

Document title: REINSTATEMENT MANAGEMENT PLAN

Document number: 1062-TGN-MNG-PLN-PJM-22-00014

Project: THE DEVELOPMENT OF THE ROMANIAN GAS TRANSMISSION SYSTEM ALONG BULGARIA-ROMANIA-HUNGARY-AUSTRIA ROUTE, PODISOR – GMS HORIA AND 3 NEW COMPRESSOR STATIONS (JUPA, BIBESTI AND PODISOR) (PHASE 1) (REFERENCE NUMBER IN EU LIST: 6.24.2)

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Abbreviations

Abbreviations	Description
AGIs	Above Ground Installations
BRUA	Bulgarian-Romanian-Hungarian-Austrian
CESMP	Construction Environmental and Social Management Plan
CR	Commitments Register
EBRD	European Bank of Reconstruction and Development
EIA	Environmental Impact Assessment
ESIA	Environmental and Social Impact Assessment
ESMP	Environmental and Social Impact Assessment
F-CESMP	Project Framework Construction Environmental and Social Management Plan
GCS	Gas Compressor Station
HSE	Health, Safety and Environmental
HSE-MS	Health, Safety and Environmental Management System
KPI	Key Performance Indicator
PMU	Project Management Unit
PR	Performance Requirement
RoW	Right of Way

1 Introduction

1.1 Overview

The Construction Environmental and Social Management Plans (CESMP) defines the actions and measures necessary for the overall management of environment and social impacts for both the Project beneficiary (TRANSGAZ S.A (Trangaz)., represented by the Bulgarian-Romanian-Hungarian-Austrian Project Management Unit (BRUA PMU)) and contractors in line with the applicable law and other obligations. The CESMPs are comprised of a suite of management plans.

This is the Reinstatement Management Plan, document number 1062-TGN-MNG-PLN-PJM-22-00014 Trangaz is committed to protecting and restoring the natural and rural environments encountered along the pipeline route. The Reinstatement Management Plan addresses the following:

- Reinstatement of land other than the Right of Way (RoW);
- Physical reinstatement (areas where no specific restoration with regards to biodiversity is required).
- Bio-Restoration (in sensitive areas where specific biological restoration is required); and
- Erosion.

1.2 Purpose of this Reinstatement CESMP

This CESMP relates to the reinstatement of land disturbed by pipeline construction activities (like RoW, construction camps, pipe yards, etc.) to a condition similar to its original pre-construction character. The main objective is to meet Trangaz's goal of 'no harm to the environment'. This objective has associated benefits that include:

- Minimizing the risk regarding the pipeline's integrity because the erosion risk is reduced;
- Maintenance of natural landscapes and consequently their value as a tourism resource;
- Preservation of soil fertility in both natural and agricultural environments;
- Protection of water catchments and water quality;
- Sustain biodiversity (inline with the Biodiversity CSEMP); and
- Reduced risk of desertification.

Project construction activities have the potential to cause severe adverse impacts upon the ecological environment due to permanent and temporary disruption of local habitats. The majority of expected impacts upon the ecological environment however would occur during the construction phase, with the main causes of impacts being due to trenching, removal or top soil and compaction due to work vehicles. The project's residual impacts upon these environments throughout the route, however, can be mitigated against if an efficient and sustainable reinstatement process is established and implemented; resulting in negligible long term impacts and thus environmental stability. The Project, therefore, seeks to proactively manage the reinstatement process conducted by the projects contractors and to this effect has included specific obligations regarding reinstatement in the bidding document drawn by Transgaz S.A.

Due to the importance of ensuring that an efficient reinstatement process is in place, allowing for the long term ecological integrity of the habitats crossed during the construction of BRUA, clear guidelines are necessary. This CESMP therefore:

- Outlines the key policies, legislation and standards relating to waste management;
- Defines roles and responsibilities;
- Outlines actions necessary for the effective reinstatement management;
- Details specific control measures to be implemented by Transgaz and its contractors (and subcontractors);

- Incorporates the requirements of the Environmental Social Impact Assessment (ESIA) findings, international standards, Romanian legislation, Lenders requirements and Project-specific construction permits; and
- Considers Transgaz's general reinstatement management procedures and methodologies.

By doing this the CESMP defines the actions and measures necessary for the overall reinstatement management for both the Project beneficiary (Transgaz S.A., represented by BRUA Project Management Unit (PMU)) and contractors in line with the applicable law and other obligations

1.3 Scope of the Reinstatement CESMP

This CESMP covers all construction activities and stages of reinstatement and is applicable to all Transgaz staff, Contractors and Sub-contractors. Whilst this CESMP will act as a 'framework' to determine what the Contractors will be expected to produce, Contractors are required to ensure that all the CESMP requirements are adopted within their own management plans. To this effect the Beneficiary will introduce in the bidding documents specific provisions regarding reinstatement management obligations of contractors and at the conclusion of the contract, the winning bidder (the contractor) will present the activities that they will perform (including any outsourced) to address this. Further information on Roles and Responsibilities is provided in Section 5.

This plan describes the reinstatement of the RoW and all other temporary project areas which are used to support construction, including (but not limited to) construction camps, pipe dumps, maintenance areas, roads and other transport facilities, waste management and disposal sites.

1.4 Document Management

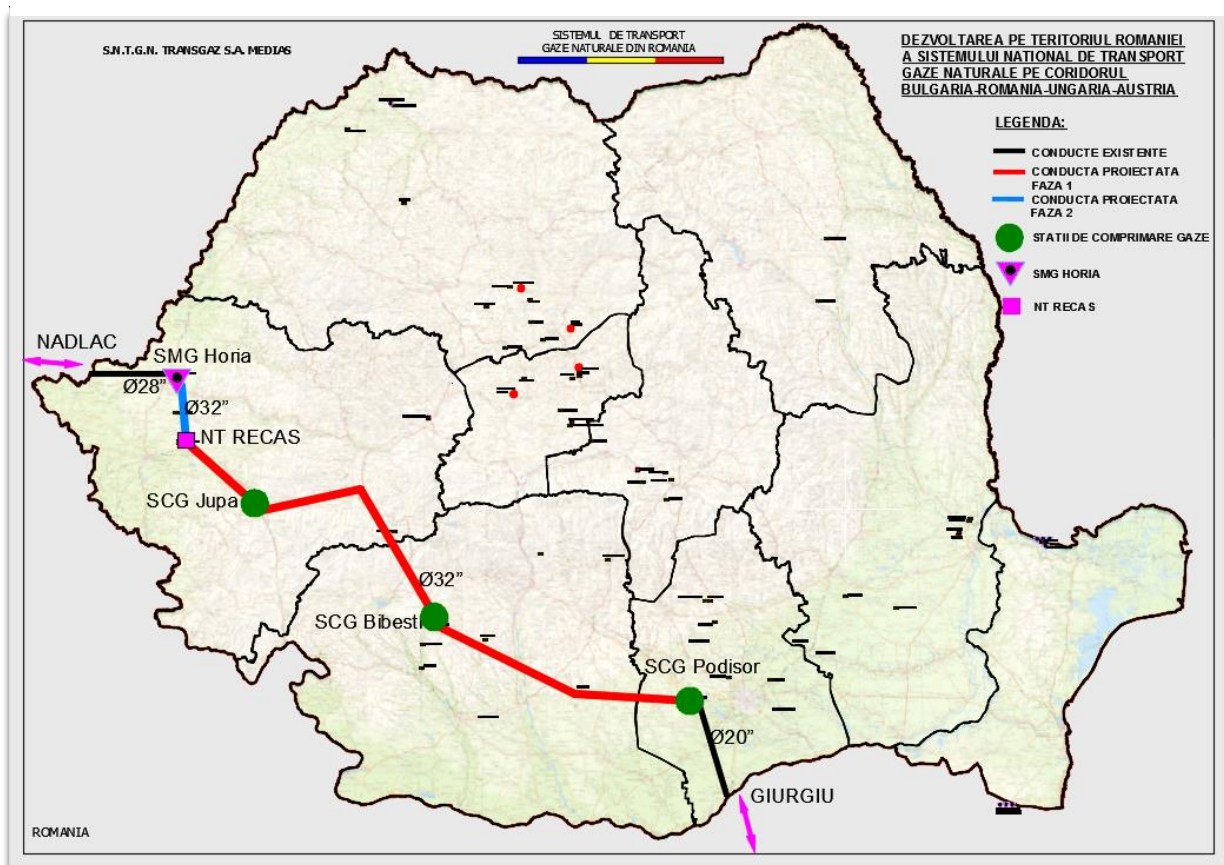
Project documentation will be managed and controlled by the Document Control and Archiving Compartment within BRUA PMU. The methods for document management and improvement during the construction phase will be described in the Document Guide to be developed by BRUA PMU.

2 The BRUA Project

2.1 Project Overview

SNTGN Transgaz SA Medias (“Transgaz”, “the Company” or “the Beneficiary”), the licensed operator of the Romanian National Gas Transmission System, is developing a 529km natural gas pipeline between Podisor in southern Romania and Horia in the west of the country (the “Project”), illustrated by Figure 2.1. The pipeline, which for much of the route will be buried and will upgrade or run alongside existing pipelines, represents the Romanian section of the BRUA Natural Gas Transmission Corridor. In addition to the pipeline itself, the Project will also require construction of three new Gas Compressor Stations (GCS) at Podisor, Bibesti and Jupa, as well as a range of supporting infrastructure including block valve stations, construction camps, pipe storage areas, watercourses and infrastructure crossings and access roads.

Figure 2.1 BRUA Route



Whilst the majority of the route is on land currently used for farming, it does pass through a number of specifically sensitive areas, including seven Natura 2000 Sites, and the nationally important Dinosaurs Geo-Park. It also passes close to a number of sites of archaeological value including the ancient city of Tibiscum near Jupa. In some of these areas, as well as near major roads and railways and for the eight major rivers, this will involve the use of horizontal directional drilling. In mountainous areas, special “hammering techniques” may also be applied.

2.2 Environmental and Social Commitments

The Project is subject to various environmental and social requirements that are managed by the Company through the implementation of its Health, Safety and Environmental Management System (HSE-MS)¹. This HSE-MS includes a specific Project Framework Construction Environmental and Social Management Plan (F-CESMP) as well as associated topic/activity specific CESMPs. Operational phase Environmental and Social Management Plans (ESMPs) will be developed at a later stage prior to BRUA operation. The overall approach to integration of the above documents is described in Section 4.2 of the F-CESMP.

2.3 Project Approach to Soil and Vegetation Reinstatement

Physical impacts on soil will exist only in the construction stage, especially in phases of excavation and local blasting as a result of the trench laying sections of pipe, and also while transporting materials, tools, equipment and workers to work fronts. In soil structure (temporary access roads) will occur following changes inevitable (but recoverable over time), such as:

- Pedogenetical process changes by interrupting the life cycles of vegetation, microfauna and mesofauna;
- Modifying the physico-mechanical properties of soil: texture, loosening state (settling), cohesion and internal friction; and
- Changes in hydro, and thermal aeration

Regarding the surface, the thickness and the volume of topsoil stripped during the various stages of project implementation:

- The most significant impact will occur during construction, when there will be mobilized soil layers from the horizons A (topsoil), B (deep soil deep) and C (parental substrate) - in the excavation trench of the pipeline;
- The surface of the stripped soil will be about 1083ha and permanent loss of surfaces by placing permanent objectives (SC, valve stations) will be about 12ha;
- Stripping thickness will be 30cm, thus estimated a total volume of 2,525,842.2 cubic meters of fertile soil to be mobilized. It must be fully understood this constructive step which involves scraping topsoil layer, because it is a solution to protect the soil, avoiding its exposure to the aggressive phenomena (compaction, risk of pollution by oil products, etc.) which are to be conducted in the area that would become comparable to a site area.

This plan summarizes the specific requirements that have been developed for reinstatement of areas disturbed during the project's execution. Issues addressed include physical reinstatement, erosion control and bio-restoration, as well as requirements for the extraction re-use and, if necessary, disposal of material excavated from the pipeline trench. The reinstatement specification is based on the following principals:

- Use of erosion classes as targets for reinstatement;
- Identification of bio-restoration targets;
- Definition of final reinstatement conditions;
- Limitations that the amount of open ground must not exceed the amount of ground undergoing reinstatement.
- Protecting topsoil resources by ensuring separation and storage in a manner that maximize

¹ Integrated Management Manual Quality-Environment-Occupational Health and Safety, code MSMI-CMSSO Ed. 03/Rev.

- the ongoing integrity of soil structure, seedbank resources and vegetative material and minimize the risk of topsoil loss;
- Achieving key bio-restoration objectives, including:
 - (a) restoration of the pre-existing ecology (i.e. that existing prior to construction), so far as is practicable, particularly in terms of the variety and distribution pattern of indigenous plant species
 - (b) establishment of sufficient vegetation cover to reduce erosion and achieve the performance target of Erosion Class 3 (Section 3) or better through restoration of the local plant communities, where practicable
 - Use of indigenous flora for long-term cover. The bio-restoration strategy is based on supplementing the topsoil seedbank and vegetative material resource within the reinstated topsoil;
 - Disposing of excess spoil in an environmentally acceptable manner; and
 - Minimizing adverse impacts on sensitive habitats outside of the RoW from construction activities, in particular when forming cuts on side slopes

This plan summarizes the specific requirements that have been developed for reinstatement of areas disturbed during the project's execution. Issues addressed include physical reinstatement, erosion control and bio-restoration, as well as requirements for the extraction re-use and, if necessary, disposal of material excavated from the pipeline trench.

The reinstatement specification is based on the following principals:

- Identification of bio-restoration targets – are mentioned in the Biodiversity Management Plan;
- Definition of final reinstatement conditions;
- Protecting topsoil resources by ensuring separation and storage in a manner that maximize the ongoing integrity of soil structure, seedbank resources and vegetative material and minimize the risk of topsoil loss;
- Use of indigenous flora for long-term cover. The bio-restoration strategy is based on supplementing the topsoil seedbank and vegetative material resource within the reinstated topsoil; and
- Disposing of excess spoil in an environmentally acceptable manner.

3 Policies and Standards

3.1 Overview

The Project is subject to a range of policies, legal & regulatory requirements and other applicable standards of relevance to this CESMP. Where two or more of the identified standards are inconsistent or contradictory, unless otherwise justified, the Project will adopt the most stringent. Details of these policies are provided in Section 7.3 of the F-CESMP.

3.2 Company Policies

Transgaz has adopted an Health, Safety and Environmental (HSE) policy and a Corporate Social Responsibility policy, registered as MSMI-CMSSO-Ed.03/Rev.0 and Transgaz Corporate Social Responsibility Policy/2014 -Manual. These policies apply to Transgaz and all activities carried out by the Company as part of this Project.

3.3 National Legislation

All contractors are also required to comply with all relevant national regulatory requirements. Whilst contractors are required to verify the latest regulatory requirements themselves an indicative key list of legislations is provided in F-CESMP.

Contactors must also ensure that relevant requirements of the various construction-related permits for the Project issued by national (and local) regulators are addressed. Any requirements arising from the revision/amendment of those permits will also be applied. Key permits are summarised in the F-CESMP Framework Document.

The construction companies will apply the requirements stipulated in the abovementioned documents, in force the date this Plan was prepared, as well as any amendments thereto. The Beneficiary, by means of BRUA PMU, will ensure the compliance with such requirements.

3.4 International Standards and commitments

A range of international standards and commitments are applicable to this plan as described in the F-CESMP. These include the EBRD Environmental and Social Performance Requirements (PRs), most specifically [PR3](#) and [PR6](#) for this plan. All contractors are required to comply with all such requirements as they apply to their activities

3.5 Other Reference Documents

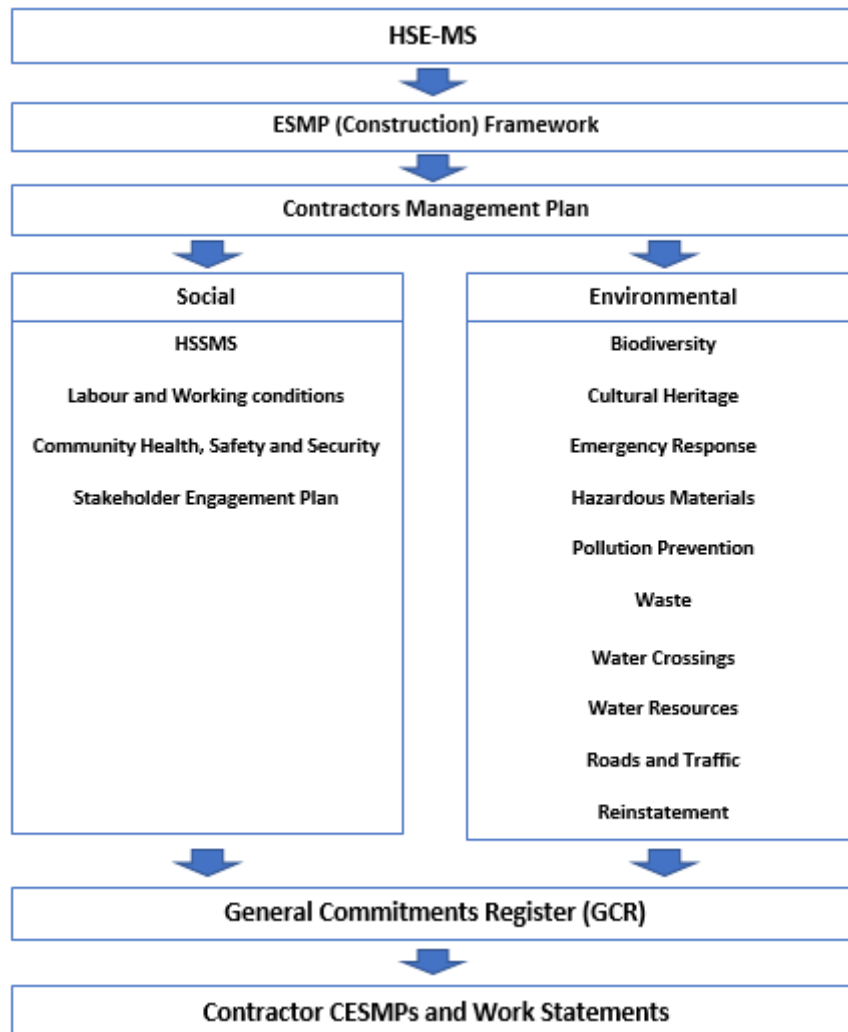
Technical Project no. 1062-2015: "Development of the National System of Gas Transportation along the BRUA Corridor"

4 LINKAGES TO OTHER ELEMENTS OF TRANSGAZ HSE-MS

4.1 Overview

This CESMPs forms part of the Project HSE-MS as described in the F-CESMP. Where relevant the CESMP should be read in conjunction with other HSES-MS elements including the ESMP source documentation, control documentation and the key HSE-MS documentation. These are described further in the F-CESMP and illustrated in Figure 4.1 below:

Figure 4.1 HSE-MS Linkages



4.2 Linkages to other CESMPs

A listing of the CESMPs and their document numbers is presented in the F-CESMP Document. This CESMP is part of the overall suite of CESMPs developed for the BRUA Project. This CESMP has overlaps and cross-linkages to a number of other Management Plans listed within Table 4.2:

Management Plan	Document Reference
Waste Management Plan	1062-TGN-MNG-PLN-PJM-22-00005
Pollution Prevention Management Plan	1062-TGN-MNG-PLN-PJM-22-00003
Water Resources Management Plan	1062-TGN-MNG-PLN-PJM-22-00007
Water Crossing Management Plan	1062-TGN-MNG-PLN-PJM-22-00008
Biodiversity Management Plan	1062-TGN-MNG-PLN-PJM-22-00006
Contractor Management Plan	1062-TGN-MNG-PLN-PJM-22-00002

This CSEMP is intrinsically linked with the Biodiversity CSEMP. Detailed methodologies, targets and KPI's for the biorestitution are included within this document and will be detailed further in a Biodiversity Management Plan (BMP)

5 To the Roles and Responsibilities

5.1 Overview

An integrated approach to reinstatement management involves a range of stakeholders, including the Company, the Contractors (and subcontractors), local authorities, regulatory agencies and the general public. Generic roles and responsibilities for the Company and Contractors are detailed below. An initial split of activities between key stakeholders is shown in Table 5.1 below with further information on specific responsibilities for CESMP actions outlined in Appendix 1 and Appendix 2 to this CESMP.

Table 5.1 Initial Split of Activities

Activities	Beneficiary	Contractors	External providers
Planning	x	x	
Dissemination of information	x	x	
Monitoring and audit	x	x	x
Professional training	x	x	x
Surveillance and control	x	x	
Corrective actions		x	
Management of cooperation	x	x	

The operational cooperation procedures in the construction site will be set in the Statement of Works that will be appended to the Commercial Contract to be signed between the Beneficiary and the Contractor. The Contact Point Unit for each construction site, as defined in the Contractor Management Plan, is the structure responsible for the implementation and monitoring of the provisions in the Statement of Works.

5.2 Company Roles and Responsibilities

Transgaz management roles and responsibilities during Project construction are detailed in the BRUA – PMU “Regulation of organization and functioning”. Further information is also provided in other documents listed in the F-CESMP document.

With regards to this CESMP, Transgaz S.A. is responsible for key management activities including:

- Development of bidding conditions regarding this management plan;
- Professional training of its representative on site;
- Surveillance and control;
- Management cooperation in case of environmental accident;
- Management of pollution from its own operations;
- Reviewing the Contractor’s procedures;
- Implementation of this procedure and the Contractor is meeting the requirements;
- Monitoring of adherence to the plans is implemented; this should be conducted by a dedicated Transgaz team to sign-off reinstatement.
- Breach of procedure is met with corrective actions;
- An inspection and audit programme is coordinated and supervised;
- Monitoring the contractors/subcontractors’ performance; and
- Prepare photographic evidence and/or video record the condition of the RoW prior to construction.

5.3 Contractor Roles and Responsibilities

Overarching Contractor requirements are defined in the relevant articles of their contracts and associated

mandatory annexes - Work of statement document. Each contractor must also implement all relevant requirements of the CESMPs, including this plan. Contactors are also responsible for ensuring that any subcontracted work also meets these requirements.

Contractors will therefore be required to present to the Beneficiary, represented in the project by PMU BRUA in accordance with the requirements, their proposed approaches to any other conditions outlined in this CESMP or its appendices.

Further specific responsibilities of both the beneficiary and the contractors/sub-contractors are outlined in the Appendices of this CESMP.

Table 5.2 Contractor Roles and Responsibilities

Responsible entity	Activities
Contractor	<ul style="list-style-type: none"> - Appoints, by decision the responsible person/persons for the implementation of the requirements provided in this Plan; - Makes sure that all the activities are carried out in line with the requirements of the bidding documentation and of this Plan; - Makes sure that the activities carried out by subcontractors are executed in line with the requirements of this Management Plan and with the requirements of the project; - Assures compliance with all the requirements of the Environmental Permit, permits/opinions issued by the custodians/administrators of the natural protected areas for the project; - Assures the notification and consultation of the custodians/administrators of the natural protected areas for the restoration of the lands to their initial state; - Assures the necessary training for the entire personnel; - Coordinates and monitors all the activities related to the application of this plan; - Assures the coordination of the activity of the team/teams in the field; - Records, on weekly basis, the information supplied by the teams in the field and integrates the information in a unitary report he submits monthly to Transgaz; - Reports on all risks, non-compliances and incidents; - Takes all necessary measures to remedy non-compliances; - Carries out routine inspections in the working sites to make sure that all activities are carried out in line with this Plan; - Within the Project the responsibility during the execution of the works related to the restoration of the land to its initial state lies entirely with the Contractors; - Defines the procedures and protocols to better implement the measures required by the project; - Complies with all relevant project standards, relevant international guidelines, statutory requirements, and permits; - Communicates to the workforce the requirements and regulations of the Client; - Ensures that all personnel are aware of their responsibilities; - Implementation of an appropriate inspection and monitoring program; - Assures the performance of all subcontractors regarding the project's requirements; and - Record keeping and reporting.

Further requirements for contractors in relation to environmental protection (under environmental permit) are defined in the relevant articles of their contracts and associated mandatory annexes, as defined in Work statement document. This requires that each contractor shall develop a Reinstatement Management Plan/ Reinstatement Action Plan (as part of the overall contractor implementation plan) that shall be submitted to Transgaz for approval, and that the contractor shall ensure that the Reinstatement Plan is implemented. In addition, each contractor is required to ensure that it meets all topic-specific requirements outlined in the Reinstatement Management Plan drawn by Transgaz that is relevant to its scope of work. The contractor is also responsible for ensuring that any relevant subcontracted work meet these requirements.

As part of this the Contractors will produce method statements, inspection plans and record portfolios for all erosion control and reinstatement works in order to be submitted for approval by Transgaz, according with bidding documents and recommendation of Beneficiary. The documentation will comply with project specifications, pre-entry agreements and the requirements of the ESIA and relevant Authorities. The contractor will prepare a photographic evidence and/or video record the condition of the RoW after reinstatement.

The Contractor will prepare site-specific method statements and schedules for reinstatement of:

- Environmentally Sensitive Areas is those areas with high ecological sensitivity, landscape value or erosion risk. The beneficiary will provide the necessary information to Contractors on bidding documents.
- Watercourse crossings that have detailed crossing drawings associated with them, or occur in environmentally sensitive or special agricultural;
- Special agricultural areas that support more complex agricultural systems such as canals and irrigation systems;

The contractors' documentation will also detail temporary and permanent measures to stabilize and control erosion.

The Contractors shall report to the Beneficiary the results of the surveys and assessments, shall integrate the results, including additional mitigation and management measures as agreed with Company, with the Reinstatement Management Plan and site specific reinstatement plans.

Contractor's monthly report to Company shall include:

- Results of the surveys and assessments;
- Number and results of verification inspections; and
- Performance Indicators as applicable in the reporting period.

6 Mitigation, Management and Monitoring Activities

6.1 Management Actions

A range of management actions (and other mitigation measures) are required to be implemented. The specific management actions and measures required of Transgaz staff and its contractors are described in Appendix 1.

6.2 Monitoring Activities

The specific monitoring requirements for this CESMP are presented in Appendix 2.

The RoW will be monitored for:

- Slope wash;
- Slumping and soil movements;
- Loss of stored topsoil, subsoil or cuttings; and
- Status and success of re-vegetation.

6.3 Environmental and Social Monitoring Activities

The monitoring provisions for the construction phase of the Project have been developed by Transgaz in a staged process, as detailed within Table 6.1:

Table 6.1 Approaches to Monitoring

Objective	Approach
Stage 1: Risk Management	Use of the 'source-pathway-receptor' approach in the ESIA to determine monitoring requirements for significant construction activities that are commensurate with: <ul style="list-style-type: none">• the scale and nature of the activity;• the assessed potential level of impact (and uncertainty thereof); and• the sensitivity of the local environment within the activity area of influence.
Stage 2: Regulatory Compliance	In addition, regulatory monitoring programs have been defined that are fully consistent with the principles developed in Stage 1.

The above approach ensures that monitoring plans are developed that meet both:

- Transgaz's judgement on the necessary monitoring required adequately understanding and managing the Project's potential impacts during each construction activity and at each location; and
- Any specific requirements of the Romanian authorities.

7 Verification Activities

7.1 Key Performance Indicators

Both the General Monitoring and the Management System Verification Processes require robust Key Performance Indicators (KPI) to be developed. These are quantitative or qualitative measurements used to gauge performance over time and can be used to assess the effectiveness of control measures. The KPIs considered relevant to this CESMP are shown in Table 6.4 below.

Table 7.1 KPI relevant to the Reinstatement CESMP

ID	KPI	Target/Action Threshold	Monitoring Measure
KPI-RMP01	Instances of non-compliance with the requirements of this CMP.	Zero non-conformances	See Appendix 2
KPI-RMP02	Instances of non-compliance with project standards identified during monitoring	Zero non-conformances	See Appendix 1 and Appendix 2
KPI-RMP03	Instances of non-compliance with environmental permit	Zero non-conformances	See Appendix 1 and Appendix 2

The specific auditing requirements for the verification of each management and mitigation controls measure described within this plan are identified in Appendices 1 and 2. This includes identification of the relevant audit tier level (1 to 3) to be undertaken.

7.2 Management System to Verify Monitoring

Management System verification monitoring requirements, as detailed in the F-CESMP Document, are divided into three levels as shown in Table 7.2 below.

Table 7.2 Auditing Management System

Tier	Objective	Responsible	Description
Tier 1:	Transgaz management system audits	Transgaz	These audits are aimed at assessing the Transgaz HSES management system elements and assessing their continued suitability throughout the project life cycle.
Tier 2:	Transgaz CESMP audits	Transgaz	These audits are undertaken by the Transgaz BRUA team to confirm compliance by the Company and its contractors with the CESMPs.
Tier 3:	Contractor self-audits	Contractor	These audits are to be undertaken by contractors to confirm compliance by themselves and their sub-contractors with the CESMPs and their own HSE management systems. The managing contractors shall ensure that audit reports are provided to Transgaz

In addition to the above, there are also expected to be regulatory audits and lender compliance monitoring visits. The nature and structure of these will be confirmed with regulators and lenders.

7.3 Non-Conformance

Non-conformances and progress on associated corrective actions will be identified, recorded and managed in line with the HSE-MS procedures and action tracking system.

7.4 Training

The contractor shall make sure that all employees are properly trained for the necessary activities related to the restoration of the lands to their initial state, so that the activities carried out do not generate a significant negative impact.

8 Appendices

8.1 APPENDIX 1 –Mitigation Measures & Management Actions

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
RMT-C01	All	Overall	Works organizations will be established by accurate legal documents that will determine the distinct responsibilities of entrepreneurs, assumed compensation, but also the breach to restore them to the initial state. Based on these documents, environmental liabilities will be clearly defined in the protocols of pre-defining environmental tasks undertaken. Thus, the principles underlying the specific legislation in force (especially the principle: the polluter pays), the contractor will undertake to remedy any fault of its negative effects.	Contractor Transgaz	All	288
RMT-C02	All	General	The contractor will develop a generic Soils Management Plan to be applied across their working areas. This will include identification and mapping of areas with soils of high sensitivity (eg especially fertile, at risk of erosion/landslip, susceptible to flooding/compaction etc).	Contractor	All	227
RMT-C03	All	RoW pegging	Contractors will only disturb soils within the designated right of way (ROW) working strip and approved work areas, and new access roads. Areas to be excavated will be minimized and clearly pegged out.	Contractor	Site supervision	9
RMT-C04	All	General	Vegetation will not be removed too far ahead of trenching operations to minimize erosion, run-off or dust from exposed unvegetated surfaces.	Contractor	Site supervision	19
RMT-C05	All	General	Trench widths and depths will be minimized where practical (and in align with technical requirements) to minimize soil generation. In general the entire volume of soil overburden will be reused at each location.	Contractor	Site supervision	19

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
RMT-C06	All	Grading	Restoration of land after temporary works will start as soon as the pipe is backfilled and will continue until the work area is reinstated and re-vegetated. All graded areas will be returned to their original contours the topsoil replaced and the work area will be seeded, fertilized and mulched as appropriate to restore ground cover and to minimize erosion. Excess/spoil soil will be appropriately disposed. The length of time between vegetation clearance and grading, and between grading and reinstatement will be minimized to reduce levels of soil erosion (including of stockpiles) . The length of time the trench is open will also be minimized with backfill commencing immediately following pipe laying.	Contractor	Site supervision	156
RMT-C07	All	Topsoil	Topsoils and subsoils will be stripped and stockpiled separately, with topsoil separated at the outset to protect it from compaction, risk of pollution by oil products, etc. Topsoil will generally be stored at the edge of the ROW with subsoil next to the trench, although if necessary geotextile will be used to separate topsoil and subsoil (e.g. in restricted spaces). Contractors will minimize double handling of top soil and will undertake continuous visual inspection of activity sites for identification of possible soil contamination.	Contractor	Site supervision	335
RMT-C08	All	stockpiles	Piles of topsoil will be stored at one edge of the strip work and will take the form of berms with triangular, slope inclination will reach 45 ° a maximum width of 2.5m. Soil stockpiles from topsoil stripping will also be approximately 2.5 m in height depending on local soil conditions, as well as working strip width and local coverage of the pipeline (i.e. required trench).Limit the storage area of the excavated material in order not to cause the over loading of the land.	Contractor	Site supervision	335
RMT-C09	All	stockpiles	Any plant debris from the immediate vicinity of the implementation area of the project will be mixed with the topsoil to increase its organic matter content and thus amplify its productive capacity, help limit erosion and compaction and improve water-holding capacity. This will approach not be used inside the Natura 2000 sites or where the route crosses other sensitive areas as outlined in the Biodiversity section.	Contractor	Site supervision	93

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
RMT-C10	All	stockpiles	Topsoil storage periods will be kept to a minimum, and in general topsoil will only be stored for no more than 30 days.	Contractor	Site supervision	61
RMT-C11	All	stockpiles	When topsoil stockpiles need to be maintained for more than 30 days they will be protected from erosion and compaction by sowing with fast growing seeds (e.g. mustard or grass). Special measures will also be taken to ensure ventilation by installing polyethylene pipes with perforations (filter type) to the berm faces alternately to about 1-1,5m, one end of about 0.5m, to be left out to allow the continuation of biological processes inside the topsoil.	Contractor	Site supervision	229
RMT-C12	All	seeding	Reseeding of topsoil will involve seeds from species collected locally at the site and compatible with the surrounding area. Wooded areas will be replanted with saplings from appropriate tree and scrub species of local provenance.	Contractor	Site supervision	94
RMT-C13	All	seeding	Following soil restoration and reseeded remaining cut vegetation will be used to cover the area to help stabilize the soil and to promote natural re seeding.	Contractor	Site supervision	338
RMT-C14	All	construction method	Clean the channel from rocks or other hard bodies, which might deteriorate the isolation of the pipe	Contractor	Site supervision	60
RMT-C15	All	erosion control	In the areas with eroded land, slopes, and risks of landslide/seismic activity, specific erosion control measures will be implemented. A study of the geological and tectonic structure of the area will be undertaken to understand risks. Transgaz will provide the existing geotechnical studies.	Contractor	All	63
RMT-C16	All	erosion control	Construction strip reinstatement will be accelerated in areas with high or medium erosion sensitivity. Antierosional protection systems will also be created through the placement of oversized objects and sand bags with rocks. Erosion control using 'polders', pads of plants and geo-nets should be implemented, as specified in the Environmental Impact Assessment (EIA) and the use of the following considered: 1) assembly of floundered	Contractor	Site supervision	163

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
			fences, 2) attentive land consolidation, 3) compacting and grassing works after the trench is filled.			
RMT-C17	Soil Erosion	erosion control	Construction activities shall seek to avoid periods of highest precipitation when the risks of soil structure destruction, compaction and erosion are highest. Special efforts will be made for soils of high sensitivity to compaction (e.g. clayey soils, Luvisols) to undertake Project activities during the dry period.	Contractor	Site supervision	241
RMT-C18	Throughout	compaction	Compact the layers of covering soil by using a beater (manual); successive layers of 20-30 cm each shall be made which have been moistened in advance and then they will be compacted	Contractor	Site supervision	68
RMT-C19	Soil Compaction	compaction	Deep ploughing (subsoil de-compaction) will be applied to the construction zone as well as temporary construction facilities (such as pipe yards and construction camps) following project construction and will be performed during restoration. The deep ploughing will be performed on the entire working strip where topography allows to a depth of approximately 60 cm+D800 D80cm 40 cm low surface, and if locally required due to equipment limitations diagonal and alongside the working strip.	Contractor	Site supervision	233
RMT-C20	Alpine areas	sensitive areas	Create appropriate conditions for temporary storage of soil furrows in close proximity (placement on a pallet or nylon film) and they will be sprinkled daily;	Contractor	Site supervision	146
RMT-C21	watercourses	watercourses	Where the pipeline crosses surface watercourses AND WHERE REQUIRED IN THE WATER MANAGEMENT PERMITS, erosion control for banks will be implemented as specified in the appropriate chapter of the EIA. Near watercourses the contractor will ensure reinstatement is like-for-like (i.e. bank makeup, shape etc. should be maintained, Geo coir will be used to retain bank edges where required (see specific mitigation). If specified by the Biodiversity Specialist, the prescriptions of a specific method statement for watercourse restoration must be followed.	Contractor	Site supervision	362

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
RMT-C22	Rock falls	Sensitive Areas	Use of stoppers, barriers and/or wire fences to minimize impact.	Contractor	Site supervision	226
RMT-C23	Soil Erosion	Fencing	Silt fences which are used during construction to mitigate the high risk of soil erosion are important to remain there beyond the end of the pipeline construction activities in order to assist the reinstatement.	Contractor	Site supervision	239
RMT-C24	General	Approach	<p>1. Contractors will be responsible for producing a Reinstatement Management Plan (C-RMP) that will ensure adequate reinstatement (restoration of vegetation cover and habitats to the same conditions prior to construction), in particular in sensitive areas;</p> <p>2. The C-RMP will specify in detail the measures / techniques the Contractor proposes to implement to achieve adequate reinstatement;</p> <p>3. The C-RMP will be reviewed and approved by Transgaz;</p> <p>4. The Supplementary ESIA, TG RMP and the General Project CR will include some recommendations / examples of efficient reinstatement measures (see below under "Recommended Approach") that TG can consider when reviewing / approving the C-RMP; different measures / techniques can be accepted, as long as TG considers they will ensure an "adequate reinstatement" of the affected areas.</p> <p>5. "Recommended Approach":</p> <ul style="list-style-type: none"> • Prior to any seeding, scarification of land in areas that are compacted to promote soil aeration (e.g. following removal of hard-core used for access roads); • Soil stabilisation needs to be ensured before seeding: SEE 238 • If areas were previously vegetated vegetation should be re-instated, and appropriate seed mixes should be used throughout. • In steep slopes and embankments that are difficult to access with conventional equipment: Hydroseeding is recommended • In flat areas: hand or machine casting of seed is recommended (with gentle rolling) • Use of bulking materials: <ul style="list-style-type: none"> - for hand sowing, use sand (damp, not wet and added immediately prior to sowing), as the sand will adhere to the seed and aid distribution. 	Contractor	Approval and Audit	237

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
			<ul style="list-style-type: none"> - for mechanical distributors (where sand may cause damage to mechanisms) use sawdust or cornmeal. • Light rolling required following seeding to ensure adhesion (create good seed/soil contact - in dry wheather 			
RMT- C25	Soil Erosion	Stablising	At the sections with high precipitation, moderate to steep slopes and weak soil structure or structureless soils, some form of soil stabilisation will be required. It can be via the use of fences, revetments made of wood, steel gabions, coir matting etc.; however, in riparian areas (on the river banks) and potentially Natura heathlands, scrub planting may be required to appropriately stabilise the soils	Contractor	Site Supervision	238
RMT- C26	Watercourses	Watercourses	Soil stockpiles stored within 20m of watercourses will be covered with Geo-netting.	Contractor	Site Supervision	382
RMT- C28	Landslides	Soil Stabilisation	<p>In the case the pipeline crosses landslide areas, use of embankments at the basis of the slope or retaining structure, reducing the slope inclination with additional soil deposits or lowering groundwater levels, or replacing or reinforcing sensitive soil layers to minimise causation.</p> <p>On slopes, soils will be stabilised via the use of fences, except on the banks of rivers, where shrubbery will be required to appropriately stabilise the soils.</p>	Contractor	Internal Audit	225
RMT- C29	Enitre Route	Compaction	<ol style="list-style-type: none"> 1. The Contractors will detail in their C-RMP measures / techniques to avoid / minimise soil compaction wherever possible, in particular in sensitive areas 2. Where compaction cannot be avoided, the Contractors will be responsible for decompacting and aerating the soil before seeding, in order to ensure an adequate reinstatement of the area; 3. The C-RMP will be reviewed and approved by Transgaz; 4. The Supplementary ESIA, TG RMP and the General Project CR will include some recommendations / examples of efficient measures (see below under "Recommended Approach") that TG can consider when reviewing / approving the C-RMP; different measures / techniques can be 	Contractor	Approval and Audit	236

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Means of verification	Commitments Register Ref
			<p>accepted, as long as TG considers they will ensure an “adequate reinstatement” of the affected areas.</p> <p>5. “Recommended Approach”: In sensitive areas, the ground shall not be compacted, either by using cellular geo textiles or raised traffic ways;</p> <ul style="list-style-type: none"> • If this is not possible, and crushed hard-core is to be used, it should still be on top of a membrane of some sort to enable removal; • De-compaction will be required in these areas before seeding. 			
RMT-C30	Entire Project	Statements	Implement Special Method statements for construction and reinstatement at special/sensitive areas.	Contractor	Site supervision	202

8.2 APPENDIX 2 – Monitoring Requirements

ID	Topic/ Aspect	Applicability / Activity	Control Description	Responsible Parties	Timing
RMP-M01	ROW	Throughout	ROW landform is reestablished	Contractor/Transgaz	Monthly
RMP-M02	ROW	Watercourses	Storm water runoff does not pollute nearby watercourses	Contractor/Transgaz	In rain period
RMP-M03	ROW	Throughout	Sediment and erosion control structures in place	Contractor/Transgaz	Monthly
RMP-M04	ROW	Throughout	Compliance with all reinstatement requirements	Contractor/Transgaz	Monthly

8.3 APPENDIX 3 – Erosion Classification and Management

Erosion classes have been used as the basis for determining erosion targets for permanent reinstatement. Table 3-1 defines these erosion classes. The objective is to achieve erosion class 3 or better, wherever practicable. This represents moderate erosion, which is defined as the release of < 10 tonnes of sediment per hectare during a one hour, 10-year return period, storm. As a minimum, the following standards will be achieved:

- No risk of reduction of the depth of cover above the pipeline
- Very low risk of release of eroded soil beyond the confines of the ROW (Note: sediment interception devices will be installed at locations where there is a risk of such sediment significantly impacting water bodies)
- Low risk of damage to bio-restoration schemes through washing-out of seeds and plants

An erosion risk assessment has been undertaken along the route. This assessment identified areas of potential erosion and assigned erosion control measures for each area of the route.

Table 3-1 Erosion classes

EROSION CLASS	VERBAL ASSESSMENT	EROSION RATE (t ha ⁻¹)	VISUAL ASSESSMENT
1	Very slight	< 2	No evidence of compaction or crusting of the soil. No wash marks or scour features. No splash pedestals or exposed roots or channels.
2	Slight	2-5	Some crusting of soil surface. Localized wash but no or minor scouring. Rills (channels <1m ² in cross-sectional area and < 30cm deep) every 50-100m. Small splash pedestals where stones or exposed roots protect underlying soil.
3	Moderate	5-10	Wash marks. Discontinuous rills spaced every 20-50m. Splash pedestals and exposed roots mark level of former surface. Slight risk of pollution problems downstream.
4	High	10-50	Connected and continuous network of rills every 5-10m or gullies (> 1m ² in cross-sectional area and > 30cm deep) spaced every 50-100m. Washing out of seeds and young plants. Reseeding may be required. Danger of pollution and sedimentation problems downstream.
5	Severe	50-100	Continuous network of rills every 2-5m or gullies every 20m. Access to site becomes difficult. Revegetation work impaired and remedial measures required. Damage to roads by erosion and sedimentation. Siltation of water bodies.
6	Very severe	100-500	Continuous network of channels with gullies every 5-10m. Surrounding soil heavily crusted. Integrity of the pipeline threatened by exposure. Severe siltation, pollution and eutrophication problems.
7	Catastrophic	> 500	Extensive network of rills and gullies; large gullies (> 10m ² in cross-sectional area) every 20m. Most of original surface washed away exposing pipeline. Severe damage from erosion and sedimentation on-site and downstream.

TEMPORARY EROSION CONTROL MEASURES

A. General

Temporary erosion control measures will be installed by the contractor to provide protection to the local environment and to achieve the required performance standards. The measures will facilitate stabilization of reinstated areas, minimize erosion and ensure that watercourses are not adversely impacted. Such measures include:

- Flow breakers, or plugs of material (hard and soft) installed at appropriate intervals within trenches on longitudinal slopes to prevent scouring of the trench bottom
- Water bars constructed on the ROW to control surface water runoff and erosion. Water bars will be designed to simulate the slope contour and direct and diffuse surface water away from the disturbed area
- Flumes or other similar methods to allow drainage and migration of water where cross drainage is necessary (ie where slopes are steep)

The ROW will be monitored for:

- Subsidence of the pipeline trench
- Slope wash
- Slumping and soil movements
- Loss of stored topsoil, subsoil or cuttings
- Areas of disturbed ground off the ROW
- Status and success of re-vegetation

B. Erosion matting

Erosion matting will be installed to:

- provide immediate protection to the ROW on slopes, etc.
- minimize washing-out of seeds
- enhance the micro-climatic conditions of the soil for plant germination and growth.

Once installed, erosion mats will be regularly inspected for degradation and installation integrity. Mats will be maintained and replaced as required to achieve project requirements.

C. Sediment control

Where the ROW intersects or is parallel to an environmental receptor (eg watercourse, wetland, water body or other environmentally sensitive area), sediment controls will be installed to prevent sediment run-off significantly affecting the receptor. Sediment control will be used and maintained until the ROW has been stabilized and project requirements are achieved.

Sediment interception devices include:

- Silt fences - installed in areas of low sheet flow

- Straw bale barriers - installed in areas where small amounts of sediment require temporary interception
- Filter berms - installed where there is a requirement to temporarily retain run-off water after a storm event to allow sediment to settle
- Sediment traps - installed as required at outlets of ROW drainage systems, at the outlet of any structure which concentrates sediment-laden runoff and above storm water drains which are in line to receive sediment-laden runoff

D. Soil stack control

In certain instances, such as in areas of side slope and along steep ridges, wooden fences will be installed and maintained alongside the ROW to retain stockpiled topsoil and arising during construction and reinstatement. Fences will be designed for the anticipated and will be removed during final reinstatement of the ROW.

PERMANENT EROSION CONTROL DEVICES

Permanent erosion control measures are outlined in this section. They will be installed to:

- facilitate maintenance of stability in reinstated areas
- minimize erosion
- ensure that watercourses are not adversely impacted.

A. Diverter berms

Diverter berms will be place across the slope of the ROW to intercept runoff and direct it to a safe outlet. Berms will be construct in accordance with a detailed specification.

B. Gabions

Gabions will be use where there is a requirement to form large, flexible, but permeable structures such as retaining walls and revetments for earth retention. Gabion walls may be construct to facilitate permanent recovery of the ROW and associated areas and to prevent or stabilize landslides.

Gabions structures will be design and construct in accordance with the manufacturer's specifications and project approved method statements.

C. Trench breakers

Trench breakers will be install within the trench at locations along the pipeline route where the natural profiles, drainage patterns and backfill materials may cause the trench to act as a drain. They may also be required at the base of slopes adjacent to watercourses and wetlands and where it is necessary to prevent the SCP trench acting as a drain.

The following subsections discuss regular activities that will take place prior to and during reinstatement of the disturbed areas, in addition to those mentioned above. An agronomist should be instated at each site to oversee the reinstatement procedure is implemented effectively and conduct soil sampling prior to works and post works to ensure soil quality is maintained throughout the route.

PHYSICAL IMPACTS ON SOIL

Mitigation of the impact on soil

Outlined in appendices A and B of this document is the generic mitigation commitments that contractors must abide by when conducting all activities that may impact upon the reinstatement process of the project. The should form the basis of all contractor and subcontractor's plans on the effective management of pipeline reinstatement. Compliance with these management actions and monitoring practices will ensure a reduction in environmental impacts throughout the route via the establishment of reinstatement standards of practice.

In order to reduce the impact of the environmental factor ground for the construction phase, it has been proposed the following measures:

- Technological road not be located on the line of greatest slope; It will be avoided thus develop a leak (wash) surface and forming of ditches, gullies, erosion profiles;
- Work should be avoided in rainy weather;
- All machinery to be used will be thoroughly checked technically, so it does not appear any damage with the damage and consequences of environmental factors;
- Repair and maintenance of equipment shall only be performed in specialized units outside sites or work fronts;
- It is prohibited to wash the machines in the work fronts; any measures of cleaning the machines will be carried out only in the premises equipped with concrete platforms, with gutter systems equipped with tanks of desanding and oil separator;
- The waste will be selectively collected and stored in containers or bins with exclusive destination, located at the site and work fronts;
- Temporary access roads will be restored to its original state by backfilling, ripping, disking, over seeding - where appropriate;
- Limiting the vehicle routes to a minimum in order to avoid the impact on the proximal extension;
- Use the existing access roads and avoid, when possible, the realization of new roadways;
- Strengthen and systematize the access routes in order to avoid induction of an impact due to the occurrence of erosive phenomena, the ponding, etc .;
- Starting the work on site from the farthest point of the yard, to the proximal point, in order to avoid creating new roadways;
- Organizing separate heaps for temporary storage of excavated soil, as follows: for topsoil stripped - the end of work platform; for soil excavated from the trench laying pipe - in close proximity to the excavation area;
- Immediately cover of the excavated trench after laying the pipe;
- Where the excavated trench is exposed for more than 24 hours, there will be an earth ramp inclination of max 45° in order to allow the microfauna species to climb the walls and exist the excavation, the trech will be checked each morning by the Biodiversity Specialist.;
- Compacting the soil layers by using a coating mallet (manual); will be achieved successive layers by 20-30 cm, moistened in advance, which will be compacted;
- The application of hay blankets in close proximity to the area of construction (but outside Natura 2000 sites, where the route overlaps with such protected areas) to ensure: reinforcement of the superficial soil layers, intake

of organic matter , surplus of vegetable seeds (and micro fauna), avoidance of superficial erosion;
- Over seeding with native spontaneous species;
- Ensuring the proper equipment on site, and also the necessary materials for intervention in case of accidents (oil spills), in order to avoid any possibility of expansion of pollution;

Supplementary to these generic mitigation strategies that can be found in appendixes 1 and 2, detailed procedures for erosion classification (appendix 3), Reinstatement Procedure (appendix 4) and Bio-restoration procedure (appendix 5). These procedures should be regarded by contractors as guidelines and the minimum standard on which they will draft their reinstatement procedures.

TOPSOIL STRIPPING AND STORAGE

Topsoil can be defined as the upper layer of material on the land surface, which is capable of supporting plant growth; it contains the seedbank and vegetative material resources. Maintenance of topsoil quality, structure and integrity is vital to both bio-restoration and erosion control.

The following principles will apply to removal and storage:

- In general, the width to be topsoil stripped will be the working width required for construction and installation of the SCP, but will exclude the area that will be used to store topsoil. The contractor may apply for relaxation of this requirement where the ground is solid rock (is where there is no soil) taking into consideration the local conditions, pre-entry agreements and the need to satisfactorily reinstate the pipeline route
- Where topsoil stripping is necessary, the depth of the topsoil will be established and up to 300mm will be removed and stored. Topsoil below 300mm will only be stripe if this is specifically required. Topsoil will generally be stored on areas where the topsoil has not been removed
- Storage locations will be sited so that they are not compacted by vehicles, or contaminated, or otherwise treated in a manner that will cause losses and/or degradation
- Stored topsoil will not be mix with subsoil. In general, topsoil will be stored on the opposite side of the ROW to subsoil. In cases where there is insufficient storage space, both topsoil and subsoil may be stored on the same side provided mixing is prevented by physical means e.g. geotextile sheeting
- Topsoil stacks will be structure to ensure that they are free draining and do not impound water. Where possible, topsoil stacks will not more than 2m high with side slopes of 45° and will be drained with open ditches and berms as necessary.
- Gaps will be left in the topsoil stack to permit reasonable access across the ROW
- The surface of the topsoil stacks may be compacted to restrict rainfall penetration, but not so much that anaerobic conditions will occur
- The stockpile will be treated where appropriate to prevent weed growth
- Under no circumstances will topsoil be used as padding material or for trench breakers
- Topsoil handling during inappropriate ground / weather conditions will be avoided for soils that are susceptible to damage (eg soils with a high clay content)

SUBSOIL REMOVAL AND STORAGE

During construction, subsoil will be excavated from the pipe trench and, at some locations, from the cutting of level working platforms ('benches') on the side of slopes. Subsoil will be managed so that it does not contribute directly or indirectly to excessive erosion or sedimentation. The following principles will be applied to the removal and

storage of sub-soil:

- Subsoil will be stored separately from topsoil, and will not be mixed
- Stockpiles will be kept stable from collapse and will drain freely
- Drainage will be provided to manage appropriately the water and sediment loads emanating from the subsoil stacks (e.g.- gaps will be left or flumes installed, and others)
- Subsoil will be returned to the area from which it was excavated, as far as practicable
- Subsoil which cannot be reused, is returned to the trench or corridor ROW, will be placed in stockpiles pending disposal.

TRENCH EXCAVATION AND PIPELINE PADDING

The creation of excess excavated material will be minimized and excess material will be recovered and re-use to the greatest extent possible.

Fill materials will not be import unless it can be demonstrated that such fill is required and that it cannot be won from the project areas (eg by crushing trench arising). All importation of fill will be approved in advance by SCP Co.

Generally, all excavated materials will be return to the excavated areas. Where materials are unsuitable for return to the trench (eg certain types of rock) they will be disposed of safely in accordance with environmental requirements.

MANAGEMENT OF SURPLUS SPOIL AND ROCK

Priorities for managing excess spoil are as follows:

1st priority - ROW Reuse:

Where generated spoil is suitable for use as a construction material it will re-used on the ROW or temporary works areas.

2nd priority - ROW / Project-Area Disposal:

- Localized increase in finished surface height of ROW
- Increase in finished level of AGIs

All disposal/reuse in the project areas will be done without environmental impact to off-project areas.

3rd priority - Off ROW Reuse:

Transfer to a third party for re-use purposes as raw or semi-finished materials, eg crushed rock may be suitable for road construction materials or for rail ballast.

4th priority - Off ROW Disposal: (All sites, to be agree prior to use with SCP Co.)

Potential disposal sites will be identified and any necessary consent obtained. These sites will be plane, design, develop, operate and re-instated as appropriate by the contractor. The contractor will be responsible for the technical and environmental assessment of such sites and for obtaining regulatory approval.

In principle, excess material disposal sites will not be:

- in Environmentally Sensitive Areas (except with prior project approval)
- in areas adjacent to special agricultural sections
- in watercourses or valley bottoms
- in windrows over the pipe
- on side slopes below benches or ridge cuttings where the side slope exceeds 45°
- where they will potentially interrupt concentrated overland flow
- in such a way as to cause unacceptable landscape (visual) impact
- on any open area where the slope exceeds 30°

Sites for the disposal of excess excavated material will, in general, comply with the requirements for 'inert' waste disposal sites. However, provided a number of conditions are met, a reduced specification for the design of the site may apply. Conditions include the requirements that:

- the site is stable and appropriately drained
- only natural materials are deposited and
- the transport vehicles do not transport other types of wastes.

REINSTATEMENT OF SOILS

A. Reinstatement of subsoil

Two situations are considering: standard reinstatement and special reinstatement.

- **Standard reinstatement:** On return of the subsoil to the trench or ROW, the subsoil will be compacted to levels similar to the adjacent undisturbed area. The depth of subsoil after settlement will not be above that within the surrounding ground. After the subsoil has been returned and the land leveled, the subsoil will be ripped to a depth of 350-400mm, rendered to a loose and workable condition and contoured in keeping with the adjacent undisturbed ground.
- **Special Area reinstatement:** Special Area Reinstatement will be applied where it has been necessary to cut a bench into the hillside in order to lay the pipe and the intention is to restore the original contours. This will be achieved by filling-in the bench, thereby removing any visual impact on the landscape. Locations where this is required relate to defined Environmentally Sensitive Areas and special agricultural areas.

Upon completion of reinstatement of subsoil, disturbed areas will be inspected jointly by the contractor and SCP Co. for slope stability, relief, topographic diversity, acceptable surface water drainage capabilities and compaction.

B. Reinstatement of topsoil

Topsoil will not be mixed with subsoil during replacement. Only topsoil (and equivalent materials as permitted by the Reinstatement Specification) will be re-spread over the surface. Topsoil will not be used for bedding material in the trench and topsoil from unstripped/undisturbed areas will not be used to cover adjacent disturbed areas. Topsoil will not be handled under wet conditions or at times when the ground or topsoil is frozen.

All disturbed areas will be graded and left sufficiently rough to promote new vegetation growth which will protect the stability of the topsoil.

WATERCOURSES

International best practice will be used for watercourse crossings. For significant crossings, in environmentally sensitive or special agricultural sections, special section designs and method statements will be developed and implemented to ensure site-specific environmental and social issues are considered appropriately.

The disturbed portion of the watercourse, the bed and banks, will be returned to pre-construction contours where possible with the backfill over the pipe at least as scour-resistant as the original bed material. Where practicable, watercourse banks will be stabilized within 48 hours of backfilling. Erosion and sediment control devices will be installed and maintained until new vegetation is sufficiently established. Where unstable channels exist downstream in the vicinity of the pipeline crossings, bed stabilization work will be carried out to minimize the risk of bed erosion compromising the integrity of the pipeline.

Watercourse crossings will be regularly inspected until adequate stability has been achieved. After this, routine inspections will be made approximately every three weeks until the end of the maintenance period.

SPECIALIST AREAS

Special Areas will be considered separately within the reinstatement plan and method statements. Special areas include:

- **Side Slopes & Cuttings** - At environmentally sensitive locations or special agricultural areas, the side slope will be restored, as far as practicable to the original contours.
- Special agricultural areas – where canals, or irrigation channels, etc. are encountered these will be addressed in land use / system method statements.

RESTRICTING AREAS

Measures will be taken to prevent unauthorized use of the ROW as a roadway to prevent rutting, subsequent erosion problems, damage to riparian areas and disturbance of the reinstated areas. Access will be blocked at specific locations defined by the project.

SITE CLEAN UP

On completion of construction activities, the Contractor will clean-up all areas affected by construction operations in preparation for the replacement of stockpiled materials (subsoil and rock from grading and benching, topsoil from topsoil stripping). Clean-up includes removal of all plant, equipment and materials not required for replacement of soil or for subsequent bio-restoration activities. In agricultural and industrial areas/proximity, the condition achieved following clean-up will be equivalent to, or better than, the condition prior to construction.

No waste materials, other than excess soil and rock, will be left, buried or disposed of on any project area. All waste will be disposed of at approved waste disposal sites that will be selected by the project and approved by the

relevant authorities.

HANDOVER AND POST-CONSTRUCTION MAINTENANCE

Before it relinquishes responsibility for the reinstated areas to the operating company, the project will:

- Complete a final inspection of all project areas in conjunction with land owners to ensure that the pre-agreed standards of reinstatement have been met
- Undertake remedial work to the satisfaction of the landowners where any shortfalls exist.

During the contract maintenance period the project will be responsible for maintaining the standard of reinstatement and ensuring that the required erosion class and bio-restoration targets are met.

OBJECTIVES

This section of this CSEMP outlines the basic approach to bio-restoration. Full details of Bio-restoration for each habitat type can be seen in the Biodiversity CSEMP.

The objectives of bio-restoration are to:

- Restore the ecological characteristics, and in particular the variety and distribution pattern of plant species
- Achieve sufficient vegetation cover to reduce erosion to meet the performance target of Erosion Class 3 or better

In areas of natural and semi-natural habitat, the aim will be to achieve long-term vegetation cover comprised of the native flora. The strategy for achieving this will be the use the native seedbank and vegetative material resource that will remain in the topsoil when it is replaced, supplemented by re-seeding and planting with local species.

TARGETS

The original percentage vegetation cover will be estimated from the photographic record of the route (conducted by Transgaz), or, in case of doubt, by reference to adjacent undisturbed areas. Against this record, appropriate targets and timeframes for achieving established growth will be set in agreement with the specialist bio-restoration contractors. In this context 'established' means showing an initial healthy growth that would be expected for the particular species / habitat. In sensitive areas and Natura 2000 sites specific habitat targets will be set which will need to be achieved to demonstrate compliance with EBRD PR6. Further details can be seen in the Biodiversity CSEMP.

Soil, slope, perspective, and climatic conditions all affect rates of growth. Aftercare (watering, weeding, application of fertilizer, etc) will be carried out during the maintenance period in order to meet the re-vegetation targets.

The bio-restoration progress for each section of the route, and other project areas, will be reported quarterly against the performance criteria agreed. Where the criteria are not met, or it appears that they will not be met within the reasonable timeframes, corrective action will be taken, that may include watering, weeding, over-seeding, fertilizer application, replacement of failed trees, etc.

SCHEDULING

Bio-restoration work will be carried out during the appropriate growing seasons. Sowing or planting will be scheduled for a period that is likely to be followed by sufficient rain to promote germination and establishment.

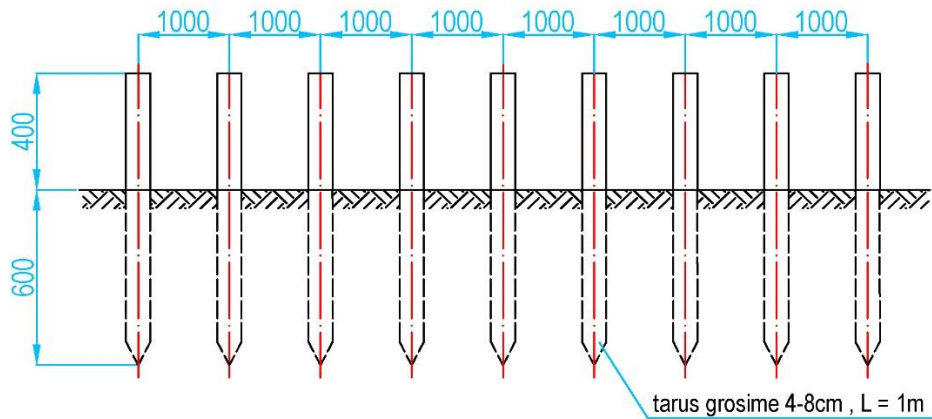
PROCEDURES TO BE FOLLOWED BY THE CONTRACTOR

Preliminary approaches for seeding and planting and have been developed as guidance for the construction contractor. However, these are optional and may be developed or substituted by other procedures by the construction contractor. The procedures developed relate to various habitat types (eg meadows, forest) as well as to specific locations or species that are encountered along the route. The procedures include guidance on factors such as:

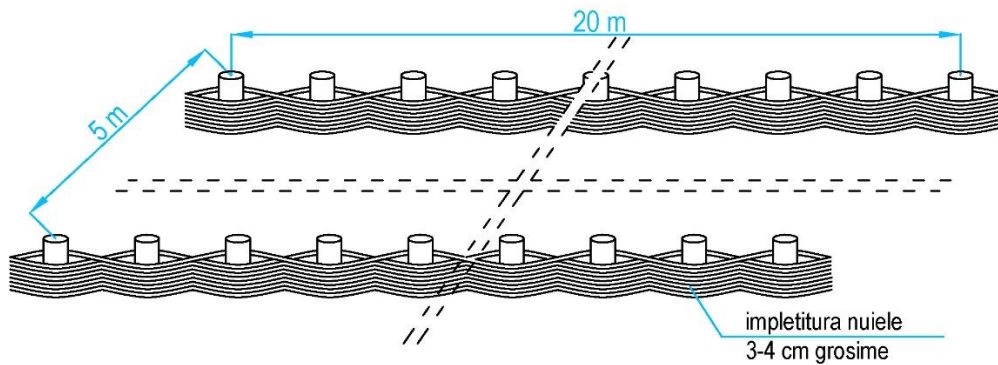
- Seed / turf removal and storage
- Seed bed preparation

- Seeding/planting rates
- Seeding/planting methods e.g. trenches, pit planting, slot planting
- Soil additives, e.g. fertilizer
- Watering requirements
- Use of erosion matting
- Optimum planting/seeding times

8.6 APPENDIX 6 – Detailed Silt fences



NOTA: - garduletele de coasta se vor executa in cheie dubla



REV.	DES.	DATA	VER.	DATA	APR.	DATA	COMENTARII
<p>DESENUL/DOCUMENTUL ESTE PROPRIETATEA SNTGN TRANSGAZ SA, TRANSMITEREA SAU REPRODUCEREA INTEGRALA SAU PARTIALA, FARA APROBAREA SCRISA S.N.T.G.N. TRANSGAZ S.A., SE SANCTIONEAZA CONFORM LEGII Nr. 8/1996</p>							
<p>DEPARTAMENTUL PROIECTARE SI CERCETARE</p>						<p>Dezvoltarea pe teritoriul Romaniei a Sistemului National de Transport Gaze Naturale pe coridorul: Bulgaria-Romania-Ungaria-Austria</p>	
<p>Proiectat</p>		<p>ing. Iliescu B.</p>		<p>Scara</p>		<p>PT 1062/2015</p>	
<p>Desenat</p>		<p>ing. Szakacs G.</p>		<p>1 : 20</p>		<p>GARDULET DE COASTA</p>	
<p>Verificat</p>		<p>ing. Grezer P.</p>		<p>data:</p>		<p>Desen nr.1062-M-GC</p>	
<p>Control STD</p>		<p>ing. Mircea M.</p>		<p>06. 2016</p>		<p>A4</p>	
<p>Aprobat</p>		<p>ing. Grezer P.</p>					

8.7 APPENDIX 7 – Detailed Sand bags barriers

