intrusive approaches – precise data to confirm or disprove that the land that is to be impacted by future construction/operation works still has potential to contain or not vestiges of human activities of archaeological interest dating from more or less distant ages. As a consequence, the main purpose of a detailed archaeological diagnosis – achieved by both intrusive and non-intrusive methods – is to detect, characterise, circumscribe and date potential archaeological relics by defining sampling areas (for specialist works of the coring or sampling type) or by GPR/LIDAR-type investigations.

Of course, by implementing the PPDI and its associated Operations Manual for surface sites, the whole set of existing historical and archaeological data resulted from the implementation of the preventive archaeological research project under the PNC – AM will have to be reassessed for the relevant area. Also, there will be an analysis of recent and archive aerial photographs, and satellite imagery, a process coupled with the procurement of new information resources of this kind. In the end, all these detailed data will have to be correlated with the available historic and contemporary maps of this site, in order to identify the changes of landscape emerged in recent decades, and establish the detailed local topography, in order to provide a preliminary outline of the areas suspected of archaeological potential that had not previously been fully accessible to preventive archaeological research during 2001 – 2007 (see Plate 4a).

For the sites where diagnosis and surveillance work will lead to certain identification of archaeological relics no previously known, or the chance find of such elements, the second stage of specialist archaeological works will be required, i.e. rescue archaeological research under the save by study practice.

The following will briefly introduce a number of considerations on the working approach that will be used – at various stages – in the research of potential targeted objects.

The research methodology will consider, on the one hand, the site characteristics (surface – underground), the diversity of field experience among the members of the independent archaeological team, but it will be implemented under a consistent approach, compatible to the relevant best practice standards, and aiming to ensure – in a clearly defined timeline agreed by the stakeholders – the recovery - by specific investigation means and techniques – of all the artefacts that might be found during mine construction and operations work, as well as the exact and detailed recording of the original archaeological context, of the potentially associated structures, or the extension of movable archaeological asset collections from the respective area. Of course, the research approach will be influenced by a number of objective factors, but ultimately it will ensure that no irreversible loss or destruction of the archaeological heritage will occur during the construction/operation works.

In such circumstances, in the first stage, the process will focus, on the one hand, on the surface research (field walking) combined with various intrusive and non-intrusive investigation methods in all the areas where there is indication of a potential presence of previously unknown archaeological relics and, on the other hand, on the surveillance of construction/operation works over the entire footprint of the mining
For a detailed on site diagnosis, mechanical means (specially equipped excavators) will be required to perform, under archaeological supervision, sampling surveys based on a preliminary design pattern, in relation to the major topographical landmarks of various industrial infrastructure elements that will need to be built/operated. The main outcome to be provided by such surveys – only in the areas where GPR / LIDAR-type investigation or field walking have not previously identified the presence of potential structures beneath the topsoil – will be to establish the presence or absence of human traces of archaeological relevance. In some situations, the surveys may aim to establish the boundaries of areas of rescue archaeological interest. For all the surveys performed, the characteristics and observations will be recorded on a standard data sheet, and the preliminary documentation will be supplemented by digital photographs. The location and sizes of such surveys will also be recorded in topographical format.

When areas of certain archaeological interest are identified, or for any chance find of archaeological relics – of course, taking into account the preliminary stratigraphical observations and the deadlines mutually agreed by all the stakeholders - mechanical soil stripping will be undertaken with two types of excavators, of different sizes, both with toothless (smooth) cups, to allow sufficient accuracy in the stripping to identify and define the archaeological complexes. Soil stripping will be done – in general - in asymmetrical passes, about 10 cm deep in areas with no indication of the presence of archaeological relics immediately beneath the topsoil or in narrower passes in areas where potential relics (previously identified by non-intrusive methods) are located very close to the soil surface.

After soil stripping, in order to establish the complex boundaries, manual scraping will continue and complex logos will be assigned, and a preliminary description will be provided. Once defined, the complexes will be photographed in various stages of the rescue investigation, then drawn on a scale of 1/20, except for specific details recorded on a scale of 1/10. At the same time, the complex coordinates will be surveyed in relation to their location on the general layout. Sections will be defined as necessary. Considering that the results of preventive archaeological research under the PNC – AM of the 1001-1007, it is expected that there will be types of complexes already known and researched, as the members of the archaeological team have already gained a good understanding and practical experience for studying them adequately over a well defined period of time, based on the complexity of each separate find. Thus, once the archaeological relics have been well outlined and defined, manual digs will proceed in parallel with detailed recording – differentiated by potential habitation or funerary structures – of thei context and characteristics.

Detailed information regarding the strategy, methodology and working procedure of the independent archaeological team an of the specific requirements for the non-archaeological staff will be included in the Operations Manual on PPDI implementation on surface sites,

The following presents a number of issues and general principles the consider in developing such documentation upon completion of the permitting procedure for the mining project.

6. PRELIMINARY PRINCIPLES AND NORMS IN REGARDING SURFACE CHANCE FINDS

An independent archaeological team will be established in the implementation of the PPDI for surface sites, to include archaeologists working for the previous partner institutions under the PNC-Am and others, or cooperating with them, that have recognised professional competence and experience in the field. Specialist archaeological work conducted in implementing the PPDI and related professional expertise will be secured under service contracts concluded between the above institutions and the Company, with scientific coordination provided by the National History Museum of Romania. The RMGC Heritage Department will provide the necessary logistics for such works (equipment, transport, labour, accommodation, office and storage spaces, etc.) for the independent archaeological team and provide the communication interface for the Company.
Thus, the RMGC Heritage Department will cooperate directly with the independent archaeological team for surface sites, to include teams of archaeologists working for the institutions empowered under the law (whether or not partners under the PNC-AM) to monitor the technical construction/operation works associated to the mining project. This document (the PPDI) has identified and developed a number of risk maps (Map 1 – 8) for surface sites and creates a framework for the subsequent development of operational maps for each archaeological sub-programme, indicating precisely the area in which it will the Protocol or Chance Finds will be implemented. These maps, detailed based on the development plans for the industrial project, in both the construction and the operational stages, were published in the EIA Report as part of the chapter dealing with the industrial processes (Plate 2.8, 2.3–2.7, of the EIA) and will be adapted to the specific recording needs identified by the independent archaeological team.

Therefore, based on the preliminary map documentation developed for the PPDI, the RMGC Heritage Department, the topographical survey service of the Company and the independent archaeological team will cooperate in developing additional sets of detailed maps for surface areas directly associated to the mine construction and operation plans, so that the PPDI may be implemented with maximum accuracy. Once developed and agreed upon by all the stakeholders, these maps will be made available free of charge to the independent archaeological team, and become the reference map support for the consistent recording of all the chance finds that might occur.

Project development activities that may have an impact on potential unknown archaeological resources relate to quarry operation, road and other industrial infrastructure building works (dams, process plant), topsoil stripping. Topsoil stripping required for the preparation of the waste rock landfills, TMF, and other industrial facilities, will be based on specific archaeological surveillance and rescue research procedures (of the save by study type) aiming to ensure adequate management of such issues, so as to prevent any loss or destruction of archaeological relics potentially unknown to date.

At the start of the archaeological works proposed under the PPDI, the entire industrial/operational area previously investigated under the PNC – AM (see Section 4 above) for which the archaeological burden discharge procedure has been followed under the law, will be subject to the Protocol for Chance Finds (see Fig. 1 and Map 01) and will be coloured in RED (as areas where archaeological research has already been conducted and that have been described during the EIA). In practice, all the industrial works that might in any way affect natural sedimentation that are located in sectors where archaeological structures have been identified and researched before (see CCA 2000–2007, AM I–III) will be done under the strict supervision of the independent archaeological team, as part of the monitoring process.

Should any human structure of the ancient, medieval, modern or pre-industrial times be identified in such areas, based on the documented decision of the independent archaeological team, the mining operations manager will enforce temporary suspension of any activity in that sector until the rescue archaeological research works have been finalised.

During such works, the areas will be coloured in YELLOW (initially, they will form the buffer zones around the sites coloured in RED) which will mean that industrial works may only be conducted here under strict archaeological supervision.

Areas coloured in YELLOW will be designated as protection zones around the sites where archaeological research has identified ancient, medieval, modern or contemporary human structures, extension of such areas being determined from the archaeological data obtained in the research programme, from multi-disciplinary analyses, from aero-photo interpretation and not least from the micro-morphology of the area corroborated with other types of relevant indications at the time the works are performed.

Should any human structure of archaeological interest be identified in such areas, based on the decision of the independent archaeological team, the mining operations manager will enforce temporary suspension of any activity in that sector until the rescue archaeological research works have been finalised. Throughout this time, the area will be temporarily coloured in RED.

The industrial operations manager will issue an order/notification to stop industrial works and relocate such earth moving/construction/operational activities outside such areas, in order to prevent unintended risks to the integrity of the archaeological relics and facilitate access to the archaeological research teams.

Once archaeological research work has been finalised, the colour for such sites may be changed back to YELLOW, which will allow the implementation of industrial works under strict archaeological supervision.
If the construction/operation area is considered by the independent archaeological team to be sufficiently assessed in advance, and the realities on site do not require additional monitoring, then such sites will be coloured in **GREEN**, a colour used for all the areas within the industrial footprint that were investigated during 2001-2006 and where the archaeological burden discharge procedure was followed and established that they are currently known to be free of archaeological relics.

The professional groups on the independent archaeological team will provide supervision of construction works in these sectors as well, and wherever necessary, may request, based on documentation, a temporary stoppage of works until archaeological investigation is completed.

**The Protocol for Chance Finds in Topsoil Stripping**

Most chance finds occur in the topsoil or immediately beneath it and, therefore, a specific procedure needs to be implemented, requiring special vigilance on the part of the technical teams (who have graduated previous adequate training sessions) during the topsoil stripping operations and stricter supervision by the archaeologists. The construction/operations teams will be informed/ notified by the RMGC Heritage Department before inception of their specific operations in a given area where greater vigilance is required because of the potential presence of archaeological relics, and a direct correlation will be established with the construction work schedule will be provided, by timely setting the boundaries and adequately marking the targeted sectors.

7. **TRAINING REQUIREMENTS OF NON-ARCHAEOLOGICAL PERSONNEL**

An efficient implementation of the **Protocol for Chance Finds** will also depend on the capacity of the non-archaeological personnel (workers) involved in construction/operations work to recognise archaeological artefacts and other relics and to cooperate actively and directly with the archaeological teams. Therefore, all construction workers, miners, and other categories of staff will participate in an archaeological training programme provided by the RMGC Heritage Department an the independent archaeological team.

This training will include a practical module for the recognition of archaeological relics such as Roman galleries, structures and artefacts of different historical periods (see Section 9 below), but especially of the Roan and mediaeval ages. The training will emphasize that the finding of such relics is expected and valuable, and immediate signalling thereof is important – they are not something to “cover up”/ “hide” or avoid.

All the construction/operating personnel will be trained in the meaning of colour codes on the maps indicating the areas where they may or may not work (RED – YELLOW – GREEN) or where they may work only in the presence of an archaeologist, etc. The staff will also master the simple procedures of informing the Operations Managed on any chance finds (see Section 17); copies of such procedures will be kept in all the offices of the site and off site.

8. **GENERAL CHARACTERISTICS OF TH MAIN TYPES OF ARCHAEOLOGICAL RELICS THAT MIGHT BE FOUND BY CHANCE AND POTENTIAL AREAS WHERE THEY MIGHT BE PRESENT ON SURFACE SITES**

The history of Roșia Montană is closely related to the presence of gold deposits which have attracted various foreign interests over the years, ever since Roman times. The mining heritage has always defined Rosia Montana, as it is the element providing the specifics of this place in relation to the neighbouring communities in Transylvania, i.e. non-mining settlements.

In Rosia Montana. A number of representative archaeological sites, consisting of galleries, mine wells, mining infrastructure elements (of the ancient and mediaeval times), sacred areas, funerary sites and habitation areas have proven the extent of intensive gold mining ever since Roman times. One of the first chance finds certainly originating from Rosia Montana s a series of epigraphic materials and funerary architecture elements in the area of Tau Gauri. From the late 18th c up until mid 19th c, a number of wax
Tablets were found by chance, in several galleries of Rosia Montana, all representing legal Roman texts related to mining activities and elements of everyday life, written in Latin longhand.

The first documentary mention of Rosia Montana, under the name of *Alburnus Maior*, comes from Roman wax tablet dated 6 February 131 AD. *Alburnus Maior* entered the historical-epigraphic literature after the discovery, in 1786-1855 of some unique pieces, i.e. 25 wooden wax-covered tablets, in Latin longhand, documenting sales and purchase contracts, payment of services, interest loan agreements, college acts, pricelists and expenses, such as a menu, with all the prices for a banquet, association covenants, etc.

Two buildings were documented in *Alburnus Maior* as having a heating system (*hypocaustum*) possibly with administrative uses. In this context, it may be expected that there may be storage facilities and possibly a foundry (gold ore processing workshops), but there are very few certain data available at this stage of the research. Written sources also document the presence of buildings of a religious company (*collegia*), but here again archaeological finds have not been very conclusive.

The discovery of the sacred area at Habad Bradoaia and of a large number of votive altars originating there support the assumption that the areas of sacred functions in *Alburnus Maior* must have looked like stone walled sites, substitutes for what was generally understood to be a temple in Roman ancient times. In conclusion, we need to mention the statement according to which Rosia Montana may have been the site of a small castrum, or infrastructure elements associated to military presence (L. Marinescu, 2002),

It may be possible that elements related to habitation by Illyrian colonists at *Alburnus Maior* may have been similar to those documented at Domavia, where 120 small houses were investigated, all arranged on terraces ad actually consisting of one 5 x 3 m room. As it is assumed that the veins closest to the surface were mined first, it is expected that he Illyrian miners settled near the mining areas, and once the resources of that deposit became depleted, they moved on, to open new mines.

Surface archaeological research conducted to date has mainly identified archaeological relics dating from the Roman Age (2\textsuperscript{nd} - 3\textsuperscript{rd} c. AD), and incineration necropolises, sacred areas, a circular funerary monument, areas of habitation and very few buildings (see Photo Annex).

**Habitation Areas**

Four habitation areas have been identified in the Project development area, located as follows in:

- Hop Găuri;
- Habăd;
- Tăul Țapului; șî
- Carpeni (already designated as an “archaeological reserve” area).

**Sacred Areas**

Two sacred areas have been identified in the Project development area:

- Habăd Brădoaia and
- Valea Nanului

**Necropolises**

Five necropolises and two funerary areas have been identified in the Project development area:

- Hop-Găuri;
- Carpeni funerary area;
- Tăul Corna;
- Jig-Piciorg;
- Țarina;
- Părăul Porcului-Tăul Secuilor;
- Valea Nanului funerary area;
More than 10,000 artefacts were discovered during the archaeological research of 2000–2007, including:

- ceramics;
- bronze and silver coins;
- various bronze objects (buckles, belt pieces, fibulae, mirrors, etc.);
- glass items;
- funerary steles and votive altars;
- funerary lions; and
- wooden mining tools.

All these pieces were collected, restored, preserved and recorded or are in the process of being restored, preserved and recorded, under Law No. 182/2001. They come from rescue/preventive archaeological digs organised as provided by GO No. 43/2000 as subsequently amended. The objects are stored in the facility of the archaeological basis at Rosia Montana in the custody of MNIR. The object restoration process is ongoing for the objects discovered during 2003-2005, by the specialist laboratories of the MNIR, MNUAI and MCDR.

Between the Roman withdrawal from Dacia and the second half of the 13th century there are no certain data – either from archaeological or documentary sources – about any human activity in the present-day area of Rosia Montana.

Ever since the Middle Ages, starting in the 16th century, there has been interest in the chance finds of this area. Various chroniclers, antiquarians, foreign travellers, diplomats, politicians and officers, and of course, scientists, not least, have showed an increasing interest in this area ever since the 17th century.

After some important reports and studies on improving mining, and mining reforms, with the inception of the large-scale industrial facilities paid for by the State – i.e. the Habsburg Empire – in the 18th century an industrial revolution in its own right started in the Rosia Montana area, as noted for the entire territory of Transylvania. We may say that this becomes a significant moment of the vast economic and social European transformations conventionally known as the “industrial revolution”, and a landmark worth mentioning for the area of concern is the year 1733, marking the start of artificial lake (tau) and hydrotechnical works building with funds from the Transylvanian Treasury.

In the second half of the 18th century, in the context of reforms initiated by Empress Mary Theresa in 1733, the entire gold bearing area of Rosia Montana witnessed unprecedented development in the opening of large galleries, by both the State and private owners or associations of owners who bought concessions from the State to get the right to operate the deposits (1746 – the gallery system of Sf. Treime - Vercheluș de Jos – Râzna in the Cârnic massif; 1769 – Vercheluș de Sus gallery in the Cârnic massif; 1783 – Sf. Cruce gallery in the Orlea massif, a large scale work initiated by the State and covering the entire length of the Rosia Stream valley). This distribution of underground horizons was matched on the surface by a complex processing system consisting of artificial ponds (tau) that supplied the valley streams where the ore crushing installations (stamp-mills) were located. These two components, consisting of a multitude of taus, hundreds of stamp mills (in 1772, on a visit to Rosia Montana – Abrud, Ignatz von Born mentions about 1204 stamp mills located as follows: 226 in Rosia Valley, 254 in Corna Valley, 151 in Câmpeni, 471 in Câmpeni and 102 in Bucium) and waste rock landfills around the old mine entrances defined the landscape of this mining area until 1948.

During this time, the 18th to the 19th century, a number of mining specialists from Austria, Hungary, Slovakia, etc, came to work and live in Rosia Montana. They gradually changed the ethnic structure of the settlement and its general landscape, by bringing elements of Central-European civilisation and culture, such as architectural, Baroque decorative art, German style clothing, furniture and silverware, ceramic and glass items etc.

After the Great Union of 1918 and until 1948, the Romanian State was massively involved, adopting legislation on the subsoil riches, and supporting a vast process of modernisation of the mining industry. All this caused a train of important changes in the landscape of Rosia Valley. The communist period, by prosecuting the mining concession and stamp mill owners and the nationalisation of the means of
production, brought to an abrupt halt a historical-economic process that had actually built the community of Rosia Montana over centuries. The 1960’s and 70's were representative of a vast process of deposit operation that preceded the initiation of open cast mining first in the Cetate pit, and later in Cârnic – practically extending old historic operations – as well as a number of substantial urban development changes (the building of housing blocks in the Carpeni and Orlea areas, and the complex in the historic centre square), the negative environmental and landscape effects of all these developments still visible to date.

9. PPDI IMPLEMENTATION IN CORRELATION WITH THE PIT CONSTRUCTION AND OPERATION SCHEDULE

MINING PROJECT SCHEDULE

Mine construction phase (see Map 2.8, cf. EIA 2006)

Estimated to last 2 years, it will include the following main activities involving soil disturbance:
- development of Cetate and Cârnic, [potential sites of archaeological sites in the Hop-Găuri area];
- development of the process plant and related facilities [potential sites of archaeological sites in the Tâul Ţapului – Hâbad area];
- development of the Corna TMF to a height of 80 m [potential sites of archaeological sites in the Tâul Corna area];
- development of the Corna Secondary Containment Dam;
- development of Cetate Water Catchment Dam [potential sites of archaeological interest];
- development of the access road to the process plant [potential sites of archaeological sites in the Valea Nanului area];
- construction of water supply pipeline from Aries River;
- development of industrial roads [potential sites of archaeological interest];
- site preparation for the two waste rock landfills of Cârnic and Cetate [potential sites of archaeological interest];
- construction of the Storm Water Drainage System;
- development of quarries for construction materials Şulei and Pârâul Porcului;
- development the sites and building of topsoil stockpiles [potential sites of archaeological interest].

Mine operation and closure phase (see Map 2.3 – 2.7, cf. EIA 2006)

- Year 0 – completion of mine construction and inception of mining in the Cârnic pit [potential sites of archaeological interest in the Cârnic south area]. Stockpiling of low-grade ore in the Valea Nanului area, between Cetate pit and Cetate waste rock landfill.
- Year 1 – inception of mining in the Cetate pit [potential sites of archaeological interest in the Găuri and Zeus areas], in parallel to Cârnic pit [potential sites of archaeological interest in the Cârnic south area].
- Year 5 – temporary interruption of operations in the Cetate pit. Inception of rehabilitation on Cetate landfill – work estimated for a period of 2 years.
- Year 7 – continuation of mining in the Cârnic pit [potential sites of archaeological interest in the Cârnic south area] and opening of Orlea pit [potential sites of archaeological interest in the Orlea east and Orlea south a areas]
- Year 9 – in parallel to of mining in the Cârnic pit [potential sites of archaeological interest in the Cârnic south area] and Orlea pit [potential sites of archaeological interest in the Orlea east and
Orlea south a areas], the operation of Cetate pit will be resumed [potential sites of archaeological interest in the Găuri, Zeus areas] Last year of activity at the Cârnic pit.

- **Year 10** – continued mining alternatively in the Cârnic, Orlea pits [potential sites of archaeological interest in the Orlea east and Orlea south a areas], and Jig continued rehabilitation of the Cârnic pit and inception of Cârnic landfill rehabilitation

- **Year 11** – continued operations, alternatively in the Cetate, Orlea and Jig pits. Last year of activity at the Jig pit.

- **Year 12** – continued operations, alternatively in the Cetate and Orlea pits. Last year of activity at the Orlea pit. Continued filling of Cârnic, Orlea and Jig pits. Finalised rehabilitation and re-vegetation of Cârnic landfill.

- **Year 14** – finalised operations at Cetate pit and inception of operation of the low grade ore stockpile. Continued rehabilitation of Cârnic and Jig pits, finalisation of Orlea pit rehabilitation. Southern side of Cârnic pit completely rehabilitated and re-vegetated by the end of this year.

- **Year 16** – Last year of activity at the mine. Continued rehabilitation works on Orlea pit, the TMF dam, stabilisation of Cetate pit walls and continued flooding of Cetate pit started in Year 15.

- **Year 17** – Jig pit land restored to previous use. Finalised rehabilitation of the TMF dam and re-vegetation of Orlea pit. Inception of low-grade ore stockpile rehabilitation.

- **Years 18–25** – continued rehabilitation of the industrial sites (process plant, TMF, industrial roads, flooding of Cetate pit). as of year 25, for and estimated period of 30 to 50 years, post-closure monitoring.
## Mining Project Schedule (Operations Stage) According to the Mine Closure and Environmental Restoration Management Plan (EIA 2006)

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10. STAFF HEALTH AND SAFETY MEASURES

The regulations and requirements for workplace health and safety cannot be ignored, no matter how urgent the need to record archaeological data. Therefore the Health & Safety norms will have priority over archaeological concerns. Any archaeologist conducting field research must abide by the Health & Safety Policy. Archaeologists conducting field research must abide by the Health & Safety norms. Workplace Health & Safety must be agreed on and understood by all the stakeholders, prior to the inception of works. A risk assessment must be conducted for every field research project. The independent archaeological team must work in close cooperation with the mine manager / operations manager and comply with the regulations in force for the respective site.

Furthermore, the operations manager will be responsible, in every situation where the relevant institutions, government agencies, and other organisations visit the Project site, for the observance of all the internal security requirements, including for the provision of protective equipment.

11. ANALYSES AND REPORTS IN PPDI IMPLEMENTATION AND UPDATING

All chance finds will be analysed by trained and experienced archaeologists in the field, registered with the Romanian Archaeologist Register, under the law. They will be given a brief presentation of the project before initiating any professional activity, for a better understanding of the working environment and the procedures in force.

The level of detail in analysing the characteristics, artefacts, and eco-facts will be based on the Protocol for Chance Finds, and the characteristics and significance of the finds, respectively. All the data derived from analysis and/or evaluation will be entered into the project archive, and incorporated into a number of scientific publications of results (series of preliminary reports and later publication in the monographic series of Alburnus Maior).

All the reports will keep in mind the purpose of the Protocol on Chance Finds, as well as the characteristics and significance of the finds. Interim reports will also be prepared for special finds. These will have to be drafted in a clear, concise and logical style, in accordance with the post-dig analysis and publication programme established for the archaeological programme determined in the PPDI implementation. The reports will be written by the archaeologists and included in the publishing system already established under the PNC-AM, and also based on the relevant national legislation.

12. MONITORING

Archaeological works will be conducted and coordinated by the independent archaeological team (including archaeologists from the National History Museum of Romania and participants from other specialist institutions involved in archaeological research at Roşia Montană during 2001–2007, or other responsible institutions), in cooperation with the RMGC Heritage Department, reported under the Monitoring Framework previously devised by Gifford and ultimately published as mentioned above.

13. REPORTING OF NON-COMPLIANCE AND CORRECTIVE ACTION

All cases where a find was not correctly reported will also be used as a learning experience for the mining company, its construction/operations teams, and the independent archaeologist team.

All such situations will be recorded and reviewed in order to identify the step where the non-compliance occurred, and the information derived will be used in re-writing the procedures, and re-training, so as to avoid repetition.
14. **ORGANISATION AND MANAGEMENT OF THE SCIENTIFIC DATABASE DEVELOPED IN PPDI IMPLEMENTATION ON SURFACE SITES**

All artefacts, eco-facts and records will be stored according to the provisions of the national legislation and the recommendations of the National History Museum of Romania, Bucharest, agreed by the RMGC Heritage Department and in consideration of the potential requirements of the future Mining Museum in Roşia Montană.

15. **COMMUNICATION AND DISSEMINATION**

Internal communication modes are briefly described in the following, for the process of chance finds reporting: archaeologists report the finds to the Mining Operations Manager who works in close cooperation with the RMGC Heritage Department.

Work stoppage orders will be issued by the Operations Manager in accordance with the decisions of the independent archaeological team, according to the procedures described in Section 6.

Public and media communication – radio, TV, newspapers, magazines, journals, etc. - will be conducted by the independent archaeological team in partnership with the RMGC Heritage Department and PR Department, in view of providing consistency to new data of public interest.

16. **DECISION MAKING PROCESS IN PPDI IMPLEMENTATION**

These data are listed here in the form of a “process map”. The document clearly indicates the communication flow and the decision making points for the *Protocol on Chance Finds*, providing details on the roles and responsibilities of the RMGC Heritage Department, the independent archaeological team, and the RMGC Operations Manager, as well as for the contractors of construction and operations works active on the site of concern.

For the archaeological objectives of the Project to be met, and in order to complete the mining activities on schedule, it will be essential that the steps of the *Protocol on Chance Finds* implementation process should be simple, and easy to manage and verify. This process will involve many people and organisations, making it necessary for everyone to understand their role on the site, within the archaeological programme and technical works context.

The *Operations Manual for PPDI Implementation on Surface Sites*, will adequately review and detail the above-mentioned roles and ensure that all the persons involved have a general picture of the responses to events that might occur during field activities.

All the actions/works/decisions required in the implementation of this document and of subsequent Operations Manuals during construction/pit development activities and during mining operations will have to follow and comply with the procedures preliminary described in Section 6 (see above) that will be detailed accordingly by the *Operations Manual for PPDI Implementation on Surface Sites*. 
17. FLOWCHART OF PDI IMPLEMENTATION AND OPERATION PROCESS

DIAGRAMA PROCESULUI DE IMPLEMENTARE ȘI OPERARE A PPDI

Figura 3. DIAGRAMA PROCESULUI DE IMPLEMENTARE ȘI OPERARE A PPDI
PART III – GENERAL PRINCIPLES IN DEVELOPING AN OPERATIONS MANUAL FOR PPDI IMPLEMENTATION ON UNDERGROUND SITES

Mining archaeological heritage was the object of detailed studies conducted by the French specialists of TRACES (Laboratoire des Travaux et Recherches Archéologiques sur les Cultures, les Espaces et les Sociétés), formerly UTAH, University of Toulouse 2 Le Mirail, CNRS UMR 5608 (France). The research revealed portions of Roman mining works in the massifs of Cetate, Cârnic, Cârnicel, Orlea-Țârina, Pâru Carpeni and Cos. This situation requires special attention in point of mining archaeology on the sites that will be affected by Project construction/operations (to the surface and underground). Mining archaeology preventive and rescue research is a first in Romania.

The activity of the mining archaeology specialists in charge of archaeological surveillance of construction/operations works in the industrial/mining areas provided for the Project is regulated by the same type of operational procedures as for the archaeologist staff monitoring surface sites (para. 6). The following is a preliminary description of a number of highly specific elements requiring the expertise of mining archaeologist staff from the start of monitoring works, after completion of a detailed field diagnosis. Monitoring will be done both on the surface and underground, in the safety conditions agreed on with the RMGC representatives.

In the soil stripping phase, which will free access to the living rock, indications may emerge regarding previous open cast or underground mining, which will require continued presence of a specialist mining archaeologist in the operations site.

A good part of the Project area is currently covered by landfills. These are proof of previous mining on a certain site, but at the same time cover the traces of previous operations. Removal of the landfills will open access to a so far inaccessible, and hence unknown, part, that has the potential to lead to the discovery of new access pathways to Roman and more recent mining works. Monitoring will target not only the filled mining works that might emerge beneath the landfills, but also potential wooden equipment primarily used for the support/protection of underground access.

For safety reasons, mining archaeological research on the top of Cârnic massif could not be continued down to the assumed levels (still existent) of the Roman mining works. Removal of the landfills on the southern slopes and top of Cârnic massif will have to be monitored with great care by the mining archaeologists, in order to identify the old access ways to the mining levels. Roman mining works followed surface ore seams, so that there is a possibility to discover traces of open cast mining currently completely filled over and hidden under the landfill.

In regard to Cârnic massif, monitoring provided by the archaeological mining staff of the independent research team will also be required during operations. Gradual opening of the pit in this massif may facilitate – as expected during the 1999-2000 diagnostic study – the discovery of potential mining works, primarily in the areas close to the surface, where access is currently impossible for reasons of safety. Mining archaeological surveillance will be provided in the areas of known Roman underground mining works, in the areas continuing them, as well as in areas where no such works have been known to date.

Cetate massif, in its current morphology, i.e. a pit in the central-eastern area of the relevant site and slopes largely covered in landfills, will require the same monitoring approach from the archaeological staff as in the case of Cârnic, with the note that chance finds opportunities will be scarce.

Orlea and Țârina massifs have a peculiar feature, in the positioning of the mine works in relation to the terrain. There are fewer mine works on the slopes, however, as most known Roman mine works are found below the Rosia Valley level. The slopes are largely covered by landfills, and the remaining areas are occupied by public, industrial and private buildings. Underground archaeological research is only in a preliminary stage, so that the situation has not been clearly defined for this sector. Topographical surveys have identified several potential areas of access to underground levels probably dating back to the Roman age, that will need to be open in the future after stripping, the removal of landfills and demolition of some
buildings. Soil stripping, removal of landfills, and other works required for the Project in the Orla-Țarina area will be closely monitored by mining archaeological staff on the independent research team. During the operations stage proper, the archaeologist team will monitor the development of gradual pit opening and the potential emergence of mine works or parts of mining equipment (water wheels, wooden supports, etc.).

The mining sectors of Piatra Corbului, Păru-Carpeni and Coș (Cătălina-Monulești) are protected areas in relation to the Project site. However, the Roman mine works sectors on these sites will be continuously monitored by the independent mining archaeologist team, during Project construction and operation. Measures will also be taken to provide maximum protection to these sites before initiating the works scheduled for the pits. Their state of conservation will be carefully monitored in parallel with the conduct of mining operations. If it is found that their state of conservation is affected by various activities related to mining operations, protection and stabilising measures will be adopted by RMGC, as suggested by the mining archaeology specialists.

18. PRELIMINARY PRINCIPLES AND NORMS IN REGARDING UNDERGROUND CHANCE FINDS

During the conduct of mining archaeological research in underground areas, there have been sectors where technical or safety conditions prevented access of the research team for study and mapping. During pit operation, chance finds may be identified underground, including Roman mine galleries and/or Roman artefacts (e.g.: Roman oil lamps, wooden fragments of old mining structures). It is therefore necessary to implement special protocols instituting permanent very careful supervision of mining archaeology specialists over pit operation activities. Objective safety and access issues might cause temporary impossibility of access for investigation of every chance find of this type, until safety conditions at the pit become adjusted to the newly emerged situation. Such safety conditions must be clearly formulated and pre-established when a mining operations team and independent archaeological team specialists experiences in mining archaeology may have adequate access to that area. Both the construction/operations teams, and the independent archaeologist team groups must directly cooperate with the RMGC Heritage Department for good information and real-time notification of situations requiring special vigilance. Preliminary risk maps have been developed for this purpose, indicating the areas of potential incidence of change finds (see Maps 1 - 8).

The independent archaeological team will develop a working approach for the consistent recording of all chance finds that might occur in underground areas, and this will be used by the RMGC Heritage Department for the practical training session organised for non-archaeologist staff. All work of this type must be conducted in accordance with this methodology and the subsequent recording documents. Any amendment that might become necessary in the conduct of archaeological surveillance and/or rescue research work must be agreed in writing by all the stakeholders.

On arrival to the site, the independent archaeological team must contact the industrial operations manager or other designated representatives of the contractor and comply with their decisions regarding entry and exit approval for safety reasons.

If any member of the construction/operation team (or member of the independent archaeological team) notices any archaeological relics that requires recording, they will follow a set of procedures, as preliminary outlined below and in Figure 3.

It is clearly understood that sufficient and adequate resources (personnel, equipment, etc.) must be used in order to allow adequate recording of the find, investigation and compliance with all the mandatory health and safety requirements. Full and adequate records will be made of all the works (text, graphs, digital and photographic, as established under the consistent recording methodology in the subsequent Operations Manual, and digital topographical surveys in the national coordinates system of Romania, STEREO 70) using standard record sheets ad descriptive archaeological logs. Digital records generated as part if the archaeological works provided in the PPDI and subsequent Operations Manuals must comply with the relevant best practice standards. The independent archaeological team will ensure that the digital
information, written (hard copies) and photographic records are stored in a safe and adequate medium, and backup copies will be regularly provided, the copies to be kept in a different location than the primary archives. Artefact and eco-fact collection, and the investigation policies, strategies and techniques included in a save by study process must be suitable to the purpose and understood by all the members of the independent archaeological team.

All the archaeological and non-archaeological staff, respectively, must have the qualifications/training and experience required for their role on the archaeological supervision/rescue research project, must be informed on the works established under the Operations manual and must understand the objectives of the process and the specific working approach.

The equipment must be in good operating condition, suitable to the purpose and comply with the health and safety regulations and recommendations.

An independent archaeological team will be established in the implementation of the PPDI for underground sites, to include archaeologists working for the previous partner institutions under the PNC-Am and others, or cooperating with them. Specialist archaeological work conducted in implementing the PPDI and related professional expertise will be secured under service contracts concluded between the above institutions and the Company, with scientific coordination provided by the National History Museum of Romania. The RMGC Heritage Department will provide the necessary logistics for such works (equipment, transport, labour, accommodation, office and storage spaces, etc.) for the independent archaeological team and provide the communication interface for the Company.

Thus, the RMGC Heritage Department will cooperate directly with the independent archaeological team for underground sites, to include teams of archaeologists working for the institutions empowered under the law (whether or not partners under the PNC-AM) to monitor the technical construction/operation works associated to the mining project. This document (the PPDI) has identified and developed a number of risk maps (Map 1 – 8) for underground sites and creates a framework for the subsequent development of operational maps for each archaeological sub-programme, indicating precisely the area in which it will the Protocol or Chance Finds will be implemented. These maps, detailed based on the development plans for the industrial site, in both the construction and the operational stages, were published in the EIA Report as part of the chapter dealing with the industrial processes (Plate 2.8, 2.3–2.7, cf. EIA 2006) and will be adapted to the specific recording needs identified by the independent archaeological team.

Therefore, based on the preliminary map documentation developed for the PPDI, the RMGC Heritage Department, the Topographical Survey Service and the independent archaeological team will cooperate in developing additional sets of detailed maps for surface and underground areas directly associated to the mine construction and operation plans, so that the PPDI may be implemented with maximum accuracy. Once developed and agreed upon by all the stakeholders, these maps will be made available free of charge to the independent archaeological team, and become the reference map support for the consistent recording of all the chance finds that might occur.

Project development activities that may have an impact on potential unknown archaeological resources relate to quarry operation, road and other industrial infrastructure building works (dams, process plant), topsoil stripping. Topsoil stripping required for the preparation of the waste rock landfills, TMF, and other industrial facilities, will be based on specific archaeological surveillance and rescue research procedures (of the save by study type) aiming to ensure adequate management of such issues, so as to prevent any loss or destruction of archaeological relics potentially unknown to date.

At the start of the archaeological works proposed under the PPDI, the entire industrial/operational area previously investigated under the PNC – AM (see Section 4 above) for which the archaeological burden discharge procedure has been followed under the law, will be subject to the Protocol for Chance Finds (see Fig. 1 and Map 01) and will be coloured in RED (as areas where archaeological research has already been conducted and that have been described during the EIA). In practice, all the industrial works that might in any way affect natural sedimentation that are located in sectors where archaeological structures have been identified and researched before (see CCA 2000–2007, AM I–III) will be done under the strict supervision of the independent archaeological team, as part of the monitoring process.

Should any human structure of the ancient, mediaeval, modern or pre-industrial times be identified in such areas, based on the documented decision of the independent archaeological team, the mining operations manager will enforce temporary suspension of any activity in that sector until the rescue
archaeological research works have been finalised.
During such works, the areas will be coloured in **YELLOW** (initially, they will form the buffer zones around the sites coloured in **RED** which will mean that industrial works may only be conducted here under strict archaeological supervision.

Areas coloured in **YELLOW** will be designated as protection zones around the sites where archaeological research has identified ancient, medieval, modern or contemporary human structures, extension of such areas being determined from the archaeological data obtained in the research programme, from multi-disciplinary analyses, from aero-photo interpretation and not least from the micro-morphology of the area corroborated with other types of relevant indications at the time the works are performed.

Should any human structure of archaeological interest be identified in such areas, based on the decision of the independent archaeological team, the mining operations manager will enforce temporary suspension of any activity in that sector until the rescue archaeological research works have been finalised. Throughout this time, the area will be temporarily coloured in **RED**.

The industrial operations manager will issue an order/notification to stop industrial works and relocate such earth moving/construction/operational activities outside such areas, in order to prevent unintended risks to the integrity of the archaeological relics and facilitate access to the archaeological research teams.

Once archaeological research work has been finalised, the colour for such sites may be changed back to **YELLOW**, which will allow the implementation of industrial works under strict archaeological supervision.

If the construction/operation area is considered by the independent archaeological team to be sufficiently assessed in advance, and the realities on site do not require additional monitoring, then such sites will be coloured in **GREEN**, a colour used for all the areas within the industrial footprint that were investigated during 2001-2006 and where the archaeological burden discharge procedure was followed and established that they are currently known to be free of archaeological relics.

The professional groups on the independent archaeological team will provide supervision of construction works in these sectors as well, and wherever necessary, may request, based on documentation, a temporary stoppage of works until archaeological investigation is completed.

### 19. TRAINING REQUIREMENTS OF NON-ARCHAEOLOGICAL PERSONNEL

An efficient implementation of the *Protocol for Chance Finds* will also depend on the capacity of the non-archaeological personnel (workers) involved in construction/operations work to recognise archaeological artefacts and other relics and to cooperate actively and directly with the archaeological teams. Therefore, all construction workers, miners, and other categories of staff will participate in an archaeological training programme provided by the RMGC Heritage Department and the independent archaeological team.

This training will include a practical module for the recognition of archaeological relics such as Roman galleries, structures and artefacts of different historical periods (see Section 20 below), but especially of the Roan and mediaeval ages. The training will emphasize that the finding of such relics is expected and valuable, and immediate signalling thereof is important – they are not something to “cover up” or avoid.

All the construction/operating personnel will be trained in the meaning of colour codes on the maps indicating the areas where they may or may not work (RED – YELLOW – GREEN) or where they may work only in the presence of an archaeologist, etc. The staff will also master the simple procedures of informing the Operations Managed on any chance finds (see Section 17); copies of such procedures will be kept in all the offices of the site and off site.
20. GENERAL CHARACTERISTICS OF THE MAIN TYPES OF ARCHAEOLOGICAL RELICS THAT MIGHT BE FOUND BY CHANCE AND POTENTIAL AREAS WHERE THEY MIGHT BE PRESENT ON UNDERGROUND SITES

Mining archaeology investigation of underground works starts by seeking and identifying old mine works, either on the surface, in areas where there is indication that they might exist (seeking and identification of mining voids by means of mechanical means or by field walking) or underground, starting from areas of direct access consisting of the old mine works themselves or indirect access, i.e. newer mine works assumed to intersect with the old works looked for. Old works include both ancient mining relics and those assumed to predate the 17th century (when gunpowder started being used in the European mines). Old mine works are identified by a number of characteristics, of which the following are more significant:

- shape, as for example a trapezoid section, typical of the ancient galleries at Rosia Montana;
- narrow width, specific to galleries, inclines, wells, raises, exploration sites;
- the presence of particular developments dug with iron tools into the mine work walls, such as, for instance, oil lamp niches, the presence of soot traces preserved on the walls, larger symmetrical recesses, used for the fixing of wood beams (as supports or circulation bridges);
- visible traces of iron tools on the walls (pickaxes, chisels, of square cross-section, with or without a handle)

Mining archaeological research provide a general outlook of the mine cavities, an absolute requirement in continuing the geological and deposit studies, archaeometrics studies on underground lighting (oil lamp niches, etc.), studies of the mine water drainage systems (drains, wells, water wheels), of providing mining safety works (traces of wood supports or recesses where beams would be fixed), and in the complex interpretation of all this information, ultimately giving a picture of the mining dynamics.

Mine dynamics may be recognised by:

- direction of work progress (suggested by the spatial orientation of the tool marks on the walls, traces of work fronts observed on the ceiling – floor or walls, equally attesting the change of direction in that mine work);
- nature of the mining works – research and/or operation, ancillary works (access or connecting gallery, bypass, air duct) – depending on the shape, size, length and position within the network, and in relation to the mineralization (seat rock, cover rock, or following a mineralised structure)
- relative chronology of the works in relation to each other, by evidencing intersections, re-profiling;
- the digging strategy, depending on identifying the mineralization signs and the nature of the rock face (varying degree of hardness, from extremely altered, powdery to medium and to very hard, intensely silicated rocks);
- option to work with iron tools or fire, especially in mine works located near the surface, due to airing problems that the later involves (they generate smooth, very rounded walls).

The following mine of works classify into three chronological categories:

- Old works: pre 300 BC, including the Roman Age.
- Migration Age /early Middle Ages: 300–1100
- Mediaeval: 1100–1500
- Mediaeval/Modern: 1500–1900
- Modern/Contemporary: 1900 to the present day.

Mining archaeological investigation in the massifs of Cetate, Cârnic, Orlea, Jig and Țărina, allowed the mapping of about 140 km of underground galleries.
With the exception of areas that could not be investigated to date, the following types of works could be identified:

- Short galleries, research galleries and long galleries – providing access to various operating sites, or groups of operating galleries, near one another, in the shape of a star or angular network;
- Depilations, or operating areas, generally obtained by extending or deepening the tread of a simple gallery;
- Ascending or descending inclines, dug on the surface or underground, to provide connections to two work fronts, sometimes provided with steps;
- Pillared chambers – operating areas located at the crossing of galleries and seams;
- Exploration or operating wells, either vertical or helicoidal, or of a descending rectangular pattern, equipped with steps; and
- Inter-level communication shafts, generally scarce and short.

Galleries are the main type of mine work *see Photo Annex) and it is adapted to the need, i.e. access, exploration, mining. There are few known drains in the galleries, but it is evident that this aspect had to be considered at the bottom of the massifs.

The investigated areas during archaeological research include:

- Cetate;
- Cărnicel;
- Cârnic;
- Jig-Văidoia;
- Orlea-Țarina;
- Carpeni-Pâru Carpeni;
- Lety-Coș; și,
- Hâbad.

21. PPDI IMPLEMENTATION ON UNERGROUND SITES CORRELATION WITH THE CONSTRUCTION AND OPERATION SCHEDULE

See Section Error! No bookmark name given.9 of this document.

22. STAFF HEALTH AND SAFETY MEASURES

The regulations and requirements for workplace health and safety cannot be ignores, no matter how urgent the need to record archaeological data. Therefore the Health & Safety norms will have priority over archaeological concerns. Any archaeologist conducting field research must abide by the Health & Safety Policy. Archaeologists conducting field research must abide by the Health & Safety norms. Workplace Health & Safety must be agreed on and understood by all the stakeholders, prior to the inception of works. A risk assessment must be conducted for every field research project. The independent archaeological team must work in close cooperation with the mine manager / operations manager and comply with the regulations in force for the respective site.

Furthermore, the operations manager will be responsible, in every situation where the relevant institutions, government agencies, and other organisations visit the Project site, for the observance of all the internal security requirements, including for the provision of protective equipment.
23. **ANALYSES AND REPORTS IN PPDI IMPLEMENTATION AND UPDATING**

All chance finds will be analysed by trained and experienced archaeologists in the field, registered with the Romanian Archaeologist Register, under the law. They will be given a brief presentation of the project before initiating any professional activity, for a better understanding of the working environment and the procedures in force.

The level of detail in analysing the characteristics, artefacts, and eco-facts will be based on the *Protocol for Chance Finds*, and the characteristics and significance of the finds, respectively. All the data derived from analysis and/or evaluation will be entered into the project archive, and incorporated into a number of scientific publications of results (series of preliminary reports and later publication in the monographic series of *Alburnus Maior*).

All the reports will keep in mind the purpose of the *Protocol on Chance Finds*, as well as the characteristics and significance of the finds. Interim reports will also be prepared for special finds. These will have to be drafted in a clear, concise and logical style, in accordance with the post-dig analysis and publication programme established for the archaeological programme determined in the PPDI implementation. The reports will be written by the archaeologists and included in the publishing system already established under the PNC-AM, and also based on the relevant national legislation.

24. **MONITORING**

Archaeological works will be conducted and coordinated by the independent archaeological team (including archaeologists from the National History Museum of Romania and participants from other specialist institutions involved in archaeological research at Roșia Montană during 2001–2007, or other responsible institutions), in cooperation with the RMGC Heritage Department, reported under the Monitoring Framework previously devised by Gifford and ultimately published as mentioned above.

25. **REPORTING OF NON-COMPLIANCE AND CORRECTIVE ACTION**

All cases where a find was not correctly reported will also be used as a learning experience for the mining company, its construction/operations teams, and the independent archaeologist team.

All such situations will be recorded and reviewed in order to identify the step where the non-compliance occurred, and the information derived will be used in re-writing the procedures, and re-training, so as to avoid repetition.

26. **ORGANISATION AND MANAGEMENT OF THE SCIENTIFIC DATABASE DEVELOPED IN PPDI IMPLEMENTATION ON UNDERGROUND SITES**

All artefacts, eco-facts and records will be stored according to the provisions of the national legislation and the recommendations of the National History Museum of Romania, Bucharest, agreed by the RMGC Heritage Department and in consideration of the potential requirements of the future Mining Museum in Roșia Montană.

27. **COMMUNICATION AND DISSEMINATION**

Internal communication modes are briefly described in the following, for the process of chance finds reporting: archaeologists report the finds to the Mining Operations Manager who works in close cooperation with the RMGC Heritage Department.

Work stoppage orders will be issued by the Operations Manager in accordance with the decisions of the independent archaeological team, according to the procedures described in Section 6.
Public and media communication – radio, TV, newspapers, magazines, journals, etc. - will be conducted by the independent archaeological team in partnership with the RMGC Heritage Department and PR Department, in view of providing consistency to new data of public interest.

28. DECISION MAKING PROCESS IN PPDI IMPLEMENTATION

These data are listed here in the form of a “process map”. The document clearly indicates the communication flow and the decision making points for the Protocol on Chance Finds, providing details on the roles and responsibilities of the RMGC Heritage Department, the independent archaeological team, and the RMGC Operations Manager, as well as for the contractors of construction and operations works active on the site of concern.

For the archaeological objectives of the Project to be met, and in order to complete the mining activities on schedule, it will be essential that the steps of the Protocol on Chance Finds implementation process should be simple, and easy to manage and verify. This process will involve many people and organisations, making it necessary for everyone to understand their role on the site, within the archaeological programme and technical works context.

The Operations Manual for PPDI Implementation on Underground Sites, will adequately review and detail the above-mentioned roles and ensure that all the persons involved have a general picture of the responses to events that might occur during field activities.

All the actions/works/decisions required in the implementation of this document and of subsequent Operations Manuals during construction/pit development activities and during mining operations will have to follow and comply with the procedures preliminary described in Section 6 (see above) that will be detailed accordingly by the Operations Manual for PPDI Implementation on Underground Sites.

29. FLOWCHART OF PDI IMPLEMENTATION AND OPERATION PROCESS

See above Section Error! No bookmark name given.17 of this document.
PART IV – BACKGROUND DATA AND INFORMATION APPENDICES

1. TECHNICAL DATA ON THE MINE CONSTRUCTION AND OPERATION PROJECT

The table below summarises the medium and long term action plan for the cultural heritage of Rosia Montana.

<table>
<thead>
<tr>
<th>No.</th>
<th>Site name</th>
<th>Actions</th>
<th>Planning</th>
</tr>
</thead>
</table>
| 1   | Găuri - Hop - Hăbad - Tâul Țapului | • Publication of research results (if not already published in Alburnus Maior I and II)  
• Restoration of the funerary monument at Tau Găuri  
• Inclusion of the funerary monument at Tau Găuri on a tour  
• Museum display of research results;  
• *Archaeological surveillance during the construction and operation stages*  
• *Implementation of the Protocol regarding chance finds (PPDI) instructions*                                                                 | According to the mining project schedule                                                           |
| 2   | Valea Nanului              | • Publication of research results (if not already published in Alburnus Maior I)  
• Museum display of research results;  
• *Archaeological surveillance during the construction and operation stages*  
• *Implementation of the Protocol regarding chance finds (PPDI) instructions*                                                                 | According to the mining project schedule                                                           |
| 3   | Carpeni                    | • Publication of research results (if not already published in Alburnus Maior I)  
• Conservation and restoration of the Roman water system in the Pâru Carpeni mining sector and of building E2  
• Inclusion of the Carpeni archaeological reserve on a tour  
• Museum display of research results;  
• Archaeology summer camp during research                                                                 | Not applicable. Protected area.                                                                      |
| 4   | Cârnic Massif              | • Publication of research results (if not already published in Alburnus Maior I)  
• Conservation of the galleries in the Piatra Corbului sector  
• Inclusion of the Piatra Corbului galleries on a tour  
• Museum display of research results;  
• 3D model of the ancient galleries in Cârnic Massif  
• *Archaeological surveillance during the construction and operation stages*  
• *Implementation of the Protocol regarding chance finds (PPDI) instructions*                                                                 | According to the mining project schedule                                                           |
| 5   | Cetate Massif              | • *Archaeological surveillance during the construction and operation stages*  
• *Implementation of the Protocol regarding chance finds (PPDI) instructions*                                                                                                                                  | According to the mining project schedule                                                           |
| 6   | Roșia Montană Historic Area | • Publication of ethnographical, architectural, socio-economic research results  
• Completion of reopening works in the Cățălina Monulești gallery.  
• Inclusion of the Cățălina Monulești gallery on a tour  
• Development of a new Mining Museum  
• Restoration of the historic monuments and vernacular buildings in the Historic Centre                                                                                                           | Not applicable. Protected area.                                                                      |
| 7   | Jig – Văidoaia Massif      | • Publication of research results  
• Inclusion of the Văidoaia east on a tour  
• Museum display of research results;  
• *Archaeological surveillance during the construction and operation stages*  
• *Implementation of the Protocol regarding chance finds (PPDI) instructions*                                                                 | According to the mining project schedule                                                           |
| 8   | Țarina                     | • Publication of research results  
• Museum display of research results;                                                                                                           | According to the mining project schedule                                                           |
<table>
<thead>
<tr>
<th></th>
<th>Location</th>
<th>Activities</th>
<th>Schedule</th>
</tr>
</thead>
<tbody>
<tr>
<td>9</td>
<td>Orlea Massif</td>
<td>• Archaeological surveillance during the construction and operation stages&lt;br&gt;• Implementation of the Protocol regarding chance finds (PPDI) instructions</td>
<td>According to the mining project schedule</td>
</tr>
<tr>
<td>10</td>
<td>Părăul Porcului - Tâul Secuilor</td>
<td>• Undertaking preventive archaeological digs (surface and underground)&lt;br&gt;• Publication of research results&lt;br&gt;• Applying the archaeological burden discharge procedure&lt;br&gt;• Relocation of the open air display of Orlea museum&lt;br&gt;• Museum display of research results;&lt;br&gt;• Archaeological surveillance during the construction and operation stages&lt;br&gt;• Implementation of the Protocol regarding chance finds (PPDI) instructions</td>
<td>According to the mining project schedule</td>
</tr>
<tr>
<td>11</td>
<td>Valea Cornei</td>
<td>• Publication of research results&lt;br&gt;• Museum display of research results;&lt;br&gt;• Archaeological surveillance during the construction and operation stages&lt;br&gt;• Implementation of the Protocol regarding chance finds (PPDI) instructions</td>
<td>According to the mining project schedule</td>
</tr>
<tr>
<td>12</td>
<td>Tâul Cornei - Corna Sat</td>
<td>• Publication of research results&lt;br&gt;• Museum display of research results;&lt;br&gt;• Archaeological surveillance during the construction and operation stages&lt;br&gt;• Implementation of the Protocol regarding chance finds (PPDI) instructions</td>
<td>According to the mining project schedule</td>
</tr>
<tr>
<td>13</td>
<td>Balmoșești</td>
<td>• Archaeology summer camp during research</td>
<td>During the mining project</td>
</tr>
</tbody>
</table>
Protocol regarding chance finds

The protocol for chance finds is an essential component of the Cultural Heritage Management Plan, which shows how RMGC will ensure proper identification and management of the archaeological relics that may be discovered throughout the Project lifetime.

Considering the nature of the site, there is a possibility that, during activities performed at various stages of the project, further archaeological assets may be discovered.

For this reason, an archaeological surveillance program will be implemented based on a chance finds protocol, a document that will be drafted in the future. The protocol will aim to prevent any accidental destruction of archaeological resources, in the event they might occur during any stage of the Project, both on the surface and underground.

Specific Project activities that may result in chance finds of archaeological assets relate to quarry operation, road and other infrastructure building, surface stripping, etc. Throughout topsoil stripping operations in the building of the TMF and landfilling areas, permanent archaeological surveillance will be ensured in order to prevent any damage to the archaeological resource.

A first step in preventing such situations was the development of a comprehensive baseline study, under which archaeological investigation work was conducted in all the areas of the Project footprint, for most of them the Ministry of Culture and Religions then issuing archaeological duty of care removal certificates, and therefore RMGC fulfilled its obligations under the law. These are providing the necessary resources for the preliminary investigation of potentially impacted areas, as well as for a number of studies and related activities in relation to the management of any found mobile heritage asset, and the prevention to the extent possible of the situations where significant discoveries may happen during project implementation.

The baseline studies and preventative archaeological studies conducted in view of obtaining the archaeological duty of care removal certificate have identified areas of archaeological potential, and confirmed the existence of Roman mining operations in the 2nd-3rd centuries AD. Based on the results of this research, the Chance Finds Protocol will play an important role in the light of the environmental impact assessment process.

The following sections present a number of details concerning the commitments under the Project in identifying such finds during the scraping and excavation works that it entails. The Chance Find Protocol will be guided by the following principles:

- Archaeological surveillance for the potential identification of archaeological relics
- Professional training, warning, alertness and competence;
- Rapid assessment of the significance of a find;
- Adequate recording and documentation of chance finds;
- Internal and external communication of chance finds;
- Special procedures in the management of chance finds;
- Reporting on non-compliance with the Protocol provisions and further corrective and preventative action; and,
- Compliance with the applicable legal provisions in the case of chance finds (as provided by Law 462/2003).

The specific approach in the case of chance finds will be determined based on the nature of their significance. Such finds may imply the need of conducting rescue archaeological research, based on which decisions might be taken under the law.

The main purpose of the Chance Finds Protocol is to identify, assess the significance and conserve unique archaeological resources in an appropriate manner and cause minimal disturbance in the planning of
structures and operations.

Based on the nature of such discoveries, on the assessment conducted by the independent archaeological surveillance team, and on the decision of the Ministry of Culture and Religions and of the County Directorate for Culture, Religions and Cultural Heritage Alba, the Operations Manager may decide to suspend the mining activities on a certain site. Additionally, during site visits or assessments conducted by the legally empowered authorities, the Operations Manager in charge of coordinating activities on the respective site will be responsible with providing all the security and health and safety conditions for the visit.

A number of management measures will be implemented as part of the Protocol on Chance Finds in order to reduce the possibility or minimise the potential impacts on the archaeological relics. These management measures include the following:

- **Extended baseline research:** Cooperation between RMGC and MCR during the pre-construction stage generated better knowledge and understanding of the archaeology and history of the Project area. This information will allow the setting of priorities for various areas and a focusing of efforts in identifying the chance finds in areas susceptible to contain unidentified archaeological resources, thus helping the professional archaeological and mining staff to identify the types of finds that might occur at a given stage of the project;

- **Protocol for area striping:** It is expected that many of the potential chance finds will occur during soil stripping operations, so that a special protocol for archaeological surveillance will be required for stripping.

- **Protocol regarding underground chance finds:** During pit operations, such underground finds are possible. Special protocols will be implemented in order to provide archaeological surveillance. A number of special safety measures will need to be considered in order to provide safe access to the specialist archaeologists. Should it be found that a certain area intercepted during operations was not included among those that were investigated during the baseline study, the special procedure provided in the Protocol for Chance Finds will be applied.

- **Relocation and conservation programme:** A programme for the relocation, conservation and storage of archaeological material from chance finds will need to be developed, including based on authorised inspections.

- **Perimeter marking:** Areas of high potential for chance finds or at least where a temporary stoppage of operations was decided and access is restricted by such situations, will have to be visibly marked; the architectural staff will have to ensure that the marking is suitable, so as to prevent the access of mining equipment and staff. Training session, foreman consultations and the RMGC Standard Operating Procedures Manual, will define such types of perimeters and set the rules for visual signage thereof.

- **Stop of work (temporary suspension):** From the Company point of view, the management will be responsible for the implementation of the Protocol for Chance Finds and decide, on a case by case basis, to stop work at the front in a sector for a shorter or longer term, to allow for the performance of preventive archaeological research, based on which to decide on the applicable legal measures.

Additional details on this protocol are given in the ESMS Plans, Plan M, Cultural Heritage Management Plan.

**LIST OF ILLUSTRATIONS**

- **Figure 1** – Location of the main archaeological sites
- **Figure 2** – Scope of applicability and implementation of the Chance Find Protocol
- **Figure 3** – PPDI implementation and operation diagram
- **Map 1** – General Layout. Location of the areas of potential archaeological risk on the industrial project site
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- Law No. 182/2000 on the protection of movable heritage assets.
- MCRO 2071/30.06.2000 on the regulations for archaeological digs in Romania
- MCRO No. 2260/2008, on the approving the Methodological Norms for the classification and stock taking of the historic monuments, repealing OMCR No. 2682/2003.
- OMCR 2392/2004 on archaeological standards and procedures in Romania

International legislation

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