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Appendix B1 Issue / Activity Matrix



Table B-1 Issue / Activity Matrix

Ref	lssue	Activit	ty																		_		_							
SCPX		Land acquisition	Logistics (materials, equipment and people)	Site Clearance and Fencing (Camp, Laydown Areas, AGIs)	Operation of Construction Camps	Refuelling	Employment of construction workforce	Storage in Laydown Areas	Operation of Borrow Pits	Concrete Batching and Use	Preparation of access roads	Survey and Clearance of Vegetation and Soil	Storage of Cleared Soil	Pipeline Stringing	Trenching	Pipe Welding and Lowering	Backfilling & compaction	Open-cut crossings (Algeti River, Irrigation Channels)	Microtunneling Crossings (Mtkvari River)	Hydrotesting	Reinstatement	CSG2 Access Road Construction	Civil Engineering at AGI Sites	Equipment Installation at AGI Sites	Commissioning of AGI Equipment	AGI Landscaping	Operation of SCPX Pipeline	Operation of SCPX Facilities	Maintenance of Pipeline and AGIs	Variations to Proposed Work Areas
A0	General issues																													
A1	Use of raw materials and natural resources																													
A2	Soil compaction																													
A3	Soil erosion																													
A4	Loss of soil structure, fertility and seed bank																													
A5	Ground settlement																													
A6	Disturbance, treatment and disposal of known/unknown contaminated land																													I
A7	Disposal of solid and liquid waste, release of hazardous materials																													
A8	Visual intrusion into landscape																													
A9	Disposal of surplus spoil																													
A10	Disposal of surplus water from working areas																													
A11	Impeded flow of river or channel																													
A12	Use of water from river or channel																													

Ref	Issue	Activit	y																											
SCPX		Land acquisition	Logistics (materials, equipment and people)	Site Clearance and Fencing (Camp, Laydown Areas, AGIs)	Operation of Construction Camps	Refuelling	Employment of construction workforce	Storage in Laydown Areas	Operation of Borrow Pits	Concrete Batching and Use	Preparation of access roads	Survey and Clearance of Vegetation and Soil	Storage of Cleared Soil	Pipeline Stringing	Trenching	Pipe Welding and Lowering	Backfilling & compaction	Open-cut crossings (Algeti River, Irrigation Channels)	Microtunneling Crossings (Mtkvari River)	Hydrotesting	Reinstatement	CSG2 Access Road Construction	Civil Engineering at AGI Sites	Equipment Installation at AGI Sites	Commissioning of AGI Equipment	AGI Landscaping	Operation of SCPX Pipeline	Operation of SCPX Facilities	Maintenance of Pipeline and AGIs	Variations to Proposed Work Areas
A13	Flooding																													
A14	Disposal of black and grey water																													
A15	Abstraction of groundwater																													
A16	Altered drainage pattern																													
A17	Loss of habitat																													
A18	Introduction of competitive species or plant/animal diseases																													
A19	Disturbance or harm to wildlife																													
A20	Impeded movement of animals & people																													
A21	Open excavations																													
A22	Use of energy																													
A23	Release of gases, exhausts and vapours to atmosphere																													
A24	Dust																													
A25	Noise																													
A26	Vibration																													
A27	Disturbance or loss of cultural heritage																													

Ref	Issue	Activi	ty																											
SCPX		Land acquisition	Logistics (materials, equipment and people)	Site Clearance and Fencing (Camp, Laydown Areas, AGIs)	Operation of Construction Camps	Refuelling	Employment of construction workforce	Storage in Laydown Areas	Operation of Borrow Pits	Concrete Batching and Use	Preparation of access roads	Survey and Clearance of Vegetation and Soil	Storage of Cleared Soil	Pipeline Stringing	Trenching	Pipe Welding and Lowering	Backfilling & compaction	Open-cut crossings (Algeti River, Irrigation Channels)	Microtunneling Crossings (Mtkvari River)	Hydrotesting	Reinstatement	CSG2 Access Road Construction	Civil Engineering at AGI Sites	Equipment Installation at AGI Sites	Commissioning of AGI Equipment	AGI Landscaping	Operation of SCPX Pipeline	Operation of SCPX Facilities	Maintenance of Pipeline and AGIs	Variations to Proposed Work Areas
A28	Employment																													
A29	Provision of goods, services and land																								 					
A30	Community safety																													
A31	Community health																								 					
A32	Loss/severance of agricultural land																													
A33	Community relations																													
A34	Loss of field boundaries																													
A35	Damage to third party infrastructure (pipelines, cables etc.)																								 					
A36	Disruption of irrigation/drainage infrastructure																								 					
A37	Use of local road network																								 					
A38	Road closure/Access Restrictions																													
A39	Change to proposed work areas or methods																													

Appendix B2 Generic Impact Assessment and Mitigation Tables



Appendix B2: Generic Impact Assessment & Mitigation Table

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
Impact	and Probability Assessment for	Planned Events - C	Chapter 10	<u>l</u>							<u> </u>	
A0	General Issues	General						1.13	The construction contractor will have a documented and operational ESMS aligned with the requirements of ISO 14001 Environmental Management Systems.			
								39.04	Management of change procedures will include environmental and social assessment before any changes that may have detrimental effects on environmental or social receptors are adopted.			
								OP18	Ongoing training programme for facility personnel will be implemented to include environmental compliance and reporting.			
								OP19	Should there be any significant changes to the operations of SCPX such as increased throughput, environmental policies and standards shall be considered as an integral part of any engineering assessment. This will be achieved through the Management of Change system.			
A1	Use of raw materials and natural resources (excluding energy and water)	Geology & Geomorphology	Depletion of natural resources, e.g. aggregates	10-1	В	3	Low	1.01	Aggregates will only be sourced from licensed sources as approved by MoENR.	В	3	Low
		Geology & Geomorphology	Reinstatement of borrow pits and other re-use initiatives	10-1	В	2	Low	1.02	Environmental considerations will be included in the project procurement process.	В	2	Low
								1.03	The project will give preference to using existing borrow pits where reasonably practical.			
								39.01	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.			
								39.02	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.			
								39.03	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.			
								1.05	Environmental audits will be undertaken at any proposed third-party borrow pits and/or spoil disposal pits before they are used. Periodic audits will be undertaken thereafter and as considered appropriate by the Company.			

	ISSUE		POTENTIAL IMPACTS		PO	TENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								1.06	Use of borrow pits will be managed in a manner that seeks to ensure that no illegal extraction (including by a third party) takes place.			
								1.07	All excavated materials will be screened and reused to the extent deemed feasible by Company to minimise the need for new aggregates.			
								1.08	When camps and lay-down areas are taken out of service, the existing aggregate will be used, as approved by the Company, to landscape areas of the site before topsoil is spread; where this is not possible, the aggregate will be returned to borrow pits/Company approved disposal areas.			
								1.09	All temporary borrow pits will be reinstated (unless instructed otherwise by regulatory authorities).			
								1.10	Where excavated material is unsuitable for padding or backfilling, padding materials (e.g. sand or small-grained soils/gravel materials) will be bought or sourced from approved borrow pits.			
								1.11	Where benching is required, surplus subsoil will be stored on the ROW or, if disposal is necessary, it will be transported to an approved disposal site and/or approved borrow pits.			
								1.12	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface.			
								1.14	Excavated subsoil will be screened and reused for padding, wherever practicable.			
								9.02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.			
								D13.01	The Project will review the flood protection philosophy at CSG1 with the aim of reducing the volume of imported material.			
A2	Soil compaction	Soil & Ground Conditions	Loss of drainage capacity with increased surface water run-off	10-4	С	3	Medium	2.01	Load-bearing materials, such as bog mats and geotextile membranes, will be used to support heavy loads in areas of soft ground (including wetland areas) unless deemed impractical by the Company.	С	1	Low
		Ecology	Impaired re-establishment of vegetation after construction	10-12	В	2	Low	2.02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).	В	1	Low
		Land Ownership and Land Use	Loss of agricultural productivity	10-38	С	3	Medium	2.03	Driving along the ROW will not be permitted in excessively wet conditions unless otherwise approved by the Company.	С	1	Low
								2.04	Temporary drainage will be provided where necessary (as determined by the Company) to prevent ponding or waterlogging of the working area.			
								2.05	Backfill will be adequately (but not excessively) compacted to prevent future settlement.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	. IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								2.07	After backfilling, the subsoil beneath the running track will be ripped prior to reinstatement of agricultural land.			
								3.09	Local people will be actively discouraged from using the ROW as an access road (through use of signage, public education, leaflets etc.).			
								3.15	Upon completion of subsoil and topsoil reinstatement, the contractor and Company personnel will inspect disturbed areas jointly for signs of erosion, slope stability, relief, topographic diversity, acceptable surface water drainage capacity and function, and compaction. Remedial measures will be implemented, if necessary, at locations where reinstatement does not meet the Project criteria.			
								4.03	Topsoil will be stored outside the running track used by construction plant, equipment and vehicles.			
								4.06	Soil storage areas will be protected from vehicle movements to avoid soil compaction.			
								4.08	The topsoil and subsoil stack surface will be compacted sufficiently with the aim of preventing erosion, without leading to the development of anaerobic conditions.			
								4.13	Topsoil stacks will be regularly inspected for compaction and erosion; corrective measures will be implemented if compaction or erosion is identified.			
								D17.01	Construction of CSG2 facility and lay-down areas will avoid building on the larger area of wetland at the site.			
								D17.02	The CSG2 access road route has been selected to follow existing roads and tracks and to avoid plantations, wetlands and cultural heritage sites as far as practicable.			
								OP61	When patrolling the pipeline, the Project will use horse patrols wherever practicable, minimising vehicular access except where necessary for maintenance purposes.			
A3	Soil erosion following removal of vegetation and/or disturbance of ground	Soil & Ground Conditions	Loss of topsoil necessitating importation for reinstatement	10-4	С	4	Medium	3.01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.	С	2	Low
								3.03	Erosion control measures will be implemented to achieve erosion Class 3 or better.			
								3.05	Temporary dewatering or trench stabilisation will be undertaken where required to minimise slumping of trench walls.			
								3.07	Trench breakers will be installed where downhill flow within the backfilled trench may lead to erosion.			
								3.08	Soil loss will be monitored and corrective actions taken if it exceeds erosion class 3, in accordance with the Reinstatement Plan.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	. IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								3.09	Local people will be actively discouraged from using the ROW as an access road (through use of signage, public education, leaflets etc.).			
								3.17	The rate of discharge of water will be controlled to reduce the risk of soil erosion.			
								X3.01	Topsoil from the access road will be stored in allocated areas along the access road and used preferentially for reinstatement of road banks. Surplus topsoil from the CSG2 access road construction will be spread at agreed locations or on municipal land.			
								3.19	Field boundaries will be reinstated to pre-existing condition on completion of construction.			
								3.23	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.			
								3.26	Surface water drainage from operational areas including access roads and temporary facilities will be designed to minimise soil erosion in accordance with sustainable urban drainage systems (SUDS) principles.			
								3.28	Temporary erosion control measures will be developed and implemented after initial land disturbance and if construction activity on the working areas is suspended over the winter before reinstatement has been completed.			
								D5.086	To facilitate natural re-vegetation of the ROW, the separately stockpiled topsoil and vegetation debris will be spread over the surface of the ROW following completion of grading, as appropriate.			
								4.02	Stored subsoil and topsoil will be segregated in a manner that avoids mixing.			
								4.05	Topsoil stacks along the ROW will be free draining and stored in accordance with the Project Reinstatement Specification.			
								4.07	Where the Project considers that ground is sufficiently steep (generally greater than 25%), topsoil stockpiles will be protected with silt fence to help reduce washout and loss of topsoil during heavy rains.			
								4.08	The topsoil and subsoil stack surface will be compacted sufficiently with the aim of preventing erosion, without leading to the development of anaerobic conditions.			
								4.12	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.			

	ISSUE		POTENTIAL IMPACTS		P	OTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								4.13	Topsoil stacks will be regularly inspected for compaction and erosion; corrective measures will be implemented if compaction or erosion is identified.			
								4.18	In sensitive areas of thin topsoil (as defined by Company) additional precautions will be taken with the aim of preserving the topsoil for subsequent replacement where deemed feasible by the Company.			
		Surface Water	Erosion of river/channel banks, scour, sediment contamination of surface waters	10-9	C	3	Medium	3.21	Measures to minimise scour and reduce sediment load will be implemented at locations where hydrotest water or other pumped water (including trenchwater) is discharged to surface watercourses or to land (e.g. controlled rate of discharge and deployment of geotextile mats or other physical erosion prevention measures).	С	2	Low
								3.15	Upon completion of subsoil and topsoil reinstatement, the contractor and Company personnel will inspect disturbed areas jointly for signs of erosion, slope stability, relief, topographic diversity, acceptable surface water drainage capacity and function, and compaction. Remedial measures will be implemented, if necessary, at locations where reinstatement does not meet the Project criteria.			
								4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.			
								10.12	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.			
								10.16	Daily visual monitoring of turbidity will be undertaken at river crossings while works are being undertaken at that river. This will be supplemented as necessary by probe monitoring			
								10.18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally, the construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.			
								10.19	Protection measures will be put in place to prevent any water used for dust suppression from causing silt problems for nearby wetlands or watercourses.			
								OP131	ROW patrols will monitor river crossing to provide assurance of the integrity of any river protection works and river banks. This will include a visual inspection for river bank erosion or changes to channel morphology.			
		Land Ownership and Land Use	Loss of agricultural productivity	10-38	C	3	Medium	4.12	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.	С	2	Low

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
A4	Loss of soil structure, fertility and seed bank	Soil & Ground Conditions	Development of anaerobic conditions in stored soil	10-4	С	4	Medium	3.01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.	С	1	Low
		Ecology	Poor recolonisation due to anaerobic conditions in stored soil, reduced fertility and loss of entrained seeds	10-12	В	2	Low	3.11	Once the topsoil has been replaced it will be stone picked to remove any large stones that are not in keeping with the surrounding soil texture.	В	1	Low
		Land Ownership and Land Use	Loss of agricultural productivity	10-38	С	3	Medium	4.02	Stored subsoil and topsoil will be segregated in a manner that avoids mixing.	С	1	Low
								4.03	Topsoil will be stored outside the running track used by construction plant, equipment and vehicles.			
								4.04	If topsoil is stored for more than six months, the stacks will be monitored for anaerobic conditions and manual aeration will be undertaken if they develop.			
								4.05	Topsoil stacks along the ROW will be free draining and stored in accordance with the Project Reinstatement Specification.			
								4.06	Soil storage areas will be protected from vehicle movements to avoid soil compaction.			
								4.07	Where the Project considers that ground is sufficiently steep (generally greater than 25%), topsoil stockpiles will be protected with silt fence to help reduce washout and loss of topsoil during heavy rains.			
								4.08	The topsoil and subsoil stack surface will be compacted sufficiently with the aim of preventing erosion, without leading to the development of anaerobic conditions.			
								4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.			
								4.12	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.			
								4.13	Topsoil stacks will be regularly inspected for compaction and erosion; corrective measures will be implemented if compaction or erosion is identified.			
								4.14	In the case of an unplanned event, any damage will be reinstated and compensated where appropriate.			
								4.15	A soil survey will be undertaken (based on a representative sample) prior to construction to measure the depth of the topsoil layer along the pipeline route and will be used to determine the depth of topsoil stripping.			

White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Im
-	White - Primary Impact	White - Primary Impact Purple - Primary & Secondary Impact

	ISSUE		POTENTIAL IMPACTS		P(OTENTIA	L IMPACT		MITIGATION	RI	ESIDUAL	. IMPACT
					vity	ude	ance			vity	ude	ance
Ref	Description	Торіс	Impact	Ref	Sensiti	Magnit	Signific	Ref	Commitments Relating to the Issue	Sensiti	Magnit	Significa
								4.22	A soil survey of camp sites and pipe storage areas will be undertaken.			
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
A5	Ground settlement following restoration of pipeline trench	Soil & Ground Conditions	Visual impact	10-4	В	2	Low	3.01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.	В	2	Low
								9.01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.			
								D5.065	In sloping terrain (usually 10 degrees and over), trench breakers (e.g. bags filled with soil/cement mix) will be installed across the width of the trench at suitable intervals up to the graded ground level.			
								D5.066	Any surplus subsoil from trench excavations will normally be spread within the working width and within zones that exhibit similar subsoil types. The spreading work will be carried out in a manner that avoids the mixing of soil types to the greatest extent possible.			
								D5.086	To facilitate natural re-vegetation of the ROW, the separately stockpiled topsoil and vegetation debris will be spread over the surface of the ROW following completion of grading, as appropriate.			
								X3.01	Topsoil from the access road will be stored in allocated areas along the access road and used preferentially for reinstatement of road banks. Surplus topsoil from the CSG2 access road construction will be spread at agreed locations or on municipal land.			
	Ground settlement following decommissioning of section of SCP pipeline at Area 72	Soil & Ground Conditions	Ground Subsidence	10-4	В	2	Low	DE.01	At Area 72, the section of SCP pipeline under the road will be cut either side of the crossing, injected with suitable grouting and capped to prevent collapse.	В	1	Low
A6	Disturbance of known/unknown contaminated land	Soil & Ground Conditions	Mobilisation of soil contaminants	10-4	С	3	Medium	3.01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.	С	-	Beneficial
								6.01	A baseline survey of visible contamination has been carried out and will be repeated before construction begins to include camp and pipe storage areas.			
								6.02	All known areas of surface contamination (within the Project footprint) will be cleared before construction begins.			

	ISSUE		POTENTIAL IMPACTS		P	OTENTIA	AL IMPACT		MITIGATION	RE	ESIDUAL	. IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								6.13	The need for remedial work in any specific area will be determined on the basis of the observed contaminants, sampling and analysis to determine their concentrations and the risks that they may pose to local receptors (social and environmental) in accordance with Project Standards.			
								6.14	In each area of identified contamination, a site-specific remedial action plan will be developed. The plan will include a summary of the environmental risks posed by the contamination and the procedures that are to be adopted to mitigate those risks.			
								6.16	The preferred options for the treatment of contaminated soil will be based on the risks posed by the material. In keeping with the aim of minimising the transportation of hazardous materials and minimising waste generation, preference will be given to in situ and low technology remedial approaches.			
								6.18	Any contaminated material storage areas will be provided with containment measures (for example bunds, ditches, impermeable base membranes, covers) to help minimise run-off and airborne losses.			
								6.22	The Company will carry out a due diligence exercise to identify and manage the risk of anthrax.			
								6.25	If any animal burial pits are identified during construction, works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax.			
								7.05	Contaminated soil will be segregated from uncontaminated materials and stored at least 50m away from any surface water or seasonal surface water bed.			
								D3.04	The selected pipeline route has avoided areas of soil contamination, such as the known anthrax-contaminated areas close to the Mtkvari crossing.			
								D5.104	The CSG2 early works camp will be selected based on multidisciplinary evaluation including H&S, environmental and social, and technical criteria, with preference given to the use of brownfield locations where practicable.			
								OP121	When the 56"-diameter pipeline is operating, regular patrols of the pipeline by ROW horse patrols, vehicular patrols (using existing access tracks) and security patrols will lessen the risk of third-party interference.			
		Soil & Ground Conditions	Mobilisation of contaminants with associated risk of polluting groundwater	10-11	C	3	Medium	6.09	Relevant personnel will be trained in safe use and handling of hazardous materials.	C	-	Beneficial
								6.11	Relevant construction personnel will be trained in use of spill kits and disposal practices.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	L IMPACT		MITIGATION	RI	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	ensitivity	agnitude	nificance	Ref	Commitments Relating to the Issue	ensitivity	agnitude	nificance
					ŭ	Ŵ	Sig			й	Ŵ	Sig
								6.18	Any contaminated material storage areas will be provided with containment measures (for example bunds, ditches, impermeable base membranes, covers) to help minimise run-off and airborne losses.			
A7	Production & disposal of solid & liquid waste, release of hazardous materials	Soil & Ground Conditions	Contamination of soil	10-4	C	3	Medium	4.14	In the case of an unplanned event, any damage will be reinstated and compensated where appropriate.	C	1	Low
		Surface Water	Contamination of water used for irrigation and water supply. (Ktsia, Mtkvari, Algeti)	10-9	С	4	Medium	6.03	The storage of hazardous materials will be restricted to designated impermeable hazardous materials storage areas located at least 50m from any surface watercourse or seasonal water channel.	D	2	Medium
								6.04	Requirements for the establishment of hazardous materials storage areas (e.g. bunding, impermeable surfaces, secure drainage, limited access, labelling) will be identified in the Contractor's Pollution Prevention Implementation Plan.			
		Groundwater	Potential for groundwater contamination if disposal uncontrolled or from accidental spillages	10-11	С	2	Low	6.05	A refuelling procedure will be developed by the Contractor, which will include a restriction on refuelling within 50m of any watercourse. Any deviation will be subject to approval by the Company.	С	1	Low
		Ecology	Stress or mortality of flora and fauna due to drilling mud break out or spills of waste or hazardous materials into watercourses	10-12	В	2	Low	6.06	The Contractor's Implementation Plan will detail requirements for record keeping and on-site maintenance of material safety data sheets (MSDS).	В	1	Low
								6.07	Materials that can potentially react with each other will be segregated during storage.			
								6.08	Procedures will be established to determine acceptability of material storage and to promote the minimisation of storage volumes.			
								6.09	Relevant personnel will be trained in safe use and handling of hazardous materials.			
								6.10	Spill response equipment (absorbents etc.) will be available in hazardous materials storage areas.			
								6.11	Relevant construction personnel will be trained in use of spill kits and disposal practices.			
								6.12	A trained rapid response team will be mobilised in the event of spillage of hazardous materials.			
								6.13	The need for remedial work in any specific area will be determined on the basis of the observed contaminants, sampling and analysis to determine their concentrations and the risks that they may pose to local receptors (social and environmental) in accordance with Project Standards.			

	ISSUE	POTENTIAL IMPACTS			PC	DTENTI/	AL IMPACT		MITIGATION	R	ESIDUAL I	MPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								6.14	In each area of identified contamination, a site-specific remedial action plan will be developed. The plan will include a summary of the environmental risks posed by the contamination and the procedures that are to be adopted to mitigate those risks.			
								6.16	The preferred options for the treatment of contaminated soil will be based on the risks posed by the material. In keeping with the aim of minimising the transportation of hazardous materials and minimising waste generation, preference will be given to in situ and low technology remedial approaches.			
								6.18	Any contaminated material storage areas will be provided with containment measures (for example bunds, ditches, impermeable base membranes, covers) to help minimise run-off and airborne losses.			
								6.20	Vehicles delivering fuel or hazardous liquids will carry appropriate spill kits to allow an initial response to any spill to be deployed.			
								6.21	All mobile plant (excluding vehicles) will be integrally bunded or will be equipped with a bund or drip tray that will be regularly inspected and emptied to prevent rainwater accumulating.			
								6.24	Disposal of the drilling mud will be subject to an environmental risk assessment.			
								6.26	Drilling and tunnelling mud will be stored in impermeable lined bunded areas or tanks.			
								7.01	Controlled or uncontrolled burning of waste will not be allowed (with the exception of Company approved incinerators).			
								7.02	Non-hazardous waste will be disposed of at a Company and Government-approved landfill site.			
								7.03	A secure hazardous waste accumulation area that meets Project requirements will be used for temporary storage at Project sites prior to transfer to an approved final hazardous storage or disposal facility.			
								7.04	Waste management practices will be subject to regular monitoring and auditing.			
						///////////////////////////////////////		7.08	Waste will be segregated to facilitate recycling and re-use.			
								7.10	Diesel storage tanks at construction camps and CSG2 will be located in suitably sized bunded areas that are designed to be impervious to water and fuel. The bund volume will be designed to no less than 110% of the tank volume. Loading and off-loading connections will be located over secondary containment.			
								7.11	Hazardous chemicals will be securely stored on site in special containers in a designated storage area.			

	ISSUE		POTENTIAL IMPACTS				IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								7.12	Regular inspections and maintenance will be carried out: of secondary containment areas at camps and Facilities and emission control techniques at Facilities, to confirm that they are functioning effectively.			
								7.13	Relevant training will be provided to those with responsibilities for monitoring of effluent discharges and emissions at the construction camps and Facilities such as effluent sample taking and chain of custody.			
								7.14	Information will be incorporated into the Site induction process and will outline the role of personnel in the management of waste and emissions from site and spill response procedures.			
								7.15	Site induction training will be supplemented by regular 'toolbox' talks with relevant personnel if inspections or audits highlight failings in waste management.			
								D5.028	In accordance with the SCPX Waste Management Plan, solid wastes generated by construction activities will be collected in waste storage areas (WSA) located at the camps.			
								D5.029	All wastes from the SCPX Project will be managed with the aim of minimising (a) impacts to the natural environment and (b) health hazards to personnel. Where appropriate, waste materials will be reused or recycled, with disposal to landfill as a last resort. In this case, inert and non-hazardous waste will be disposed of to the licensed BP operated landfill site near Rustavi.			
								OP02	At CSG2 rainwater from the diesel storage tank bund will be manually drained and routed to the storm water drainage system via an oily water separator.			
								OP03	After visual inspection and sampling of water (if required, to determine it meets the Project Standards) the oily water separator water will be discharged directly in to the environment.			
								OP05	At the facilities, fixed, external equipment containing oil and the water bath heaters will be bunded locally and bunds will be manually discharged to the storm water drainage system if clean. Any visible contamination will be recovered prior to discharge or the oily water will be removed for treatment at an oily water separator.			
								DE.02	The glycol and water mix drained from the Area 72 water bath heater during decommissioning will be disposed of in accordance with the Project waste management plan.			
								DE.03	An environmental risk assessment will be undertaken prior to decommissioning of Area 72 to identify the potential environmental risks, including to soil and groundwater. The mitigations developed will be incorporated into the Decommissioning plan.			

	ISSUE POTENTIAL IMPACTS				PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								DE.04	Scrap metal removed from Area 72 will be sent to recycling facilities where available.			
								DE.05	Within 30 days of termination of the Host Government Agreement a plan must be prepared describing how abandonment will be achieved. This Abandonment Plan will be subject to approval by the Government. An ESIA will be prepared prior to implementation of the Abandonment Plan to assess and minimise potential environmental and social impacts arising from the abandonment operations. This abandonment ESIA will be submitted to the Government.			
								DE.06	Upon completion of the abandonment operations an assessment of contaminated land will be prepared recording the final contamination status of the location of the Project facilities. This assessment will be subject to governmental approval.			
								3.23	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.			
								10.01	Concrete batching plant (if required) will be sited at least 50m away from sensitive receptors such as watercourses; wash pits to be lined with an impermeable liner.			
								11.05	Watercourse crossing methods will be developed with the aim of minimising the mobilisation of sediments.			
								24.07	Treated waste water will be used for damping down road surfaces to mitigate dust generation.			
								31.05	A risk assessment will be undertaken when considering waste water discharge options and locations.			
								OP41	A monitoring programme will be developed for sanitary and industrial discharges, which will be monitored at the point of discharge to confirm compliance with the Project Standards. Monitoring will be carried out monthly for the first year of operation, after which the frequency and suite of determinants will be reviewed and revised dependent on the on the first year's results.			
								OP42	Monitoring and maintenance of the water treatment facilities will be integrated with the existing SCP Georgia emission management procedures.			

Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Imp

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	ISSUE		POTENTIAL IMPACTS		PC	DTENTIAI	L IMPACT		MITIGATION	RI	ESIDUAL	. IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								OP43	An ambient surface water monitoring programme will be developed during operations for waters that receive discharges from the facilities. Monitoring will be carried out monthly for the first year of operation upstream and downstream of the discharge point, after which the frequency and suite of determinants will be reviewed and revised dependent on the first year's results.			
								OP46	In addition to the site induction, more detailed emissions management training will be provided for managers and technicians who will be involved in site operations.			
								OP47	Groundwater quality monitoring will be carried out post-construction and prior to operation of the facilities and subsequent to any unplanned events which are assessed as having the potential to impact groundwater quality.			
								14.03	In areas of wetland and areas where the groundwater supplies wells for irrigation or potable use, the storage and use of hazardous materials will be carefully controlled.			
								D5.030	Hazardous waste will be forwarded to a waste disposal contractor licensed to receive and treat hazardous waste.			
								D5.106	The camps will discharge domestic wastewater treated by a sewage treatment package designed to meet the Project standards and permit requirements.			
								19.08	Construction contractors will be required to manage the storage and disposal of food and organic wastes to avoid attracting vermin.			
A8	Visual intrusion into landscape particularly where the pipeline is installed on ridge or steep slope and there is permanent modification of topography	Landscape	Modification of landscape elements (arable land, grasslands) during pipeline construction. Topsoil removal, soil removal and storage	10-7	В	3	low	3.14	A monitoring plan will be developed to determine the success of re- vegetation and bio-restoration activities, including the appropriateness of species composition.	В	1	Low
		Landscape	Modification of landscape elements (field boundaries, watercourses and trees) during pipeline construction. Trees and vegetation removed.	10-7	В	3	low	3.19	Field boundaries will be reinstated to pre-existing condition on completion of construction.	В	1	Low
		Landscape	Temporary modification of views during pipeline construction	10-7	D	3	Medium	3.26	Surface water drainage from operational areas including access roads and temporary facilities will be designed to minimise soil erosion in accordance with sustainable urban drainage systems (SUDS) principles.	D	1	Low
		Landscape	Modification of landscape and view from pigging station and block valve	10-7	В	3	Low	4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.	В	3	Low

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	RI	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.			
								8.03	The Company will carry out annual maintenance operations to help maintain the integrity of the landscape planting.			
								8.04	Lights will be shrouded or directed with the aim of reducing off-site light spill at the construction sites, camp and pipe storage areas.			
								9.01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.			
								17.10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.			
								35.08	Any disrupted irrigation or drainage system will be reinstated on completion of construction to a standard at least equal to their original condition.			
								D5.093	Before construction personnel and equipment are demobilised, temporary buildings and equipment, tools and any excess material brought on site or generated during the construction and commissioning programme will be removed.			
								OP141	The existing programme of landscape monitoring on the BTC/SCP Facilities will be extended to include the SCPX ROW, Facilities and temporary sites.			
								D5.096	The block valve, PRMS and the CSG1 have been collocated to minimise the requirement for additional development on greenfield sites.			
A9	Disposal of surplus subsoil	Landscape	Modification of landscape and views through changed topography	10-7	C	3	Medium	9.01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.	С	1	low
		Ecology	Smothering of native flora and fauna	10-12	В	2	Low	9.02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.	В	1	Low
								4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.			
								D5.093	Before construction personnel and equipment are demobilised, temporary buildings and equipment, tools and any excess material brought on site or generated during the construction and commissioning programme will be removed.			
								9.04	No side-casting of excess spoil outside the working area will be permitted.			

	ISSUE		POTENTIAL IMPACTS		PC)TENTI/	AL IMPACT		MITIGATION	R	ESIDUAL	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								1.08	When camps and lay-down areas are taken out of service, the existing aggregate will be used, as approved by the Company, to landscape areas of the site before topsoil is spread; where this is not possible, the aggregate will be returned to borrow pits/Company approved disposal areas.			
								1.12	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface.			
								D5.066	Any surplus subsoil from trench excavations will normally be spread within the working width and within zones that exhibit similar subsoil types. The spreading work will be carried out in a manner that avoids the mixing of soil types to the greatest extent possible.			
								1.11	Where benching is required, surplus subsoil will be stored on the ROW or, if disposal is necessary, it will be transported to an approved disposal site and/or approved borrow pits.			
A10	Disposal of trench-water and hydrotest water	Surface Water	Surface water contamination by sediment or chemicals	10-09	D	4	High	10.01	Concrete batching plant (if required) will be sited at least 50m away from sensitive receptors such as watercourses; wash pits to be lined with an impermeable liner.	D	2	Medium
		Ecology	Smothering of invertebrates by sediment and mortality of fish	10-12	В	3	Low	10.02	The direct discharge of trenchwater to watercourses will be avoided, except where approved by the Company.	В	1	Low
		Surface water	Artisanal fish catch reduced by levels of sediment during open-cut crossing	10-09	С	2	Low	10.03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.	С	2	Low
								10.04	If discharge of trenchwater to a watercourse is unavoidable, discharge will be through a filtering medium.			
								10.06	Before hydrotesting, the Contractor will prepare, and submit for Company approval, a hydrotest plan.			
								10.08	A risk assessment will be undertaken before any chemical additives are used in hydrotest water.			
								10.09	Hydrotest water will be re-used between sections, where practical, to minimise the volume required.			
								10.10	Water (including hydrotest water) will be tested before discharge and treated to meet the Project Environmental Standards.			
								10.11	The hydrotest water will be treated using diffusers to entrain oxygen in a break tank, and filtration will be used to minimise suspended solids, prior to discharge. Flow rate will be controlled to reduce the risk of soil erosion and disturbance to river bed sediment.			
								10.12	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.			

ISSUE POTENTIAL IMPACTS				PC	TENTIAL			MITIGATION	R	ESIDUAL	IMPACT	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								10.14	Watercourse banks disturbed by Project crossings will be restored to near original condition, which will be assessed individually for each watercourse and defined in the Contractor's Reinstatement Implementation Plan. Any deviations (e.g. because hard reinforcement is required for erosion control) shall be subject to Company approval.			
								10.15	Sediment reduction measures will be implemented including but not limited to discharge of pumped water via break tanks or sediment mats.			
								10.16	Daily visual monitoring of turbidity will be undertaken at river crossings while works are being undertaken at that river. This will be supplemented as necessary by probe monitoring			
								10.18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally, the construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.			
								10.19	Protection measures will be put in place to prevent any water used for dust suppression from causing silt problems for nearby wetlands or watercourses.			
								10.21	The direct discharge of hydrotest water to watercourses and soakaways will be subject to the results of the chemical risk assessment. The use of evaporation basins will be considered subject to the availability of land and an environmental and social assessment.			
								10.22	Washing of Project plant and vehicles in watercourses will not be undertaken.			
								3.17	The rate of discharge of water will be controlled to reduce the risk of soil erosion.			
								3.21	Measures to minimise scour and reduce sediment load will be implemented at locations where hydrotest water or other pumped water (including trenchwater) is discharged to surface watercourses or to land (e.g. controlled rate of discharge and deployment of geotextile mats or other physical erosion prevention measures).			
								3.24	At locations where trenchwater or hydrotest water or other pumped water discharges causes scour or soil erosion, eroded areas will be reinstated.			
								3.30	When discharge velocities have the potential to create erosion, energy dissipaters will be used to establish sheet fLow Trenches will be dewatered in such a manner that no heavily silt-laden water flows into any wetland or water body.			

	ISSUE POTENTIAL IMPACTS				P(DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAI	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A11	Impeded flow of river or stream	Ecology	Harm to freshwater ecosystem	10-09	С	3	Medium	11.01	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.	С	2	Low
		Surface Water	Reduced flow may restrict use by local people	10-09	D	3	Medium	11.02	Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and fluming.	D	2	Medium
		Ecology	Artisanal fish catch reduced by changes to water flows and increased levels of sediment during open-cut crossing	10-09	С	2	Low	11.03	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.	С	2	Low
								11.04	Any temporary dams in watercourses to be removed as soon as pipe installation and reinstatement at that crossing is complete.			
								11.05	Watercourse crossing methods will be developed with the aim of minimising the mobilisation of sediments.			
								D5.078	If water is sourced from rivers (or channels), no more than 10% of the water flow will be extracted at any time.			
								D5.079	Before extracting water the Project will consider the presence of any IUCN/Georgian Red List fish species particularly during fish spawning season (which normally occurs within the period May to June) and the mitigations such as 10mm fish screens will be determined by a site assessment and approval by the Company.			
								10.14	Watercourse banks disturbed by Project crossings will be restored to near original condition, which will be assessed individually for each watercourse and defined in the Contractor's Reinstatement Implementation Plan. Any deviations (e.g. because hard reinforcement is required for erosion control) shall be subject to Company approval.			
								10.18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally, the construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.			
A12	Use of water from river or channel	Surface Water	Reduced flow may restrict use by local population	10-09	С	3	Medium	D5.078	If water is sourced from rivers (or channels), no more than 10% of the water flow will be extracted at any time.	С	1	Low
								15.02	All new and existing water abstractions for use by the Project will be subject to an environmental and social assessment to assess potential impacts; decisions on the acceptability of the source and appropriate abstraction rates will be based on the results of the review, in accordance with the abstraction permit.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	L IMPACT		MITIGATION	RI	ESIDUAL	. IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								15.03	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users.			
								11.01	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.			
		Ecology	Loss of aquatic and water-margin habitats, restriction of fish movement and reduced reproductive success, impaired movement and reduced habitat suitability for other aquatic organisms	10-12	В	3	Low	D5.079	Before extracting water the Project will consider the presence of any IUCN/Georgian Red List fish species particularly during fish spawning season (which normally occurs within the period May to June) and the mitigations such as 10mm fish screens will be determined by a site assessment and approval by the Company.	В	1	Low
								10.09	Hydrotest water will be re-used between sections, where practical, to minimise the volume required.			
								10.04	If discharge of trenchwater to a watercourse is unavoidable, discharge will be through a filtering medium.			
A13	Flooding caused by impeded river or ground surface flows	Surface Water	Blockage of irrigation or land drainage channels affects downstream users and freshwater ecosystem	10-09	C	3	Medium	13.01	The Construction Contractor will monitor weather forecasts and avoid creating temporary dams in watercourses if flooding is likely.	С	2	Low
		Land Ownership and Land Use	Loss of agricultural productivity	10-38	С	3	Medium	13.02	Gaps will be left in soil stacks at strategic locations to allow water through.	С	1	Low
								13.03	Any flood defence banks breached by the pipeline will be replaced during reinstatement.			
								D17.04	The Mtkvari River crossing will be constructed by micro-tunnelling or horizontal directional drilling under the river.			
								16.01	The land drainage system will be reinstated to achieve pre-existing functionality.			
								15.03	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users.			
								11.01	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.			
								11.02	Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and fluming.			
								11.03	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.			

	ISSUE		POTENTIAL IMPACTS		PC	OTENTIA			MITIGATION	RI	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	– ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
A14	Production of black and grey water	Groundwater	Groundwater contamination	10-11	С	3	Medium	D14.01	The facilities will be designed with treatment units for black and grey water. Treated water from the sewage treatment units will be discharged to ground in a controlled manner via a soakaway or to surface water in accordance with the Project Standards.	С	1	Low
								14.02	Domestic sewage from camps and pioneer camps will be stored and transported to water treatment works or treated through a dedicated site sewage water treatment plant.			
								14.03	In areas of wetland and areas where the groundwater supplies wells for irrigation or potable use, the storage and use of hazardous materials will be carefully controlled.			
								14.04	Waste water will be reduced by efficient use of raw water and the implementation of water management schemes that require water to be reused, whenever practicable, prior to treatment and disposal.			
								14.06	All wastewater discharges will be in compliance with the Project Environmental Standards.			
								14.08	Periodic analysis will be undertaken of controlled stormwater, sanitary and industrial discharges and any receiving surface water upstream and downstream of the discharge point.			
								14.09	The applicable discharge permits will be obtained for any new planned liquid discharges, prior to the discharge commencing.			
								7.13	Relevant training will be provided to those with responsibilities for monitoring of effluent discharges and emissions at the construction camps and Facilities such as effluent sample taking and chain of custody.			
								D5.106	The camps will discharge domestic wastewater treated by a sewage treatment package designed to meet the Project standards and permit requirements.			
								31.05	A risk assessment will be undertaken when considering waste water discharge options and locations.			
								OP41	A monitoring programme will be developed for sanitary and industrial discharges, which will be monitored at the point of discharge to confirm compliance with the Project Standards. Monitoring will be carried out monthly for the first year of operation, after which the frequency and suite of determinants will be reviewed and revised dependent on the on the first year's results.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	RE	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A15	Abstraction of groundwater (if required, e.g. at construction camp)	Groundwater	Reduced water quality or quantity from established springs, wells etc.	10-11	С	2	Low	15.01	All necessary permits/consents to drill and abstract groundwater will be obtained before water is abstracted for construction, or domestic use. Groundwater will not be used for pipeline hydrotesting.	С	1	Low
		Groundwater and surfacewater	Reduced availability of groundwater and surface water sources such a springs for local users	10-46	D	2	Low	15.02	All new and existing water abstractions for use by the Project will be subject to an environmental and social assessment to assess potential impacts; decisions on the acceptability of the source and appropriate abstraction rates will be based on the results of the review, in accordance with the abstraction permit.	D	1	Low
								15.03	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users.			
								15.04	The abstraction borehole, when completed, will be test pumped and a sustainable yield will be determined together with aquifer characteristics such as hydraulic conductivity and radius of influence.			
								15.05	Water features such as abstractions (boreholes, wells, springs) or environmental features (wetlands, springs, streams or surface water features in continuity with groundwater) will be identified within the likely radius of influence of the abstraction point.			
								15.07	Water conservation initiatives will be undertaken at construction camps.			
								15.09	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored periodically to confirm that the supply meets Project standards and does not impact adversely on other known users.			
								X6.01	At CSG1 and the PRMS, where existing boreholes will be used, the water will be sampled and analysed to monitor contamination.			
								X6.02	The facilities will be supplied with water from either existing abstraction wells or new wells, and subject to a sustainability assessment.			
								X6.03	Groundwater quality at CSG2 will be monitored during construction using the installed monitoring wells.			
								X5.01	Water flow in the Mtkvari and Algeti Rivers will be assessed before and during abstraction of hydrotest water.			
								X5.02	The Mtkvari River at KP30 will be non-open-cut (micro-tunnel or HDD) and use existing/abandoned launch pit on east bank if practicable.			

	ISSUE POTENTIAL IMPACTS POTENTIAL IM					AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								X5.03	The contractor will prepare a plan to respond to an outbreak of mud including clean up and remediation for outbreak on land and liaison with downstream users in the event of outbreak in the water.			
								X5.04	At the Algeti River, the crossing trench will be backfilled with the excavated material and, where existent, the watercourse's armour will be reinstated as soon as possible following pipeline installation.			
								X5.05	Water quality and flow rate testing will be undertaken upstream and downstream of crossings on the access road to CSG2 prior to, during and after construction.			
								X5.06	Water flow will be maintained at Irrigation channels that will be open-cut at KP00–11.			
A16	Altered drainage pattern	Groundwater	Trench can act as conduit for groundwater, draining higher areas and flooding lower areas	10-11	С	2	Low	3.07	Trench breakers will be installed where downhill flow within the backfilled trench may lead to erosion.	С	1	Low
								2.05	Backfill will be adequately (but not excessively) compacted to prevent future settlement.			
A17	Loss of natural habitat / vegetation	Ecology	Reduced biodiversity	10-12	В	2	Low	3.14	A monitoring plan will be developed to determine the success of re- vegetation and bio-restoration activities, including the appropriateness of species composition.	В	1	Low
		Ecology	Modified habitat structure	10-12	В	2	Low	2.02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).	В		Low
		Ecology	Loss of breeding & foraging areas	10-12	В	2	Low	4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.	В	1	Low
		Ecology	Habitat severance	10-12	В	2	Low	9.01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.	В	1	Low
								9.02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.			
								17.05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).			
								17.07	The Project will seek to achieve an increasing trend in vegetation re- growth and species diversity (specifically species composition) in reinstated areas with reference to nearby areas undisturbed by Project activities, as recorded by the percent similarity and commonality indices.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	RE	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								17.10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.			
								17.11	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.			
								17.14	A record will be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features along the pipeline ROW before construction to inform the reinstatement work.			
								17.15	An inventory will be made of all trees felled during the Project construction phase, including Red Data Book species, in accordance with the requirements of national legislation.			
								D17.09	The inert surface area of the vent exclusion zone at the facilities (CSG1, CSG2 and PRMS) will be reduced to that required for safety purposes, thereby reducing the amount of habitat removed.			
								17.08	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific.			
								D5.045	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.			
								OP51	Follow-up monitoring to record survival of planted or re-planted trees for off-setting purposes will be undertaken until sustainable growth is achieved.			
								OP52	The Project will carry out annual maintenance operations until any new tree planting for off-setting purposes has established.			
								OP61	When patrolling the pipeline, the Project will use horse patrols wherever practicable, minimising vehicular access except where necessary for maintenance purposes.			
A18	Introduction of competitive species or diseases	Ecology	Poor re-colonisation by local flora following reinstatement	10-12	В	2	Low	18.01	No species that are considered likely to out-compete the indigenous plant species will be used in seed mixes.	В	1	Low
			Modified habitats due to non-native species establishment	10-12	В	3	Low	18.05	The Contractor shall inspect and wash, all plant and equipment prior to shipping to the country of use with the aim of ensuring, as far as practicable, it is free from soil and plant material.	В	1	Low
								18.02	No invasive species will be used in seed mixes for erosion control or biorestoration.			

	ISSUE POTENTIAL IMPACTS POTENTIAL IMP					AL IMPACT		MITIGATION	R	ESIDUAL	. IMPACT	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A19	Disturbance or harm to wildlife	Ecology	Reduced breeding potential and population	10-12	В	2	Low	2.02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).	В	1	Low
			Changed behaviour	10-12	В	2	Low	3.14	A monitoring plan will be developed to determine the success of re- vegetation and bio-restoration activities, including the appropriateness of species composition.	В	1	Low
			Increased predation	10-12	В	2	Low	9.01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.	В	1	Low
			Injury or death	10-12	В	2	Low	9.02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.	В	1	Low
						///////////////////////////////////////		9.03	Muds used will be water based		///////////////////////////////////////	
								19.03	If Testudo graeca (spur-thighed tortoise) is found within the work site, individuals will be moved a safe distance (50m+) from the works by the Project ecologist. Any eggs or hatchlings will be placed in a box of sand and transferred by the Project ecologist to suitable nearby habitat where a nest will be created.			
								19.04	Welded nine sections will be canned to prevent entry			
								19.05	No hunting, fishing or unauthorised gathering of products (including plants and cultural heritage artefacts) by the workforce will be permitted within the Project footprint.			
								19.06	Wildlife sensitivity to disturbance will be included in workforce training.			
								19.07	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.			
								19.08	Construction contractors will be required to manage the storage and disposal of food and organic wastes to avoid attracting vermin.			
								19.10	The Company will prepare Site Specific Ecological Management Plans for priority areas. Contractor will incorporate the requirements of these plans into site-specific method statements.			
								21.04	The trench will be checked regularly for wildlife (particularly in sensitive locations) e.g. where tortoises are found (KP29-31 and KP54-55) and where the four-lined snake may be present (KP0-12).			
								28.11	Environmental and social issues will be included in workforce and visitor induction training.			

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Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Impa

	ISSUE	POTENTIAL IMPACTS POTE			DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	. IMPACT	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								X7.11	The Algeti River crossing will be constructed outside of the fish-spawning season which is May–June.			
A20	Impeded movement of wild animals, domestic herds and people due to open trench or spoil storage mounds	Ecology	Disruption of animals movements affecting their ability to forage	10-12	В	2	Low	20.01	Gaps will be left in soil stacks at strategic locations to allow passage of animals and people where the Project considers it safe to do so.	В	1	Low
		Land Ownership and Land Use	Disruption of movement of herds	10-38	В	2	Low	21.01	The length of the continuous open trench (including trench with pipe installed but not backfilled and with a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.	В	1	Low
								32.17	The Project will seek to identify whether any herders use the construction areas and aim to consult with them on potential restrictions during construction.			
								13.02	Gaps will be left in soil stacks at strategic locations to allow water through.			
								30.06	Bridges will be provided across open trenches and welded pipes at locations where there is a demonstrable need for people to cross, if it is reasonable for them to do so and can be accommodated safely, taking into account works being undertaken in that area at the time.			
								33.19	Land users and local communities will be consulted to determine their requirements for access across the ROW.			
								33.14	To avoid disturbance of particular local events such as funeral ceremonies by construction traffic, the Community Liaison Officers will encourage local community authorities to provide advance warning of funerals (and other similar events) so that the Contractor can avoid the movement of heavy vehicles, equipment and pipe through settlements at these times.			
A21	Open excavations (including open trench)	Ecology	Injury to fauna from falling into excavations	10-12	B	2	Low	21.01	The length of the continuous open trench (including trench with pipe installed but not backfilled and with a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.	В	1	Low
		Land Ownership and Land Use	Accidents to livestock resulting in livelihood loss	10-40	С	3	Medium	21.02	Each section of open pipeline trench will have sloped ends or other mechanisms to aid egress from the trench.	С	2	Low
								21.04	The trench will be checked regularly for wildlife (particularly in sensitive locations) e.g. where tortoises are found (KP29-31 and KP54-55) and where the four-lined snake may be present (KP0-12).			
								32.07	The Project will inform land owners/users about any reuse restrictions that apply to land used by the Project.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	L IMPACT	ACT MITIGATION			ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
								34.01	Any field boundaries that are removed will be replaced with temporary fencing to meet reasonable landowner/user requirements.			
A22	Use of energy	Ecology	Respiratory problems for animals	10-12	В	1	Low	22.01	Energy efficiency in the camps will be monitored against key performance indicators (KPIs) and measures will be identified and implemented with the aim of continual improvement.	В	1	Low
		Air Quality and GHG emissions	Reduced air quality	10-18	В	1	Low	22.02	The workforce training will include advice on minimising energy consumption.	В	1	Low
								D5.098	A connection to the Georgian national electricity grid will be installed at CSG1. The grid will initially be used as a back-up power supply and the project intends to gather reliability information on the electrical connection with the aim of moving to using the electricity grid as the primary source of site power (i.e. for heating and lighting etc.) in the future, provided there is no impact on the pipeline operation.			
								D5.099	A connection to the Georgian national electricity grid will be installed at the PRMS. The grid will initially be used as a back-up power supply and the project intends to gather reliability information on the electrical connection with the aim of moving to using the electricity grid as the primary source of site power (i.e. heating and lighting etc.) in the future, provided there is no impact on the pipeline operation.			
								D23.01	Seal gas that leaks from the compressors will be recovered during normal compressor operation (i.e. excluding start-up and shutdown) and returned to the process system.			
								23.02	Equipment and vehicles will be regularly maintained in accordance with the manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.			
								23.03	Preferentially, the project will use fuel that has low sulphur content of 0.1%, where practical and available within Georgia.			
								2.02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).			
								OP147	An operations phase energy efficiency procedure will be implemented to monitor energy efficiency at the Facilities with the aim of identifying opportunities for improvement.			

	ISSUE		POTENTIAL IMPACTS		P(OTENTIA	L IMPACT		RI	ESIDUAL	IMPACT	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A23	Release of gases and vapours to atmosphere from vehicle exhausts, camp	Air Quality and GHG emissions	Reduced air quality from construction emissions	10-18	В	2	Low	22.03	Ambient air quality monitoring will be carried out prior to construction to establish a baseline on the boundary fence and at receptors in the vicinity of CSG1, CSG2 and PRMS.	В	2	Low
	operation, concrete batching, welding, cleaning, testing of pipeline; and fugitive emissions from fuel storage	Air Quality and GHG emissions	Reduced air quality from operational emissions - CSG1	10-18	В	4	High	23.02	Equipment and vehicles will be regularly maintained in accordance with the manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.	В	3	Low
	and refuelling, Facility Operations		Reduced air quality from operational emissions - CSG2	10-18	A	2	Low	23.03	Preferentially, the project will use fuel that has low sulphur content of 0.1%, where practical and available within Georgia.	A	2	Low
			Reduced air quality from operational emissions - PRMS	10-18	A	2	Low	D23.01	Seal gas that leaks from the compressors will be recovered during normal compressor operation (i.e. excluding start-up and shutdown) and returned to the process system.	A	2	Low
								D5.019	The compressor stations will have four gas compressors mechanically driven by dry low emission (DLE) gas turbines.			
								D5.094	The stand-by generators at the facilities will run on diesel and largely will only be used in an emergency when gas turbine powered generators have to be shut down.			
								D5.097	The turbines will be sized appropriately to aim to operate within their low- NOx operating range for as much of the year as reasonably practical when considering ambient temperature variation and variation in pipeline throughput.			
								D5.098	A connection to the Georgian national electricity grid will be installed at CSG1. The grid will initially be used as a back-up power supply and the project intends to gather reliability information on the electrical connection with the aim of moving to using the electricity grid as the primary source of site power (i.e. for heating and lighting etc.) in the future, provided there is no impact on the pipeline operation.			
								D5.099	A connection to the Georgian national electricity grid will be installed at the PRMS. The grid will initially be used as a back-up power supply and the project intends to gather reliability information on the electrical connection with the aim of moving to using the electricity grid as the primary source of site power (i.e. heating and lighting etc.) in the future, provided there is no impact on the pipeline operation.			
								7.13	Relevant training will be provided to those with responsibilities for monitoring of effluent discharges and emissions at the construction camps and Facilities such as effluent sample taking and chain of custody.			
								22.01	Energy efficiency in the camps will be monitored against key performance indicators (KPIs) and measures will be identified and implemented with the aim of continual improvement.			
								22.02	The workforce training will include advice on minimising energy consumption.			

Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Imp

	ISSUE		POTENTIAL IMPACTS		PC) TENTI	AL IMPACT	CT MITIGATION			ESIDUAL I	MPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								OP10	Stack emission monitoring of NOx and CO emissions will be undertaken for major point source emissions (compressor drive turbines, power generation turbines and engines and water bath heaters) and emissions of PM and SO2 will be determined using accepted calculation methodologies.			
								OP11	Where stack emission monitoring shows values which are consistently within the project environmental standards the frequency and scope of monitoring will be reviewed and revised if required.			
								OP12	An atmospheric emissions inventory will be prepared and updated annually. The inventory will detail all relevant emission sources including direct and indirect emissions based on monitoring results and estimates based on fuel consumption or other process inputs as required.			
								OP16	All major combustion plant will operate on natural gas where possible.			
								OP17	Preventative maintenance programme to minimise fugitive emissions and maintain performance of emission abatement technology will be implemented.			
								OP18	Ongoing training programme for facility personnel will be implemented to include environmental compliance and reporting.			
								OP19	Should there be any significant changes to the operations of SCPX such as increased throughput, environmental policies and standards shall be considered as an integral part of any engineering assessment. This will be achieved through the Management of Change system.			
								OP21	An air quality monitoring programme encompassing ambient air quality and stack emissions monitoring will be developed and implemented in relation to the Project Environmental Standards. Where monitoring results demonstrate consistent compliance with the Project Standards, the frequency and scope of monitoring will be reviewed and revised if appropriate to include less frequent, boundary fence monitoring.			
								14.10	The applicable air emissions permits will be obtained for combustion equipment, prior to the emission commencing.			
								OP46	In addition to the site induction, more detailed emissions management training will be provided for managers and technicians who will be involved in site operations.			

	ISSUE		POTENTIAL IMPACTS	TAL IMPACTS POTENTIAL IMPACT MITIGATION					RE	SIDUAL	IMPACT	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A24	Dust generation, particularly from vehicle movements, storage of excavated materials and operation of concrete batching plant	Air Quality and GHG emissions	Reduced air quality	10-19	E	3	Medium	23.05	Dust generation and concentrations in the air will be visually monitored during construction where activities are near communities. If dust is visible, additional mitigation measures, such as the imposition of tighter speed limits, will be implemented with the aim of avoiding causing disturbance to residents or land users.	E	1	Low
		Land Ownership and Land Use	Less honey production and livelihood loss	10-40	С	3	Medium	23.06	Vehicles carrying fine materials will be sheeted to help prevent dust blow and spillages.	С	2	Low
		Land Ownership and Land Use	Reduced crop production resulting loss to livelihoods	10-38	С	3	Medium	24.01	Contractor will be required to have an adequate supply of bowsers and to regularly damp down the ROW, access roads and village roads used by construction traffic during dry conditions.	С	1	Low
		Ecology	Respiratory problems for animals	10-12	В	2	Low	24.02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.	В	1	Low
								24.05	Community Liaison Officers will identify any beekeepers whose hives are within 300m of the pipeline and facility construction, camp and pipe storage areas or access routes before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route for the season.			
								24.06	The Company will develop and implement a policy for the compensation of beekeepers adversely affected by Project impacts.			
								OP13	Dust generated by operational activities is considered a disturbance issue and will be monitored through visual inspection.			
								OP23	All off-site dust disturbance complaints will be logged, reported, investigated and actioned as appropriate.			
								X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).			
								2.02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).			
								4.09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.			
								24.07	Treated waste water will be used for damping down road surfaces to mitigate dust generation.			

Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Impa									
	ISSUE		POTENTIAL IMPACTS		PC	TENTIA	AL IMPACT		MITIGATION	RE	ESIDUAL	
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Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								33.01	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.			
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
								33.18	Community Liaison Officers may assist in raising community awareness about emissions-related issues and ensuring emissions-related complaints are followed up and responses provided.			
								X8.02	Particular attention will be paid to the implementation of dust suppression measures where the CSG2 access road passes close to Nardevani and Berta/Oliangi.			
A25	Noise emissions from vehicle movements, construction operations and construction camp	Construction Noise	Disturbance affecting breeding and/or behaviour	10-12	В	2	Low	25.01	During construction work will generally be undertaken in daylight hours (excluding specified operations). Where people live in close proximity to the works, or there is a high potential for disturbance (e.g. blasting), a location-specific risk assessment will be undertaken for activities undertaken between 7pm and 7am.	В	1	Low
			Disturbance causing nuisance, lack of sleep for shift workers, and loss of concentration for school children	10-27	D	2	Medium	25.02	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.	D	1	Low
								25.03	Project induction training will include instructions about minimising noise disturbance.			
								25.04	Local residents will be forewarned of planned activities that are considered by the project to be noisy (e.g. blasting, pile driving and release of test pressure).			
								25.05	Noise will be monitored periodically against the Project Environmental Standards.			
								25.07	Camp rules will be developed and implemented and will include restrictions on noisy activities (e.g. inappropriate use of personal radios) to help avoid causing disturbance.			
								25.08	The project will avoid vehicle reversing where practical, and will preferentially use white noise type reversing alarms.			
								25.09	During construction of the pipeline and facilities and operation of the construction camp and pipe storage areas where the works are less than 400m from residential buildings for longer than one month, periodic noise monitoring readings of 10 minutes duration (in accordance with the Project procedure) will be measured at the building facade at the start of the potentially noisy activities. If the noise exceeds Project Standards, measures will be implemented to aim to reduce noise levels (e.g. hoardings).			

	ISSUE		POTENTIAL IMPACTS		PC	OTENTIA	AL IMPACT		MITIGATION	RI	ESIDUAL	IMPACT
ef	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								25.10	During construction of CSG1, CSG2 and the PRMS, the local community will be informed of when and where noisy activities (e.g. blasting, piling) will occur.			
								25.11	During commissioning and testing, noise emissions from equipment will be minimised through use of acoustic insulation as deemed appropriate by the Project.			
								37.10	Night-time driving will be by exception only, as approved by the Company, to minimise driving risk and disturbance to communities.			
								37.20	Prior to selection all access routes will be subject to a multidisciplinary			
								OP148	During early operations, 10-minute readings will be taken at the nearest noise sensitive receptors to CSG1, CSG2 and the PRMS to confirm that the site will meet the appropriate Project Environmental Standards.			
								23.02	Equipment and vehicles will be regularly maintained in accordance with the manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.			
								33.18	Community Liaison Officers may assist in raising community awareness about emissions-related issues and ensuring emissions-related complaints are followed up and responses provided.			
								X9.01	At the Military Camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32), and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).			
								X9.02	Where the CSG2 access road passes close to Nardevani and Berta/Oliangi, if construction continues for longer than one month, 10- minute noise monitoring readings will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).			
N C	loise emissions from facility perations	Operation Noise (Continuous)	Disturbance causing nuisance, lack of sleep for shift workers, and loss of concentration for school children	10-27	C	1	Low	D5.038	At CSG2 the buildings housing the gas turbine and compressor units will typically be fabricated with 150mm-thick sandwich panels to control noise transmission.	С	1	Low
								D5.039	At CSG1 buildings housing the gas turbine and compressor units will utilise high-performance acoustic louvres to allow for natural ventilation and retain a high-performance acoustic design for the cladding.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTI	AL IMPACT		MITIGATION	R	ESIDUAL I	MPACT
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Ref	Description	Торіс	Impact	Ref	Sensitiv	Magnitu	Significa	Ref	Commitments Relating to the Issue	Sensitiv	Magnitu	Significa
								D5.040	High-performance silencers for each of the compression and power generation gas turbine exhaust stacks will reduce noise power levels from 115 dB(A) to 100 dB(A).			
								D5.041	Silencers will also be included in the combustion and ventilation air inlet system to control noise power level emissions.			
								D5.042	High-performance acoustic insulation will be installed on the compressed gas pipework and the design for compressor after-cooler fans will also achieve reduced noise power level emission.			
								25.11	During commissioning and testing, noise emissions from equipment will be minimised through use of acoustic insulation as deemed appropriate by the Project.			
								OP14	Noise monitoring will be carried out every 6 months at the sensitive receptors around CSG1, CSG2 and the PRMS to verify the modelling results and demonstrate that the Project Standards are met. When it has been established that the project standards are being met, the frequency of monitoring will be reviewed and reduced.			
								OP18	Ongoing training programme for facility personnel will be implemented to include environmental compliance and reporting.			
								OP48	Free-field (i.e. 3.5 metres away from the façade of the building) noise measurements at identified receptors near the Facilities will be undertaken by a trained, competent person using a calibrated sound level meter in accordance with the international standard ISO 1996 Description and Measurement of Environmental Noise.			
								OP50	A preventative maintenance programme will be implemented that is designed to ensure that all plant and equipment operate in accordance to with Project Standards.			
								OP125	The relevant authorities will be informed in the case of planned or actual third-party development within the relevant pipeline and facility protection zones.			
								OP15	The project will monitor the occurrence of noise complaints to determine whether there is a specific link with noisy activity and determine whether further action is required.			
								33.18	Community Liaison Officers may assist in raising community awareness about emissions-related issues and ensuring emissions-related complaints are followed up and responses provided.			

	ISSUE		POTENTIAL IMPACTS		P	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	. IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
	Noise emissions from facility maintenance	Operation Noise (Maintenance)	Disturbance causing nuisance, lack of sleep for shift workers, and loss of concentration for school children	10-27	С	5	High	OP137	Maintenance venting of large inventories of gas at CSG1, CSG2 and the PRMS, with a flow rate likely to generate an LAmax noise level which would exceed the Project Standards, will not be undertaken between 23:00 and 07:00.	С	2	Low
								OP138	Local communities will be notified in advance of any maintenance work at CSG1, CSG2, PRMS expected to generate any exceptionally high noise levels.			
A26	Vibration from vehicle movements and construction operations	Vibration	Damage to old buildings	10-31	C	3	Medium	37.08	Surface of frequently used access roads will be subject to regular inspections and repair, with the aim of ensuring they are maintained in a good condition particularly where fragile buildings are close to roads (subject to site-specific survey).	С	2	Low
								25.14	A survey will be undertaken to record the external condition of buildings in close proximity to the ROW or access roads prior to construction; this will provide baseline evidence in the event of claims for damage.			
								25.15	The validity of any damage claims will be assessed; repairs will be undertaken or appropriate compensation paid if damage is associated with construction vehicle movements.			
								25.16	Correct tyre pressures will be monitored and maintained.			
								37.08	Surface of frequently used access roads will be subject to regular inspections and repair, with the aim of ensuring they are maintained in a good condition particularly where fragile buildings are close to roads (subject to site-specific survey).			
A27	Disturbance of archaeological remains	Cultural Heritage	Loss/disturbance of known archaeology	10-32	C	4	Medium	27.01	A Cultural Heritage Management Plan will be implemented that includes the five-phase strategy for the progressive assessment and mitigation of the effects of construction.	A	1	Low
		Cultural Heritage	Loss/disturbance of previously unknown archaeology during construction	10-32	С	4	Medium	27.02	Areas of potential cultural heritage impact will be examined and any necessary excavations conducted prior to construction.			
								27.04	Pre-construction works to evaluate and record known archaeological sites will be agreed with the Ministry of Culture and Monument Protection.			
		Cultural Heritage	Loss/disturbance of previously unknown archaeology during construction	10-32	C	4	Medium	27.03	Archaeological sites identified during construction will be archaeologically recorded.	C	2	Low
								27.05	A programme of archaeological surveillance (watching brief) will be implemented during topsoil stripping of the ROW, the facility sites, construction camps and equipment lay-down areas and ancillary areas, and ROW trenching. The Company will be empowered to temporarily stop works, pending archaeological examination, if artefacts are seen.			

	ISSUE		POTENTIAL IMPACTS		PC)TENTIA	L IMPACT		MITIGATION	RE	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								27.06	If archaeological artefacts or structures are found, archaeological advice will be sought from relevant approved Georgian heritage institutions and the Ministry of Culture and Monument Protection and the Chance Finds Procedure followed.			
								27.07	The archaeologist conducting the watching brief will advise on procedures to be followed by the construction supervisor in line with the Chance Finds Procedure.			
								27.08	The Company will consider making minor adjustments to the route of the pipeline where this will avoid damage to a cultural heritage feature that is discovered during construction operations.			
								27.09	If the pipeline route cannot easily be adjusted to avoid damaging the feature, construction activities will be suspended at the site until the excavation and recording required by the authorities has been carried out.			
								27.10	Known archaeological sites within 50m of the pipe centreline or other construction activity will be demarcated throughout construction.			
								27.11	Issues relating to archaeological awareness (such as ownership of finds, notification of finds and protection of archaeological sites) will be included in induction training.			
								27.13	Any ripping or other ground disturbance activities required during reinstatement will be planned to avoid archaeological evidence that has been preserved in-situ.			
								19.05	No hunting, fishing or unauthorised gathering of products (including plants and cultural heritage artefacts) by the workforce will be permitted within the Project footprint.			
								OP139	Activities involving topsoil stripping and excavation during operation, which are undertaken outside of areas previously disturbed during project construction, will be subject to a cultural heritage assessment to determine appropriate mitigation measures before the work begins.			
A28	Employment	Employment, Skills & Livlihoods	Reduced out-migration	10-36			Beneficial	28.01	To help minimise the extent of in-migration, the Project's strategy on local recruitment will be disseminated publicly, including via media announcements at regional and national levels (as appropriate).			Beneficial
			Local population increases	10-36			Beneficial	28.03	Applications for employment will only be considered if submitted via the official application procedure.			Beneficial
			Unplanned in-migration increases	10-36	C	3	Medium	28.04	Targets for local recruitment from PACs will be agreed with the Contractor.	С	1	Low

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	. IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
			Unplanned in-migration increases	10-36	С	3	Medium	28.05	The Project will seek to manage employment expectations by explaining the number and type of opportunities in advance to local communities via the Community Liaison Officers.	С	1	Low
			Increase in jobs available and incomes, leading to enhanced circulation of money in local/PAC economies resulting in overall economic growth, albeit small-scale	10-40			Beneficial	28.06	Recruitment procedures will be transparent, public and non- discriminatory and open with respect to ethnicity, religion, sexuality, disability or gender.			Beneficial
			Enhanced economic growth on Kvemo Kartli and Samtskhe- Javakheti and consolidation of existing growth trends in towns of Akhaltsikhe and Tsalka	10-40			Beneficial	28.07	Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post.			Beneficial
			Unmet employment expectations and/or resentment between local people who are employed by the project and those whose applications were unsuccessful	10-40	С	5	High	28.08	Community Liaison Officers will monitor that PACs are given priority in recruitment and that recruitment is non-discriminatory in terms of PACs and ethnicity.	С	2	Medium
			Improved standard of living for households with members who have increased incomes due to employment of local people	10-40			Beneficial	28.09	When appropriate, on-the-job training will be provided to enable local employees to gain new and/or improved skills while working on the Project.			Beneficial
			Enhanced skills among local workforce	10-40			Beneficial	28.10	The workforce training programme will include refresher and induction training with the aim of ensuring that all recruits have the necessary understanding and knowledge levels for each job, in particular with regard to HSE issues.			Beneficial
			Retrenchment/loss of jobs	10-40	С	5	High	28.11	Environmental and social issues will be included in workforce and visitor induction training.	С	5	High
			Loss of skilled employees to SCPX from small and medium sized enterprises and public sector and adverse effect on output/service delivery	10-40	С	2	Low	28.12	Particular emphasis will be paid to health and safety and community relations, with additional technical toolbox talks given on specific issues.	С	2	Low
			Agricultural lands not cultivated for a period of 2-3 years as self- employed subsistence farmers work for SCPX and then farmers find it difficult to take up farming again after losing jobs	10-40	С	2	Low	28.13	Additional on-the-job informal training sessions and discussions will be provided as necessary during construction of the different SCPX component projects.	С	2	Low
								28.14	All workers will have contracts describing conditions of work and will have the contents explained to them.			
								28.02	Unskilled labour will be preferentially recruited from the Project affected communities.			
								28.15	As part of the recruitment programme community liaison teams will seek to manage any misconceptions about perceived differences in pay or conditions.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	RI	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								28.17	Job vacancies will be advertised in the PAC through appropriate and accessible media (consistent with employment targets).			
								28.18	A plan will be developed and implemented that will aim to discourage and prevent the workforce from purchasing goods from informal vendors to discourage vendors from establishing themselves at construction camp fence-lines in the hope of securing additional business.			
								28.20	The Contractor will advise workers about risks of neglecting their land during recruitment process.			
								28.21	The Contractor will prepare a retrenchment plan, with the aim of reducing the impacts of cessation of employment contracts.			
								28.22	The Contractor will explain the temporary nature of jobs during the recruitment process and explain to workers the need to prepare for losing jobs and to manage their income wisely while employed.			
								28.23	The Project will give priority to people from the construction camp PACs for employment opportunities within the camp (e.g. cook, housekeeper etc.) where suitably qualified.			
								D33.01	The Project has selected construction camp locations on the same sites as, or very near to, the major facilities.			
A29	Provision of goods and services	Provision of goods and services	Unplanned in-migration increases	10-36	C	3	Medium	28.18	A plan will be developed and implemented that will aim to discourage and prevent the workforce from purchasing goods from informal vendors to discourage vendors from establishing themselves at construction camp fence-lines in the hope of securing additional business.	С	1	Low
			Reduced out-migration	10-36			Beneficial	1.02	Environmental considerations will be included in the project procurement process.			Beneficial
			Local population increases	10-36			Beneficial	29.03	Taking into account relevant commercial considerations as appropriate, the project will seek to purchase goods and services from within Georgia and will monitor such purchases.			Beneficial
			Unplanned in-migration increases	10-36	С	3	Medium			С	1	Low
			Increase in sales for local businesses and those involved full/part-time in 'cottage' industries	10-40			Beneficial					Beneficial
			Resentment from business owners whose offer of goods and services is refused	10-40	C	3	Medium			C	2	Low

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAI	L IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
						For Issu	e A30 and A31 see	end of Section			1	<u> </u>
A32	Loss or severance of agricultural land during construction	Land Ownership and Land Use	Pipeline corridor: land is acquired on a permanent basis and occupied on a temporary basis during construction only, then reinstated to its previous condition and handed back for agricultural use to the previous owner - The impact is therefore the inability to use land for agriculture for a period of up to three years	10-38	С	3	Medium	X13.01	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders. This measure will apply particularly at CSG2 and PRMS sites where grazing livestock are important contributors to local livelihoods.	В	2	Low
			Facilities and Pipeline AGIs: land is acquired and occupied permanently - The impact is the permanent inability to use this land	10-38	С	3	Medium	32.01	The project will consult with local government authorities, landowners and land users, including graziers, before restricting access to land and will establish the need for temporary fencing.	В	2	Low
			Impacts to users (see crops below)	10-38	С	3	Medium	32.03	Parking of Project-related vehicles will be restricted to designated areas.	В	2	Low
			Impediment to agricultural use of land	10-38	В	2	Small	32.04	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.	A	1	Very Low
			Inability to farm on land for a period of up to three years	10-38	В	2	Small	32.05	The Company Land Acquisition Team, environmental representative and the construction contractors will carry out an exit inspection with the previous land owner/user of all land that was used during the construction period.	A	1	Very Low
			Inability to grow and harvest annual crop on affected plot	10-38	С	3	Medium	17.05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).	A	1	Very Low
			Inability to harvest hay or to use land for grazing	10-38	С	3	Medium	32.07	The Project will inform land owners/users about any reuse restrictions that apply to land used by the Project.	A	1	Very Low
			Loss of crop	10-38	С	3	Medium	32.08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.	В	2	Low
			More severe impacts on people less able to claim compensation benefits	10-38	С	3	Medium	32.09	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.	В	2	Low
								D5.096	The block valve, PRMS and the CSG1 have been collocated to minimise the requirement for additional development on greenfield sites.			
								39.02	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.			

	ISSUE		POTENTIAL IMPACTS		PC)TENTIAI	IMPACT		MITIGATION	R	SIDUA	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								39.01	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.			
								39.03	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.			
								3.15	Upon completion of subsoil and topsoil reinstatement, the contractor and Company personnel will inspect disturbed areas jointly for signs of erosion, slope stability, relief, topographic diversity, acceptable surface water drainage capacity and function, and compaction. Remedial measures will be implemented, if necessary, at locations where reinstatement does not meet the Project criteria.			
								32.05	The Company Land Acquisition Team, environmental representative and the construction contractors will carry out an exit inspection with the previous land owner/user of all land that was used during the construction period.			
								35.08	Any disrupted irrigation or drainage system will be reinstated on completion of construction to a standard at least equal to their original condition.			
								2.04	Temporary drainage will be provided where necessary (as determined by the Company) to prevent ponding or waterlogging of the working area.			
								X15.01	Access to the church located close to CSG2 will be maintained throughout construction as long as the Project considers it safe to do so.			
								OP25	Operations will liaise with the government authorities to establish guidelines regarding patrol behaviour with respect to access to/transit through agricultural lands and the reporting of any damage.			
A33	Community relations	Community relations	Tensions resulting from cultural differences, anti-social behaviour of construction workforce, potential prostitution and attraction of 'hangers on' at camp sites	10-40	C	5	High	33.01	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.	С	4	Medium
			Frustration and resentment if local workers perceive that foreign workers are receiving better pay or conditions for exactly the same job	10-40	С	5	High	33.02	All workers will receive at least the minimum wage as defined by Georgian national law.	С	4	Medium
								33.03	The Community liaison teams will maintain regular liaison with local communities before, during and after construction.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								33.04	An employee Code of Conduct will be prepared and issued to all recruits and camp residents during the employee induction process.			
								33.06	The Employee Code of Conduct will prohibit the workforce from participating in illegal activities, including use of illegal drugs, bribery and corruption or requesting or receiving gifts from communities.			
								33.08	A Company policy limiting alcohol consumption in construction camps will be applied.			
								33.09	Workforce training will include a briefing on camp rules and awareness of local issues and sensitivities.			
								33.10	No unauthorised access to, or use of, camp facilities will be allowed.			
								33.11	A range of recreational facilities will be provided within the camps to reduce the need for finding recreation in the local community.			
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
								33.15	The Project will review measures to mitigate community health and safety impacts regularly, and consult PAC leaders every six months, informing them on the status of implementation and results, and discussing any changes needed to the 'Pollution Prevention Plan' or the 'Community Health, Safety and Security Plan' in advance of proposed changes.			
A34	Loss of field boundaries	Land Ownership and Land Use	Impediment to agricultural use of land	10-40	В	2	Low	34.01	Any field boundaries that are removed will be replaced with temporary fencing to meet reasonable landowner/user requirements.	A	1	Low
			Accidents to livestock resulting in livelihood loss	10-40	C	3	Medium	33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.	С	2	Low
								32.07	The Project will inform land owners/users about any reuse restrictions that apply to land used by the Project.			
A35	Damage to third party infrastructure (pipelines, cables etc)	Infrastructure & Services	Temporary loss of supply to other consumers	10-41	D	3	Medium	35.01	Contractor will prepare a Method Statement that includes measures to protect the integrity of the third-party services and is acceptable to the service operator.	D	2	Medium
								35.02	Any damage to third-party services to be repaired promptly in consultation with, or by the service operator.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	L IMPACT		MITIGATION	R	ESIDUAL	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								35.03	Any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works.			
								35.04	In the event of a disruption to services the Contractor will work with the service owner to effect repair in reasonable time.			
								35.05	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.			
								35.06	The Contractor will aim to maintain the integrity and viability of functional irrigation and drainage systems throughout construction, for example, by using measures such as pumping, channel diversions and fluming. Any deviations shall be subject to approval by the Company.			
								35.07	Affected landowners and occupiers will be consulted to determine their views on the requirement for temporary measures if irrigation systems are to be disrupted.			
								35.08	Any disrupted irrigation or drainage system will be reinstated on completion of construction to a standard at least equal to their original condition.			
								35.09	Pre-entry agreements including reinstatement requirements will be agreed prior to work affecting third party assets.			
								D30.01	Where it is considered that there is a higher risk of the pipeline being damaged or interfered with, or where other services are crossed and at track and road crossings, the pipeline will be covered by concrete slabs at open cut crossings.			
A36	Disruption of irrigation/drainage infrastructure	Land Ownership and Land Use	Severed access to irrigation supply, water holes and disruption to livestock movement	10-48	С	3	Medium	D36.01	Drains will be installed on the uphill side of the CSG2 access road, pass through culverts under the road and discharge via holding ponds or other energy reduction techniques in to local streams.	В	2	Low
								36.03	If impacts to third party land or crops is caused by Project activity, for example due to interruption of irrigation or drainage, the Project's procedure for land and crop damage will be applied.			
								35.09	Pre-entry agreements including reinstatement requirements will be agreed prior to work affecting third party assets.			
								35.05	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.			
								35.06	The Contractor will aim to maintain the integrity and viability of functional irrigation and drainage systems throughout construction, for example, by using measures such as pumping, channel diversions and fluming. Any deviations shall be subject to approval by the Company.			
								35.07	Affected landowners and occupiers will be consulted to determine their views on the requirement for temporary measures if irrigation systems are to be disrupted.			

Appendix B-2 White - Primary Impact Cyan - Secondary Impact Cyan - Secondary Impact				· · · · · · · · · · · · · · · · · · ·
March 2013	Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Impa

	ISSUE		POTENTIAL IMPACTS		P(TENTIA			MITIGATION	RI	ESIDUAI	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								35.08	Any disrupted irrigation or drainage system will be reinstated on completion of construction to a standard at least equal to their original condition.			
								32.04	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.			
A37	Use of local road network by construction traffic	Land Ownership and Land Use	Accidents to livestock resulting in livelihood loss	10-40	С	3	Medium	37.01	Advance warning (at least 72 hours) of any road/track closures will be provided to local communities.	С	2	Low
		Infrastructure & Services	Road widening and CSG2 construction resulting in more efficient transport links for local people	10-41			Beneficial	37.02	A bypass/alternative routes will be provided at locations where road closure is unavoidable.			Beneficial
		Infrastructure & Services	Disruption of traffic flows causing inconvenience to local users and Traffic disturbance - CSG1	10-42	С	5	High	37.03	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.	В	5	Medium
		Infrastructure & Services	Damage to road from aggregate and oversize heavy loads - CSG1	10-41	С	4	Medium	37.04	Temporary traffic control measures will be employed at road crossings and junctions (flagmen, temporary traffic lights) where a safety risk assessment has identified traffic control measures will reduce the risk of traffic accidents.	С	3	Medium
		Infrastructure & Services	Traffic disturbance - CSG2 and CSG2 Access Road	10-42	С	5	High	37.05	The authorities will be notified when oversize heavy loads need to be transported and the loads will be escorted by the Project.	С	4	Medium
		Infrastructure & Services	Traffic disturbance - PRMS Area	10-42	D	3	Medium	37.07	Following construction, the Contractor will repair roads to at least their pre-construction condition.	D	2	Medium
		Infrastructure & Services	Damage to roads from aggregate and oversize heavy loads - PRMS	10-41	D	4	High	37.08	Surface of frequently used access roads will be subject to regular inspections and repair, with the aim of ensuring they are maintained in a good condition particularly where fragile buildings are close to roads (subject to site-specific survey).	D	3	Medium
								37.09	All contractors and subcontractors will adhere to BP driving rules.			
								37.10	Night-time driving will be by exception only, as approved by the Company, to minimise driving risk and disturbance to communities.			
								37.11	The Project will aim to provide buses to transport non-camp resident workers to the construction sites.			
								37.17	The Project will undertake a road condition survey before construction begins in areas as defined by Project.			
								37.20	Prior to selection all access routes will be subject to a multidisciplinary assessment.			
								D5.036	The line pipe will be transported by rail to off-loading points. The rail offloading point will be located close to the pipe storage area to reduce the number of HGV movements.			

	ISSUE		POTENTIAL IMPACTS		PO	TENTIA	LIMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								37.14	Where it is necessary to maintain traffic flow, the crossing will be made in two stages, and only one half of the road width will be used at a time. Steel plates will be laid to maintain one lane of through traffic.			
								D5.055	Line pipe shall be transported by trucks from the pipe yards to the ROW along approved access routes and then along the ROW to the required location.			
								25.02	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.			
								OP25	Operations will liaise with the government authorities to establish guidelines regarding patrol behaviour with respect to access to/transit through agricultural lands and the reporting of any damage.			
								34.01	Any field boundaries that are removed will be replaced with temporary fencing to meet reasonable landowner/user requirements.			
								33.13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.			
								37.18	The Project will use the existing access roads established for construction of the BTC and SCP pipelines to access the pipeline ROW as far as practical.			
								D33.01	The Project has selected construction camp locations on the same sites as, or very near to, the major facilities.			
								32.08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.			
								37.05	The authorities will be notified when oversize heavy loads need to be transported and the loads will be escorted by the Project.			
								30.21	Where traffic is diverted around crossings, traffic control or careful selection of the exit from the working areas will be provided with the aim of ensuring vehicles join the road in a safe manner.			
A38	Road closure	Traffic & Transport	Disruption of traffic flows causing inconvenience to local users	10-42	D	3	Medium	37.01	Advance warning (at least 72 hours) of any road/track closures will be provided to local communities.	D	1	Low
								37.02	A bypass/alternative routes will be provided at locations where road closure is unavoidable.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT	MITIGATION		R	ESIDUAI	LIMPACT
Ref	Description		Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A39	Change to proposed work areas or methods		Potential impacts that have not been assessed in this ESIA	10-1-6				39.01	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.			
			Inadequate mitigation of potential impacts	10-1-6				39.02	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.			
								39.03	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.			
Ref	Description	Topic	Impact	ESIA Ref	Significance	Probability		Ref	Commitments Relating to the Issue	Significance	Probability	
A30	Community Safety	Community Safety	Accident to local people and livestock from the project site, particularly from open excavations	10-37	High	6		30.02	At sensitive locations where Project construction traffic will be using local roads, and particularly where schools and markets are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons.	High	5	
			Risk of accident to local people and livestock particularly from traffic	10-37	High	6		30.04	Protective barriers will be erected at excavations at a road or river crossing, close to a community or that are flooded temporarily in accordance with the Community HS&S Plan; warning barriers will be deployed around areas of lesser risk to members of the public.	High	5	
			Risk of conflict between community members and security personnel leading to injury or death	10-37	High	6		30.06	Bridges will be provided across open trenches and welded pipes at locations where there is a demonstrable need for people to cross, if it is reasonable for them to do so and can be accommodated safely, taking into account works being undertaken in that area at the time.	Med	3	
			Deterioration of patient's condition during transport to a medical facility	10-37	High	6		30.08	Community Liaison Officers (CLOs) appointed by the Contractor will participate in, or deliver safety awareness training to, local children and their parents and/or their teachers.	Med	5	
								30.09	Water will be pumped from flooded excavations (e.g. with centrifugal pumps or well-points as appropriate) where a risk assessment concludes that they present a safety risk.			
								30.10	The project will implement the Voluntary Principles on Security and Human Rights.			
								30.12	During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTI/	AL IMPACT		MITIGATION	R	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								30.15	Random drug and alcohol testing of the workforce will be conducted, recorded and audited regularly.			
								30.17	Warning posts and bunting will be erected to mark overhead cables and temporary crossing points.			
								20.03	Warning barriers and/or signs will be erected where the pipeline or CSG2 access road route crosses locations identified with local communities as being heavily used by people, including herders.			
								30.18	Construction traffic warning signs will be positioned at road crossings and other appropriate locations as determined by the Project, for example along access routes before they are used by construction traffic.			
								30.21	Where traffic is diverted around crossings, traffic control or careful selection of the exit from the working areas will be provided with the aim of ensuring vehicles join the road in a safe manner.			
								30.22	The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable.			
								30.24	The contractor will be expected to use the designated access roads and to apply for Company consent to use any new or existing roads not designated for Project use.			
								31.02	Risk assessments will be carried out to identify sensitive receptors such as hospitals and clinics along Project access routes. The project will ensure that access to and from these facilities is not restricted by Project activities or an alternative access is in place and has been agreed with the hospital or clinic staff.			
								31.03	SCPX-related drivers will be briefed so they understand the importance of ensuring free access and egress of ambulances to the hospital and all traffic to clinics.			
								32.08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.			
								32.09	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.			
								30.23	The ROW of the SCPX pipeline and any additional temporary workspaces will be surveyed and set out (i.e. marked out and, where necessary, fenced off). The contractor will be required to keep within the designated footprint.			
								19.04	Welded pipe sections will be capped to prevent entry.			

	ISSUE		POTENTIAL IMPACTS		PC) TENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								21.01	The length of the continuous open trench (including trench with pipe installed but not backfilled and with a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.			
								33.01	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.			
								33.15	The Project will review measures to mitigate community health and safety impacts regularly, and consult PAC leaders every six months, informing them on the status of implementation and results, and discussing any changes needed to the 'Pollution Prevention Plan' or the 'Community Health, Safety and Security Plan' in advance of proposed changes.			
								33.16	Information will be disclosed to PAC leaders regarding potential community health and safety impacts and mitigations, at a sufficient level of detail to help these stakeholders to fully understand current and expected risks, and, as necessary, additional measures to be implemented.			
								3.34	If water accumulates in the open trench (either from rainfall or because of a high water table), it will be pumped out before the pipe is lowered into the trench. All trench water will be discharged safely with the aim of minimising erosion.			
								24.02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.			
								37.03	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.			
								37.04	Temporary traffic control measures will be employed at road crossings and junctions (flagmen, temporary traffic lights) where a safety risk assessment has identified traffic control measures will reduce the risk of traffic accidents.			
								37.05	The authorities will be notified when oversize heavy loads need to be transported and the loads will be escorted by the Project.			
								6.12	A trained rapid response team will be mobilised in the event of spillage of hazardous materials.			
								37.09	All contractors and subcontractors will adhere to BP driving rules.			
								19.07	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.			
								37.10	Night-time driving will be by exception only, as approved by the Company, to minimise driving risk and disturbance to communities.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								3.09	Local people will be actively discouraged from using the ROW as an access road (through use of signage, public education, leaflets etc.).			
								2.02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).			
								6.03	The storage of hazardous materials will be restricted to designated impermeable hazardous materials storage areas located at least 50m from any surface watercourse or seasonal water channel.			
								37.06	At locations where schools are very close to a road used by SCPX traffic, the construction contractor will plan works to minimise the delivery of heavy loads at times when children are likely to be walking to and from school.			
								33.19	Land users and local communities will be consulted to determine their requirements for access across the ROW.			
A31	Community Health	Community Health	Spills impacting surface water and groundwater used in PACS	10-37	Med	6		31.04	The Project will apply a risk assessment approach to contaminated land management to evaluate the potential impact of soil, surface water or groundwater contamination on local receptors.	Med	3	
			Potential for field related activity leaks and spills	10-37	Med	6		6.12	A trained rapid response team will be mobilised in the event of spillage of hazardous materials.	Low	3	
								6.10	Spill response equipment (absorbents etc.) will be available in hazardous materials storage areas.			
								6.20	Vehicles delivering fuel or hazardous liquids will carry appropriate spill kits to allow an initial response to any spill to be deployed.			
								14.03	In areas of wetland and areas where the groundwater supplies wells for irrigation or potable use, the storage and use of hazardous materials will be carefully controlled.			
								33.01	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.			
								33.15	The Project will review measures to mitigate community health and safety impacts regularly, and consult PAC leaders every six months, informing them on the status of implementation and results, and discussing any changes needed to the 'Pollution Prevention Plan' or the 'Community Health, Safety and Security Plan' in advance of proposed changes.			
								33.16	Information will be disclosed to PAC leaders regarding potential community health and safety impacts and mitigations, at a sufficient level of detail to help these stakeholders to fully understand current and expected risks, and, as necessary, additional measures to be implemented.			
								6.11	Relevant construction personnel will be trained in use of spill kits and disposal practices.			

Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Imp

	ISSUE		POTENTIAL IMPACTS		POTENTIAL IMPACT				MITIGATION	R	ESIDUAI	LIMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
			Air emissions from camps and facilities	10-37	Med	6		23.05	Dust generation and concentrations in the air will be visually monitored during construction where activities are near communities. If dust is visible, additional mitigation measures, such as the imposition of tighter speed limits, will be implemented with the aim of avoiding causing disturbance to residents or land users.	Med	3	
			Incremental addition of road dust	10-37	Med	6		OP21	An air quality monitoring programme encompassing ambient air quality and stack emissions monitoring will be developed and implemented in relation to the Project Environmental Standards. Where monitoring results demonstrate consistent compliance with the Project Standards, the frequency and scope of monitoring will be reviewed and revised if appropriate to include less frequent, boundary fence monitoring.	Med	3	
								22.03	Ambient air quality monitoring will be carried out prior to construction to establish a baseline on the boundary fence and at receptors in the vicinity of CSG1, CSG2 and PRMS.			
								23.06	Vehicles carrying fine materials will be sheeted to help prevent dust blow and spillages.			
			Project may add contaminants to water used for hydrostatic testing	10-37	Med	6		10.08	A risk assessment will be undertaken before any chemical additives are used in hydrotest water.	Low	3	
								31.05	A risk assessment will be undertaken when considering waste water discharge options and locations.			
			Outbreaks of infection in camps, which could be transferred to PACs	10-37	Med	6		7.04	Waste management practices will be subject to regular monitoring and auditing.	Med	3	
								31.06	Medical waste will be disposed of via a licensed medical contractor or a Company approved incinerator.			
								31.10	A non-communicable disease (NCD) awareness programme will be implemented.			
								31.11	Pre-job fitness for task assessments will be implemented and will be repeated at regular intervals based on the employee risk profile.			
			Non-communicable diseases in local construction workers	10-37	Med	7		31.12	Project will prohibit the workforce from participating in illegal activities including use of illegal drugs.	Low	5	
								31.13	Worker education and awareness programmes will be conducted and materials regarding the health hazards of smoking, alcohol and substance abuse will be provided.			
			Increase in drug and alcohol abuse in the community	10-37	Med	7		31.14	A worker education and awareness programme regarding the risks and prevention measures associated with STIs including HIV/AIDS and other communicable diseases (e.g. TB) will be implemented.	Med	7	
								31.15	The project will make information on communicable diseases and STIs available to communities close to the camps.			

	ISSUE		POTENTIAL IMPACTS		PC	DTENTI	AL IMPACT		MITIGATION	RI	ESIDUA	L IMPACT
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								30.15	Random drug and alcohol testing of the workforce will be conducted, recorded and audited regularly.			
			Increase in prevalence of STIs in camp and PACs	10-37	Med	6		31.16	Temporary Project housing structures will be constructed and maintained according to internationally accepted design specifications for space occupancy per person.	Med	3	
								31.17	The Contractor will operate a personnel health programme which will aim to prevent illness and disease occurring, and will include immunisations as required.			
			TB outbreaks within the camp and PACs	10-37	Med-	5		31.18	A workplace TB control programme will be implemented.	Low	3	
								31.19	A food sanitation programme will be developed and implemented within all Project catering facilities based on internationally recognised standards.			
								31.20	Food-borne illness investigation procedure will be implemented and workers will be educated regarding the prevention of food related illnesses (e.g. hygiene practices).			
			Transmission of food related illnesses from Project to community and vice versa	10-37	Low	6		31.21	Food service operations, practices and facilities will be regularly inspected and findings and resolved non-compliance issues will be documented immediately.	Low	4	
			Risk of zoonotic diseases to Project and community	10-37	Med	3		31.22	Measures for preventing zoonotic disease transmission will be implemented.	Low	3	
								6.22	The Company will carry out a due diligence exercise to identify and manage the risk of anthrax.			
								6.25	If any animal burial pits are identified during construction, works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax.			
			Risk of vector related diseases to Project staff	10-37	Low	2		31.23	A vector-related disease (VRD) prevention programme will be implemented.	Low	2	
								19.08	Construction contractors will be required to manage the storage and disposal of food and organic wastes to avoid attracting vermin.			

Appendix B-2 March 2013	White - Primary Impact	Purple - Primary & Secondary Impact	Cyan - Secondary Imp

	ISSUE		POTENTIAL IMPACTS		PC	DTENTIA	AL IMPACT		MITIGATION	R	ESIDUAL	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
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Ref	Description	Topic	Impact	ESIA Ref	Significance		Probability	Ref	Commitments Relating to the Issue	Drohahilitu		Residual Risk
					l	Event: Gas	s release from pipel	ine with explosion				
A30	Community safety		Exposure to thermal radiation	12-8	Very High		5	D11.02	There will be increased depth of cover at crossings: road crossings will generally be installed with 2.0m cover; rail crossings have at least 3.0m cover and unpaved roads will have at least 1.5m cover	3	3	Medium
A4	Loss of soil structure		Crater formation	12-8	C3 Mediu m			D11.03	Concrete slabs will be installed at open-cut road crossings to protect SCPX from future road construction activities and excavations along roads or the verges.			Low
A8	Visual intrusion		Visible fireball	12-8	B2 Low			D11.04	A general minimum separation distance of 20m is applied between SCPX and SCP/BTC. At crossings, additional control of work measures will be applied.			Low
A3	Soil erosion		Ground cover removed where earth is scorched	12-8	B3 Low			D11.05	At the block valve location (KP28) the separation distance between 56" SCPX pipeline and the 42" SCP pipeline will be no less than 28m.			Low
A17	Loss of habitat		Fire damage to vegetation	12-8	A2 Low			D5.010	Where the SCPX pipeline crosses buried services or pipelines, trenchless or open cut crossing methods will be adopted. A typical vertical separation between the SCPX pipeline and the existing service or pipeline will be 1500mm where trenchless techniques are used, and 900mm where open cut techniques are used.			Low
A32	Loss of agricultural land		Damage to crops	12-8	B3 Low			D5.011	Construction of crossings of the existing BTC and SCP pipelines will be controlled under the existing pipeline operations permit to work system and the activity will be subject to a specific risk assessment undertaken by both the construction contractor and BTC and SCP operations team.			Low
A35	Damage to third party infrastructure		Damage to buildings	12-8	B2 Low			D5.034	An increased wall thickness with a design factor of 0.6 will be applied at major road, railway and river crossings and where the pipeline passes seismic faults to meet the requirements of API RP 1102.			Low
A25	Noise		Noise disturbance from major incident	12-8	C5 High			D5.100	Local vents will be installed that will release the compressor seal gas to the atmosphere at a safe location if the seal gas recovery system fails.			Medium
A31	Community health		Anxiety caused to residents in surrounding communities	12-8	Low			D12.07	A zone around the cold vent will be fenced to exclude the public from areas where thermal radiation levels are considered likely to harm them in the event that the vented gas ignites.			Low

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	ISSUE POTENTIAL IMPACTS				POTENTIAL IMPACT				MITIGATION	RI	ESIDUAL	IMPACT
Ref	Description	Topic	Impact	— ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
A23	Release of gases to atmosphere		Greenhouse gas emission	12-8	C4 Med			D12.03	A leak detection system is provided on the pipeline. Following detection of a leak, the block valves on either side of the leak will be remotely closed so that the volume of release will be limited by the distance between the two block valves.			Low
								D12.06	Each major river crossing (i.e. the Mtkvari and the Algeti) will have a site- specific design which will be set to account for the maximum flow rates (1:200 year storm event), sediment movement patterns, anticipated changes to the river bed contour and the predicted extent of lateral erosion.			
								D5.001	The SCPX pipeline will be protected from corrosion by an impressed current cathodic protection system.			
								D12.01	A design factor of 0.5 has been allowed, and heavy wall pipe will be used in KP39–41 where a number of dwellings are less than 200m from the pipeline.			
								4.14	In the case of an unplanned event, any damage will be reinstated and compensated where appropriate.			
								OP140	Local residents will be advised of activities that could threaten the integrity of the pipeline, such as the extraction of aggregate.			
								D30.01	Where it is considered that there is a higher risk of the pipeline being damaged or interfered with, or where other services are crossed and at track and road crossings, the pipeline will be covered by concrete slabs at open cut crossings.			
								OP121	When the 56"-diameter pipeline is operating, regular patrols of the pipeline by ROW horse patrols, vehicular patrols (using existing access tracks) and security patrols will lessen the risk of third-party interference.			
								OP20	The entire pipeline will be walked or ridden periodically to provide assurance that no unauthorised activities are taking place that could damage or otherwise affect the integrity of the pipeline. Sensitive sections will be patrolled with the highest frequency.			
								OP123	The pipeline and facilities will be regularly inspected and maintained.			
								OP124	The pipeline and facilities will be operated within the intended design conditions.			
								OP125	The relevant authorities will be informed in the case of planned or actual third-party development within the relevant pipeline and facility protection zones.			
I								OP128	The existing SCP pipeline has a Government-approved emergency response plan (ERP), which will be updated to integrate the SCPX pipeline and the new facilities before they become operational.			

	ISSUE		POTENTIAL IMPACTS POTENTIAL IMPACT MITIGATION						RESID	UAL IMPACT	
Ref	Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Significance
								OP129	In accordance with Appendix 4 Clause 3.6 of the HGA, the revised ERP will be submitted to GOGC (representing the Georgian Government).		
								OP130	All personnel are required to understand their roles and responsibilities described in the ERP and undertake training and instruction necessary to ensure that they are competent to carry out their roles and responsibilities. Regular drills, musters and training are detailed in the annual emergency response exercise programme that will be updated to include SCPX-specific training and emergency drills.		
								OP131	ROW patrols will monitor river crossing to provide assurance of the integrity of any river protection works and river banks. This will include a visual inspection for river bank erosion or changes to channel morphology.		
								OP132	In-line inspection pigging operations will be carried out on a regular basis to provide information on the line integrity.		
								OP133	The project will maintain liaison with all land owners along the pipeline route, and with authorities and utilities companies to track proposals for third party buildings activities that could affect the pipeline		
								OP143	An expert assessment of burial depths, set back measurements and pipeline protection works will be carried out at major river crossings annually (depending on the river characteristics and crossing technique) and after flood events exceeding a 1:100-year return period.		
								OP144	Depending on river crossing monitoring results, additional maintenance measures, as deemed necessary by the Project, such as civil protection works which are necessary to maintain adequate depth of cover and set back, will be implemented.		
								OP136	Monitoring of areas of geotechnical instability and erosion potential will be continued during operations.		
					Event: Ga	is re <u>lease f</u>	from fa <u>cility with jei</u>	fire and facility blov	wdown		
A30	Community safety		Exposure to thermal radiation	12-8	High		5	D5.100	Local vents will be installed that will release the compressor seal gas to the atmosphere at a safe location if the seal gas recovery system fails.	3	Low
A25	Noise		Noise disturbance from venting	12-8	C3 Med			D12.07	A zone around the cold vent will be fenced to exclude the public from areas where thermal radiation levels are considered likely to harm them in the event that the vented gas ignites.		Low
A23	Release of gases to atmosphere		Greenhouse gas emission	12-8	C4 Med			D12.05	Piping systems at the facilities are designed to ASME B31-3 'Code for Pressure Piping'. Pipeline systems at the facilities are designed to ASME B31-8.		Low

	ISSUE		POTENTIAL IMPACTS		PC	DTENTI	al Impac	CT		MITIGATION	R	ESIDUAL	. IMPACT
Ref	Description	Торіс	Impact	ESIA Ref	Sensitivity	Magnitude	Sinnificance	5	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
									OP124	The pipeline and facilities will be operated within the intended design conditions.			
									OP123	The pipeline and facilities will be regularly inspected and maintained.			
									OP125	The relevant authorities will be informed in the case of planned or actual third-party development within the relevant pipeline and facility protection zones.			
									OP127	CSG1 and CSG2 will have local emergency shut down (ESD) and safety systems.			
									OP128	The existing SCP pipeline has a Government-approved emergency response plan (ERP), which will be updated to integrate the SCPX pipeline and the new facilities before they become operational.			
									OP129	In accordance with Appendix 4 Clause 3.6 of the HGA, the revised ERP will be submitted to GOGC (representing the Georgian Government).			
									OP130	All personnel are required to understand their roles and responsibilities described in the ERP and undertake training and instruction necessary to ensure that they are competent to carry out their roles and responsibilities. Regular drills, musters and training are detailed in the annual emergency response exercise programme that will be updated to include SCPX-specific training and emergency drills.			

Appendix B3: Site Specific Impact Assessment & Mitigation Table

L	OCATION		POTENTIAL IMPACTS		F	POTE IMP/	NTIAL ACT		MITIGATION	RE	SIDU	JAL IMPACT		
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance		
KP0-12	Wetlands	Soil & Ground Conditions	Compaction of KP0-1 wetland	10-5	A	3	Low	2.01	Load-bearing materials, such as bog mats and geotextile membranes, will be used to support heavy loads in areas of soft ground (including wetland areas) unless deemed impractical by the Company.	A	2	Low		
	Irrigation Channels	Surface Water	Increased levels of sediment by open cut crossing technique at Irrigation channels at KP0-11	10-10	С	2	Low	X5.06	Water flow will be maintained at Irrigation channels that will be open-cut at KP00–11.	С	1	Low		
			Impeded flow of channel disrupting downstream users	10-10	С	3	Medium	3.21	Measures to minimise scour and reduce sediment load will be implemented at locations where hydrotest water or other pumped water (including trenchwater) is discharged to surface watercourses or to land (e.g. controlled rate of discharge and deployment of geotextile mats or other physical erosion prevention measures).	С	3	Medium		
								10.12	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.					
		Ecology	Disturbance of fauna inhabiting irrigation channel	10-13	В	3	Low	D5.009	The large irrigation channel, drainage ditch and road at KP12 will form part of a single trenchless crossing.	В	2	Low		
								X7.15	The irrigation channel at KP12 will be crossed using a trenchless method thus avoiding disturbance to flora and fauna.					
	Wetlands	Ecology	Disturbance of wetland fauna in KP0-1 wetlands	10-13	В	3	Low	X7.01	A method statement will be produced and agreed prior to construction of the pipeline through the wetland at KP0–0.5 with the aim of reducing damage to the wetland during construction by use of bogmats or an alternative as approved by the Company.	to flora and fauna. Atement will be produced and agreed prior to construction of the pipeline vetland at KP0–0.5 with the aim of reducing damage to the wetland during by use of bogmats or an alternative as approved by the Company.				
	Irrigation channels	Land Ownership & Use	Increased sediment in river affecting downstream users and aquatic ecology	10-10	С	3	Medium	3.21	Measures to minimise scour and reduce sediment load will be implemented at locations where hydrotest water or other pumped water (including trenchwater) is discharged to surface watercourses or to land (e.g. controlled rate of discharge and deployment of geotextile mats or other physical erosion prevention measures).	С	3	Medium		
								10.12	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.					
	Wooded areas	Ecology	Loss of habitat (roosts) for bats	10-13	В	3	Low	X7.12	Pre-construction ecological surveys will be carried out at dusk/night in June–July to record details of bats at KP2–12. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.	В	1	Low		
	Pipeline crosses wetlands	Ecology	Damage to reed bed habitat supporting amphibians	10-13	В	3	Low	X7.15	The irrigation channel at KP12 will be crossed using a trenchless method thus avoiding disturbance to flora and fauna.	В	1	Low		
	Military Camp within 500m of ROW	Air Quality	Military Camp is within 500m of works sites, may be affected by dust generation.	10-20	E	3	Medium	X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).	E	2	Low		
	Military Camp within 500m of ROW	Noise	Disturbance causing nuisance	10-29	C	2	Low	X9.01	At the Military Camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32), and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).	С	1	Low		

L	OCATION		POTENTIAL IMPACTS			Pote IMP	NTIAL ACT		MITIGATION	RE	SIDL	JAL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
	Building at KP1.8	Dust	Building may be affected by dust generation	10-29	С	2	Low	X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).	С	1	Low
	Jandari Road	Landscape	Visual intrusion from lighting. Night time views Jandari Road	10-8	С	3	Medium	X4.02	At CSG1, locally occurring native trees and shrubs will be planted along field boundaries to the north and east to screen PSG1 and CSG1 facilities from Jandari Road providing sufficient land is available.	С	2	Low
								X4.12	At CSG1, CSG2 and the PRMS, the Project will maintain the unobtrusive colour scheme.	1		
CSG1	CSG1	Surface Water	Surface Water drainage causing erosion at facility sites	10-5	В	3	Low	X6.01	At CSG1 and the PRMS, where existing boreholes will be used, the water will be sampled and analysed to monitor contamination.	В	3	Low
		Landscape	Landscape impacts. Modification to landscape features and character by CSG1	10-8	В	2	Low	X6.02	The facilities will be supplied with water from either existing abstraction wells or new wells, and subject to a sustainability assessment.	В	2	Low
		Landscape	Visual intrusion. Nazarlo and Garji Modification of daytime views from Nazarlo and Garji by CSG1	10-8	D	2	Medium	X4.12	At CSG1, CSG2 and the PRMS, the Project will maintain the unobtrusive colour scheme.	D	1	Low
		Landscape	Visual intrusion. Jandari Road Modification of daytime views from the Jandari Road by CSG1	10-8	С	3	Medium	X4.02	At CSG1, locally occurring native trees and shrubs will be planted along field boundaries to the north and east to screen PSG1 and CSG1 facilities from Jandari Road providing sufficient land is available.	С	2	Low
								33.18	Community Liaison Officers may assist in raising community awareness about emissions- related issues and ensuring emissions-related complaints are followed up and responses provided.			
								D13.01	The Project will review the flood protection philosophy at CSG1 with the aim of reducing the volume of imported material.			
								D5.019	The compressor stations will have four gas compressors mechanically driven by dry low emission (DLE) gas turbines.			
								D5.021	CSG1 will also have a high-pressure vent stack 80m high for emergency and maintenance depressurisation of the process equipment.			
								D8.02	Sensitive material and colour finishes will be used for the external facades of buildings.			
								D5.096	The block valve, PRMS and the CSG1 have been collocated to minimise the requirement for additional development on greenfield sites.			
								D8.03	The project will use sensitive lighting design to minimise light pollution and sky glow, including directional, task-specific, low level, hooded, photo-sensitive lighting at CSG1, CSG2 and PRMS.			
								X4.02	At CSG1, locally occurring native trees and shrubs will be planted along field boundaries to the north and east to screen PSG1 and CSG1 facilities from Jandari Road providing sufficient land is available.			
						OP04	Surface run-off from un-contained catchment areas within the facility site areas (e.g. roadways and other surfaced areas) will flow into the storm water drainage which will be discharged off-site via a weir, to surface or ground.					
								D6.01 Waste water systems will be integrated with the existing facilities at CSG1 and PRMS.			1///	
Rustavi	Rustavi	Air Quality	Sensitivity to Dust	10-20	E	3	Medium	X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).	Ē	1	Low

L	OCATION		POTENTIAL IMPACTS			POTE Imf	ENTIAL PACT			MITIGATION	RES	SIDU	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance		Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
		Noise	Sensitivity to Noise	10-29	С	2	Low		33.18	Community Liaison Officers may assist in raising community awareness about emissions- related issues and ensuring emissions-related complaints are followed up and responses provided.	С	1	Low
									D12.02	A design factor of 0.5 has been allowed and heavy wall pipe will be used within KP22- KP43 around Rustavi to allow for future development and population expansion.			
									D5.006	The section of the pipeline trench that crosses the Rustavi fault will be excavated in a trapezoidal shape, double lined with geotextile membrane and filled with non-cohesive, graded aggregate.			
	Dwellings at KP 27.5 and 28.5	Air Quality	Sensitivity to Dust	10-20	E	3	Mediu	im	X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).	E	1	Low
KP26-28	Steep slopes to the East of the Mtkvari River	Soil & Ground Conditions	Surface water erosion and landslip	10-5	В	4	Mediu	im	X7.08	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded using hay and an appropriate seed mix.	В	3	Low
		Surface Water	Surface water erosion and landslip	10-5	В	4	Mediu	im	X7.08	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded using hay and an appropriate seed mix.	В	3	Low
									X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).			
									X9.01	At the Military Camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32), and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).			
									3.01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.			
									3.03	Erosion control measures will be implemented to achieve erosion Class 3 or better.			
									3.05	Temporary dewatering or trench stabilisation will be undertaken where required to minimise slumping of trench walls.			
									3.07	Trench breakers will be installed where downhill flow within the backfilled trench may lead to erosion.			
									3.08	Soil loss will be monitored and corrective actions taken if it exceeds erosion class 3, in accordance with the Reinstatement Plan.			
									3.09	Local people will be actively discouraged from using the ROW as an access road (through use of signage, public education, leaflets etc.).			
									3.11	Once the topsoil has been replaced it will be stone picked to remove any large stones that are not in keeping with the surrounding soil texture.			
									3.14	A monitoring plan will be developed to determine the success of re-vegetation and bio- restoration activities, including the appropriateness of species composition.			

L	OCATION		POTENTIAL IMPACTS			POTE IMP	NTIAL ACT		MITIGATION
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issu
								3.15	Upon completion of subsoil and topsoil reinstatement, the cont personnel will inspect disturbed areas jointly for signs of erosio topographic diversity, acceptable surface water drainage capac compaction. Remedial measures will be implemented, if neces reinstatement does not meet the Project criteria.
								3.17	The rate of discharge of water will be controlled to reduce the r
								4.13	Topsoil stacks will be regularly inspected for compaction and e will be implemented if compaction or erosion is identified.
								3.19	Field boundaries will be reinstated to pre-existing condition on
								3.21	Measures to minimise scour and reduce sediment load will be where hydrotest water or other pumped water (including trench surface watercourses or to land (e.g. controlled rate of discharg geotextile mats or other physical erosion prevention measures
								3.23	At watercourses, bank and bed material will be stored separate channels and will not be placed where flow or drainage will be
								3.24	At locations where trenchwater or hydrotest water or other pun causes scour or soil erosion, eroded areas will be reinstated.
								3.26	Surface water drainage from operational areas including acces facilities will be designed to minimise soil erosion in accordanc drainage systems (SUDS) principles.
								3.28	Temporary erosion control measures will be developed and im disturbance and if construction activity on the working areas is before reinstatement has been completed.
								3.30	When discharge velocities have the potential to create erosion used to establish sheet flow. Trenches will be dewatered in suc silt-laden water flows into any wetland or water body.
								4.02	Stored subsoil and topsoil will be segregated in a manner that
								4.05	Topsoil stacks along the ROW will be free draining and stored Project Reinstatement Specification.
								4.07	Where the Project considers that ground is sufficiently steep (g topsoil stockpiles will be protected with silt fence to help reduce during heavy rains.
								4.08	The topsoil and subsoil stack surface will be compacted sufficient preventing erosion, without leading to the development of analysis.
								4.12	The construction contractor(s) will produce method statements erosion control, sediment control and reinstatement before wor
KP29	Mtkvari River Crossing	Surface Water	Mud break out from tunnelling may cause increased sediment in river affecting downstream users (Rustavi) and aquatic ecology	10-10	C	3	Medium	X5.01	Water flow in the Mtkvari and Algeti Rivers will be assessed be hydrotest water.
								X5.02	The Mtkvari River at KP30 will be non-open-cut (micro-tunnel c existing/abandoned launch pit on east bank if practicable.

	RE	SIDUA	AL IMPACT
e	Sensitivity	Magnitude	Significance
ractor and Company n, slope stability, relief, city and function, and sary, at locations where isk of soil erosion. rosion; corrective measures completion of construction.			
implemented at locations water) is discharged to ge and deployment of).			
ely, away from the active obstructed.			
aped water discharges			
e with sustainable urban			
plemented after initial land suspended over the winter			
, energy dissipaters will be ch a manner that no heavily			
avoids mixing.			
in accordance with the			
enerally greater than 25%), e washout and loss of topsoil			
ently with the aim of probic conditions.			
incorporating plans for k begins at river crossings.			
fore and during abstraction of	С	3	Medium
or HDD) and use			

L	OCATION		POTENTIAL IMPACTS			POTE IMP	ENTI. PACI	IAL T		MITIGATION	RE	SIDU	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude		Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
									X5.03	The contractor will prepare a plan to respond to an outbreak of mud including clean up and remediation for outbreak on land and liaison with downstream users in the event of outbreak in the water.			
									X5.07	At the slopes east of the Mtkvari between KP27 and KP29, header drains or dewatering should be considered where large quantities of water are likely to enter the ROW.			
					1111		////		9.03	Muds used will be water based.	1111		
		Ecology	Causing Injury, restriction of movement, breeding, or foraging to Spur Thigh Tortoise	10-13	D	2	Me	edium	D17.04	The Mtkvari River crossing will be constructed by micro-tunnelling or horizontal directional drilling under the river.	D	1	Low
									X5.02	The Mtkvari River at KP30 will be non-open-cut (micro-tunnel or HDD) and use existing/abandoned launch pit on east bank if practicable.			
		Ecology Removal of smooth-leaved Elm (GRL spe							21.04	The trench will be checked regularly for wildlife (particularly in sensitive locations) e.g. where tortoises are found (KP29-31 and KP54-55) and where the four-lined snake may be present (KP0-12).			
	Ecology Removal of smooth-leaved Elm (GRL species) 10		10-13	D	3	Me	edium	D5.045	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.	С	3	Medium	
									19.06	19.06 Wildlife sensitivity to disturbance will be included in workforce training.			
									17.08	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific.			
									X7.07	After construction has been completed, seed-grown plants of 50cm or more in height will be planted in areas of the Algeti riparian woodland where populations of smooth-leaved elm occurred prior to clearance (subject to planting restriction zones), suitable protection will be provided to protect them from grazing.			
									17.10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.			
									3.14	A monitoring plan will be developed to determine the success of re-vegetation and bio- restoration activities, including the appropriateness of species composition.			
									17.11	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.			
									X7.09	At the Mtkvari crossing, the scrub will be cut back and coppiced to accommodate the guide cable for the micro-tunnel machine. Plant roots will remain undisturbed, as far as practical.			
		Soil & Ground Conditions	Disposal of solid and liquid waste, release of hazardous materials	10-4	C	3	Me	edium	X3.03	The existing micro-tunnelling shaft on the east bank of the Mtkvari is full of waste material that has not been classified. The waste will be dug out, assessed and managed in accordance with the Pollution Prevention Plan and Waste Management Plan.	C	1	Low
			Surface water erosion and landslip	10-3	В	4	Me	edium	X7.08	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded using hay and an appropriate seed mix.	В	3	Low
			Disturbance, treatment and disposal of known/unknown or unknown contaminated land	10-4	С	3	Me	edium	X6.04	The fencing at the known anthrax pit at KP30 will be maintained during construction to help protect the area from disturbance and workers will be made aware of the risks posed by this area and the need to avoid disturbance.	С	3	Beneficial

L	OCATION		POTENTIAL IMPACTS		F	POTE IMP	NTIAL ACT		MITIGATION	RE	SIDL	IAL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
Pipeline Camp	Dwellings on edge of Poladantkaari	Infrastructure & Services	Restricted access to local access track to some dwellings on the edge of Poladantkaari village preventing local community use	10-41	С	4	Medium	X15.02	If the Project affects the existing access track at the Pipeline Camp on the edge of Poladaantkari an alternative access will be provided to dwellings in the village. The Project will locate the access as close as is practical to the existing track, taking into consideration potential health and safety impacts.	С	2	Low
		Noise	Noise disturbance to houses closest to the camp (c.200m)	10-29	С	2	Low	X9.03	Site layout will be designed, where practical and feasible, to locate noisy plant in areas further away from houses at the pipeline camp where a risk assessment shows that there may be significant noise impacts on sensitive receptors.	С	1	Low
KP40-45	Krtsanisi (KP40),	Air Quality	Sensitivity to Dust	10-20	E	4	Medium	X8.01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).	E	3	Medium
								17.18	A pre-construction survey between April and July inclusive will be undertaken at the pipeline camp location, of the plants and animals present on site to identify any need for site-specific mitigation measures.		4 Medi	
		Noise	Noise disturbance	10-29	С	5	High	X9.01	At the Military Camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32), and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).	С	4	Medium
		Vibration	Damage to buildings	10-31	С	3	Medium	25.13	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.	С	2	Low
	Kumisis Dachas (KP45)	Noise	Noise disturbance	10-29	D	2	Medium	X9.01	At the Military Camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32), and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).	D	1	Low
KP50-56	KP50-56	Surface Water	Surface water erosion and landslip at KP53 slope East of Algeti River	10-5	В	4	Medium	X7.13	Pre-construction ecological surveys will be carried out at dusk/night in June/July to record details of bats at KP54–55. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.	В	3	Low
KP 53-54	KP53	Cultural Heritage	Construction may have an adverse effect on artefacts in the immediate vicinity	10-33	A	2	Low	X7.11	The Algeti River crossing will be constructed outside of the fish-spawning season which is May–June.	В	3	Low
	KP54	Cultural Heritage	Construction may have an adverse effect on artefacts in the immediate vicinity	10-33	С	2	Low	X10.01	There are areas of potential archaeology at KP55 (CH7) and KP56 (CH8), which will be examined in a programme of Phase 2 trial trenching if crossed by the SCPX ROW.	A	1	Low
	Algeti River Crossing	Surface Water	Downstream receptors may be affected by increased flows and Subsequent increased levels of sediment during open cut crossing	10-10	С	2	Low	X5.01	Water flow in the Mtkvari and Algeti Rivers will be assessed before and during abstraction of hydrotest water.	С	2	Low

L	OCATION		POTENTIAL IMPACTS			Pote IMP	NTIAL ACT		MITIGATION	RE	SIDU	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								X5.04	At the Algeti River, the crossing trench will be backfilled with the excavated material and, where existent, the watercourse's armour will be reinstated as soon as possible following pipeline installation.			
		Ecology	Removal of smooth-leaved elm (GRL species)	10-13	D	3	Medium	D5.054	Where the ROW passes through riparian woodland by the Algeti River crossing, the SCPX ROW will be a reduced working width, and topsoil will be removed from the ROW to a storage area.	D	2	Medium
								X7.02	Where trees are removed on the banks of the Algeti River, compensation planting will be undertaken to off-set the essential removal of trees.			
								X7.17	At the Algeti River crossing, individuals of the smooth-leaved elm shall be marked prior to construction and shall be avoided where deemed practicable by the Company during the setting out of the ROW.			
								X7.06	To facilitate the re-establishment of smooth-leaved elm populations by the Algeti River, seeds will be collected from mature tree specimens in nearby habitat and saplings will be produced from the collected seeds at a recognised nursery.			
								X7.07	After construction has been completed, seed-grown plants of 50cm or more in height will be planted in areas of the Algeti riparian woodland where populations of smooth-leaved elm occurred prior to clearance (subject to planting restriction zones), suitable protection will be provided to protect them from grazing.			
		Ecology	Causing Injury, restriction of movement, breeding, or foraging to Spur Thigh Tortoise	10-13	D	2	Medium	21.04	The trench will be checked regularly for wildlife (particularly in sensitive locations) e.g. where tortoises are found (KP29-31 and KP54-55) and where the four-lined snake may be present (KP0-12).	D	1	Low
								19.06	Wildlife sensitivity to disturbance will be included in workforce training.			
KP54-55	KP54-55	Ecology	Loss of habitat (roosts) for bats	10-13	С	3	Medium	X7.13	Pre-construction ecological surveys will be carried out at dusk/night in June/July to record details of bats at KP54–55. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.	В	1	Low
	KP55	Cultural Heritage	Construction may have an adverse effect on artefacts in the immediate vicinity CH7-8	10-33	С	2	Low	D27.02	The CSG2 access road has been routed to avoid the majority of known cultural heritage features including:	A	1	Low
									 Nardevani settlement The A number of small stony mounds that could potentially be archaeological features and several probable Bronze Age burial mounds. 			
CSG2	CSG2	Soil & Ground Conditions	Compaction of wetland	10-3	A	3	Low	D17.01	Construction of CSG2 facility and lay-down areas will avoid building on the larger area of wetland at the site.	A	2	Low
		Landscape	Visual intrusion from lighting. Night time views from Rheka	D-08	D	4	High	3.01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.	D	3	Medium
		Surface Water	Surface Water drainage causing erosion at facility sites	10-5	В	3	Low	17.10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.	В	3	Low
		Surface Water	Pollution of surface water in Ktsia affecting downstream users (Avranlo and Berta)	10-10	D	3	Medium	D5.032	The design of the waste water system at CSG2 is still being developed, although the options currently being assessed include a rotating disc (BioDisc®) water treatment plant (or similar) with discharge of treated effluent into surface water or alternatively via a soakaway.	С	2	Low

L	OCATION		POTENTIAL IMPACTS			Pote Imp	NTIAL ACT		MITIGATION	RE	SIDL	JAL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								D6.03	A hydrology study will be undertaken during the detailed design of the CSG2 site and access road to determine catchment areas, flow rates and water quality in the stream crossings and wetland areas.			
								D6.04	Additional tertiary treatment shall be investigated at CSG2, including reed beds, to identify a solution suitable for the climatic conditions.			
								D5.078	If water is sourced from rivers (or channels), no more than 10% of the water flow will be extracted at any time.			
								10.09	Hydrotest water will be re-used between sections, where practical, to minimise the volume required.			
								D5.106	The camps will discharge domestic wastewater treated by a sewage treatment package designed to meet the Project standards and permit requirements.			
								15.02	All new and existing water abstractions for use by the Project will be subject to an environmental and social assessment to assess potential impacts; decisions on the acceptability of the source and appropriate abstraction rates will be based on the results of the review, in accordance with the abstraction permit.			
								OP04	Surface run-off from un-contained catchment areas within the facility site areas (e.g. roadways and other surfaced areas) will flow into the storm water drainage which will be discharged off-site via a weir, to surface or ground.			
								D14.01	The facilities will be designed with treatment units for black and grey water. Treated water from the sewage treatment units will be discharged to ground in a controlled manner via a soakaway or to surface water in accordance with the Project Standards.			
		Landscape	Landscape impacts. Modification to landscape features and character by CSG2	10-8	С	4	Medium	X4.03	At CSG2, the excess subsoil will be used to create bunding north of the facility.	С	2	Low
			Visual intrusion. Modification of daytime views from Rekha by CSG2	10-8	D	4	High	D5.024	CSG2 will have a high-pressure vent stack 40m high for emergency and maintenance depressurisation of the process equipment.	D	2	Medium
			Visual intrusion. Modification of daytime views from Khando by CSG2	10-8	D	1	Low	X4.05	Planting of coniferous trees on a bund north of the CSG2 facility will screen the facility from Rekha.	D	1	Low
			Visual intrusion. Modification of daytime views from Rekha to Khando Road by CSG2	10-8	D	1	Low	D8.02	Sensitive material and colour finishes will be used for the external facades of buildings.	С	1	Low
								D8.03	The project will use sensitive lighting design to minimise light pollution and sky glow, including directional, task-specific, low level, hooded, photo-sensitive lighting at CSG1, CSG2 and PRMS.			
								X4.12	At CSG1, CSG2 and the PRMS, the Project will maintain the unobtrusive colour scheme.		1111	
		Ecology	Loss of meadow land supporting the Marsh Orchid	10-13	D	3	Medium	X7.18	Marsh orchids within the temporary and permanent footprint at CSG2 will be surveyed, identified and translocated prior to construction. A proportion of the plants will be moved to similar habitat in unaffected areas.	D	2	Medium
		Ecology	Disturbance of wetland habitat, loss of habitat supporting amphibians	10-13	В	3	Low	X7.10	At CSG2, tree planting to screen the visual impact will avoid planting on the seasonal wetland areas.	В	2	Low
		Ecology	Loss of wetland patches supporting Corncrake breeding and feeding areas	10-13	С	3	Medium	D17.01	Construction of CSG2 facility and lay-down areas will avoid building on the larger area of wetland at the site.	В	1	Low
								X7.16	At CSG2 the large wetland area to the east of the facility area will be fenced with protective barriers to protect it from construction activities while allowing access for livestock.			

LOCATION			POTENTIAL IMPACTS		-	Pote Imp	ENTIAL PACT		MITIGATION	RE	SIDU	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								X7.14	Ornithological surveys will be carried out at CSG2 and at wetland areas along the CSG2 access road in the breeding season (May–June) and in the migration season (September) before and during construction work to identify bird species using the area and the effect of construction.			
		Ecology	Removal of trees from pine plantation	10-13	A	3	Low	D17.02	The CSG2 access road route has been selected to follow existing roads and tracks and to avoid plantations, wetlands and cultural heritage sites as far as practicable.	A	1	Low
		Ecology	Disturbance of breeding birds and migrating birds	10-13	D	1	Low	X7.14	Ornithological surveys will be carried out at CSG2 and at wetland areas along the CSG2 access road in the breeding season (May–June) and in the migration season (September) before and during construction work to identify bird species using the area and the effect of construction.	D	1	Low
		Cultural Heritage	Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 (CH54-CH66)	10-33	С	2	Low	D27.01	The following potential cultural heritage sites identified by surveys of SCPX Project-related sites will be excavated before Project construction begins: The stony mounds at the CSG2 site (CH54-58).	A	1	Low
								X10.03	Phase 2 archaeological evaluation of nine potential features identified in the area of CSG2 (CH54, CH55, CH56, CH58) will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.			
								X10.13	Six potential features identified in the vicinity of CSG2 (CH03, 59, 62, 64, 65 and 66) will be avoided during construction work and will be demarcated with protective fencing before construction starts.			
		Land Ownership & Land Use	Difficulty to water animals	10-38	C	3	Medium	X13.01	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders. This measure will apply particularly at CSG2 and PRMS sites where grazing livestock are important contributors to local livelihoods.	В	2	Low
								X13.02	Local communities and grazers will be consulted prior to construction regarding access to grazing lands in the vicinity of CSG2 and the CSG2 Access Road to determine suitable alternative access routes to pastures.			
		Infrastructure & Services	Restricted access to church at CSG2 preventing local community use	10-41	C	4	Medium	X15.01	Access to the church located close to CSG2 will be maintained throughout construction as long as the Project considers it safe to do so.	C	2	Low
CSG2 Access Road	CSG2 Access Road	Soil & Ground Conditions	Compaction of wetland	npaction of wetland 10-5 A 3	A	3	Low	D17.08	During detailed design, the CSG2 access route has been adjusted to avoid the majority of the wetland area near Kushi and to route the permanent and temporary footprint away from the area of active corncrake habitat between Kushi and Berta villages.	A 2	2	Low
							X3.02	The CSG2 access road embankments will be reinstated with an appropriate seed mix.				
		Soil & Ground Conditions	Surface Water drainage causing erosion at facility sites	10-5	В	3	Low	X3.01	Topsoil from the access road will be stored in allocated areas along the access road and used preferentially for reinstatement of road banks. Surplus topsoil from the CSG2 access road construction will be spread at agreed locations or on municipal land.	В	2	Low
		Landscape	Landscape impacts. Modification to landscape features and character by access road	10-8	C	3	Medium	X4.06	Where the CSG2 access road has been cut into the hillsides, some of the excess subsoil and topsoil will be used to blend the road into the landscape if slope stability and drainage allow. The remainder of the material will be removed from site to reinstate borrow pits or disposed of to an agreed location.	С	2	Low
		Landscape	Visual intrusion. Modification of daytime views from Nardevani, Aiazmi, Burnasheti, Ozni and Berta.	10-8	D	3	Medium	X5.08	Where the CSG2 access road crosses hill slopes and springs, header drains or dewatering should be considered where large quantities of water are likely to enter working areas.	D	2	Low

L	DCATION		POTENTIAL IMPACTS		F	Pote IMP	NTIAL ACT		MITIGATION	RE	sidu.	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
		Surface Water	Downstream receptors (Kizilkilisa, Ozni, Edikalisa) may be affected. Increased levels of sediment, increased flow rate may cause flooding or changes to channel morphology	10-10	D	4	High	X5.05	Water quality and flow rate testing will be undertaken upstream and downstream of crossings on the access road to CSG2 prior to, during and after construction.	D	1	Low
								D5.032	The design of the waste water system at CSG2 is still being developed, although the options currently being assessed include a rotating disc (BioDisc®) water treatment plant (or similar) with discharge of treated effluent into surface water or alternatively via a soakaway.			
		Ecology	Loss of wetland patches supporting corncrake breeding and feeding areas	10-13	С	3	Medium	D17.02	The CSG2 access road route has been selected to follow existing roads and tracks and to avoid plantations, wetlands and cultural heritage sites as far as practicable.	В	1	Low
			Removal of trees from pine plantation	10-13	A	3	Low	D17.08	During detailed design, the CSG2 access route has been adjusted to avoid the majority of the wetland area near Kushi and to route the permanent and temporary footprint away from the area of active corncrake habitat between Kushi and Berta villages.	A	1	Low
			Disturbance of breeding birds and migrating birds (Stork Nesting near Nardevani)	10-13	D	1	Low	X7.14	Ornithological surveys will be carried out at CSG2 and at wetland areas along the CSG2 access road in the breeding season (May–June) and in the migration season (September) before and during construction work to identify bird species using the area and the effect of construction.	D	1	Low
								X4.07	Where the CSG2 access road is routed through pine plantations, felled trees will be preferentially left within the existing plantation to rot and provide habitat for fungal and invertebrate species, pending agreement with the landowner.			
		Air Quality	Sensitivity to Dust		С	3	Medium	X8.02	Particular attention will be paid to the implementation of dust suppression measures where the CSG2 access road passes close to Nardevani and Berta/Oliangi.	С	2	Low
		Noise	Disturbance causing nuisance	10-29	С	2	Low	X9.02	Where the CSG2 access road passes close to Nardevani and Berta/Oliangi, if construction continues for longer than one month, 10-minute noise monitoring readings will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).	С	1	Low
		Cultural Heritage	Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road	10-33	C	2	Low	D27.02	 The CSG2 access road has been routed to avoid the majority of known cultural heritage features including: Nardevani settlement The A number of small stony mounds that could potentially be archaeological features and several probable Bronze Age burial mounds. 	A	1	Low
								D27.04	Portions of the CSG2 Access Road drainage and embankments have been specially designed to protect and preserve in place possible archaeological features.			
								X10.02	The CSG2 access road alignment has been routed to avoid all known archaeological sites except CH71, CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261 and CH265. These features will be subject to Phase 2 archaeological evaluations, and a recording and preservation programme if appropriate.			
			Construction may have adverse effect on artefacts in the immediate vicinity of (CH16-38)	10-33	C	2	Low	X10.04	At CH9 (Nardevani Settlement remains), CH67 (megalithic stones), and probable burial mounds CH10, CH30, CH161-CH167, CH208, CH215, CH270, CH273, CH274 and CH276 (Access Road construction camp) the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction begins.	A	1	Low

L	OCATION		POTENTIAL IMPACTS			Pote Imp	NTIAL ACT		MITIGATION	RE	SIDU	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road (many Refer to section 7.10.4)	10-33	С	2	Low	X10.05	During topsoil stripping, areas of the CSG2 access road which are adjacent to visible cultural heritage features and in the vicinity of CH276 at the access road construction camp will be monitored for any sites of archaeological features. If they are identified, work will be suspended while an archaeological investigation takes place.	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road (CH15)	10-33	С	2	Low	X10.14	 The following potential cultural heritage sites identified by surveys of Project-related sites will be excavated before Project construction begins: Potential archaeological sites within the CSG2 Access Road footprint that cannot be avoided (CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261, CH265). 	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road (CH60)	10-33	С	2	Low	X10.07	All aspects of the historical road in the vicinity of the Project will be recorded prior to and during access road construction.	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road (CH67)	10-33	С	2	Low	X10.08	At CH41 a small portion of the toe of an embankment of the road will lay across a part of the area identified as being part of the Bronze Age settlement west of Ozni. Possible cultural heritage features have been identified in this part of the site. Phase 2 work will be undertaken prior to construction to assess the features and identify the need for any necessary mitigation measures required.	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road (CH71)	10-33	С	2	Low	X10.09	The archaeological watching brief will be maintained at CH41 during CSG2 access road construction that will enable any elements in this area to be excavated and recorded.	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road (CH41)	10-33	С	2	Low	X10.10	At CH16–38 the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction of the CSG2 access road begins.	A	1	Low
				10-33				X10.12	The width of the access road construction corridor will be evaluated during detailed design with the aim of narrowing to avoid three of the mounds near Burnasheti (CH16, CH19 and CH27). If these sites cannot be avoided, they will be subject to a Phase 2 evaluation.			
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road Berta (CH72)	10-33	В	3	Medium	X10.11	Traffic movements will be managed during the construction of the CSG2 access road with the aim of minimising heavy vehicle movements past the monastery in Berta (CH72) and reducing light vehicle movements to necessary journeys as far as practical.	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road Berta (CH275)	10-33	С	2	Low	X10.06	At CH71 and CH275 where the CSG2 access road crosses the historical road, the existing road surface will be protected by laying a layer of geotextile membrane over which the road surface will be built up.	A	1	Low
			Construction may have adverse effect on artefacts in the immediate vicinity of CSG2 Access Road Camp (CH276)	10-33	С	2	Low	D27.05	The CSG2 access road camp will be designed with the aim of protecting CH276. If this is not practical, phase 2 archaeological evaluation will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.	A	1	Low
		Vibration	Damage to old buildings	10-30	С	3	Medium	25.13	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.	С	2	Low
								25.16	Correct tyre pressures will be monitored and maintained.	1		
								24.02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.			

L	LOCATION		POTENTIAL IMPACTS		P	OTE IMP	NTIAL ACT		MITIGATION	RE	SIDU	AL IMPACT
KP	Location Description	Topic	Impact	ESIA Ref	Sensitivity	Magnitude	Significance	Ref	Commitments Relating to the Issue	Sensitivity	Magnitude	Significance
								OP40	Water quality testing will be undertaken annually downstream of the CSG2 access road crossing for a period of five years post construction or until there are no demonstrable changes, whichever is the sooner.			
		Land Ownership & Land Use	Loss of access to agricultural land	10-38	С	4	Medium	D32.01	The Project will aim to maintain the existing level of access to unaffected land parcels adjacent to the CSG2 access road by providing junctions/crossing points connected to the main existing tracks.	С	2	Low
PRMS	PRMS	Landscape	Surface Water drainage causing erosion at facility sites	10-5	В	3	Low	17.10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.	В	3	Low
			Landscape impacts. Modification to landscape features and character by PRMS	10-8	В	2	Low	X4.12 At CSG1, CSG2 and the PRMS, the Project will maintain the unobtrusive colour	At CSG1, CSG2 and the PRMS, the Project will maintain the unobtrusive colour scheme.	В	2	Low
			Visual intrusion. Modification of daytime views from Julda by PRMS	10-8	D	2	Medium	X4.08	At the PRMS, topsoil from the facility will be used to create bunding east and south of the facility.	D	1	Low
			Visual intrusion. Modification of daytime views from Vale by PRMS	10-8	D	2	Medium	X4.09	Once the landforming at the PRMS has been completed the land will be reinstated for grazing use.	D	1	Low
			Visual intrusion from lighting. Night time views from Julda and Vale	10-8	D	1	Low	D5.096	The block valve, PRMS and the CSG1 have been collocated to minimise the requirement for additional development on greenfield sites.	D	1	Low
						/////		D8.02	Sensitive material and colour finishes will be used for the external facades of buildings.			
								D5.027	The PRMS will also have a high-pressure vent stack 40m high for emergency and maintenance depressurisation of the process equipment.			
								17.10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.			
		Surface Water	Pollution of surface water	10-10	С	3	Medium	OP04	Surface run-off from un-contained catchment areas within the facility site areas (e.g. roadways and other surfaced areas) will flow into the storm water drainage which will be discharged off-site via a weir, to surface or ground.	С	2	Low
		Ecology	Loss of 16 ha of scrub and steppe supporting 6 endemic species	10-12	В	2	Low	D17.09	The inert surface area of the vent exclusion zone at the facilities (CSG1, CSG2 and PRMS) will be reduced to that required for safety purposes, thereby reducing the amount of habitat removed.	В	1	Low
								D5.046	The location of the PRMS construction camp will be selected based on a multidisciplinary evaluation of the potential options considering H&S, social, technical and environmental criteria. This evaluation will consider the results of pre-construction ecological surveys which will be undertaken at the potential locations in Spring.	1		
		Groundwater	Reduced water quality or quantity from established springs, wells etc.	10-11	С	2	Low	X6.01	At CSG1 and the PRMS, where existing boreholes will be used, the water will be sampled and analysed to monitor contamination.	С	1	Low
			Pollution of surface water currently used for A80 site discharge.	10-10	С	3	Medium	X6.02	The facilities will be supplied with water from either existing abstraction wells or new wells, and subject to a sustainability assessment.	С	2	Low
		Land Ownership & Land Use	Difficulty to water animals	10-38	С	3	Medium	X13.01	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders. This measure will apply particularly at CSG2 and PRMS sites where grazing livestock are important contributors to local livelihoods.	В	2	Low

Appendix C1 Public Consultation and Disclosure Plan


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1 INTRODUCTION AND OBJECTIVES

This document is the Public Consultation and Disclosure Plan (PCDP) for the Environmental and Social Impact Assessment (ESIA) of the South Caucasus Pipeline Expansion (SCPX) Project in Georgia. BP, on behalf of a number of partner companies, is managing the Project, as it is the technical operator of the South Caucasus Pipeline (SCP) Company.

This PCDP presents and describes the stakeholder (including members of the public) disclosure and consultation procedures that were implemented as part of the ESIA process and outlines the disclosure and consultation proposed for the pre-construction, construction and operations phases. For ease of reading, the term 'consultation' is used in this document to cover both disclosure and consultation activities. Good stakeholder consultation assists in building strong relationships with stakeholders, based on mutual respect and trust, and increases the likelihood that projects are well designed and responsibly implemented. It reduces the risk of delays in project approval and permitting processes, or the need for costly redesign of operations/facilities. There are some internationally recognised principles that apply to the design and implementation of such consultations, for example, those presented in Performance Standard 1 entitled "Assessment and Management of Environmental and Social Risks and Impacts" (International Finance Corporation, 2012). This Performance Standard states, inter alia, that stakeholders should be able to enter into consultations without coercion, that they should be given adequate information upon which they can comment before key project decisions are made and that their comments will be taken into account in decision-making on a proposed project.

Work on this PCDP began prior to the formal introduction of the Performance Standard; however, the PCDP has been finalised to be compatible with it, in particularly with the characteristics of a Stakeholder Engagement Plan, as presented in the Performance Standard¹. In addition, the PCDP draws on the experience of stakeholder engagement, and understanding of stakeholder concerns, that BP has gained over nearly two decades. BP has been operating in Georgia since the mid 1990s and has carried out extensive stakeholder consultation programmes associated with its major developments. Therefore, BP has well-established relationships with stakeholders, upon which it will build for the SCPX Project.

This PCDP has been prepared to support the development of the SCPX ESIA, which began in Q1 2011. It will be revised from time to time to reflect changes in the SCPX Project and to incorporate lessons learnt and experience gained through ESIA work and consultation with stakeholders.

The construction contractor implementing the SCPX Project will be required to continue stakeholder consultations in conjunction with BP. Along with BP, it will play a large part in implementing the mitigating measures put forward in the ESIA report.

The SCPX Project's stakeholders include inter alia the ministries and agencies of the Government of Georgia (especially regulatory authorities), non-governmental organisations (NGOs) and project-affected communities (PACs). This PCDP presents a plan for stakeholder consultation that includes the following key activities:

• **INFORM** (1): provide accurate, relevant, timely and culturally appropriate information to stakeholders about the SCPX Project, its impacts and benefits, and the ESIA process

¹ The implementation of an 'Informed Consultation and Participation' process, as presented in the Performance Standard, was not considered necessary owing to the likely characteristics of the expected impacts not meeting the criteria applicable to a decision in favour of use of such a process.

- **ENGAGE**: provide opportunities for stakeholders to express their opinions and concerns about the SCPX Project, and to seek broad stakeholder support for the Project and impact management
- **UNDERSTAND:** enable the SCPX Project team to understand the concerns and priorities of stakeholders
- **REVIEW**: incorporate these concerns and priorities into the design, construction and operation of the SCPX Project
- **INFORM** (2): provide feedback to stakeholders as the Project develops so that the consultation process continues.

Review Inform

This cyclical process is illustrated in the diagram below:

This PCDP allows BP to demonstrate that its planning, construction and operation of the SCPX Project complies with the requirements of the host government agreement (HGA) between the SCP participants and the Republic of Georgia as it relates to stakeholder engagement in ESIA, and that it conforms to BP's policies and operational guidelines. The detailed objectives of this PCDP are further described in Section 4.

2 PREVIOUS IN-COUNTRY ESIA STAKEHOLDER CONSULTATIONS AND CURRENT STAKEHOLDER ENGAGEMENT

BP has been operating in Georgia since the mid 1990s and has undertaken extensive stakeholder consultations associated with its major development projects. Specifically, ESIA-related stakeholder consultations have been implemented for development of the Western Route Export Pipeline (WREP), BTC and SCP pipelines (and associated facilities), the Supsa Terminal and a non-hazardous waste landfill near Rustavi. Therefore, BP already has well-established relationships with key stakeholders.

During the WREP, BTC and SCP Projects, extensive stakeholder consultation programmes were undertaken, involving, *inter alia*, national and local government entities, NGOs and communities along the pipeline routes.

Continuing stakeholder consultation activity associated with the operation of the WREP, BTC and SCP pipelines includes:

- Regular communication with PAC members and local government representatives including update meetings on topics such as pipeline operation; community safety and land use restrictions
- Implementation of the grievance procedure to record and respond to individual, group or community complaints
- Regular dialogue with national NGOs through capacity-building initiatives
- Regular communication with media including round table meetings and field trips.

The SCPX stakeholder consultation programme has built upon the lessons learnt from the WREP and BTC/SCP Projects and the existing established relationships between BP and key stakeholders.

3 PROJECT DESCRIPTION

3.1 The South Caucasus Pipeline Expansion Project

The SCPX Project is currently nearing the end of the front-end engineering design (FEED) stage and is being developed to expand the capacity of the existing SCP system to allow additional gas throughput from the Shah Deniz Full Field Development in the Caspian Sea. The existing 690km-long, 42"-diameter SCP gas pipeline transports gas from the Sangachal Terminal, Azerbaijan, to markets in Georgia and Turkey, with a system design capacity of 7.41 billion metric cubic metres per annum.

A map of the route of the proposed pipeline is shown below in Figure 1. The SCPX section is shorter in length, when compared to SCP, especially in Georgia.



Figure 1: Route of SCPX Project

A new section of pipeline and associated facilities will be constructed in both Azerbaijan and Georgia.

In Georgia, the Project will involve a new section of pipeline from the border with Azerbaijan to a location to the north-west of Marneuli (a distance of nearly 56km). After this point the increased gas flow will continue to the border with Turkey in the SCP. There will also be three new major permanent aboveground facilities. Two of these facilities (a compressor station near Jandari, in Gardabani municipality, and a pressure reduction and metering station near Vale, in Akhaltsikhe municipality) will be located next to existing facilities. A new compressor station will be constructed near Rekha, in Tsalka municipality. Finally, there will be a pigging station at the end of new pipeline section, in the vicinity of Marneuli. Temporary and permanent access roads will be required. To date, the location of only one new access road has been confirmed: the access road to the new compressor station near Rekha, which will leave the Millennium Road between Aiazmi and Nardevani and terminate at the compressor station site Work camps, pipe lay-down areas and storage yards have been identified at CSG1, CSG2 and the CSG2 access road and the pressure reduction and metering station (PRMS) for the facility construction and a pipeline camp, lay-down area and rail offloading area in the vicinity of Rustavi. The majority of PACs in the vicinity of the locations for these facilities have been consulted because of their expected proximity to the permanent 'footprint' of the Project during early consultations. Additional PACs identified for the CSG2 access road construction camp and pipeline construction camp were identified and consulted during the ESIA disclosure period.

As the Project definition develops and becomes more detailed and locations for any additional access roads are determined, the consultation process will be expanded, as necessary, to ensure all stakeholders, especially PACs, will be consulted on the Project in accordance with the requirements of this PCDP.

Early construction work is expected to begin in 2013 in support of the CSG2 access road construction and early works continue at various locations in 2014. The main activities occur between 2014 and continue, at different locations, into 2018.

3.2 Environmental and Social Impact Assessment

The SCPX ESIA determines the potential Project effects on the natural environment and on nearby people and communities. The ESIA findings will inform Project design and decision-making (by BP and the regulatory agencies of the Government of Georgia) by identifying key environmental and socio-economic issues and sensitivities associated with the Project and by enabling the establishment of effective processes for impact mitigation, management and ongoing monitoring.

The SCPX ESIA process includes the following:

- Project screening (in line with BP requirements): The purpose of screening is to
 ensure early identification of key environmental and social sensitivities and potential
 Project impacts on those sensitivities. It results in a list of prioritised potential
 impacts for management through the life cycle of the Project
- **Project scoping:** to identify key environmental and social sensitivities associated with the SCPX Project, and therefore the key issues to address in the ESIA report. Existing sources of data were reviewed to identify gaps and the requirements for additional studies. Key governmental stakeholders were consulted during this phase through individual meetings
- Baseline socio-economic and environmental investigations: In line with scoping
 results the provision of a detailed description of baseline socio-economic and
 environmental conditions in the SCPX area of impact has been acquired, including
 information on critical trends in the biophysical and social environments. The
 baseline conditions will also provide a basis on which to monitor environmental and
 social change during the life of the Project. Baseline data for the SCPX pipeline
 route and aboveground facilities was obtained by means of a range of field surveys
- Impact assessment: to provide a comprehensive assessment of the potential impacts of the SCPX Project. This includes an evaluation of the nature, magnitude and significance of all environmental and socio-economic impacts. The most significant impacts identified during the assessment process, including those related to particularly sensitive environments or vulnerable social groups, are addressed in greater detail. Impact assessment work addresses cumulative and transboundary impacts
- Draft ESIA report: The draft ESIA report was submitted to the Georgian Oil and Gas Company (GOGC) who will distribute to other government ministries for comment including the Ministry of Environmental Protection (MoE). The MoE will set up an Environmental Review Expert Group to review and reach a decision in terms of issuing an 'approval' for the final ESIA report. Copies of the draft ESIA report were also be provided directly to identified key stakeholders, while the draft ESIA report was made available at various public locations within Tbilisi, Gardabani, Marneuli, Tetritskaro, Tsalka, Adigeni and Akhaltsikhe, i.e. the main communities that are close to the proposed works. Copies of the non-technical summary were available for consultation in public venues in the PACs. Public meetings were also be held, at minimum, in Tbilisi, Rustavi, Tsalka and Akhaltsikhe during the draft ESIA report disclosure phase to inform stakeholders and seek feedback on the draft ESIA findings

- Final ESIA report: Following consultation on the draft ESIA report, a final version of the ESIA report has been developed incorporating, where appropriate, comments and issues raised, on the draft ESIA report, by the MoE and other stakeholders. This includes a record of all comments received during disclosure, and the responses, which relate to the SCPX ESIA and the draft ESIA report
- **Approval**: Based on the ESIA findings, and agreement on the implementation of appropriate measures for impact management, the Georgian government authorities will determine whether the required approvals and permits will be issued.

Stakeholder consultation is an integral component of the ESIA process (see Figure 2).



Figure 2: The ESIA Process

4 CONSULTATION OBJECTIVES

This PCDP has the following strategic and operational objectives:

- Identifying all Project stakeholders and understanding the nature of their interest and influence in Project development and impact management
- Providing culturally appropriate, adequate and timely information on Project development and impact assessment to stakeholders
- Providing culturally appropriate and timely opportunities for stakeholders to express their opinions and concerns in relation to the ESIA and Project development, and for these to be reflected in the ESIA and management decisions, where considered appropriate
- Providing the SCPX Project team with comments and feedback from stakeholders
- Establishing a foundation of effective and broad stakeholder engagement that is conducive to the emergence of stakeholder support for the Project and impact management programmes
- Supporting compliance with SCP HGA requirements
- Ensuring that Project decisions consider, to a feasible extent, stakeholder needs, priorities and concerns
- Reducing the potential for delays in decision-making times for issue of Project approvals and permits or the need for costly redesign of operations/facilities. The consultation process will help to ensure continuity in Project development and the implementation of agreed impact management strategies
- Helping stakeholders understand the Project's corporate and operational aims and requirements and have confidence in the Project's ability to manage risk in a responsible manner.

It is important to note that the stakeholder engagement will continue beyond any potential approval of the ESIA report. BP will be responsible for this activity during pipeline construction and in respect of the SCPX Project as a whole, although it will be a joint effort involving both BP and contractor personnel working in parallel. Contractor requirements will be specified in the Contractor Environmental and Social Management and Monitoring Plan.

In this respect local communities and other Project stakeholders will be made aware of the SCPX grievance mechanism.

5 REGULATORY AND POLICY CONTEXT

Stakeholder consultation activities presented in this PCDP conform to:

- The standards and practices specified in the Georgian HGA for the SCP Project. HGA requirements are to comply with:
 - \circ international natural gas pipeline industry standards and practices generally observed by comparable projects

• World Bank standards and practices

- (the above standards shall be no less stringent than those applicable in the UK)
- EC Directive 85/337/EEC, as amended (the EU 'Environmental Impact Assessment' Directive)
- o prescribed requirements for public consultation and disclosure
- National legislation (specific to ESIA consultation as part of the environmental permitting regime)
- BP policies, (notably the *Environmental & Social Group Defined Practice* and *Group Recommended Practice*).

In order to define international gas pipeline industry standards and practice, the SCPX Project has considered key principles of the IFC's Performance Standard 1 on "Assessment and Management of Environmental and Social Risks and Impact" (and accompanying Guidance Note)², and relevant international conventions, regarding project-related disclosure and consultation.

The regulatory, policy and administrative framework for the ESIA work is presented in Chapter 6 of the ESIA report. It has been determined that the legal, policy and administrative framework outlined briefly above supports the principles and objectives of stakeholder consultation presented in the introduction to this PCDP (Section 1), namely that stakeholders should be consulted in a meaningful and transparent way in order for them to contribute to the process of designing and executing the Project, particularly within an ESIA context. In this way, adverse impacts on people and the environment can be minimised and the potential benefits maximised.

² In addition, cognisance was taken of the recommendations contained in IFC's (2006) *Lessons of Experience: The Baku-Tbilisi-Ceyhan (BTC) Pipeline Project*, Number 2. Washington, DC: IFC. Also, although an 'archived' document, account was taken of IFC's *Guidance for Preparation of a Public Consultation and Disclosure Plan,* Environmental and Social Review Procedure Guidance Note F.

6 SCPX STAKEHOLDERS

Within the SCPX ESIA process, the following inclusive definition of stakeholders is used: *any organisation, group or individual that is affected in any way by the proposal or has the ability to influence the Project.* In line with this definition government ministries and agencies, local government entities, NGOs, PACs (including community-based interest groups such as those based on livelihoods) and individual residents, the scientific community, and others, are all recognised as stakeholders.

It is recognised that the nature and intensity of participation in the ESIA consultation process will vary between stakeholders and between different stages of the process During the ESIA consultation process the SCPX team aim to ensure that consultation occurs in a manner appropriate to stakeholders' needs and wishes.

6.1 Stakeholder Identification

An initial stakeholder identification workshop was held in Tbilisi on 12–13 October 2010, during the ESIA scoping phase. It involved key SCPX Project personnel and representatives of the BP Georgia Operations Team.

The aims of the workshop were to identify key stakeholders, including vulnerable groups; key concerns; past and current relationships with stakeholders; and lessons learned from BTC/SCP and current BP operations in Georgia. The workshop participants also developed an initial consultation strategy and timetable, and defined roles and responsibilities for consultation activities.

6.1.1 Key Stakeholder Groups Identified for SCPX Project

The key stakeholder groups identified by the workshop are listed below and each is discussed in further detail below.

- National and local governments
- Project-affected communities (PACs)
- International and national NGOs
- Scientific community
- Media
- Diplomatic missions and international organisations
- SCPX Project partners
- BP staff.

National and local government

National government

Table 1 shows the key national government stakeholders subdivided into those with a formal role in the ESIA report approval process and those with a recognised interest in the SCPX Project.

Table 1: Georgian National Government Stakeholders

1. Approval	Governmental stakeholders with a formal role in the approval process GOGC - Government representative for Caspian oil/gas transportation projects in Georgia; the formal ESIA report approver as per the HGA
	MoE - The MoE will review the draft ESIA report ('Ecological Expertise'). Within MoE there are two key departments: Environment Agency and Reserved Area Department
2.Consultation	Governmental stakeholders with a recognised interest in the SCPX Project Ministry of Economic and Sustainable Development (MoESD) Ministry of Energy and Natural Resources: includes Natural Resources Agency (which includes Forest Department), Environmental Monitoring Inspection, Environmental Investigation Department Ministry of Agriculture (Irrigation Department) Ministry of Culture and Monument Protection (which includes the National Agency for Cultural Heritage Protection) Minister of Health, Labour and Social Affairs Ministry of Regional Development and Infrastructure (Roads Department; River Protection Department)
	Ministry of Justice including the National Agency of Public Register

Local government

Local governments (appointed officials and elected representatives) in:

- two regions (*mkhare*): Kvemo Kartli and Samtskhe-Javakheti
- six municipalities (*municipalitetebi*): Gardabani, Marneuli Tetritskaro, Tsalka, Adigeni and Akhaltsikhe and
- one self-governing city: Rustavi

Within whose territories the SCPX pipeline activities will be implemented, were consulted during the ESIA process.

The current local government structure is shown in Table 2. Appendix A presents an organogram with more detail on the local government hierarchy and structure/functions.

Government Entity	Elected Representatives	Appointed Representatives
State	President Parliament	Prime Minister, Ministers
Regions		Regional Governor
Self-governing cities	City Council - Sakrebulo	Mayor
Municipalities	Legislative Council - Sakrebulo Head - Sakrebulo Chairperson	Executive Council – <i>Gamgeoba: members</i> appointed by Gamgebeli Head – Gamgebeli: appointed by Sakrebulo Chairperson, in agreement with Sakrebulo
Towns*	Elected representative to municipality Sakrebulo	Trustee - appointed by Gamgebeli, or Mayor
Territorial organ*	Elected representative to municipality Sakrebulo	Trustee - appointed by Gamgebeli, or Mayor

Table 2: Local Government Structure

*Towns that are not self-governing entities are constituent part of municipalities and are considered equivalent to territorial organs. Territorial organs can consist of one village, but usually consist of several villages.

In addition, the following are considered specific key local government stakeholders:

- Municipality Heads of Police and Fire Departments
- Regional Heads of Melioration and Irrigation Departments.

Project-affected communities (PACs)

Forty-five towns and villages along the proposed route of the SCPX pipeline and within the vicinity of the three aboveground installations (AGIs) have been identified as PACs. A PAC is identified as follows (based on an update of criteria used for the BTC/SCP Projects)³.

Two approaches were used. First, a PAC is defined as an inhabited settlement (whether inhabited permanently, temporarily, or intermittently) that falls within the following boundaries or has at least one inhabited structure that is on/within the boundary:

- Pipeline (including block valves and pigging station): 2km either side of the centreline resulting in a 4km-wide zone
- Construction camps, compressor stations and pressure reduction and metering stations: 5km 'radius' based on the centre point of the facility
- Pipe lay-down areas and storage yards: 2km 'radius' based on the on the centre point of the yard
- Access roads (new, upgraded and whether temporary or permanent): 300m either side of the centre-line resulting in a 600m-wide zone.

Secondly, a settlement outside the above boundaries, but located nearby, was determined (or not) to be a PAC depending on the outcome of a case-by-case analysis of its characteristics taking the following factors into account:

- Number of private land plots owned and worked by residents, and their total surface area, that are located within one of the boundaries defined above
- Surface area of communal land, or state-owned land that is used as if it were communal land (irrespective of whether such use is by legal or non-binding agreement between the state and the community) and is located within one of the boundaries defined above
- Evidence from impact monitoring studies/grievance logs that the community was affected by BTC/SCP, or an associated facility, in the past
- Judgement by the ESIA team that, on basis of previous experience and available data, there is reasonable likelihood that the community could be affected.

The SCPX pipeline generally parallels the SCP and BTC pipeline route corridor (with the exception of a few areas where deviations are necessary). Therefore, the SCPX Project PACs are similar to that for the BTC/SCP Projects. A list of the current SCPX pipeline PACs is provided in Appendix B. This list will be revised and updated as necessary if additional access road locations are confirmed.

Consultation with PACs is a central feature of the ESIA consultation process. BP will consult all PACs during the ESIA work and draft ESIA report disclosure phases of the Project, and engagement with PACs will continue, thereafter, during construction and operation of the SCPX Project. The PACs are located in different areas and there is considerable ethnic/linguistic heterogeneity. Most PACs have been clustered into groups taking into account PAC proximity, population size, shared language and logistic criteria (the PAC clusters and dates of consultations are shown under the heading 'Consultation Meetings' in Appendix B). Representatives of each PAC, in a specific cluster, attended a meeting with representatives of the other PACs, in that cluster, in a convenient central location.

Consultations with PACs involved 'formal' leaders and a selected group of five or six residents, for each PAC, chosen to represent a cross-section of perspectives and interests, for example, a teacher, a doctor/nurse, a farmer, an entrepreneur, a young person and an individual who is either a registered disabled person or is chronically sick. At least one of these must be a woman (Appendix D).

³ The list of PACs is current as of 30 January 2013.

International and national NGOs

International and national NGOs can make important contributions to the ESIA process on account of their knowledge and perspective on key issues of concern and/or their strong links with some PACs. NGOs that have previously participated in audit and monitoring programmes and shown an active interest in BP's activities in Georgia, along with the wider NGO community in Georgia are considered key stakeholders. BP Georgia retains a database on NGOs, and their area(s) of interest, for those NGOs that have been involved previously or are currently involved or interested in BP's activities.

The NGO community in Georgia also has a number of information-sharing networks/partner organisations including:

- Caucasus Environmental NGO Network (http://www.cenn.org/wssl/index.php)
- Regional Environment Centre for the Caucasus (http://www.reccaucasus.org/index.php?lang=en)
- Eurasia Partnership Foundation (http://www.epfound.ge/english/about-us.html).

Existing internal NGO databases and/or NGO networks and partnerships were used as required to engage this stakeholder group in consultation on the SCPX Project.

Scientific community

BP Georgia has no existing engagement with the scientific community, and little interest has been shown, historically, in BP's in-country activities by this stakeholder group.

It was recognised that the scientific community should be engaged in the SCPX Project, as members of this community can provide advice and consultancy assistance to the government regulators in the ESIA report review process and in 'approval' decision-making and can contribute to the ESIA process in general.

Many members of the scientific community in Georgia are also considered to belong to the NGO community owing to the NGO involvement in scientific research projects. The scientific community was engaged through information sharing via the NGO community and contact was made with GOGC to invite scientific community representatives, which are commissioned to provide consultancy services to the regulators, to the consultation events focused on NGOs.

Media

BP has existing relations with media organisations that participate in the regular briefings and updates that BP provides on its activities in Georgia. Information on the Project was provided through these existing channels. Additional media organisations were engaged through information sharing on NGO networks (which are subscribed to by various media organisations).

Diplomatic missions and international organisations

Diplomatic missions including foreign embassies in Tbilisi and international organisations, such as multi-lateral lending institutions (IFC and EBRD), are stakeholders and were provided high-level information about the Project as part of ongoing engagement activities connected to existing operations.

SCPX Project partners

BP SCPX Project partners are also stakeholders in the SCPX Project and will be kept informed of, and consulted on, Project progress at regular intervals, generally through quarterly partner meetings.

BP staff

BP staff members are stakeholders in the SCPX Project and will be kept informed of Project progress at regular intervals.

7 METHODOLOGY

This section describes the methodology for the consultation activities with various stakeholder groups for the SCPX Project and explains their relationship to the ESIA process. The stages of consultation are illustrated Figure 3.

Scoping	Key government stakeholders consulted on preliminary project designs, to scope social and environmental issues associated with the project.
ESIA work	 Baseline: social and environmental conditions and key trends, informed and validated through consultation with regulators, NGO and scientific community. Project scope: regulators, NGOs and scientific community and PACs informed regarding the scope of the Project through meetings and feedback used to inform the draft ESIA.
Draft ESIA Report	 Draft ESIA Report identifies all assessed impacts and mitigation measures required to ensure effective management of impacts. Draft ESIA Report is disclosed to public. Comments on draft from stakeholders are incorporated in final ESIA Report.
Final ESIA Report	Final ESIA Report addresses stakeholder comments. Final ESIA Report submitted to GOGC and MoE for approval.

Figure 3: Stages of ESIA Consultation

7.1 Consultation Methods

The ESIA stakeholder consultation process will use different methods appropriate to specific stakeholder requirements. Approaches and timings are provided in Table 3.

Table 3: Consultation Methods

Stakeholder	Type of consultation
National government	Two face-to-face meetings with MoE at different ESIA stages One face-to-face meeting with GOGC One face-to-face meeting with MoC <i>Ad hoc</i> face-to-face progress meetings on specific project-level issues as necessary

Stelzeholden	Turne of concultation
Stakenolder	Type of consultation
Local government (e.g. regional/municipality/officials and PAC leaders) Municipality Heads of Police and Fire Departments and Regional Heads of Melioration and Irrigation Departments	Face-to-face consultation meetings at all local government levels, including PACs (see below) ESIA Public Disclosure Meetings Consulted during the draft ESIA report disclosure process ESIA Public Disclosure Meetings
PACs	Two types of 'face-to-face' consultations : Consultation meetings with key community representatives ⁴ from all PACs (approximately six in each PAC including the elected and/or government-appointed PAC leader)
	Interviews with a representative sample of people in PACs, via a household survey conducted in 1200 households, to record perceptions, views and issues about the SCPX Project. The household survey was used to ensure that the views of members of the community that are sometimes under-represented in more formal or public meetings (which can include women, disabled/chronically sick and unemployed people) are obtained. ESIA Public Disclosure Meetings
International and national NGOs	One consultation workshop for NGOs was held in Tbilisi
	ESIA Public Disclosure Meetings
Scientific community	Scientific community members were consulted by invitation to the NGO workshop and through the public disclosure meetings
Media	National and regional media was consulted during the draft ESIA report disclosure process by invitation to public meetings
BP staff	Are being informed and engaged to promote clarity and prevent unrealistic expectations. Special focus is given to staff working on the Project including community liaison officers
BP SCPX Project partners	Will be updated at regular quarterly meetings

In addition, a summary of the SCPX Project and various ESIA-related documents were posted on BP's internet site and can be viewed by any interested individual/organisation globally.

7.2 Briefing Materials and Messaging

PACs and other stakeholders need to receive clear, consistent information about the SCPX Project and the ESIA process. The SCPX Project team has developed information about the Project and ESIA process for use with various stakeholders. It includes:

- An illustrated community leaflet providing an overview of the SCPX Project for use in consultation with PACs and other stakeholders (a copy of the leaflet is shown in Appendix C)
- A question and answer (Q&A) sheet for use by SCPX Project and ESIA personnel in response to questions expected to be raised by stakeholders (particularly those

⁴ PAC representatives were selected by PAC leaders using criteria developed by the SCPX ESIA team to achieve a balanced consultation involving a range of perspectives. Representatives included *inter alia* a medical professional, a teacher, an entrepreneur, a landowner, and a young person, and at least one of these should be a woman.

living in PACs) during ESIA consultations and ESIA implementation (including baseline surveys).

The illustrated community leaflet was prepared in Georgian and Russian (based on an English language original) and ~25,000 copies were distributed in the PACs prior to consultations occurring. This amount (25,000) was calculated so that there were sufficient copies to ensure that a minimum of one in two households would be able to receive a copy of the leaflet.

7.3 Draft ESIA Report: Disclosure

The draft (and final) ESIA reports (and associated documents) were prepared in Georgian and English. The disclosure period for the draft ESIA report was 60 days, in accordance with the requirements of the SCP HGA.

The disclosure period started on 29 May 2012 with media announcements placed in national, regional and municipality level media (Table 4), which included information on the disclosure period (60 days); location of ESIA documentation; main public meeting date; and the mechanisms of providing feedback (see Appendix E).

The SCPX Project team worked with BP's Communications Department to use the mass media and Project communications channels to disseminate and invite comment on the draft ESIA report.

Publication Title	Announcement Language	Coverage
Resonancy	Georgian; Russian	National
Resonancy	Georgian	National
24 Hours	Georgian	National
Rustavi News	Georgian; Russian	Rustavi/Marneuli
Rustavi News	Georgian; Russian	Rustavi/Marneuli
Rustavi	Georgian; Russian	Rustavi/Marneuli
Samkhretis Karibche (South Gate)	Georgian	Regional – Samtskhe
		Javakheti
Express of Trialeti	Georgian; Russian	Regional – Kvemo Kartli

Table 4: ESIA Disclosure Announcements

Information on the ESIA process, the draft ESIA report (and associated documents) and the consultation process was published through the following media outlets and other mechanisms:

- Regional and national newspapers
- NGO networks
- Project and external internet sites
- Presentations by SCPX Project and BP Georgia staff and ESIA team personnel on technical studies and analyses conducted through the ESIA
- Leaflets, brochures posters and audio-visual materials.

During the public disclosure phase, the draft ESIA report, non-technical summary (NTS) and feedback forms were made available at certain key public locations to allow stakeholders to review it and provide feedback. Such locations included:

- GOGC offices
- Tbilisi Parliamentary Library and Rustavi Main Library
- Regional Governor's office of the two SCPX-affected regions

- Rustavi Mayor's office
- Gardabani, Marneuli, Tetritskaro, Tsalka, Adigeni and Akhaltsikhe Municipality Administrative offices
- Offices of selected NGOs (CENN; REC; Aarhaus Centre)
- BP office.

For PACs copies of the draft ESIA non-technical summary (NTS) and feedback forms were lodged in the administrative buildings of each affected territorial organ and the community leaflet (Appendix F) summarising the ESIA contents was distributed within all PACs along the route of the pipeline and within the vicinity of the facilities and construction camps. The draft NTS, community leaflet and feedback forms were also translated into Russian.

The draft ESIA report and NTS were also posted on the BP website (www.bp.com/caspian and www.bpgeorgia.ge), which is accessible to the general public.

Table 5: ESIA Disclosure Schedule

Activity	Schedule
ESIA disclosure period	29 May–31 July
Issue disclosure announcement in media	29-30 May and 1-4 June ¹
Lodge draft ESIA. NTS and community leaflet with national,	30-31 May
regional and local government and PACs	
Public meetings	
Tbilisi	19 July
Rustavi	20 July
Tsalka	23 July
Akhaltsikhe	25 July
End of disclosure period	31 July 2012

¹ The second announcement contained the date and location of the public meeting in Tbilisi.

The SCPX ESIA Project team ensured that:

- The material was published in the Georgian and English languages (the ESIA report NTS and community leaflet were also be translated into Russian). Summary documents were written in non-technical language so that they can be understood by non-experts
- The material published was comprehensive and provided a fair reflection of the positive and negative impacts of the SCPX Project
- All stakeholders were informed of the publications/information, have access to the material and have adequate time in which to reflect on the proposals and formulate their responses
- Prior to changes in the draft ESIA report being finalised and the release of responses to stakeholders, internal approval of any commitments was confirmed by SCPX managers.

7.4 Public Meetings

In compliance with the HGA and national requirements, public meetings were held to present the findings of the ESIA (draft ESIA report disclosure) and seek feedback from stakeholders during the draft ESIA report disclosure period. Prior to disclosure and arranging public meetings, letters were sent to regional governors. Members of the BP Georgia Social team contacted these individuals to explain the disclosure process and request assistance with lodging of the ESIA and other documents in regional and local government offices.

Public meetings were held in Tbilisi and at other key locations near the main areas of Project activity, namely Rustavi, Tsalka and Akhaltsikhe.

The public meetings consisted of a presentation by the SCPX Project team, in Georgian. Simultaneous translation was provided into English at the Tbilisi meeting and into Russian at the Tsalka and Akhaltsikhe meetings. The presentation covered the following topics:

- Introduction and Purpose of the Meeting
- Project Description
 - Project Purpose
 - Project Concept
 - Schedule
- ESIA Process
- Environmental Mitigations
- Social Mitigations
- Land Acquisition and Compensation
- Disclosure Strategy and Schedule.

The presentation was followed by an open question and answer session where attendees had the opportunity to pose questions to the Project team. Responses were given and minutes of meeting including all questions, responses and attendees were prepared. Posters were displayed prior to the meeting for review by attendees either on hard copy or through PowerPoint slides. Topics covered included the key elements of the Project description, schedule, environmental and social surveys and the mitigation hierarchy.

7.5 Consultation Summary

A summary of consultations completed for the SCPX ESIA in Georgia during the drafting of the ESIA and during the disclosure phase, and accompanying timetable, is shown below in Table 6.

Stakeholder	Scoping 4Q 2010	ESIA consultation 3Q- 4Q 2011	Environment and Social (E&S) Baseline Report 2Q 2012 Draft ESIA report disclosure 2Q 2012
National and local government	Meetings with MoE, GOGC	ESIA consultation Meeting with key ministries including MoE and MoC. Meeting with MoESD for Project familiarisation and timings Meeting with GOGC Regional and Municipality Government meetings	Environment and Social (E&S) Baseline Report: Submit E&S Baseline Report to MoE for information E&S Baseline Report submission and approval via GOGC Announce draft ESIA report/NTS in national and local press Submit draft ESIA report (within seven days of media announcement) to GOGC, MoE and MoESD (electronic and printed versions) Disclosure meeting with MoE; MoENR; MoESD and MoC

Table 6: Consultation Summary and Timetable

Stakeholder	Scoping 4Q 2010	ESIA consultation 3Q- 4Q 2011	Environment and Social (E&S) Baseline Report 2Q 2012 Draft ESIA report disclosure
			2Q 2012
			MoE invited to main public meeting (official meeting required by HGA)
			Regional and municipality governments to be informed of public meetings in advance (includes municipality heads of Police and Fire Departments; also regional heads of Melioration and Irrigation Departments)
			Draft ESIA report lodged at public locations
			Public meetings held at Tbilisi, Rustavi, Tsalka and Akhaltsikhe
PACs		17 meetings encompassing all 39 PACs (most PACs are clustered in numbers ranging from 2 to 5) ⁵ 1200 interviews with a	PAC <i>Gamgebelis</i> /trustees invited to public meetings along the pipeline. PAC residents given opportunity to attend
		representative sample of households	Additional PAC consultations with Pipeline and CSG2 Access Road construction camp PACs
National and international NGOs		One NGO meeting in Tbilisi	One public meeting in Tbilisi for all interested parties (including media and government)
			Opportunity to attend regional public meetings held in Rustavi, Tsalka and Akhaltsikhe
Scientific community		One meeting in Tbilisi (combined with NGOs)	One public meeting in Tbilisi for all interested parties (including media and government)
Media		Involved only in draft ESIA	Invited to public meetings
Diplomatic missions and international organisations represented in Tbilisi		Project information given at Ambassador Round Table (following existing BP process)	Invited to public meetings
BP SCPX Project		Regular briefing meetings	Regular briefing meeting within draft ESIA report disclosure period
BP staff	Intranet article plus <i>Compass</i> (internal magazine)	Intranet, internal magazine, Region Leader's monthly newsletter	ESIA materials on intranet, internal magazine, Region Leader's monthly newsletter

 $\frac{1}{5}$ Clustering and the schedule for consultation meetings are shown in Appendix B.

7.6 Pre-Construction and Construction Consultation and Community Relations

Community liaison and consultation during the pre-construction and construction phases will be implemented by the construction contractor and BP. The objectives of this consultation will be to:

- Provide communities with information on the progress of the work and implications for these communities
- Inform the Project of any community-related issues that may impact on construction
- Monitor the implementation of mitigation measures and the impact of construction
- Direct monitoring and feedback from communities
- Manage complaints between communities and the Project.

Further information on the roles and responsibilities with respect to consultation and community liaison and the expected activities during construction are described in the ESIA Appendix D Environmental and Social Management and Monitoring Plan, specifically the Community Liaison Plan.

7.7 Operations Phase Consultation and Community Relations

The objective of the community relations programme in this phase will be to:

- Maintain constructive relationships between communities and BP
- Assist in the operation of the pipeline and facilities
- Maintain awareness of safety issues among communities along the pipeline route and in the vicinity of the facilities
- Ensure compliance with land use constraints among landowners along the pipeline route and in the vicinity of the facilities
- Monitor community attitudes.

BP already has a comprehensive community engagement plan in place that is working to deliver the above objectives for the BTC, SCP and WREP pipelines. This plan will be updated to encompass the SCPX operating pipeline and facilities, with community engagement management integrated across the pipeline systems.

8 **RESOURCES AND RESPONSIBILITIES**

The proposed roles and responsibilities within the BP/SCPX organisation for SCPX Project stakeholder consultations are outlined in Table 7.

Table 7: PCDP Resources and Responsibilities

Stakeholder Group	Responsibility
National and local governmental	BP Georgia Regulatory Affairs Team
stakeholders	
International and national NGOs	International NGOs:
	Communication and External Affairs Team – London (St James Square)
	BP Georgia Social Responsibility Team for international NGOs in- country representative offices
	National NGOs:
	BP Georgia Social Responsibility Team
PACs	BP Georgia Social Responsibility Team
Media	BP Georgia Communications and External Affairs Team
	AGT Region Communications and External Affairs Team
Scientific community	BP Georgia Regulatory Affairs Team
Diplomatic missions and	Diplomatic missions:
international organisations	BP Georgia Communications and External Affairs Team
	International organisations:
	Communications and External Affairs Team – London (St James's
CODV Designation and a set	Square)
SCPX Project partners	SUPX Project/BP General Projects Organisation
BP staff	BP Georgia Communications and External Attairs Leam

9 DATA MANAGEMENT

The SCPX ESIA team has established a stakeholder database that includes details of key stakeholders, their participation in ESIA consultations processes and issues raised. The database will be functional to allow information to be assembled, collated and analysed.

For each stakeholder, the database will include the following data:

- Name
- Contact details
- Stakeholder group (e.g. government, NGO, PAC etc.)
- Primary point of contact if the stakeholder is a group or organisation
- Nature of the SCPX Project team's current and previous involvement with the stakeholder
- History of communications/interaction with the stakeholder
- Primary interests in the SCPX Project and ESIA process
- Level of influence over the ESIA process and project development
- Level of contact with the stakeholder (e.g. written communications, face-to-face etc.)
- SCPX Project team representative/s who primarily interact with the stakeholder
- Reference to any investigations, activities or reports particularly relevant to the stakeholder's primary areas of interest.

The stakeholder database is a dynamic tool that will be revised and updated throughout the ESIA process.

10 GRIEVANCE MECHANISM

BP has an established mechanism to handle grievances and complaints that has been developed and used with success over more than a decade for the BTC and SCP Projects. The SCPX Project will use this grievance mechanism for all aspects of the Project, starting with pre-construction surveys and land acquisition and throughout Project construction (comments on the draft ESIA report will be recorded in the stakeholder database). The grievance mechanism enables local people and other stakeholders to bring complaints to BP in order for them to be considered, for corrective actions to be taken if appropriate, for decisions on the grievance/complaint to be made and for the complainant informed about the outcome. The key elements of the grievance mechanism are summarised below.

The BP Georgia and Communications and External Affairs (C&EA) Team is responsible for collating and maintaining a record of written and verbal complaints associated with the SCPX Project ESIA process. In addition, any complaints received by members of the SCPX Project ESIA team or its contractors will be directed to this team and must be acknowledged within two weeks of receipt. All complaints should be responded to in writing, though a verbal response may also be provided if this is more appropriate under the circumstances (e.g. where literacy may be an issue).

The BP Georgia C&EA team is responsible for producing a monthly report detailing the number and status of complaints, and any issues to be addressed. The number and types of complaints, and how they are handled, will be monitored during the ESIA process and beyond.

Figure 4 illustrates how the grievance mechanism works. The complaints log assigns a number to each complaint to facilitate tracking and recording of actions. It also contains a record of who is responsible for an individual complaint, as well as key dates and other information about the complaint. The complaints action form (Figure 5) specifies the information required to ensure the complaint is processed to closure.



Figure 4: Grievance Mechanism

LOGO					
2000					
THIRD PARTY COMPLAIN	TFORM				
Complaint number:					
Date received:					
Location:	(e.g. village name, KP point)				
District:					
Complainant name:					
Land parcel number:	(if available)				
Telephone number and/or address:					
Method of complaint:	(verbal/written/public meeting)				
Name of CLO/land officer taking complaint:					
Daily report reference	(if relevant)				
Written complaint ref	(e.g. incoming DCC number, or third party reference number)				
PART B: DETAILS OF CON					
Date of incident:					
Description of complaint:					
Traffic issues – time the incl	jed / what / when / How / where / Quantities / ident occurred? Licence plate number? Type of vehicle(s) involved				
Land issues – crop damage	? Re-instatement issue? Additional land? What type of crop?				
Does the complainant have	any supporting documentation? If so, obtain copies as relevant.				
PART C: DETAILS OF RES	OLUTION				
Provide details of assessment that takes place:					
(who assessed, what did the	ey find)				
Provide summary of how complaint resolved:					
Rejected/Compensated/Other corrective actions taken (please describe)					
Date letter delivered to com	plainant:				
Reference number of outgo	Reference number of outgoing correspondence:				
Additional comments:					

Figure 5: Complaint Action Form

11 **REPORTING**

Within the ESIA process, progress relating to stakeholder consultation activities will be reported. At the end of the ESIA process, a close-out report on the consultation process will be issued. This report will review the consultations and communications activities conducted; levels of stakeholder participation, particularly among vulnerable or marginalised groups; the issues discussed and outcomes; and the extent to which stakeholder issues, priorities and concerns are reflected in the ESIA report, particularly in the mitigation and monitoring strategies contained in environmental and social management plans. Lessons learned will also be incorporated where applicable.

This consultation report is included in Appendix C2 of the Final ESIA.

Appendix A: Local Government Organogram



Appendix B: List of PACs and PAC Consultation Meeting Clusters and Dates

	PAC Name and Local Government Affiliation				Consultation meeting		
Project Area	Municipality/City	Sakrebulo	PAC	Population	Language	Consultation meeting (19 in TOTAL): Location of meeting and number of PACs	Meeting date
	Gardabani	Vakhtangisi	Vakhtangisi (former Ulyanovka)	2980			
	Gardabani	Nazarlo	Nazarlo	6000	RU	Kesalo - 3	08/09/2011
CSG1	Gardabani	Kesalo	Kesalo	5700			
	Gardabani	Lemshveniera	Mzianeti	355	GEO	Lemshveniera - 3	09/09/2011
Gardabani	Gardabani	Lemshveniera	Lemshenviera	2469			
	Gardabani	Lemshveniera	Nagebi	560			
CSG1/Pipeline Loop	Gardabani	Jandari	Jandari 1	3120	RU	Jandari 1 - 1	09/09/2011
CSG1	Gardabani	Gardabani	Gardabani (town)	16200			
Pipeline Loop	Gardabani	Gardabani	Pobeda	115	GEO	Gardabani - 3	08/09/2011
	Gardabani	Gardabani	Tbiltskaro	420			
	Gardabani	Akhali Samgori	Akhali Samgori	2900		Akhali	
	Gardabani	Gamarjvrba 1	Gamarjveba 1 (former Sovkhoz Samgorski)	350	GEO	Samgori - 2	12/09/2011
	Gardabani	Krtsanisi	Krtsanisi	5230	GEO	Krtsanisi - 2	13/09/2011

	PAC Name and Local Government Affiliation				Consultation meeting		
Project Area	Municipality/City	Sakrebulo	PAC	Population	Language	Consultation meeting (19 in TOTAL): Location of meeting and number of PACs	Meeting date
	Gardabani	Gardabani	Akhali Kumisi (Former Kumisi summer houses)	650			
	Rustavi	Rustavi	Rustavi	111000	GEO	Rustavi - 1	14/09/2011
	Marneuli	Marneuli	Marneuli (town)	20000	RU	Marneuli - 2	15/09/2011
	Marneuli	Marneuli	Jandari 2 (Jandari of Marneuli)	1750			
	Tetritskaro	Marabda	Kotishi	21	GEO	Khaishi - 2	15/09/2011
Tel	Tetritskaro	Khaishi	Khaishi	560			
Pipeline Loop & Construction Camp	Gardabani	Aghtakla	Aghtakla	5600	RU Aghtakla - 2		12/09/2011
	Gardabani	Aghtakla	Karatakla	3000		Aghtakla - 2	
Pipeline Construction	Gardabani	Gamarjveba	Poladaantkari	300	GEO	Gamarjveba - 3	18/07/2012
	Gardabani	Gamarjveba	Gamarjveba	5282	GEO		
	Gardabani	Karajalari	Karajalari	4141	RU		
CSG2 PACs	Tsalka	Avranlo	Avranlo	1400			
	Tslka	Rekha	Rekha	520	GEO	Avranlo - 3	22/09/2011
	Tsalka	Khando	Khando	180			
	Tsalka	Kizil Kilisa	Kizil Kilisa	1700	RU	Kizil Kilisa - 3	22/09/2011

	PAC Name and Local Government Affiliation				Consultation meeting		
Project Area	Municipality/City	Sakrebulo	PAC	Population	Language	Consultation meeting (19 in TOTAL): Location of meeting and number of PACs	Meeting date
	Tsalka						
		Ozni	Ozni	750			
	Tsalka	Burnasheti	Burnasheti	460			
	Tsalka	Berta	Berta (former Oliangi)	120	GEO	Berta (former Oliangi) - 1	23/09/2011
	Tsalka	Sakdrioni	Aiazmi	590			
CSG2 Access Roads and Access Road Construction	Tsalka	Nardevani	Nardevani	1500	RU	Nardevani - 2	23/09/2011
Camp PACs	Tsalka	Kushi	Kuschi	893	RU		
	Tsalka	Gantiadi	Gantiadi	775	GEO	Sakdrioni -3	17/07/2012
	Tsalka	Sakdrioni	Sakdrioni	1231	010		
PRMS PACs	Adigeni	Arali	Arali	48			
	Adigeni	Arali	Tsarbastumani	90	GEO	Arali - 3	20/09/2011
	Adigeni	Ude	Ude	3500			
	Akhaltsikhe	Vale	Vale	5030	GEO	Vale - 1	20/09/2011
	Akhaltsikhe	Tskaltbila	Tsinubani	425	RU	Tskaltbila - 5	19/09/2011
	Akhaltsikhe	Tskaltbila	Tskaltbila	1550			

	PAC Name and Local Government Affiliation				Consultation meeting		
Project Area	Municipality/City	Sakrebulo	PAC	Population	Language	Consultation meeting (19 in TOTAL): Location of meeting and number of PACs	Meeting date
	Akhaltsikhe	Tskaltbila	Naokhrebi	750			
	Akhaltsikhe	Tskaltbila	Julda	250			
	Akhaltsikhe	Tskaltbila	Abatkhevi	330			

Legend:

CSG1	= Compressor Station 1
CSG2	= Compressor Station 2
PRMS	= Pressure Reduction and Metering Station

GEO = Georgian RU = Russian

Appendix C: Community Leaflet – Early Consultations



BP, on behalf of the SCP Company, is planning to develop an expansion to the South Caucasus Pipeline (SCP) which has been operating since 2006. The expansion project does not involve building a new pipeline across Georgia. It is planned that some new sections of pipeline and associated facilities will be constructed at different locations in both Georgia and Azerbaijan. In Georgia, the work will involve a new section of pipeline from the border with Azerbaijan, at a location to the north-west of Marneuli (a distance of approximately 56 km).

After this point the increased gas flow will continue to the border with Turkey in the SCP. Also, three well be three new permanent above-ground facilities. Two of these facilities (a compressor station near Jandari, in Gardabani district; and a pressure reduction and metering station near Vale, in Akhaltsikhe district will be located next to existing facilities. A new compressor station will be constructed near Rekha, in Tsalka district. Construction works will begin in 2013 and operations are expected to begin in 2017.

Compressor stations – Gardabani & Tsalka Districts

Compressor stations are required to ensure that the gas flows efficiently through the pipeline. Each station will occupy an area of approximately 40ha. The main component of each station will be four individual compressors. Noise levels from the compressors will be in compliance with the internationally accepted noise levels. Also, there will be a pressure reduction facility and cooling units located next to each compressor. A vent stack will be required, also, to dispose of gas safely when required. The compressor stations will not be located adjacent to settlements. Both stations will require temporary construction camps to house workers; these will be located close to the facilities.

The compressor station, to be located near Rekha will require a new access road which will begin at the Millennium Road and terminate at the compressor station site.

Pressure reduction and metering station – Akhaltsikhe district

The new pressure reduction and metering station is required to increase the capacity of the existing facilities near Vale as the amount of gas will increase significantly. It will be located next to the existing site and will be of a similar size (3 hal and include similar equipment. Construction of the new station will require an additional 4 ha, adjacent to the new station, to be used, temporarily, for storage and fabrication activities and a construction camp. This area will be fully reinstated when construction work is completed.



Pipeline

The new section of pipeline will primarily follow the existing SCP route. The pipeline will terminate with a pigging station occupying an area approximately 65m x 35m, at a doction to the north-west of Marneuli.

The pipeline will be buried and the land will be restored. A temporary construction camp to house workers will be required, but its location is yet to be decided.

The pipeline and associated facilities will be built to the highest international standards. During the construction period, and continuing into operations, there will be a programme of regular monitoring and reporting to ensure that everything is working well.

Land requirements and compensation arrangements

Special provisions will be made to protect the interests of owners or users of land to be affected during construction. As with previous pipelines, land will be acquired and compensation paid, in line with international best practice. Land acquisition will take

place before construction of the pipeline and facilities and will involve consultation with all those affected by land acquisition.

About this Leaflet

This leaflet is part of BP's public consultation and information programme in Georgia. This consultation programme is part of an overall Environmental and Social Impact Assessment (ESIA) study for the SCP expansion. Further opportunities to provide comment through consultation will be advertised in the future.

About the Environmental and Social Impact Assessment (ESIA)

The ESIA study will be undertaken in line with the requirements of the HGA which states that it must comply with the practices applied in Europe. Its purpose is to assess and manage the impacts of the project and to establish a framework for consultation about the project and its impacts. Consultation will be undertaken with local people, local authorities and community groups and will help BP to plan the routeing, design and construction of the



Project. The aim is to ensure, to the extent possible, that any adverse impact is kept to a minimum and benefits are realized. The ESIA will also be used by the Government of Georgia to make decisions about issuing permits and consents for the project.

About the Disclosure of Information and Consultation

The ESIA study will involve a programme of initial consultations with community leaders and other stakeholders in towns and villages near the proposed section of pipeline, associated facilities , camp sites, storage yard and access roads.

Your input

A series of initial consultation meetings will be organized soon. If you have any comments, views and opinions, about the proposed project or its potential impacts, which you wish to see considered as part of the ESIA, please present them at your local government office (Gamgeoba), verbally or in writing. it will be available locally for public review in locations to be defined. Then, there will be a series of public meetings to enable local people to express their views and make comments on the draft ESIA report. All views, opinions and comments received will be considered when preparing the ESIA report.

When the draft ESIA Report is completed.

They will be submitted to the team implementing the ESIA. In this way you will help us to ensure that all the views of local residents are considered in the design and planning of the project.

Please submit your comments, views and opinions within one week of receiving this leaflet.
Appendix D: Guidance to Trustees on Consultation Meetings

To: Trustees

Introduction: You have been informed that you and selected representatives will be invited to attend a consultation meeting in relation to the South Caucuses Pipeline Expansion Project (SCPX). Also, you have been informed that some of you will be interviewed about social and economic conditions of your municipality or village/villages to provide information for preparation of the ESIA Report. We are very grateful for your cooperation and support. All Trustees need to read and follow the guidance in Section 1 while only those to be interviewed about village conditions need to read Section 2.

In order to make this process proceed as smoothly as possible, some guidance follows in two sections:

- Section 1: the number and type of representatives to be selected for consultation meetings and
- Section 2: a list of topics about which questions will be asked during an interview.

Section 1

We are asking you to select the village representatives and ensure they attend the meeting. The date, time and venue of the meeting have been provided to you separately.

Not all municipalities or villages are the same so it is not expected that each Trustee will be able to be accompanied by exactly the same type of representatives. We would like Trustee to follow the guidance to the extent possible then apply your judgment.

Important Principles:

- 1. The maximum number of representatives from each municipality or village, including yourself, will be seven (7). It can be fewer, but please try to select at least four (4); and
- 2. At least one woman must be selected. There are no restrictions on the number of women that can be selected.

Type of Representatives:

The table below shows the village representatives that we would like to include in our consultation, as we think they will represent a suitable range of interests.

Village Representative	Guidance
School director or teacher	If you are a school director or teacher there is no need to invite an additional representative from a school
Clinic/hospital doctor, nurse	If you are a doctor or nurse there is no need to invite an additional representative from a clinic /hospital
Farmer, bee-keeper, shop-owner, carpenter (Resident who you consider can represent an important livelihood activity for your village)	If you follow one of these livelihoods please select someone who represents another livelihood that can be considered 'typical' of the village
17-22 years old person (such as a school/college student)	Young, articulate person aged between 17-22 and not yet married
Internally Displaced Person/Refugee; OR Registered disabled person or Chronic sick	Resident who is registered disabled person/chronic sick OR an Internally Displaced Person/Refugee
Senior or long-standing members of Community Based Organizations or Local Associations	Representative of a local associations or registered community- based organization promoting the welfare of the village or certain social groups such as veterans or women

Trustee of Territorial Organs consisting of one Village:

If you are the Trustee of a single village then please select the above representatives from within your village.

Trustees of Territorial Organs consisting of more than one Village:

If you are the Trustee of a Territorial Organ with more than one village then please try to ensure that each village is represented by at least 5 (and not fewer than 4) of the above representatives.

Appendix E: Disclosure Announcement



PUBLIC DISCLOSURE OF THE DRAFT ENVIRONMENTAL AND SOCIAL IMPACT ASSESSMENT SOUTH CAUCASUS PIPELINE EXPANSION PROJECT



BP is working towards the expansion of the existing South Caucasus Pipeline (SCP). The SCP Expansion Project, known as SCPX, proposes to expand the capacity of the existing SCP in order to transport an additional 16 billion cubic metres of gas from the Caspian Sea to markets in Turkey and Europe.

BP, on behalf of SCP Company, the international company that owns the existing SCP, commissioned an Environmental and Social Impact Assessment (ESIA) for the project in order to identify and assess the potential impacts of the developments, and to identify measures that will minimise negative impacts and make the most of positive opportunities.

BP is now publicly disclosing the draft ESIA for a 60 day period and asking for comments from anyone with an interest in the project. At the end this period, all the comments will be considered and the ESIA revised as needed. The ESIA will then be submitted to the Georgian government for approval.

What documents will be available for public viewing and comment?

- The draft ESIA
- A Non-Technical Summary of the ESIA (in Georgian and Russian at some locations)

Where will documents be available?

The draft ESIA and the Non-technical Summary are available at following locations:

In Tbilisi	Regional Administrative centers in	On the website
BP office	Rustavi	www.bp.com/caspian
Georgian Oil and Gas Company	Gardabani	www.bpgeorgia.ge
Ministry of Environmental	Marneuli	
National Parliamentary Library	Tetritskaro	
Aarhus Centre Georgia	Tsalka	
CENN	Akhaltsikhe	
REC Caucasus	Adigeni	
	Rustavi Main Library	

The Non-Technical Summary is also available in public places, namely in the administrative offices of respective territorial organs of villages 2km from the proposed pipeline route and 5km from the proposed facilities and construction camps.

How can the public comment on the draft ESIA?

Public meetings

BP is holding the public meetings in several locations. The first meeting will be conducted on July 19, 2012 at Georgian National Museum, Tbilisi. The following meetings will be held in Rustavi, Tsalka and Akhaltsikhe. Exact time and location are subject to further announcement.

Feedback forms

Comments can be written on the form and

- sent to: Communications and External Affairs Team,
 - BP Exploration (Caspian Sea) Ltd. Georgia,
 - 24, Sulkhan Tsintsadze Street, 0160 (formerly 38, Saburtalo Street, 0194), Tbilisi or
- submitted to your local Community Liaison Officer

Public Disclosure Phone Line and Email Address

 Alternatively, you can ring the BP Office on Tbilisi 259 3400 and request to leave comments on the SCPX ESIA or submit comments via email to <u>scpxesia@bp.com</u>

Appendix F: Community Leaflet – ESIA Disclosure





Proposed pipeline route and CSG1 facility

The compressor stations will generate their own power. However, CSG1 and PRMS may use some electricity from the national grid in future. At CSG1, new equipment will be installed to increase the supply of gas from the SCPX pipeline to the Georgian national gas system.

CSG2 will require a new, permanent 16km access road, which will leave the Millennium Road between Nardevani and Aiazmi and terminate at the compressor station site. Both stations will require temporary construction camps

and storage areas to house workers and equipment; these will be located close to the facilities. A rail offloading area to the west of Lake Tsalka may be used to transport some equipment to CSG2, with CSG1 being supplied by an offloading area in Rustavi. Other items of equipment will be transported to the sites by road.

Pressure reduction and metering station – Akhaltsikhe municipality

The new PRMS is required to increase the capacity of the existing facilities near Vale as the amount of gas will increase significantly. It will be located next to the existing site and will occupy approximately 20ha. It will include gas-fired heaters to maintain a constant temperature of the gas in the pipeline. Construction of the new station will require a temporary storage area adjacent to the facility and a construction camp, which will be located approximately 1km to the west of the site and linked to the facility by a temporary access road. A rail offloading area is likely to be established in Akhaltsikhe.

All temporary areas at the above-ground facilities will be reinstated when they are no longer required.

Pipeline

The new section of pipeline will primarily follow the existing SCP route with four minor deviations occurring due to engineering and terrain constraints. The pipeline will terminate with a pigging station, occupying an area of approximately 0.3ha at a location to the north-west of Marneuli.

One additional block valve station (0.1ha) will be installed adjacent to the existing SCP station, 27km along the pipeline.

The pipeline will be buried and the land will be restored. The depth of burial will be increased at road and river crossings, and additional measures such as concrete slabs will be installed to protect the pipe in some areas

A temporary construction camp to house workers will be required in Gardabani municipality, north of Rustavi, and a temporary pipe storage area and a rail offloading area will be located within Rustavi. Pipe will be transported from Black Sea ports to Rustavi by rail and then by road to the construction site.

Studies have been undertaken to determine a safe separation distance between the new and existing pipelines and to determine the facility design and site boundaries. Studies have also determined locations where the pipeline wall thickness has been increased as the pipeline passes close to existing developments.



Proposed CSG2 facility and access road route

Baseline conditions

To inform the impact assessment and the design of mitigation measures – the measures taken to reduce the potential impacts and enhance the potential benefits of the project – a variety of baseline surveys have been undertaken in order to understand the existing environmental and socio-economic conditions.

Baseline environmental surveys included soil and contaminated land, landscape and visual, surface and groundwater, flora and fauna, ambient air and noise, and traffic and cultural heritage. Baseline socio-economic surveys consisted of a community leader survey and household surveys, where representative data including household structure, income, employment and infrastructure were gathered from communities in the vicinity of the proposed pipeline and facilities.

Measures to reduce impacts or enhance benefits

Measures (often called mitigations) for reducing the potential impacts or enhancing the potential benefits of the project have been generated by the ESIA, and included in the project design and in the way the project will be constructed and operated. Examples of mitigations are provided below:

Soil

Reinstatement of the pipeline and temporary areas will occur at the earliest opportunity; topsoil storage will be managed to reduce erosion; and engineering design measures will be used to reduce erosion potential along the pipeline.



Proposed PRMS facility

Landscape

The vent height at CSG1, CSG2 and the PRMS has been lowered to reduce visual impacts; trees have been retained where practical when routing the pipeline and CSG2 access road; and sensitive colours will be used on visible structures.

Surface and groundwater

The rate of water abstraction will be controlled and monitored; instructions for the management of fuel, oils and chemicals will be put in place; silt fences and other mechanisms will be used to reduce the amount of sediments entering water; and tunneling or drilling will be used to install the pipeline beneath the Mtkvari River.

Ecology

The Algeti river crossing will be constructed outside of the fish spawning season and the working area at the crossing will be reduced to retain trees; Marsh Orchid species at CSG2 will be moved to an undisturbed area before construction; and ornithological surveys will be undertaken before and after construction.

Air emissions, efficiency and noise

Low emission gas turbines to power the compressors will be installed; a seal gas recovery system and installation of electrical connections will reduce CO₂ emissions; and low noise equipment and building design will be used to absorb noise.

Cultural heritage

The CSG2 access road has been routed to avoid the majority of cultural heritage; potential sites will be excavated before construction and cultural heritage will be recovered; and, if required, monitoring will be carried out during construction in sensitive areas.

Employment

Employment targets will be set for recruitment from local communities, municipalities and nationally; unskilled labour will be preferentially recruited from communities in proximity to the pipeline and facilities; and the recruitment process will be monitored to ensure it is fair and transparent.

The recruitment process will be publicised and applications that do not use the recruitment process will not be accepted.

Infrastructure and services

Surveys of frequently used pre-existing roads, irrigation channels and other infrastructure will be undertaken; frequently used roads and irrigation channels will be returned to their pre-existing condition or an equivalent alternative provided; communities will be notified of planned disruptions and temporary alternatives will be provided; and project vehicles will only use approved access roads.

Community health and safety

Workforce health checks and awareness training will be undertaken; speed limits will be enforced and drivers will be trained and their driving behaviour monitored; community health and safety awareness training will also be undertaken; construction sites will be fenced close to communities; and the pipeline will be regularly patrolled and its operation monitored.

In addition, the project will implement a grievance process with Community Liaison Officers acting as the main point of contact for local residents to raise concerns or provide feedback, which will be formally responded to.

Land requirements and compensation arrangements

The SCPX Project will purchase land for the facilities and along the pipeline route, and will generally lease land that is needed temporarily for the construction period. Land users whose livelihoods are affected by loss of crops or restriction of access to their land will be eligible for compensation payments. Land acquisition will take place before construction of the pipeline and facilities, and will involve consultation with all those affected by land acquisition. The land acquisition and compensation has been fully described in two documents, the Land Acquisition and Compensation Framework (LACF) and the Guide to Land Acquisition and Compensation (GLAC). These documents will be available to view in public locations and the GLAC will be provided to each individual land owner or occupier at the start of the process.

About this leaflet

This leaflet is part of BP's public consultation and information programme in Georgia. The leaflet provides information on the project and summarises the key findings of the *Draft Environmental and Social Impact Assessment* (ESIA). The purpose is to seek feedback on the draft document from a variety of stakeholders, before finalising the ESIA and submitting it to the Georgian Government for approval.

If the project is approved, sharing of information and consultation with stakeholders will continue prior to, and during the project construction.

About the Environmental and Social Impact Assessment (ESIA)

The ESIA study has been undertaken in line with the requirements of the Host Government Agreement (HGA) which requires the SCPX Project to comply with certain international standards. Its purpose is to assess and manage the potential impacts of the project, and to establish a framework for consultation about the project and its potential impacts. Consultation has already begun and has helped BP to plan the routing, design and construction of the project. The aim is to ensure, to all extents possible, that any adverse impact is kept to a minimum and benefits are realised. The ESIA will also be used by the Government of Georgia to make decisions about issuing permits and consents for the project.

About the Disclosure of Information and Consultation

Consultation has already been undertaken with national, regional and local government, community leaders and other stakeholders in towns and villages near the proposed section of pipeline, associated facilities and known camp sites, storage yard and access roads. Feedback from this process has been considered within the production of the draft ESIA Report.

The draft ESIA Report is now available locally for public review and comment for a period of 60 days. The document is available in Regional and Municipality Government Offices and Mayor's offices; Public libraries in Tbilisi and Rustavi and a selection of NGO offices in Tbilisi. In addition, copies of the Non-Technical Summary (NTS) are available at Trustees offices within each Territorial Organ. The NTS and the ESIA are available in the Reports and Publications Section of www.bp.com/caspian and www.bpgeorgia.ge

Towards the end of the 60-day disclosure period there will be a series of public meetings to enable stakeholders to express their views and make comments on the draft ESIA report. Meetings will be held in Tbilisi, Rustavi, Tsalka and Akhaltsikhe. The meeting dates and venues will be advertised in communities and via local and regional newspapers in advance.

Your input

If you have any comments, views and opinions about the proposed project or its potential impacts, which you wish to see considered as part of the final ESIA, please either: attend one of the Public meetings; submit comments via your Community Liaison Officer; or send feedback by post to

BP Exploration (Caspian Sea) Ltd Georgia 24 SulkhanTsintsadze Street (formerly 38 Saburtalo Street) 0160, Tbilisi Georgia

or by email to scpxesia@bp.com

or contact the BP office (Tbilisi 259 3400) and request to leave comments on the SCPX ESIA.

Comments will be submitted to the team implementing the ESIA for consideration in the final ESIA. All comments must be submitted by the end of July 2012.

Appendix G: ESIA Feedback Form





Feedback Form SCPX Draft Environmental and Social Impact Assessment

We welcome all comments on the draft Environmental and Social Impact Assessment (ESIA). Tell us what you think through attending one of the public meetings, through visiting our web-site at www.bpcaspian.com or www.bpgeorgia.ge, contacting us at the BP Office on Tbilisi 259 3400, via email at scpxesia@bp.com or through completing this form. You can either: 1) Send the completed form to: Communications and External Affairs Team BP Exploration (Caspian Sea) Ltd. Georgia, 24, Sulkhan Tsintsadze Street, 0160 (formerly 38, Saburtalo Street, 0194) Tbilisi 2) Give the completed form to your local Community Liaison Officer: Giorgi Okromchedlishvili 599 180 361 Vasil Ioramashvili 599 168 474 Please submit your comments by the end of July. Substantive comments will be carefully considered and incorporated as required. However, we will not be able to respond individually to those who fill in this form. The final ESIA will be available on www.bp.com/caspian and www.bpgeorgia.ge and will include a record of comments received and responses

Thank you for taking the time to send us your comments.

Name:	District or Region and Community:
Telephone No:	Date:
Address:	

It would be helpful for us to have these contact details. All your comments will be considered whether or not you provide these details.

If you have any comments or concerns about the draft ESIAs or the disclosure process, please write them below. Please refer to a specific section in the ESIA where relevant.

ESIA Section	Comment

Appendix H: ESIA Disclosure Meetings Poster





Venues of the meetings which will be held within the public disclosure process of the SCP expansion project ESIA Report are:

<u>Tbilisi – July 19, 2012 at 11:00, Auditorium at National Museum of Georgia</u> (Purtseladze str. #3)

<u>Rustavi – July 20, 2012 at 11:00, Center for Civil Engagement (Kostava str.</u> <u>#22)</u>

<u>Tsalka – July 23, 2012, 12:00, Assembly Hall at Municipality (Gamgeoba)</u> Office Building

<u>Akhaltsikhe – July 25, 2012 at 11:00, Boardroom at Municipality</u> (Gamgeoba) Office Building

BP is working towards the expansion of the existing South Caucasus Pipeline (SCP). The SCP Expansion Project, known as SCPX, proposes to expand the capacity of the existing SCP in order to transport an additional 16 billion cubic metres of gas from the Caspian Sea to markets in Turkey and Europe. The construction activities considered by the project will be conducted in Rustavi, Gardabani, Marneuli, Tetritskaro, Tsalka and Akhaltsikhe. The main activities will start in 2013 and finish by the end of 2016.

BP on behalf of SCPC, the international company which owns SCP has undertaken Environmental and Social Impact Assessment (ESIA) in order to identify and assess potential impacts and determine measures, which may reduce adverse impacts and increase favourable effects of the project. The residents of the communities may offer their suggestions regarding the project at public disclosure meetings held in Tbilisi, Rustavi, Tsalka and Akhaltsikhe. The exact time and venue of the meetings are mentioned above.

Appendix C2 Response to ESIA Disclosure Phase Comments



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1 INTRODUCTION

The SCPX Environmental and Social Impact Assessment (ESIA) has been subject to a 60-day public disclosure period as required by the SCP Host Government Agreement. In response to stakeholder comments received during the disclosure period the Draft for Disclosure ESIA (May 2012) has been updated to form the SCPX ESIA Final, which will be submitted to the Ministry of Economic and Sustainable Development (MoESD) and Ministry of Environment Protection (MoE) for review and subsequent approval.

This appendix provides an overview and high level analysis of the stakeholder comments received and a summary of the responses to comments, including an identification of any changes made to the Draft ESIA to address these comments.

2 PUBLIC DISCLOSURE PROCESS

2.1 Overview

The draft ESIA disclosure phase is described in more detail in Chapter 9 (Consultation Process) and Appendix C1 (Public Consultation and Disclosure Plan) and involved:

- Disclosure of the Draft ESIA (in Georgian), a non-technical summary (NTS, in Georgian and Russian) and a community leaflet (in Georgian and Russian) in public locations in Tbilisi and in the vicinity of the planned Project locations. Copies of the ESIA including the appendices were made available for viewing and additional copies of the NTS and community leaflet were available to take away.
- Disclosure of the Draft ESIA including the NTS in English and Georgian on BP websites
- Four public disclosure meetings.

2.2 Mechanisms for Providing Feedback

Feedback on the draft document could be provided to the Project via the following mechanisms (which are described in detail in Chapter 9 and Appendix C1):

- Written feedback sent to the BP Office in Georgia
- Feedback by telephone or email
- Feedback forms submitted to BP Community Liaison Officers or at public meetings
- Verbal feedback at public disclosure meetings
- Submission of electronic feedback forms, which could be downloaded via the website.

Of the comments received the majority (44%) were in writing, with 35% raised at public meetings and 21% received via feedback forms. No comments were received via telephone or e-mail/website.

2.3 Incorporation of Feedback

Each comment received was entered into the stakeholder comments database, including information on the stakeholder making the comment and the mechanism by which the comment was received.

Each comment was given a unique identification number and assigned a category from a pre-defined list of issue topics; defined to describe the area of the Project or ESIA to which the comment related. Comments often related to more than one issue. In this case, a primary, secondary and, where necessary, a tertiary issue category was used.

Comments were sorted by issue and a response was generated to each individual comment. Where a number of similar comments were received, an issue summary has been prepared, which collates these comments and provides a summary response. Where applicable the response also describes how the comment has been addressed.

3 OVERVIEW OF STAKEHOLDER COMMENTS

A summary of the comments received for the various issue topics is provided below. The list of individual comments and responses, including the relevant chapters and sections of the ESIA that have been updated in response to these comments, are included in Section 4.



3.1 Comments Related to Environmental Issues

Figure 3-1: Analysis of Stakeholder Comments Related to Environmental Issues

The majority of environmental issues raised were from the Ministry of Environment Protection (MoE) and the Georgian Oil and Gas Corporation (GOGC). Comments from Project-affected communities (PACs) on environmental issues were generally non-specific and sought clarification on whether the Project would result in environmental impacts. These have been classed as comments relating to impact assessment (refer to Section 3.3).

Ecology-related comments were raised regarding the assessment of significance of ecological impacts, the adequacy of baseline data for some ecological aspects and the mitigation measures assigned to Georgian Red List species.

Comments on water generally related to the sensitivity of the groundwater baseline and the hydrological baseline data.

3.2 Comments Related to Socio-Economic Issues



Figure 3-2: Analysis of Stakeholder Comments Related to Socio-Economic Issues

The majority of socio-economic issues raised were from members of PACs. The majority of comments (19% of all comments received) were connected to information on employment opportunities that would be generated by the Project, the recruitment process and concerns over foreign nationals being preferentially hired instead of local people.

Issues concerning infrastructure were raised, predominantly by attendees at the Tsalka public meeting. These included queries over the rationale for the proposed CSG2 access road routing, the provision of roads for community use, minimising impacts on community infrastructure and whether the Project would bring a gas supply to local communities.

Issues related to land and livelihoods included requests for clarification on how compensation for land and crops would be calculated, the process for the acquisition of state, municipal and communally owned land and land that is informally used.

Health and safety issues were raised by some respondents in relation to the potential risks posed by living close to the pipeline. Additionally, two stakeholders raised concerns regarding the potential risks posed by anthrax in the Project area and the measures the Project was implementing to seek to reduce these risks.

3.3 Other Comments

Comments relating to other areas of the ESIA or to the wider approvals process were also raised. The majority of these comments from PACs related to generic queries

regarding levels of expected environmental impact arising from the Project. These comments were in the main provided through feedback forms and it was not clear whether respondents had accessed the disclosure documentation or had attended the public meetings. No generic queries of this nature were raised at the public meetings. These have been classified as comments relating to the impact assessment.



Figure 3-3: Analysis of Stakeholder Comments Related to Other Issues

Other comments on the impact assessment related to the river crossing methodology, the impacts and mitigation measures to be used to seek to protect the pipeline from natural events, the use of aggregates from existing extraction sites and the use of thicker walled pipe when crossing other pipelines.

Comments on the permitting procedure were received from the MoE. Several queries related to the Project description were raised at the public meetings regarding the proposed route of the CSG2 access road; pipeline corrosion protection and the extent of the Project works in Rustavi.

The remaining comments related to issues raised concerning the existing BTC or SCP pipelines, comments on the consultation and disclosure phase or more general feedback on the Project.

4 DETAILED RESPONSE TO STAKEHOLDER COMMENTS

Sections 4.1 to 4.3 show individual comments received, the source of the comment and the specific response to comments from national, regional and local governmental organisations or representatives and third-party organisations.

Comments from PACs generally referred to a number of common themes, which have been grouped together under each issue and a response provided in a common template (Section 4.4).

Please note that comments received on draft versions which refer to specific sections or tables may not directly correspond with referencing in the final version. This is because in some instances, comments and responses discuss a specific table in a draft version, which has since been updated in the final report. For accuracy, comments have been kept as received and responses address the specific comment referred to. The ESIA Section Reference column in Table 4-1 is updated to reflect section and table referencing in the final report and should be used for cross-referencing.

4.1 National Governmental Organisations' Comments

Table 4-1: Draft ESIA Comments and Responses – National Governmental Organisations

Comment	ID	Response	ESIA Section Reference
Ministry of Environment Protection of Georgia (MoE)			
1. ESIA section 1.6 states that "effort has been made to ensure that the Georgian translation of this ESIA is accurate and a true reflection of the intent and meaning of its English original. In the event of any conflict or disagreement in interpretation of any provisions between these different language versions, or any subsequent translations, the English version shall be referred to as the definitive, prevailing document." With this respect, please be informed that the Ministry has reviewed the Georgian version of the ESIA, as submitted by you, and the Ecological Expertise will also be undertaken based on the Georgian version of the document. Hence, the English language version cannot be referred to as the prevailing version.	205	This comment is noted, and as stated in the Draft ESIA "effort has been made to ensure that the Georgian translation of this ESIA is accurate and a true reflection of the intent and meaning of its English original." The Project has amended the text as follows: "Effort has been made to ensure that the Georgian translation of this ESIA is accurate and a true reflection of the intent and meaning of its English original. In the event of any conflict or disagreement in interpretation of any provisions between these different language versions, the text in question shall be subject to further review and agreement with the Ministry of Environment Protection (MoE)."	1.6
2. Based on the GIS coordinates given, the proposed project intersects the Ktsia-Tabatskuri managed reserve, while according to the ESIA, "the SCPX scoping study identified the Ktsia-Tabatskuri managed reserve, 10km away from the proposed CSG2 site." It is therefore necessary to verify the issue with the LEPL Agency of Protected Areas of the Ministry of Environment Protection and a document confirming the Agency's agreement must be enclosed to the documentation package submitted for the Ecological Expertise.	206	The Project has verified internally that the coordinates provided with the ESIA Draft for Disclosure do not show the CSG2 site or any other part of the Project footprint within the Ktsia-Tabatskrui Managed Reserve. An application query has been submitted by the Project to the Agency of Protected Areas, which has confirmed that the SCPX Project footprint does not intersect with the Ktsia- Tabatskuri Managed Reserve (see the response provided in C2, Appendix 2).	-

Comment	ID	Response	ESIA Section Reference
3. ESIA section 7.2 states that: "With regard to the CSG2 location, geological survey information gathered for Energotrans' `work design` for the re-route of a section of its 500kV electricity transmission line "Vardzia" to avoid the CSG2 facility has also been taken into account." Based on the foregoing, the documentation submitted for the Ecological Expertise must be enclosed with a document evidencing the agreement with Energotrans.	207	Geological surveys for the Energotrans Re-Route were funded by the SCPX Project and were therefore also used to inform the environmental baseline at CSG2. A separate ESIA has been prepared for the re-route and has been submitted separately by Energotrans to MOE. An extract of the document evidencing the agreement with Energotrans is included within the package of documentation submitted for Ecological Expertise.	-
4. According to the ESIA section 7.2.5, "the Rustavi, Tsalka-Bedeni and Vale faults are listed as potentially active. Earthquakes measuring 6 on the Richter scale have been recorded." This statement needs to be revised, because according to the revised diagram of Georgia's seismic zoning, the area in question falls within the seismic zone measuring 7-8 points.	208	The Project has revised the statement in line with the comments to reflect that the area falls within the seismic intensity zone 7-8.	7.2.5
5. Table 5-4: Crossings Schedule should be completed to include the missing information related to the crossings of the river Aji, several dry gullies and narrow valleys. Furthermore, ESIA should address the methods of construction of the crossings with the river Aji, several dry gullies and narrow valleys, based on the relevant review of the alternatives.	209	In response to this comment Chapter 5 Table 5-4: Crossings schedule has been updated to include some of the more minor crossings as required and the corresponding construction technique. Alternative crossing methodologies have already been evaluated and reported for the major river crossings, the Mtkvari and Algeti, in Section 4.5 and Section 5.4.11. The ESIA has been updated, and Section 5.4.11 re-structured to improve the descriptions of the crossings and to reflect the design philosophy for minor watercourse and ditch (gully) crossings, which are based on typical crossing designs that are normally verified in the field prior to construction.	5.3.2;Table 5-4 4.5 & 5.4.11
		The alternative crossing methodologies considered for the Algeti River have been updated in accordance with the response to Ministry of Environment Protection Comment 15 (internal reference 219).	4.5.1

Comment	ID	Response	ESIA Section Reference
6. The ESIA should include the review of the hydrology of all the rivers, and the gullies prone to active and deep erosion and mudflows. Individual designs for each crossing must consider estimated maximum flow rates, sediment movement patterns, anticipated changes to the river bed contour, caused by potential river bed scour and lateral erosion.	210	The surface water morphology sections within Chapter 7 and Chapter 5 Section 5.4.11 have been updated with additional river hydrological information. Baseline studies have been undertaken which confirm there are no gullies considered likely to be prone to active and deep erosion or mudflows on the SCPX pipeline route.	7.2.5.1, 7.5.3; 5.4.11
		Individual designs for the major river crossings (Mtkvari and Algeti) will consider estimated maximum flow rates (1:200 year storm event), sediment movement patterns, anticipated changes to the river bed contour, caused by potential river bed scour and the predicted extent of lateral erosion as is now described in Chapter 5.	5.4.11
7. To avoid undesirable events related to the crossings of the rivers and gullies prone to active and deep erosion and mudflows, the ESIA must address the potential negative impacts and relevant mitigation measures, by taking into consideration all natural events and elemental forces that may affect the watercourses.	211	Section 5.4 has been updated to include current information on the approach to river crossings design. Additional design mitigation measures have been noted within Chapter 5 and Chapter 12 has been updated to describe the potential impacts and mitigations. It should be noted that baseline studies have been undertaken which confirm there are no gullies considered likely to be prone to active and deep erosion or mudflows on the SCPX pipeline route.	5.4.11 12.4.2; 12.6.1; 12.6.2 Commitments D12-06, OP131, OP143 & OP144
8. The ESIA should include the information on any mineral deposits or outcrops affected by the proposed pipeline corridor. Article 39 of the Law of Georgia on Subsoil prohibits the design and construction of any industrial enterprise, service lines or other facilities, without prior verification of the absence of any mineral deposits or outcrops throughout the area of the proposed development. It is therefore required to enclose the conclusion of the relevant authority on the subject to the documentation package submitted for the Ecological Expertise.	212	The Project has consulted with the Ministry of Energy and Natural Resources to seek confirmation of the presence or absence of known mineral and aggregate deposits and concessions within the current Project footprint. Results have been incorporated into the environmental baseline Chapter 7.	7.2.3

Comment	ID	Response	ESIA Section Reference
9. ESIA should specify the course of actions in the event of chance discovery of features having singular (unique) geological, paleontological, mineral, historical, aesthetic or other cultural value, during the project implementation.	213	The Project has developed a Cultural Heritage Management Plan within Appendix D of the ESIA including an outline cultural heritage chance finds procedure that meets is aligned with the relevant IFC Performance Standards and will be implemented in the event of chance discovery of any of the noted features.	Appendix D; Section 19
10. According to the ESIA, where the excavated material is unsuitable for padding or backfilling, padding materials will be sourced from approved borrow pits. In this respect, out of the economic considerations and with the view of minimizing the amount of imported inert material, the studies should be performed on the material accumulated in the retention ponds of the aggregate crushing and sorting plants located nearby the proposed right of way.	214	The Project considers this a valuable exercise to potentially reduce the amount of imported material needed for construction. The Project will evaluate opportunities to study material accumulated in retention ponds with due consideration of the associated practicalities of achieving this which may include the distance from the project areas, infrastructure upgrades required, quality of material and health and safety and environmental and social considerations. The Project also plans to investigate terracing of the CSG1 and CSG2 sites and optimisation	5.6.1, 10.2.4
		of the temporary areas to reduce the amount of earthworks and import material required.	
11. Further to the description of the landscape types, the ESIA must include the description of the geomorphological conditions.	215	I he landscape baseline description within Chapter 7 has been reviewed and updated with further available data with the aim of improving the baseline description of the landscape, specifically with regard to the geomorphological conditions.	7.4.3
12. According to the ESIA section 7.6, on page 48, "[It also summarises]groundwater quality information from monitoring locations in the vicinity of CSG2. Groundwater monitoring data is not available along the proposed SCPX pipeline loop, as it was agreed with the Ministry of Environmental Protection that monitoring was not required in this area due to its relative sensitivity compared with other areas along the BTC pipeline route." The documentation package presented for the Ecological Expertise must include a document confirming this agreement.	216	The Project considers that this comment is not directly related to the SCPX ESIA and relates to the BTC Pipeline. The scope of groundwater monitoring required for the BTC Pipeline only was agreed with the Ministry of Environment Protection. Please refer to correspondence numbers GOGC/OUT/0145/08 and BTC/INC/4090/09.	-

Comment	ID	Response	ESIA Section Reference
13. The ESIA section about the evaluation of alternatives must include the evaluation of the alternatives in terms of estimated impact upon biodiversity.	217	The Project approach for the selection of CSG1 and the PRMS and the pipeline routing was to locate the sites and the route in close proximity to the existing sites at PSG1 and Area 80 and the BTC and SCP pipeline routes. This aims to minimise the overall development footprint and utilise areas that had previously been disturbed. These sites are subject to anthropogenic influences in the form of grazing and cropping and from the presence of the existing facilities. The biodiversity for these potential sites/routes was assessed during ecological surveys and was considered to be of similar, relatively low value for each of the options.	
		For CSG2, Chapter 4 Section 4.6.2 included a description of the land use and habitat and Table 4.5 provided a preliminary assessment of ecological value. This section has been updated with a more detailed description of the qualitative ecological and biodiversity value of these alternative options demonstrating how this influenced the site selection process.	4.6.2
		For temporary areas such as construction camps and lay-down areas, the selection process included a consideration of relative ecological value and Section 4.10.1 has been updated to reflect this.	4.10.1
14. Some sections of the ESIA related to the floral species do not list few Georgia Red List (GRL) species, for example, smooth-leaved elm (Ulmus minor), as the target species under the survey. However, further in the report,	218	The Project agrees that all Georgia Red List (GRL) species should have been noted as part of the target species under the baseline surveys as they were the focus of the baseline. Chapter 7 has been updated to reflect this.	7.7.2
the same species is reterred to as being subject to removal, and the measu of its replanting are proposed. The proposed list of the target species for the survey must include, in the first place, the Georgia Red List species, endangered species and other endemic or vulnerable species, with the relevant assessment and description of the proposed measures for their mitigation and reinstatement.		GRL species were identified during ecological surveys, and the results and location are reported in Chapter 7 and the assessment of impacts and proposed mitigation measures including reinstatement are reported in Chapter 10.	10.7

Comment	ID	Response	ESIA Section Reference
15. The quantities and varieties of the trees and vegetation to be felled or removed during the project implementation, including the Georgia Red List species, must be recorded accurately. All actions required for removal of the	219	The alternative options considered for the Algeti crossing methodology have been updated in Section 4.5.1 based on the options evaluated with a view to reduce the impact on riparian forest.	4.5.1
Red List species must be applied, in compliance with the Law of Georgia on Red List and Red Data Book. Furthermore, the report must explain the instification of the need for removal of the Red List species, especially in the		A conceptual off-set planting scheme for the removal of GRL species at the Algeti has been outlined in Section 10.7.4	10.7.4
riparian forest areas.		The Project has committed within the updated ESIA to recording and producing an inventory of all trees removed in association with the Project in accordance with Law of Georgia on Red List and Red Data Book and Forestry Code of Georgia; Decree N 242 of Government of Georgia on Approval of Rules of Forest Use.	Commitment 17-15; Section 10.7.4
16. Contrary to the information presented in the report on the subject of potential impact upon floral and faunal species and habitats, according to the tables 10-12 and 10-13 showing the potential impacts, the significance of	220	The Project has reviewed the impact assessment within Tables 10-12 and 10-13 to confirm that the significance of impacts is in accordance with the ESIA methodology as described in Chapter 3.	
potential impact is rated lower (mainly rated as "low").		Updates have been made to the assessment of impact significance in Table 10-13 of:	
the magnitude of potential impacts.		KP12 Fauna in channel – sensitivity increased to "C"	10.7.4
		Riparian ecosystem at the Mtkvari has been amended to two individual potential impacts:	
		 Smooth leaved elm: Amended to potential Impact "D3" Medium; residual impact "D1" Low 	
		 Aquatic ecosystem: Amended to potential Impact "D3" Medium; residual impact "D2" Medium 	
		Trees used for bat roosts at KP3, 54–55 – potential impact increased from "B3" Low to "C3" Medium; residual impact amended from "B1" Low to "C2" Low	
		An additional impact has been added at the Algeti – aquatic ecosystem with a potential impact of "D3" Medium and a residual impact of "D1" Low	
		Corncrake in wetlands at CSG2 and CSG2 access road – potential impact significance amended to "C3" Medium (original assessment of "B1" High was an error); residual impact significance amended to "C3" Medium	10.7.3, 10.7.4

Comment	ID	Response	ESIA Section Reference
		 In response to this comment and Comment ID 221, Section 10.7.4 has been reviewed and updated as follows: 10.7.3 and Table 10-12 – Potential impacts on ecological resources has been expanded including regarding soil fertility, accidental spills and effects of sedimentation on fish 10.7.3 and Table 10-12 – Additional mitigations have been added as follows: A17: 3-19, 10-14, 11-05, 17-18, 19-10, 30-23, 32-03 A18: 18-02, 18-05 A19: 19-05, D5-045 A20: 32-08 A7: 7-10, 7-11, 7-12, 7-14, 10-01, 10-22 A9: 1-12, 9-02, A12: 10-09, D5-078 (11-01 has been moved to A11) A25: 25-09 and 25-11 added 10.7.3 – Issue A3 and A11 and associated mitigations have been added to Table 10-12 	

Comment	ID	Response	ESIA Section Reference		
17. The species variety of fish in the affected watercourses must be specified. The types of impact upon aquatic biodiversity in general, and ichthyofauna in particular, with special focus on the Georgia Red List species, must be determined, and the measures to either avoid such impact, mitigate or offset, where necessary, must be developed.	221	Additional information on aquatic ecology can be found in the Environmental and Social Baseline Report Appendices, an update of which has been provided in the ESIA Chapter 7 with a focus on ichthyofauna. It should be noted that no Georgian Red List species were recorded in the Algeti or Aji rivers during fish surveys or identified as being caught by local fishermen in the Mtkvari.	7.7.3		
		Additional surveys have been carried out on the Aji River in response to GOGC comment 2, internal reference 243.			
		The Project considers that the level of baseline information is sufficient for the affected watercourses in light of the proposed crossing methodology, for example, micro-tunnelling	7.7.3		
		under the Mtkvari River intended to I avoid impacts on the watercourse and aquatic flora and fauna. Fish surveys and macro-invertebrate surveys have been carried out for the Algeti and Aji rivers and informed the mitigation measures that are described in Chapter 10.	10.7.4		
		In response to this comment and Comment ID 220, Section 10.7.4 has been reviewed and updated.			
18. The report must present in more detail the reinstatement plan which you	222	The Project has committed to the preparation of a compensation planting plan that will	10.7.4;		
describe as mitigation of the impact upon the GRL species of smooth-leaved elm (Ulmus minor), as a compensation measure. In addition, where appropriate, the same type of compensation actions should				describe in detail the Project planting programme (including the replacement of trees at the Algeti River crossing such as the smooth-leaved elm). This will be submitted to the Ministry of Environment Protection for information. A conceptual off-set planting scheme for the removal of GRL species at the Algeti has been outlined in Section 10.7.4.	Commitment 19-10
apply to other species (for instance, GRL faunal species, such as Mediterranean Tortoise and other species described in the report). It would be preferable to include the part related to the compensation activities as a separate chapter.		Faunal mitigations already described within the ESIA are considered sufficient to mitigate impacts to these mobile species without the addition of compensation measures.			

Comment	ID	Response	ESIA Section Reference
19. Pursuant to the Instruction on the Procedures of Self-monitoring and Reporting of Harmful Emissions from Stationary Sources of Pollution (Order of the Minister of Environment Protection enacted on 24 September 2008), as far as the activities subjected to the Ecological Expertise are concerned, the monitoring of stack emissions into the ambient air is a quarterly exercise. Table 10-21 under subsection 10.8.4 should therefore be adjusted accordingly.	223	The Project operational monitoring strategy has been based on the requirements of the Environmental Standards required by the Host Government Agreement, Appendix 4 Section 3.1. The Project considers that six-monthly monitoring is appropriate in accordance with relevant World Bank and UK standards and practices.	-
20. The SCPX project includes the construction and operation of the three major facilities –CSG1, CSG2 and PRMS. Hence, in compliance with the laws of Georgia related to the ambient air protection, it is mandatory that the Technical Report of Inventory of Stationary Sources of Pollution and Emissions of Harmful Substances must be developed for each individual facility, with due consideration of their respective locations, and agreed with the Ministry of Environment Protection (Order No704 of the Minister of Environment and Natural Resources of Georgia, dated 20 October 2008, on "Approval of Regulation Related to the Rule of Inventory of the Stationary Point Sources of Pollution"), together with the "Draft Norms of Maximum Allowable Emissions of Pollutants into the Ambient Air" (Order No705 of the Minister of Environment and Natural Resources of Georgia, dated 20 October 2008, on "Approval of the Regulation Related to the Methodology of Estimation of Norms of Maximum Allowable and/or Provisionally Agreed Values of Emissions into the Ambient Air").	224	The Project will develop the Technical Report of Inventory of Stationary Sources of Pollution and Emissions of Harmful Substances for construction and operation of the three major facilities. For the construction phase the Project will calculate these limits for the applicable combustion equipment and agree them with the Ministry of Environment Protection in advance of starting operation of the relevant equipment. For the operation phase of the three facilities (CSG1, CSG2 and PRMS) the Project will calculate these limits for the applicable combustion equipment and agree them with the Ministry of Environment Protection in advance of starting operation of the relevant equipment.	10.8.4; Commitment 14-10

Comment	ID	Response	ESIA Section Reference
21. The report must specify the exact locations of effluent discharge points downstream of the treatment facility. If it is intended to discharge effluents into the surface water body, then the project developer must prepare and agree with the Ministry of Environment Protection the "Norms of Maximum Allowable Discharge of Pollutants Contained in Effluents into the Surface Water Bodies (Order No105 of the Minister of Environment and Natural Resources, dated 12 August 1996, on "Approval of Methodology of Estimation of Maximum Allowable Discharge of Pollutants into Watercourses"), which should specify the coordinates of the discharge points.	225	For the operation of CSG1, CSG2 and PRMS the Project will prepare the norms of maximum allowable discharge of pollutants contained in effluents into the surface water bodies (including discharge locations) for the applicable discharge points and agree them with the Ministry of Environment Protection in advance of any discharge commencing.	10.5.4; Commitment 14-09
		At this point during the Project design phase, effluent discharge points cannot be confirmed. It is anticipated however during the operation phase the Project will integrate with the existing wastewater treatment systems at CSG1/PSG1 and Area 80/Area 81 and use the same discharge points. A new wastewater treatment system and discharge location will be required at CSG2.	
		Preliminary discharge locations have been included within the updated ESIA. However, the Project will confirm final locations during our application to the Ministry of Environment Protection.	5.5.5
		For all construction and commissioning related discharges the Project will prepare the norms of maximum allowable discharge of pollutants contained in effluents into the surface water bodies (including discharge locations) for the applicable discharge points and agree them with the Ministry of Environment Protection in advance of any discharge commencing	Commitment D5-106; 14-09
22. According to the ESIA report, table 7-4, an anthrax pit was identified near KP30 of the proposed pipeline. To prevent propagation of the infectious disease that is hazardous to human and animal health, a landscape-epizootological-ecological survey must be carried out and the preventive measures must be developed, if warranted.	226	Annual epizootological and epidemiological surveys are carried out for the existing BTC and SCP pipelines by the National Centre for Disease control.	8.4.3 (Zoonotic Diseases);
		The results of these surveys have been reviewed against the current SCPX footprint and described in Chapter 8. The risk of anthrax will be managed through the execution of a due diligence exercise which the Project has committed to carry out (commitment 6-22). If animal burial pits are identified during construction works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax (commitment 6-25). The fencing at the known anthrax pit at KP30 will be maintained during construction to help protect the area from disturbance and workers will be made aware of the risks posed by this area and the need to avoid disturbance (commitment X6-04).	10.12.4 (Zoonotic Diseases); Commitments 6-22, 6-25, X6- 04

Comment	ID	Response	ESIA Section Reference
		Appendix D of the ESIA includes a contamination chance finds procedure that has been updated to describe the actions to be taken in the event of discovery that has the potential to impact human health, e.g. animal remains.	Appendix D 11.4.3
23. The document submitted for the Ecological Expertise must be complemented with the copies of documents evidencing the agreements from the State authorities and organizations authorized to make decisions on individual aspects of the activities at various stages of the project development.	227	This comment is noted and Project will follow the Construction Permitting Process as defined in Decree N 57 on construction permitting procedure and permit conditions.	-
24. The following are some inaccuracies noted in the ESIA report:	228		
• Base rocks within the 56km route of the SCPX pipeline belong to the Neogene period and no occurrences of limestone are observed, as indicated in the ESIA. This issue must be corrected accordingly.	229	This statement has been revised to reflect the geology of the area in accordance with this comment.	7.2.3
• The language of the report is inaccurate and vague terminology-wise, for example, it is hard to decipher the concepts like: [the Georgian of] "intrusive rocks," "volcanic eruptions," "uncemented sands," "reverse faults," "thrust faults." It is necessary to proofread the above.	230	The terminology referred to has been reviewed and amended as required in response to this comment.	7.3, 10.2
• Page 10-54: The ESIA Report refers to the Mediterranean tortoise as a variety of commonly occurring amphibians, which is not a true statement, because it is enlisted as a Georgian Red List species. This must be corrected accordingly.	306	The text has been updated in accordance with this comment. The intent of the text should have been to convey that the amphibians were common, not the reptile species, which include the Mediterranean tortoise which is a Georgian Red List Species	10.7.2; 7.7.4
The section about the icthyological survey must be revised both style- and content-wise.	231	This section has been amended in accordance with the response to comment 17 (Internal Reference 221)	7.7.3
• The unit of capacity is misspelled in the report and must be corrected. Also, "kV" is the measurement unit for voltage, not capacity.	232	The text has been reviewed and amended as required in response to this comment.	Chp5; Chp10

Comment	ID	Response	ESIA Section Reference
Table 6-4 must refer to the "National Environmental Agency", not "Environment Protection Agency"	233	The text has been reviewed and amended as required in response to this comment.	6.5.3; Table 6-4
• The measurement units throughout various parts of the text appear as a mix of Georgian and Latin letters, for instance: mk / , mkg/ 3, /hr (vehicle/hr).	235	The text has been reviewed and amended as required in response to this comment.	Chp5; 7; 10
• "Table 7-76" should be changed into "Table 7-46."	236	The text has been reviewed and amended as required in response to this comment.	Chp7
• Measurement units are missing for tables 7-46; 7-49; 7-52; 11-2.	237	Measurement units have been added to Tables 7-46, 7-49; 7-52; 11-2 (note, table references have been updated in the final report).	Chp7; 11
Please be further informed that according to the provisions of article 8.2(d) of	238	This comment is noted.	
the Law of Georgia on Environmental Impact Permitting, along with the other documentation specified by the Law, you must submit short resume (in the		The Project has already submitted the non-technical summary as part of the ESIA Draft for Disclosure and the non-technical summary is also part of the updated ESIA submission.	Non-Technical Summary
Regulation on Environmental Impact Assessment, enclosed to the report should be the review of the feedback received during the ESIA public		This appendix (Appendix C2) of the updated ESIA contains a record of relevant feedback received during the public disclosure and Project responses.	
Disclosure process, focusing mainly on concerns (disagreements), if any.			Appendix C2
The ESIA report submitted to the Ecological Expertise must include and be enclosed with all the documents enlisted in article 6 of the Regulations, as enacted by virtue of the Order No 14 of the Minister of Environment, dated 4 October 2011, on "Approval of the Regulation on Environmental Impact Assessment." Also, the submitted package must be complete with extracts from the Public Registry (updated information from entrepreneurial and public registries). Failure of the above will prevent the Ministry from the possibility to commence the administrative proceedings required for issuing the Conclusion of the Ecological Expertise.	239	This comment is noted; however, in accordance with the Host Government Agreement, Appendix 4, Section 3.6, the SCPX Emergency Response Plan will be submitted to the Government SCP representative for approval prior to completion of the Facilities.	-

Comment	ID	Response	ESIA Section Reference
As for procedure of seeking the Conclusion of the Ecological Expertise, please note that, in compliance with article 4.4 of the Law of Georgia on Environmental Impact Permitting, the Ministry of Environment will issue the Conclusion of the Ecological Expertise in relation to the documentation submitted by the administrative authority responsible for issuing the construction permit. Hence, the relevant application, together with the package of documentation, as specified by the Law, must be submitted from the Ministry of Economy and Sustainable Development (in its capacity of the construction permit issuing authority) at the second stage of the process of issuing of the construction permit.	240	This comment is noted.	-
The above comments must be incorporated into the ESIA report prior to submission of the report to the Ministry for the Ecological Expertise. Otherwise, the Ministry will not be in a position to issue positive Conclusion of the Ecological Expertise.	241	This comment is noted.	-
Ministry of Economic and Sustainable Development Georgia			
The Ministry has reviewed your submission (reference number SCP/OUT/096/12; date: 29 May 2012) of the Environmental and Social Impact Assessment related to the construction of the 56km long loop pipeline under the South Caucasus Pipeline Expansion Project and would like to advise you that we, within the purview of the Ministry, have no comments or recommendations.	311	None required	-
Georgian Oil and Gas Corporation			
1. Impact on groundwater The ESIA Chapter 7, Environmental Baseline, describes the groundwater baseline conditions in the regions under the immediate impact of the Project activities (construction, operation). Special focus has been made on the following sections: CSG1 and CSG2 sites and along the proposed pipeline. Of these three locations, the area in the vicinity of CSG2 deserves particular	242	The Project has reviewed and updated ESIA Chapter 7 Environmental Baseline, Section 7.6 Groundwater, as necessary with the aim of ensuring that there is an appropriate level of detail for the impact assessment. Table 7-27 contains information on the four groundwater monitoring wells installed at the CSG1 location, including the depth to the base of the wells. Two of the wells were dry at the	7.6.3

Comment	ID	Response	ESIA Section Reference
attention, because of occurrence of young volcanic deposits, which have high permeability properties, with the groundwater discharge modules one of the highest throughout the country, equalling 5-35L/sec per square kilometre on average. The Tsalka area is known for many high-discharge springs, with the discharge rates within the range of tens of litres up to hundreds of litres per second. For instance, the vicinity of Kizilkilisa is represented by the two concentrated discharges of springs, with the usable reserves of category A+B totalling 0.799m3sec; there is a collection of Oliangi springs on its south, with usable reserve of 0.158 m3/sec; there is Nardevani group of springs in the southernmost part, with the usable reserve of 0.308m3/sec. All the four areas are located on the right bank of the river Ktsia-Khrami, between the villages Kizilkilisa and Nardevani. These groups of springs are recharged by three groundwater streams, of which the northernmost stream originates in the catchment area of lake Tabatskuri near the east bank of the lake. It flows eastwards to add to the recharge of the Ozni springs. According to the report, monitoring wells were used to establish the groundwater baseline throughout this important region (in addition to the wells that are already part of the on-going monitoring exercise). In particular, six wells were installed (see map 1), with their locations identified based on a triangular technique; however, the report does not specify the depths of the wells and it appears that at various stages of monitoring, only three wells were used for monitoring because the remaining three wells were dry.		 time of sampling in 2011. All 4 wells were re-visited for sampling in spring 2012 (the same two wells were again dry) and the results have been reported in the updated ESIA. Table 7-27 of the Draft ESIA contained7-contained information on the six groundwater monitoring wells installed at the CSG2 location, including the depth to the base of the wells. These wells could not be sampled in 2011 owing to adverse weather conditions. However, they have been sampled in spring 2012 and the results of sampling from the two wells which contained water have been reported in the updated ESIA. In addition Section 10.6 Groundwater Resources has been reviewed and revised as follows with the aim of ensuring a complete assessment of the potential impacts on groundwater resources: Additional aspects which could affect groundwater have been added to Section 10.6.1 including the production of solid and liquid waste, contamination which could be caused by drilling or tunnelling fluid and cuttings or the production of solid and liquid wastes or hydrotest chemicals or hydrotest water; discharge of domestic wastewater to groundwater and operational effects of the pipeline trench on groundwater flows An update of the key sensitivities in Section 10.6.2 in accordance with changes made to the groundwater baseline information in Chapter 7 The potential impacts on groundwater quality have been further described The mitigations have been amended as follows: 14-08, 14-09, 7-13, OP41 and D5-106 added to A14 2-05 and 3-07 added to A16 	10.6

Comment	ID	Response	ESIA Section Reference
The report further states that unsuitable weather conditions in December 2011 prevented determination of the levels and volumes of groundwater, although they have been considered to be representative and have been included in the baseline. It is unclear as to why the wells would be considered to be	243	The Project has collected additional groundwater samples in spring 2012 and the analytical results have been included in the updated ESIA.	7.6.3
representative?		as it is accepted that volumes of groundwater have not been determined.	
We believe that, as far as groundwater is concerned, the Tsalka region is one of the most sensitive and vulnerable regions, because the groundwater resources if this area are currently being utilized in the local and regional water supply schemes, and the established usable reserves of the Trialeti springs are considered to be the country's strategic resources. It is also worth noting that due to the quality of the Trialeti springs, they were intended for the use in the water supply of Tbilisi since as early as 1895 and the issue still remains relevant up to the present time.	243	The Project has updated the groundwater baseline section in Chapter 7 referring to groundwater in the Tsalka region in response to this comment. An additional commitment to prohibit the use of groundwater for hydrostatic testing has been added (commitment 15-01) and all new and existing water abstractions for Project use will be subject to an environmental and social assessment (commitment 15-02).	7.6.3 Commitment 15-01, 15-02
It is further noted that with the purpose of protection of the Trialeti springs, the Oil Spill Response Plan (ref. BTCP-HSE-PLN-401-C1), submitted by BTC Co. to the Government of Georgia on 21 April 2005, was approved by the Ministry of Environment and Natural Resources of Georgia with conditions (Ordinance 110 – Conditions of Approval of the BTC Oil Spill Response Plan, 9 conditions in total). The fulfilment of Condition 9 of this document – Special Response for Tsalka Catchment – by the operator is still outstanding. One of the main reasons for non-fulfilment of this condition is that the company has failed to develop the additional scheme for protection of groundwater in the Tsalka area from contamination. Hence, implementation of a new construction project by the company in the same area is associated with high environmental risk.	243	Whilst we acknowledge the concern being raised here, the Project considers that this comment is not directly related to the SCPX Project as it is pertaining to the BTC OSRP approval.	-

Comment	ID	Response	ESIA Section Reference
According to the report, besides the Tsalka area, during the construction of the pipeline construction, it was agreed with the Ministry of Environmental Protection that monitoring was not required across the floodplain of the Algeti river and the groundwater of the Gardabani-Marneuli Artesian Basin. According to BP, this was due to less sensitivity of the area. The situation has changed worldwide since 2000 and the demand for fresh waters has increased considerably. It is therefore necessary to include this area into the zone of high sensitivity.	243	The Project considers that this comment is not directly related to the SCPX ESIA as it relates to the BTC Pipeline. Please refer to the response to the Ministry of Environment Protection comment 12 (internal reference 216) which states that, "The scope of groundwater monitoring required for the BTC Pipeline only was agreed with the Ministry of Environment Protection. Please refer to correspondence numbers GOGC/OUT/0145/08 and BTC/INC/4090/09.	-
2. Ichthyological survey Based on the ESIA (Chapter 7, Environmental Baseline), the ichthyological survey has not been undertaken on the river Aji. We believe that the river should be subject to thorough fish survey, because it is rich in ichthyofauna and represents one of the best sites for the local recreational fishing (refer to the map).	307	The Aji River has been subject to a fish survey in response to this comment. The results of the survey and impact assessment have been reported in the updated ESIA.	7.7.2, 7.7.3, 10.5
		The Project considers that using an open-cut crossing methodology for this river is expected to impact a relatively small area of the river bed during construction after which, the project intends to reinstate the river bed. Impacts on zoobenthos and their dependants are likely to be restricted to a small area and be temporary in nature. The inherent nature of a gas pipeline means that environmental risk to watercourses during operation is considered low.	
		The Project has included a commitment to consider the presence of IUCN or Georgian Red List species in watercourses before any water extraction occurs, particularly during the spawning season, and determine the mitigation measures to be implemented. An environmental and social review will also be carried out to determine the need for pump around at watercourse crossings.	Commitment D5-079, 11-03
3. Impact on hydrology The river crossings of the pipeline will have immediate impact upon the invertebrate aquatic fauna, and especially zoobenthos organisms living by	244	Impacts on artisanal fishing at the Aji River Crossing have been considered in the updated ESIA. Additional commitments have been added to Table 10-9 to mitigate the potential impacts of soil erosion and surface water contamination.	10.5.1; 10.5.3, 10.5.4
attaching to solid substrate. These organisms, which form the lowest trophic level, support the presence of benthophage fish in the watercourses and water reservoirs, because they constitute an essential component of their life-support triad. While the price for naturally produced fish is established and regulated by		The Project has carried out a fish survey in the Aji River in response to GOGC comment 2 (internal reference 307). In addition a macro-invertebrate survey has been carried out within the Aji River to study the zoobenthos.	7.7.2, 7.7.3
the consumer market, the naturally occurring feeding organisms are absolutely invaluable. We believe that the value of feeding organisms (in monetary terms) must be established based on the levels of the market rates for the organisms		A zoobenthic (macro-invertebrate) and fish survey has already been completed in the Algeti River.	7.7.2, 7.7.3
Comment	ID	Response	ESIA Section Reference
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(in this case, fish) that are produced by means of consumption of certain amounts of basic or specific organisms (in this case, zoobenthos). There are no inexhaustible resources in the natural environment, which is also true for benthic resources. Man-made interventions with the natural processes associated with encroachment upon the historically established river-bed, tend to accelerate the already progressing process of reduction of natural resources. There are no important and less important organisms in the natural environment, because each of them, in the aggregate and in an interconnected and interdependent manner, and while maintaining strictly defined correlation, contributes to creating a complete and balanced natural environment. Even seemingly minor disruption of the natural resources is likely to affect environmental equilibrium and induce imbalance. The report must therefore include detailed study and review of the zoobenthos in the rivers Aji and Algeti, the abundance of which is likely to influence the presence of ichthyofauna in the rivers, as explained above.		The Project considers that using an open-cut crossing methodology for this river is expected to impact a relatively small area of the river bed during construction after which, the project intends to reinstate the river bed. Impacts on zoobenthos and their dependants are likely to be restricted to a small area and be temporary in nature. The inherent nature of a gas pipeline means that environmental risk to watercourses during operation is considered low.	
During the construction of the SCPX pipeline, the following rivers must be included in the high risk zone in terms of impact upon ichthyofauna:			
River Aji Location: Gardabani district Alternative name: Ajistskali Category: Estuary of the 1st category Type: Lowland river Depth: 15-30cm Clarity: down to the riverbed Width: 2.5-3m; average 2,75m Fish production status: local, amateur. River Algeti Location: Tetritskaro district Category: Estuary of the 1st category			

Comment	ID	Response	ESIA Section Reference
Type: Upland and lowland river Depth: 60-70cm Width: 8-10m; average 9m Fish production status: local, amateur.			
 4. Biorestoration Following completion of the BTC/SCP pipeline construction, the operator of these pipelines virtually failed to manage the biorestoration activities in the forested areas, i.e. to ensure survival of replanted saplings. For several years after completion of the pipeline construction, GOGC undertook regular monitoring of the biorestoration activities inside the RoW. According to the estimation by the independent experts, who were involved in this post-construction monitoring exercise (N. Lomidze, V. Rtskhiladze), 95% of saplings did not survive. In this context, the crossing of the Algeti river floodplain, associated with the construction of SCPX, falls within the area of high sensitivity. As part of the BTC/SCP pipeline project post-construction planting activities, the saplings of the following species were replanted in this area: willow (Salix alba), tamarisk (Tamarix spp.). During the monitoring, it was established that a sampling plot selected by us supported 35 saplings of willow, 32 of which had withered. The ESIA report does not clarify as to how this problem will be addressed. 	245	The Project has committed to the preparation of a compensation planting plan which will describe in detail the planting programme (including the replacement of trees at the Algeti River crossing such as the smooth-leaved elm). This will be submitted to the Ministry of Environment Protection for Information, as noted in our response to Ministry of Environment 18, internal reference 222.	

Comment	ID	Response	ESIA Section Reference
5. SCPX pipeline crossings The proposed SCPX pipeline intersects with the GOGC-owned gas mains (Kazakh-Saguramo 1020mm main gas pipeline; Karadag-Tbilisi 700mm main gas pipeline, Kazakh-Saguramo and Karadag-Tbilisi interconnection 700mm, and Gardabani-Navtlugi 700mm gas pipeline). ESIA Chapter 12, Hazard Analysis and Risk Assessment (page 12-7) states that "In certain areas, the conservative engineering approach applied to SCPX pipeline design has gone beyond the strict requirements of the Code, resulting in increased wall thickness with a design factor of 0.5 applied at road, railway and river crossings and where the pipeline passes seismic faults to meet the requirements of API RP 1102 (D5-034)"These locations are shown in Table 12-5: Location and Proximity to SCPX of Crossovers, Settlements and AGIs. It is recommended that the same design factor be applied to the crossings with the GOGC-owned pipelines, in order to minimise the hazard and the risk of cumulative impact. These locations should also be included into Table 12-5 of Chapter 12. Furthermore, it is important that the crossing locations be incorporated into the existing SCP Emergency Response Plan, which, as noted in the ESIA, will be updated to integrate the SCPX pipeline and the new facilities before they become operational.	246	The Project will be designed to the Applicable Technical Standards as required by the Host Government Agreement, Appendix 3 Section 2.2. Regarding the locations of increased wall thickness, these have been determined in accordance with the American Society of Mechanical Engineers (ASME) Standard B31.8, Gas Transmission and Distribution Piping Systems which does not require increased wall thickness at third-party pipeline crossings and (in accordance with the HGA) is considered no less stringent than the standards and practices that would be applied in the UK.	-
You had to disseminate the information about public consultation meetings in the whole region. It is obvious from the meeting that locals are not informed about today's meeting	303	Information on the public meeting was announced in local newspapers and displayed in advertisements in public places in villages. Regional and municipal government was also informed of these meetings. In addition, our community liaison and land officers are in these areas regularly and have informed people about these meetings. The Project feels that the ESIA, non-technical summary and community leaflet were widely disseminated to Project-affected communities	-

4.2 Regional and Local Governmental Comments

Table 4-2: Draft ESIA Comments and Responses – Regional and Local Governmental Organisations

Comment	ID	PAC Affiliation	Format	Response Provided	ESIA Section Reference
Will the CSG2 access road connect to Rekha and Avranlo? This requires only 5km of additional road.	285	Rekha	PM (TS)	The access road is being constructed to allow the construction and operation of the CSG2 location, and the road therefore terminates at this point. There are currently no plans to extend the road beyond this point.	5.5.2
Rekha is the closest village which could be impacted by the project. How will Rekha benefit from the project, e.g. gas, road?	e impacted by the roject, e.g. gas, 283 Rekha Rekha Rekha Rekha Rekha Rekha Rekha including the opportunity for employment during construction of CSG2 and the implementation, in cooperation with the community, of the community development initiative on behalf of the SCPX Project, which may include assistance on infrastructure, education or other aspects. The specific details of the community development initiative have not been defined at this time.		10.14, Chapter 13		
I have worked for BP for two and a half years. Foreigners had 3–4 times higher salaries than local workers, though we were doing the similar job.282TsalkaThe land compensation for 1ha is 50 000 GEL. If the project will affect only 8m2 how will you calculate the compensation?279Tsalka		Tsalka	PM (TS)	National and international market prices will be used to define the wages for workers. Wages will depend on skills level.	-
		Tsalka (TS)		The Project will calculate pro-rated compensation based on the area of affected land.	10.13.6 – Provision of LACF and GLAC
Will the gas get cheaper?	280	Tsalka	PM (TS)	SCP Co is not responsible for setting the gas market price in Georgia.	-
Please deliver the gas to our territory	275	Tsalka	PM (TS) The provision of gas to settlements is the responsibility of the Government of Georgia		-

4.3 Third-Party Organisations

Table 4-3: Draft ESIA Comments and Responses – Third-Party Organisations

Comment	ID	Name of Organisation	Format	Response Provided	ESIA Section Reference
Scientific and Professional Organisations					
IBE, FAO and EU recognized Georgia to be a buffer zone of zooantroponotic diseases. There were hundreds of dangerous spots fixed (e.g. for Anthrax there were fixed 1600 spots) in Georgia. Anthrax is also classified as first group agent with recognized bioterrorism potential.	247	LTD "Vetsanhyg- Ecology"	Written	Annual epizootological and epidemiological surveys are carried out for the existing BTC and SCP pipelines by the National Centre for Disease control. The results of these surveys have been reviewed against the	8.4.3 (Zoonotic Diseases):
In Known Kontil and Constaling Invalid of a sing these ways 405				current SCPX footprint and described in Chapter 8.	
In Kvemo Kartli and Samtskhe-Javakheti region there were 485 anthrax areas fixed, precisely: 129 in Gardabani region, among them 45 in the vicinity of the pipeline; 48 in Marneuli and among them 7 is neighbouring the pipeline; 60 areas in Tetritskaro and 5 in the pipeline's neighbourhood; 90 in Tsalka and 41 in pipeline's neighbourhood, 46 in Adigeni region and 10 in the pipeline neighbourhood; 63 in Akhaltsikhe and 16 in pipeline neighbourhood.				The risk of anthrax will be managed through the execution of a due diligence exercise which the Project has committed to carry out (commitment 6-22). If animal burial pits are identified during construction works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax (commitment 6-25). The fencing at the known anthrax pit at KP30 will be maintained during construction to help protect the area from disturbance and workers will be made aware of the risks posed by this area and the need to avoid	10.12.4 (Zoonotic Diseases); Commitments 6- 22, 6-25, X6-04
There are number of cases when ground works provoked new diseases (various examples are provided). Thus in order to avoid potential risks taking into account the epizootic situation and applying preventive measures are important.				disturbance (commitment X6-04). Appendix D of the ESIA includes a contamination chance finds procedure that has been updated to describe the actions to be taken in the event of discovery that has the potential to impact human health, e.g. animal remains.	Appendix D 11.4.3
finances to take adequate measures and ensure that landscape-epozoologic-ecological monitoring is implemented during the SCPX design, construction and operation phases.					

Comment	ID	Name of Organisation	Format	Response Provided	ESIA Section Reference
How will the pipeline be protected from corrosion?	296	"Nargo" LTD/Technical University	PM (TB)	The SCPX pipeline will be protected from corrosion by an impressed current cathodic protection (CP) system specifically designed for the SCPX Project.	5.3.1; Commitment D5-001
				An external three-layer high-density polyethylene (HDPE) coating will insulate the outer surface of the pipeline from the surrounding soil. This coating will reduce the potential for induced current corrosion and corrosion caused by natural occurring biological and chemical substances. Section 5.3.1 has been updated to provide more information on the corrosion protection system.	5.3.1
	During operations regular maintenance will be carried out to o the integrity of the pipeline and implement corrective actions corrosion is detected.		During operations regular maintenance will be carried out to check the integrity of the pipeline and implement corrective actions if corrosion is detected.	5.8.4	
Please specify what do you mean by a 'Soil Examination'?	297	Institute of Ecology	PM (TB)	The Project has conducted a survey of the soil to measure its conductivity. Soils with higher conductivity require a higher level of cathodic protection. Soil examination also includes the acquisition of data on soil properties and soil fertility to assist with reinstatement.	7.3.3
Are there signs of developing diseases on animals and humans included in the soil examination surveys?	298	Vetsanhig – Ecology" LTD	PM (TB)	No health surveys directly on humans and animals have been carried out. Baseline studies have included surveys for surface contamination that may impact on humans and the environment, plus surveys of current water quality.	8.3
There are 1600 known incidences of animal burials from which 457 are included in the territories you are talking about. Animals are cremated and burials made to avoid spread of Anthrax. Exact locations of animal burials are not known. There was at least one burial in each village. How will you manage this risk?	299	Institute of Ecology	PM (TB)	Annual epizootological and epidemiological surveys are carried out for the existing BTC and SCP pipelines by the National Centre for Disease control. The results of these surveys have been reviewed against the current SCPX footprint and described in Chapter 8.	8.4.3 (Zoonotic Diseases);
				The risk of anthrax will be managed through the execution of a due diligence exercise which the Project has committed to carry out	

Comment	ID	Name of Organisation	Format	Response Provided	ESIA Section Reference
				 (commitment 6-22). If animal burial pits are identified during construction works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax (commitment 6-25). The fencing at the known anthrax pit at KP30 will be maintained during construction to help protect the area from disturbance and workers will be made aware of the risks posed by this area and the need to avoid disturbance (commitment X6-04). Appendix D of the ESIA includes a contamination chance finds procedure that has been updated to describe the actions to be taken in the event of discovery that has the potential to impact human health, e.g. animal remains. 	10.12.4 (Zoonotic Diseases); Commitments 6-22, 6-25 & X6-04 Appendix D 11.4.13.2
The ecological situation in Georgia has been drastically changed lately – it rains a lot which makes its impact on assimilation? Will it be taken into consideration?		Vetsanhig – Ecology" LTD	РМ (ТВ)	We have considered the comments made in regard to the presence of anthrax in the vicinity of the proposed Project and have committed to undertake a due diligence exercise (see response to comment 299 above).	
Media					
What kind changes will be made in Vale, Gardabani and Akhaltsikhe? What will the changes be in Rustavi?	304	News portal of Kvemo Kartli, www.kkpress.ge	PM (RU)	In the Rustavi area a new pipeline will be installed next to the adjacent BTC and SCP pipelines. This proposed pipeline will be 56km in length and will start at the Azerbaijan/Georgia border and end at a location outside of Marneuli with a pigging station. A compressor station will be built in Gardabani municipality and in Tsalka municipality and a pressure reduction and metering station in Akhaltsikhe municipality, near Vale. Additional information has been added to Section 5.3.1 to further describe the block valve and the pigging station.	Chp05

Comment	ID	Name of Organisation	Format	Response Provided	ESIA Section Reference
SCPX will be increased by an additional 16 billion cubic meter per year: 6 for Turkey and 10 for European countries. What is Georgia's benefit here?	additional 16 billion cubic meter or European countries. What is305News portal of Kvemo Kartli, www.kkpress.gePM (RU)Benefits to Georgia include the provision of additional gas from the expansion of the SCP system. Under the terms of the existing SCP Host Government Agreement, under which the SCPX Project is implemented, Georgia will receive 5% of the gas volumes transited through Georgia. This means an additional 0.76 bcma (billion cubic metres a year) will be provided to Georgia.lic Consultation Meetings 		Benefits to Georgia include the provision of additional gas from the expansion of the SCP system. Under the terms of the existing SCP Host Government Agreement, under which the SCPX Project is implemented, Georgia will receive 5% of the gas volumes transited through Georgia. This means an additional 0.76 bcma (billion cubic metres a year) will be provided to Georgia.	5.5.1	
Was the information about Public Consultation Meetings distributed in all Kvemo Kartli Region?			Chp09; Appendix C1 PCDP		
Will the Algeti riverbed change?	302	News portal of Kvemo Kartli, www.kkpress.ge	PM (RU)	Any impacts on the Algeti riverbed are expected to be temporary and restricted to the period of construction when the pipeline is installed. The riverbed and banks will be re-instated and monitored during the operations phase. Any changes during the operations phase will be monitored and changes which pose a potential risk to the pipeline corrected as part of the pipeline maintenance program.	10.3.4; 10.5.4

4.4 Project Affected Communities

Comments from PACs generally referred to a number of common themes, which have been collated under each issue using the common template below (**Error! Reference source not found.**).

Issue Summary: [Issue Title]

Description of Issue

[Consolidated summary of feedback received on this issue]

Issue Drawn from Comments:

[List of unique comment numbers addressed in this issue summary. In combination with Appendix 1, this list allows individuals to easily relate responses to a specific comments]

How comment is/will be addressed:

[Where appropriate, reference has been made to relevant sections of the ESIA, including the commitment numbers, which discuss the issue or which have been amended in response to this issue]

Figure 4-1: Issue Response Summary Template

Sections 4.4.1 to 4.4.11 include the issue summaries for all issues, and the full list of comments is provided in Appendix 1.

4.4.1 Issue Summary: Environmental Impacts

Description of Issue

A number of comments were raised querying whether there would be negative impacts on the environment caused by the construction and or operation of the Project and requesting that the Project define impact mitigation measures.

Issue Drawn from Comments:

250, 255, 257, 259, 248, 252

How comment is addressed:

The ESIA has attempted to systematically and comprehensively examine all identified aspects of the Project with the potential to give rise to environmental or social impacts. Environmental impacts (including but not limited to those on soils, landscape, air quality, ambient noise, surface and groundwater, and ecology) have been assessed within the ESIA and a range of mitigation measures developed.

There are a number of anticipated residual impacts relating to construction of the pipeline and operation of the facilities. However, by careful management (and in certain cases further studies to remove or reduce current uncertainty regarding their sensitivity) and the implementation of the various mitigation measures set out in this report, the Project will seek to manage any such residual impacts.

The Project has committed to undertaking an environmental and social assessment (using the same methodology as described in this ESIA) if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area (Commitment 39-01, 39-02 and 39-03). If any additional land is needed, this assessment will identify any additional mitigation measures that need to be implemented to reduce the potential impacts.

Mitigation measures related to environmental impacts are defined in Chapter 10 of the ESIA (Sections 10.2–10.10).

Some additional impacts and mitigation measures have been added following a review of the impact assessment during the disclosure process in response to these general queries for example:

- Section 10.3.3
 Table 10-3: Impacts on soil structure and fertility from disposal of surplus sub-soil and aggregates
- Section 10.4.3 Table 10-7: Further mitigation measures added to mitigate landscape and visual impacts
- Section 10.5.3 Table 10-9: Further mitigation measures added to mitigate surface water impacts
- Section 10.6.3 Table 10-11: Further mitigation measures added to mitigate groundwater impacts

Also, following a review of the document, secondary impacts have been identified in Appendix B2 and B3 and in Chapter 14 with an explanation provided in Section 10.1.5.

Individual changes are fully described in Appendix C3.

4.4.2 Issue Summary: Consultation

Description of Issue

One comment requested that the Project consult with members of the public regarding the proposed SCPX Project.

Issue Drawn from Comments:

265

How comment is addressed:

The Project has held early consultation with a variety of stakeholders including national, regional and local government, NGOs and members of the Project-affected communities (representatives from all identified PACs at that time were invited to attend) during 3Q-4Q 2011. Feedback from this consultation was considered during the production of the Draft ESIA.

Public disclosure and consultation of the draft ESIA was undertaken in June and July 2012. The ESIA, including a non-technical summary and community leaflet (summarising the ESIA and the results), has been published and made available for comment to the public. Available mechanisms for providing feedback on the draft documents included feedback forms, telephone, letter or discussions with the existing Community Liaison Officers (CLOs) or via attendance at one of the four public meetings in Tbilisi, Rustavi, Tsalka and Akhaltsikhe.

The consultation process and results are fully described in Chapter 9 and Appendix C1 PCDP and this Appendix.

4.4.3 Issue Summary: Local Employment – Job Opportunities

Description of Issue

The majority of comments received from PACs concerned the provision of local employment opportunities. There is a high level of unemployment in communities surrounding the proposed SCPX pipeline and facilities and local people have requested that job opportunities be made available to them on the SCPX Project.

Issue Drawn from Comments:

248, 249, 251-256, 258-267, 271

How comment is addressed:

The Project has identified Project-affected communities (PACs), which are those communities defined in the ESIA Section 9.4.2 and include communities that are on/within a boundary of:

• The pipeline (including block valves, and the pigging station): 2km either side of the centre-line resulting in a

4km-wide zone

 Construction camps, compressor stations and pressure reduction and metering stations: 5km 'radius' based on the centre point of the facility.

Several commitments within the ESIA relate to the provision of local employment opportunities. Unskilled labour will be preferentially recruited from Project Affected Communities (28-02), and the Project will agree targets for local recruitment from PACs with the Contractor (28-04). In addition, a new commitment has been added in response to these comments such that the Project will give priority to people from the construction camp PACs for employment opportunities within the camp (e.g. cook, housekeeper etc.), where suitably qualified (28-23). Section 10.14.3 Potential impacts on economy, employment, skills and livelihoods has been reviewed and amended with commitments 28-15, 28-17, 28-22 and 28-05 added as they also mitigate impacts regarding unmet employment expectations and loss of employees from local enterprises. A potential impact regarding local concerns associated with recruiting local contractors/workers from regions away from the Project has also been added, mitigated and assessed to have a residual impact of low significance.

The majority of employment available will be temporary in nature and predominantly during the construction phase of the Project.

4.4.4 Issue Summary: Local Employment –Selection Process

Description of Issue:

Several queries were raised regarding the employment selection process including the timing of the process, the opportunities for qualified workers and those who had worked on the previous BTC and SCP projects to gain employment.

Issue Drawn from Comments:

286, 289, 291, 292

How comment is addressed:

The SCPX ESIA has committed to the implementation of recruitment procedures which will be transparent, public and non-discriminatory and open with respect to ethnicity, religion, sexuality, disability or gender (28-06). Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post (28-07). Job vacancies will be advertised in the PACs through appropriate and accessible media (consistent with employment targets) (28-17). For example, advertisements for unskilled workers are likely to be placed in local communities using newspapers or other accessible means, for semi-skilled and skilled workers these jobs will also be advertised more widely including via newspapers and the internet. Applications for employment will only be considered if submitted via the official application procedure (28-03). These measures are described in the ESIA Section 10.14 and further information provided Appendix D, ESMMP.

The Project is unable to comment on specific requests for employment at this time, and although priority will be given to residents of PACs for certain positions, this does not preclude applications from members of other communities. Employment possibilities for qualified workers may be possible, including those who worked on the previous BTC and SCP Projects. The workers selection process will begin in each Project location in advance of construction works commencing. Employment opportunities will be lower at the start of the Project when early construction works are carried out and are likely to increase when construction of the main Facilities and pipeline commences. Specific dates for the start of the recruitment process will be developed by the Construction Contractor working with the Project and vacancies will be publicised in local communities

4.4.5 Issue Summary: Benefits to Georgia

Description of Issue:

One comment was raised regarding how the Project would influence the economy

Issue Drawn from Comments:

253

How comment is addressed:

The majority of employment opportunities available within the Project will be temporary in nature during the construction phase. The Project is expected to bring some additional revenue to the Georgian economy through the procurement of goods and services, especially during construction.

4.4.6 Issue Summary: Infrastructure – CSG2 Access Road

Description of Issue:

Queries relating to infrastructure were raised with the Tsalka public meeting and focussed on the CSG2 access road route and route selection process; whether the Project was going to connect other communities in the area to the new access road and if local people would be able to use the new access road. Some comments suggested the Project had committed to connecting local communities to the access road during baseline survey work.

In addition, there were concerns regarding the impacts the road would have on existing infrastructure, particularly a water pipe and a planned gas pipeline that serve Kuschi village.

Issue Drawn from Comments:

276, 281, 284, 288, 290, 268, 289, 290, 308

How comment is addressed:

A key consideration of the ESIA is the assessment of potential alternatives. The CSG2 access road route options were evaluated from a multidisciplinary perspective, with a key philosophy being that the access road should avoid routing, as far as possible, through local communities. This aimed to reduce potential risks to community health and safety and reduce the potential level of community disturbance due to the presence of a large number of vehicles, plant and equipment movements during the construction of the road and the CSG2 facility. Refined road routing took account of using existing tracks to reduce the new footprint and routing to avoid other constraints such as cultural heritage and tree plantations as far as practicable.

The access road is being constructed to allow the construction and operation of the CSG2 location, and the road therefore terminates at this point. There are currently no plans to extend the road beyond this point. Local people will be able to use the CSG2 access road but there may be some restrictions on use, mainly during construction, for health and safety reasons.

The Project has not made any commitments regarding the provision of roads in this area, other than the route of the CSG2 access road which is shown in the ESIA, NTS and the community leaflet. As part of the ESIA, socioeconomic surveys were carried out to document current baseline conditions in the communities.

The Project is aware of the water pipe in the vicinity of Kuschi village and will be taking its location into consideration during the design of the access road. Currently the Project does not expect to impact the water pipeline with the road route. An additional commitment (37-20) has been added to subject all new access roads to a multi-disciplinary assessment prior to their selection.

The Contractor will prepare a Method Statement that includes measures to seek to protect the integrity of the thirdparty services (35-01) and to repair any damage to third-party services promptly in consultation with, or by the service operator (35-02). If construction is planned to affect third party assets pre-entry agreements including reinstatement requirements will be agreed prior to work affecting third party assets commencing (35-09) and any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works (35-03). Additional text has been added to the description of reinstatement in Section 5.7.3 regarding existing roads, services and other facilities, which will be restored to a condition at least as good as their pre-construction condition.

4.4.7 Issue Summary: Land and Livelihoods – Disruption to Livelihoods

Description of Issue:

Several comments requested whether the Project would cause disruption to income from bee-keeping and herding (specifically at the CSG2 access road). In addition, attendees at the Tsalka meeting commented that Project vehicles had damaged hay fields.

Issue Drawn from Comments:

257, 261, 272, 308

How comment is addressed:

Bee-keeping

The ESIA has addressed the potential impact on bees and honey production from Project-related activities (Section 10.14). The Project Community Liaison Officers will seek to identify any beekeepers whose hives are within 300m of the pipeline and facility construction, camp and pipe storage areas or an access routes before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route, facility construction, camp and pipe storage areas for the season (24-05). The Project will develop and implement a policy for the compensation of beekeepers adversely affected by Project impacts (24-06).

Herding

Residents from one village expressed a concern that the CSG2 access road route crossed pathways that they used for herding livestock. In response to this comment the Project has added the following generic mitigation measure: "The Project will seek to identify whether any herders use the construction areas and aim to consult with them on potential restrictions during construction (32-17)". In addition, a site-specific mitigation measure has been updated to include consultation with herders along the CSG2 access road: "Local communities and grazers will be consulted prior to construction regarding access to grazing lands in the vicinity of CSG2 and the CSG2 Access Road to determine suitable alternative access routes to pastures (X13-02)". Also, a new mitigation has been developed regarding the provision of warning barriers or signs at crossings across the pipeline and CSG2 access road which are heavily used by local communities (20-03). Section 10.13 has been updated to reflect these changes.

Crop damage

One comment also related to Project vehicles: a community member stated that the Project vehicles were moving across their pasturelands and damaging hay crops. The Project advised that this issue should be raised to the Community Liaison Officers (who were present at the meeting when this comment was made) via the existing operations grievance procedure where it would be managed accordingly. Measures to reduce dust generation will also reduce the potential impacts it may have on crops and mitigation 4-09, 24-07, 33-01 and 33-18 have been added to Table 10-19 as they also mitigate dust generation.

Section 10.13 Impacts of Land Acquisition on Land based livelihoods has been reviewed and secondary impacts on livelihoods and corresponding mitigations from Soil compaction; Soil erosion and sediment run-off following removal of vegetation and/or disturbance of ground; Loss of soil structure, fertility and seed bank; Flooding caused by impeded river or ground surface flows and Dust generation, particularly from vehicle movements, storage of excavated materials and operation of concrete batching plant, have been added for completeness. Impacts to irrigation channels and secondary impacts on crops have also been included in this section. A new commitment regarding the application of a crop compensation procedure in the event of damage to third party land or crops, commitment 36-03, has been added.

4.4.8 Issue Summary: Land and Livelihoods – Compensation

Description of Issue:

A number of questions related generically to the provision of land compensation with some specific queries raised regarding the calculations of compensation values, the provision of compensation for state land and how any disagreements would be resolved.

Issue Drawn from Comments:

293, 294, 248, 252

How comment is addressed:

The SCPX Project land acquisition and compensation process has been documented and publicised. Agricultural land and crop prices have been based on market values based on a study carried out by specialists in each area where the SCPX Project will be constructed, i.e. Gardabani, Marneuli, Tsalka and Akhaltsikhe municipalities. For agricultural land, where the land price is lower than the price paid during the BTC/SCP projects, this higher rate will be applied to SCPX. Land and crop prices are described in the Guide to Land Acquisition and Compensation, which will be provided to every landowner at the start of the acquisition process.

The SCPX Project will purchase land from the registered legal owner of the land, which may include private, communal or state-owned land. The Project will work with landowners in the Project-affected areas to assist with registration of land. Communal land will be compensated using the same rules as private land. Individual users will be compensated for crops. Individuals with a registered use right on state or municipal land will not be compensated for land but will be compensated for crops if applicable.

The Project has implemented a Grievance Procedure and will seek to resolve any grievances related to the Project (including land acquisition) through an amicable settlement in the first instance, rather than through the judicial system. This grievance procedure remains optional, at the discretion of the complainant, and will not prevent complainants from exercising their rights under Georgian law, including by applying to a Court of Law at any stage.

4.4.9 Issue Summary: Health and Safety

Description of Issue:

A number of comments expressed concern regarding the proximity of the pipeline and to local communities (note this was raised by residents in the vicinity of the PRMS, where the SCPX Project will not be constructing any additional pipeline) and regarding the potential health and safety impacts of the Project in more general terms.

Issue Drawn from Comments:

256, 257, 264, 266

How comment is addressed:

The ESIA has included an assessment of the safety risks from the pipeline and facilities (Chapter 12) and development of mitigation measures within the Project design, construction and operation. The SCPX Facilities and pipeline will be designed to international natural gas pipeline industry standards. Assessments have been carried out to confirm that the new pipeline is located a safe distance from the existing BTC/SCP pipelines and it is therefore expected to have no impact on the existing pipelines. Chapter 5 of the ESIA has been updated to provide additional information on the pipeline design basis, corrosion protection system and safety factors.

The Facilities will have a number of safety systems including process control, fire and gas detection, local emergency shutdown systems and modelling has been carried out to assess the potential impacts of an incident at the facilities. Each facility is designed so that gas should be able to be safely disposed to atmosphere in an emergency within 15 minutes using a high-level vent. Outside the facility boundary, risks to the public are very low. A comprehensive pipeline and Facility inspection programme will also be implemented. When the pipeline is operating, regular patrols of the pipeline by ROW horse patrols, vehicular patrols (using existing access tracks) and security patrols will lessen the risk of third-party interference (OP121).

Health and safety awareness sessions will be held with PACs to advise them on any potential health and safety risks during construction. At locations where schools are very close to a road used by SCPX traffic, the construction contractor will plan works to minimise the delivery of heavy loads at times when children are likely to be walking to and from school (37-06). The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable (30-22). A new commitment has been added so that the contractor will be expected to use the designated access roads and to apply for Company consent to use any new or existing roads not designated for Project use (30-24). At sensitive locations where Project construction traffic will be using local roads, and particularly where schools and markets are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons (30-02). On-going liaison will continue through the Community Liaison Officers during operation.

Section 10.12 Community Health, Safety and Security has been reviewed and updated in response to queries regarding community health and safety as follows:

- The post mitigation impact significance of field related activities and spills has been changed from medium to low, after a review of the mitigation measures in place. This has also been updated in Appendix B2
- The potential impact under A31 has been changed to spills impacting surface water and groundwater. This has also been updated in Appendix B2
- The post mitigation impact significance of adding contaminants to water from hydrotesting has been changed from medium to low, after a review of the additional mitigation measures in place. This has also been updated in Appendix B2
- The post mitigation impact significance and probability of non-communicable diseases has been changed to low, 5, after a review of the mitigation measures in place. This has also been updated in Appendix B2
- The impact under A31 has been updated to clarify that it refers to an increase in drug and alcohol abuse in the community
- The probability of increase in prevalence of STIs in camp and PACs has been amended to 6 premitigation and 3 post-mitigation

Additional mitigation measures have been included as they are also applicable to the mitigation of potential impacts on health and safety. This includes 33-19, 37-03, 37-05, 30-15, 6-20, 31-06 and 19-08.

Also, a new mitigation has been developed regarding the provision of warning barriers or signs at crossings across the pipeline and CSG2 access road which are heavily used by local communities (20-03).

4.4.10 Issue Summary: General Feedback

Description of Issue:
These comments expressed support for the Project
Issue Drawn from Comments:
309, 310
How comment is addressed:
The Project thanks respondents for their expressions of support for the Project

4.4.11 Issue Summary: Existing BTC and SCP Operations

Description of Issue:

A number of comments received were related to the existing BTC and SCP operations including the community investment programme and impacts on crop yields and honey productions.

Issue Drawn from Comments:

270, 273, 295

How comment is addressed:

These queries were raised at the SCPX ESIA disclosure phase public meetings. Individuals were asked that as the focus of the meetings was to discuss the SCPX Project, they should submit their comments on the existing operations via the current grievance mechanisms. The existing operations Community Liaison Officer was present at all the meetings and could be approached to log any complaints relating to the BTC and SCP pipelines.

Appendix 1: List of Comments Received from PACs

Table 4-4: Draft ESIA Comments and Responses – Project Affected Communities

Comment	ID	PAC Affiliation	Format
 Regarding the transportation of gas from Caspian sea, let me express my opinion: People are unemployed They are not given compensations for land Where does the gas pipeline run through? What impacts on the environment will the project bring? Please review these comments. 	248	Tskaltbila	FF
Local people want job opportunities from this project. Please study what impacts your project could bring to the population within 2km and 5 km radii.	249	Tskaltbila	FF
The measures to decrease negative impact need to be defined for the SCPX project	250	Julda	FF
I am currently unemployed, like many others who live within 5 km from the existing pipeline facilities. We want job opportunities from this Project	251	Julda	FF
We would like the population to be happy with the project, so that everyone had a job, that there were no problems with the environment and that land compensations were paid	252	Tsinubani	FF
It is good to expand the gas pipeline, but you need to give jobs to people who are working abroad to support their families. How will this Project influence the economy?	253	Tsinubani	FF
It is very good that different projects are being implemented in Georgia but the benefits do not reach us because there are no jobs for us.	254	Abatkhevi	FF
I am happy that such projects are expanding but you need to give jobs to people, first to the locals and then to others. We do not know whether the project will have an effect on the environment	255	Abatkhevi	FF
I am against this project because it is dangerous. Gas is not something to play with. Measures need to be defined to decrease negative impact. Job opportunities need to be provided to our co-villagers.	256	Naokhrebi	FF
We are living in the village Naokhrebi and the existing facility is located in the vicinity of our village. Will the gas Project influence the population, environment, bees and animals?	257	Naokhrebi	FF
No one from our Sakrebulo works on this project, why is that?	258	Naokhrebi	FF
Our settlement is located near to your existing facilities but there is no benefit, our co- villagers are not employed; the population is not happy with the fact that the gas pipeline runs so close to us. Can this damage the environment?	259	Naokhrebi	FF
Our co-villagers from Tskaltbila Territorial organ are not employed on the existing operations to transport gas from Caspian sea to Turkey and Europe. Why is that so, please clarify?	260	Naokhrebi	FF
It is interesting why no one from Tskaltbila Territorial Organ is employed on your project. Can the project affect my bees that are located near the project area? In general, what is the benefit? We want job opportunities.	261	Naokhrebi	FF
True, it is good that every day there is something new - projects, buildings, gas pipelines but there are no jobs. Why are there no job opportunities?	262	Naokhrebi	FF

Comment	ID	PAC Affiliation	Format
In the vicinity of Naokhrebi village, there is the existing gas pipeline but we are not recruited for employment; Why? We want job opportunities from this project.	263	Naokhrebi	FF
I do not want this project. As we are living so close can the gas pipeline harm us? We want job opportunities from this project.	264	Naokhrebi	FF
I do not agree with the idea of transporting additional gas from the Caspian sea to the markets of Turkey and the Europe. The reason is that the residents of Tskaltbila territorial organ (5 villages) are not able to find jobs in this field. Our people are not employed at the existing facilities. We do not know what kind of impact it will have on the environment. It is good to expand the system of South Caucasus pipeline in Georgia but you ought and must discuss this process in compliance with the opinion of population.	265	Tskaltbila	FF
The project to transport additional gas to the markets of Turkey and Europe must be discussed in compliance with the opinion of society. As far as I am concerned everyone from our village is against this project. We think this project is dangerous. Secondly, our youth is not employed.	266	Naokhrebi	FF
Our co-villagers, the young are leaving for abroad to find some kind of job, but here in the vicinity there are works on pipeline project on-going. There are no jobs for them here, why?	267	Tskaltbila	FF
What will be the length of the CSG2 access road from the village Aiazmi? Where will the road end?	268	Kizilkilisa	PM (TS)
Will the CSG2 access road go through the village Rekha?	269	Kizilkilisa	PM (TS)
There was more than half million allocated for the social aid on the previous projects but nothing has been done	270	Kizilkilisa	PM (TS)
Our request is to hire local people. In previous projects less than 200 people were employed from our village.	271	Kizilkilisa	PM (TS)
Cars are moving through our land plots. They damaged our hayfields.	272	Kizilkilisa	PM (TS)
When BP was starting the activities, locals from the village Ashkala were negatively disposed to the projects. That time BP promised that there would be many benefits for the villages. You did not implement these activities and now, we don't trust your company.	273	Ashkala*	PM (TS)
Please ensure that gas is delivered to our settlements	274	Ashkala*	PM (TS)
In 2011, surveys were conducted in the village Khando. Investigations of the needs of the villages Kizilkilisa, Burnasheti and Khando revealed that the villages need road. They promised to construct the road to our villages, why did you change this decision. I don't know which organization the surveyors represented but they gave promise to construct road in one out of 5 villages. The Gamgebeli also stated the same.	276	Khando	PM (TS)
Will any offices be installed in Tsalka?	277	Tsalka*	PM (TS)
I am interested if you need specialists? We have experienced and qualified specialists. I am interested why the foreign employees have higher salaries than locals?	278	Tsalka*	PM (TS)
The Project access road crosses our village's water pipe. The water pipe remains under a gas pipe. Should the gas pipe be constructed 500 metres away?	281	Kuschi	PM (TS)
What factors were taken into account when designing the road project? The road is a part of a large project and you are constructing the road only in one village. We would like the road to go to Avranlo. If you construct additional 2 km to Avranlo we will also use the same road.	284	Rekha	PM (TS)
I am a Greek nurse. Will there be any possibility to work for the company?	286	Unknown	PM (TS)
When the previous pipeline works were completed we got only 10 USD compensation for land. This is an unrealistic price.	287	Ashkala*	PM (TS)

Comment	חו	PAC	Format
		Affiliation	
We were promised that BP would construct a new road and now you are stating that you will not. You have to design the project taking into account locals' interest.	288	Rekha	PM (TS)
I used to work for BTC project. Do I have the chance to get a job again?	289	Tsalka*	PM (TS)
Will locals be able to use the CSG2 Access road?	290	Tsalka*	PM (TS)
When will the workers selection process start?	291	Tsalka*	PM (TS)
How can qualified workers apply to the company and what kind of selection process will take place?	292	Tsalka*	PM (AK)
Are the land compensation prices calculated in advance? Will the land owner be able to disagree with these prices?	293	Tsalka*	PM (AK)
What are the land compensation procedures for the land plots that are under the state ownership? We use these state lands as the hayfields. We were also promised that we would receive compensations for 10-20 years, but this didn't happen.	294	Naokhrebi	PM (AK)
The pipeline has a negative impact on environment. Specifically, the pipeline has reduced the harvest of wheat and milk yield, the production of the potatoes and the number of beehives also decreased. We haven't received any compensation for these losses. We believed that pipelines wouldn't have any negative impacts, but the last two years have revealed these negative effects. Please send a special commission to study these issues.	295	Naokhrebi	PM (AK)
We welcome the new road (CSG2 Access Road) but there are several issues we need to bring to your attention: 1. the new road is crosses the route that we use for the livestock movement; we are worried that impeded livestock movement will have a negative impact on our village 2. The new road crosses the village's water supply line, please double check this to avoid any inconvenience in future 3. In the future, gasification of the village is planned, the new road is assumed to run under the village gas pipeline. Please consider this fact to eliminate any conflicts.	308	Kuschi	FF
We are positively disposed to the new project as it doesn't have much negative impact to the human health and environment. I have a land plot with barley close to the project, however I don't expect any negative impact and welcome the project.	309	Kuschi	FF
I welcome the project, there isn't a significant impact on environment and land. However, we pray to get gas in the nearest future.	310	Kuschi	FF
FF = Feedback Form; PM = Public Meeting (TB) = Tbilisi; RU=Rustavi; TS = Tsalka; AK =	Akhaltsikhe		

* Ashkala and Tsalka are not defined as SCPX PACs.

Appendix 2: Response from Agency of Protected Areas

Ministry Environment Protection of Georgia

Legal Entity of Public Law AGENCY OF PROTECTED AREAS

Ref. No: 535

9 August 2012

To: [Name removed for confidentiality purposes] Regulatory Affairs Team Leader SCP Co.

Dear [Name removed for confidentiality purposes]

With reference to your letter SCP/OUT/118/12 dated 6 August 2012, concerning the SCP Expansion Project being implemented by BP together with its Coventurers, please be informed that based on the material enclosed to your letter, a section of the new pipeline runs at a distance of 5.5km from the Gardabani managed reserve, and at a distance of 10.7km from the Ktsia-Tabatskuri managed reserve.

Sincerely,

[signed] [Name removed for confidentiality purposes] Deputy Chairman

Appendix C3 ESIA Amendments Register



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1 INTRODUCTION

This chapter is a register of the amendments made during the ESIA disclosure period leading to the production of the final ESIA for submission to the Ministry of Economic and Sustainable Development for review and approval.

Amendments have been made to this document to account for:

- The Project responses to stakeholder comments as described in Appendix C2
- Updating references to the public disclosure process which has now been completed
- Minor modifications to the Project design
- Clarifications to aid interpretation of the document
- Correction of erratum.

These amendments are included in the following tables:

- Table 1: Responses to Stakeholder Comments and Updates Due to Completion of Disclosure
- Table 2: Updates, Additional Information and Clarifications
- Table 3: Modifications on Typographic Error and Inconsistencies.

Where an amendment has been noted against a commitment in Appendix E, although not specifically referenced in the table, this change has been made to the commitment in all other locations within the ESIA e.g. Chapter 5, 10, 12 and Appendix D. The ESIA Section Reference column in the tables below reflects the section and table referencing in the final report and should be used for cross-referencing.

Table 1: Responses to Stakeholder Comments and Updates Due to Completion of Disclosure

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure				
Chapter	Section	Table / Figure / Commitment	Description		
1	1.6		The final paragraph of text regarding the Georgian and English translations of the ESIA has been amended in response to stakeholder comments		
4	4.5.1		The section on the Algeti River Crossing alternatives has been added in response to stakeholder comments.		
4	4.6.2		The CSG2 site location options section has been updated to include a qualitative evaluation of the relative ecological and biodiversity value of the options in response to stakeholder comments		
4	4.10.1		The inclusion of criteria which have been used to assess the temporary area options has been added		
5	5.1		Clarity added that commitments with a D prefix are made within the Project design		
5	5.3		Additional information on the design standards for the pipeline, piping at the block valve and pigging station design standards, the design pressure and temperatures and pipeline safety factors has been added in response to stakeholder comments		
5	5.3.1		Additional information on the corrosion protection system has been added in response to stakeholder comments		
5	5.3.1		The pigging station and block valve station descriptions have been updated in response to stakeholder comments		
5	5.3.2	T5-4	The pipeline crossings section and schedule has been updated in response to stakeholder comments		
5	5.4.5	F5-11	The figure has been updated to show the new camp location at Poladaantkari		
5	5.4.7		A description of the reduced ROW at the Algeti River crossing has been added in response to stakeholder comments		
5	5.4.11		The road, river and railway crossing section has been updated in response to stakeholder comments		

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure			
Chapter	Section	Table / Figure / Commitment	Description	
5	5.5.1		Further description of Georgian offtake has been added, including additional capacity of 0.76 bcma provided by the SCPX Project	
5	5.5.5	T5-8	This table of preliminary discharge locations for sewage treatment plants has been inserted in response to stakeholder comments	
5	5.6.1		Text has been added to explain that the project plans to investigate terracing of CSG1 and CSG2 and optimisation of the temporary areas to reduce the amount of earthworks and import material required	
7	7.2.3.1		The description of geological condition along the pipeline route has been updated in response to stakeholder comments	
7	7.2.3.1, 7.2.3.3		Information on mineral deposits within the Project footprint has been added to these sections in response to stakeholder comments	
7	7.2.3.2		This section has been updated in response to stakeholder comments on the hydrogeological conditions at CSG2	
7	7.2.4		A cross reference has been added to updates on geomorphological conditions in the landscape section (7.4) in response to stakeholder comments	
7	7.2.5, 7.2.5.1		These sections have been updated in response to stakeholder comments	
7	7.4.3		This section has been updated in response to stakeholder comments	
7	7.5.3.2, 7.5.3.5		These sections have been updated in response to stakeholder comments	
7	7.6		This section has been updated in response to stakeholder comments and to reflect the results of a second groundwater monitoring survey undertaken during the ESIA disclosure period	
7	7.7.2.2		Additional surveys undertaken during the ESIA disclosure period, including in response to stakeholder comments and the results have been added to this section	

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure				
Chapter	Section	Table / Figure / Commitment	Description		
7	7.7.2.9		This section has been updated to describe the tree inventory methodology at the Algeti river crossing and the macro invertebrate survey at the Aji river		
7	7.7.2.10		This section has been updated to describe the fish catch survey at the Aji river		
7	7.7.3.2		This section has been updated to describe the fish catch and macro invertebrate survey results at the Aji river		
7	7.7.3.3, 7.7.3.4		These sections have been re-structured in response to stakeholder comments		
7	7.7.4.1		This section has been updated in response to stakeholder comments and to reflect the IUCN designation of the carp species		
8	8.4.1		The section on zoonotic diseases has been updated in response to stakeholder comments		
9			Chapter 9 has been revised to reflect that public disclosure has now occurred		
9	9.7	T9-5	Results of consultations with additional PACs in the vicinity of the CSG2 access road camp have been included		
9	9.7		Updated ESIA disclosure locations (Libraries could not be used in some locations as they were not open) and mechanisms		
10	10.1.5		Additional information on secondary impacts has been added including a reference to Appendix B-2 and B-3 where this type of impact has now been highlighted; Additional mitigations in response to stakeholder consultation have been added		
10	10.2.4		Information on the study of terracing of the facility sites has been included		
10	10.3.3		Disturbance of unknown contamination, e.g. anthrax pits has been added as a potential source of contamination		

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure			
Chapter	Section	Table / Figure / Commitment	Description	
10	10.3.3	T10-3	Issue A9 Disposal of surplus subsoil and aggregate, the potential impacts on soil structure and associated mitigations have been added to the impact assessment; Mitigation measures have been added to the table as follows: 17-07 to Issue A3; 4-08 to issue A4; 6-18 and 6-25 to A6; D5-030 and D5-106 to A7 in response to stakeholder comments	
10	10.4.3	T10-7	Commitments D8-02, 17-07, OP141, 8-04, 9-02 and 9-04 have been added to issue A8 and 35-08, 3-15, 8-03 and 3-26 have been deleted; Commitments 1-08, 1-12 and D5-066 have been added to issue A9 in response to stakeholder comments	
10	10.5.1		Disruption of flow rate and river bank and bed disturbance Project aspects have been updated to include other smaller watercourse crossings in response to stakeholder comments	
10	10.5.3	T10-9	Impacts on artisanal fishing have been assessed in response to stakeholder comments	
10	10.5.3	T10-9	In response to stakeholder comments, additional commitments from Section 10.3.4 have been added to issue A3 as they also mitigate impacts of soil erosion on surface waters and commitments 6-06 to 6-10, 6-20 to 6-24, 7-01, 7-04, 7-08, 7-14, 7-15 and D5-028 to D5-030 have been added to issue A7 as they also mitigate impacts on surface water. Mitigation 14-04 has been moved to issue A14 from Section 10.6 as it is more relevant in this section regarding surface water contamination and mitigations D5-078 and 10-09 have been added to issue A12	
10	10.6		This section has been reviewed and amended in response to stakeholder comments as described in more detail in Appendix C2.	
10	10.7.2		The section has been amended in response to stakeholder comments and to align with the changes to Chapter 07	
10	10.7.3		The number of trees to be removed at the Algeti river crossing has been revised to reflect additional survey results, undertaken in response to stakeholder comments	
10	10.7.3	T10-12;10-13	This section has been reviewed and amended in response to stakeholder comments; to reduce repetition of commitments and cross reference to previous sections as necessary	
10	10.7.4		This section has been reviewed and amended in response to stakeholder comments as described in more detail in Appendix C2	
10	10.8.3	T10-18; T10-19	Additional mitigations have been added to issue A23 in response to stakeholder comments as described in more detail in Appendix C2	

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure				
Chapter	Section	Table / Figure / Commitment	Description		
10	10.12.3	T10-36	The impact assessment and mitigation measures have been reviewed and updated in response to stakeholder comments as described in more detail in Appendix C2		
10	10.13.4		This section has been revised in response to stakeholder comments as described in more detail in Appendix C2		
10	10.14.3	T10-39	This table has been amended in response to stakeholder comments as described in detail in Appendix C2		
10	10.15.3		The use of groundwater to supply the facilities during operations has been added to this section in response to stakeholder comments		
12	12.4.2		Text on the potential impacts of pipeline exposure at river crossings and the assessment of the risk of these impacts has been inserted in response to stakeholder comments		
14	14.3.2	T14-3	A summary of the secondary and indirect impacts has been included including some items which have been moved from Tables 14-1 and 14-2 as they have been classed as secondary impacts		
Арр В	B-2		Secondary impacts have been highlighted in Table B-2 and an explanation is provided in Chapter 10		
App E	СМТМТ	6.22	A new commitment to carry out a due diligence exercise to identify and manage the risk of anthrax as been included in response to stakeholder comments		
App E	СМТМТ	6.25	A commitment to stop work if any identified animal burial pits are encountered until sampling and analysis has been carried out has been added in response to stakeholder comments		
App E	СМТМТ	10.18	The commitment wording has been amended to require Project approval before a vehicle enters a water course and that a prior examination of the vehicle shall first be undertaken. Construction traffic will generally cross watercourses via a flume/piped bridge sized to allow fish and other aquatic organisms to pass through (this amend is in response to stakeholder comments). Specific location references have been removed from the commitment and placed in supporting text as this commitment applies at more than just the Algeti and CSG2 access road.		
App E	СМТМТ	10.22	A new commitment has been added to demonstrate that washing of vehicles, plant and equipment in watercourses will not be undertaken		

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	11.03	This commitment has been updated to require a pre-construction engineering, social and environmental review at crossings where damming is required to consider the need for pump around also. This has been amended in response to stakeholder comments		
App E	СМТМТ	14.08	A new commitment has been added to require discharge and ambient surface water monitoring during the construction phase		
App E	СМТМТ	14.09	An additional commitment regarding the acquisition of permits for planned liquid discharges during construction and operation has been added in response to stakeholder comments		
App E	СМТМТ	14.10	An additional commitment regarding the acquisition of permits for planned air emissions during construction and operation has been added in response to stakeholder comments		
App E	СМТМТ	15.01	The commitment has been updated to prohibit the use of groundwater for hydrostatic testing in response to stakeholder comments		
App E	СМТМТ	15.02	The commitment has been update to include a sustainability assessment of new and existing water abstractions in response to stakeholder comments		
App E	СМТМТ	17.15	A new commitment has been added regarding the implementation of tree inventories in accordance with national legislation in response to stakeholder comments		
App E	CMTMT	18.05	A new commitment has been added to inspect all plant and equipment prior to shipping		
App E	СМТМТ	19.05	This commitment has been updated to further define products as including plants and cultural heritage artefacts and to clarify that these activities will not be undertaken within the Project footprint		
App E	СМТМТ	19.10	A commitment has been added to require site specific ecological management plans for priority areas in response to stakeholder comments		
App E	СМТМТ	20.03	A new commitment regarding the provision of warning barriers or signs where people, including herders cross the pipeline or CSG2 access route has been added in response to stakeholder comments		
App E	СМТМТ	24.05	This commitment has been updated so that beehives in the vicinity of facility construction, camp and pipe storage areas are also identified in response to stakeholder comments		

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure			
Chapter	Section	Table / Figure / Commitment	Description	
App E	CMTMT	28.23	This commitment has been added to ensure that people from the construction camp PACs are given priority for employment opportunities within the camp where they are suitably qualified	
App E	CMTMT	30.22	A new commitment has been added for any new access roads to aim to avoid sensitive receptors	
App E	CMTMT	30.23	This commitment has been amended to require the contractor to stay within the designated footprint	
App E	CMTMT	30.24	A new commitment has been added to require Company approval before the Contractor can use additional access roads to those which have been designated as Project access roads in response to stakeholder comments	
App E	CMTMT	32.08	The commitment has been amended to include the provision of gaps for wildlife also	
App E	CMTMT	32.17	A new commitment regarding consultation with herders on access restrictions has been added in response to stakeholder comments	
App E	СМТМТ	35.09	A new commitment has been added regarding pre-entry agreements including reinstatement requirements to be signed in advance of work affecting 3rd party assets in response to stakeholder comments	
App E	СМТМТ	36.03	A new commitment regarding the application of the Project's procedure for land and crop damage due to disruption to irrigation channels has been added	
App E	СМТМТ	37.20	A new commitment has been added for any new roads to be subject to a multi-disciplinary assessment in response to stakeholder comments	
App E	CMTMT	39.02	The commitment has been updated to require site assessments taking into consideration ecology, cultural heritage, social, erosion risk, water resources for additional land	
App E	CMTMT	39.03	The commitment has been amended to clarify that an assessment report will be prepared	
App E	CMTMT	D12.06	The commitment has been updated to account for stakeholder comments regarding river crossing design	

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure			
Chapter	Section	Table / Figure / Commitment	Description	
App E	СМТМТ	D32.01	A new commitment has been added regarding the provision of local access in the vicinity of the CSG2 access road in response to stakeholder comments	
App E	СМТМТ	D5.079	The commitment has been updated to include an assessment of IUCN/GRL species before extraction of water and the development of a site specific assessment to inform mitigations, recognising that these may be different during the spawning season	
App E	СМТМТ	D5.106	The commitment has been amended to include discharges in accordance with permit requirements, in response to stakeholder comments	
App E	СМТМТ	OP01	This commitment has been re-numbered to 7.10 and made applicable to both construction and CSG2 in operation as the other Facilities will not have diesel storage	
App E	СМТМТ	OP05	This original commitment has been re-numbered to 7.11, new text has been added to describe bunding arrangements at the Facilities	
App E	СМТМТ	OP06	This commitment has been re-numbered to 7.12 and made applicable to both construction and operation	
App E	СМТМТ	OP07	This commitment has been re-numbered to 7.13 and made applicable to both construction and operation	
App E	СМТМТ	OP131	The commitment has been updated in response to stakeholder comments regarding impacts and mitigations of natural events on river crossings	
App E	СМТМТ	OP143	The commitment has been updated in response to stakeholder comments regarding impacts and mitigations of natural events on river crossings	
App E	СМТМТ	OP144	A new commitment has been added in response to stakeholder comments regarding the use of additional maintenance measures at river crossings	
App E	СМТМТ	X13.02	The commitment has been updated to include consultation with graziers in the vicinity of the CSG2 access road in response to stakeholder comments	
App E	СМТМТ	X6.04	A commitment to maintain the fencing a the known anthrax pit and inform works of the risks and need to avoid disturbance has been added in response to stakeholder comments	

Response	Responses to Stakeholder Comments and Updates Due to Completion of Disclosure			
Chapter	Section	Table / Figure / Commitment	Description	
App E	СМТМТ	X7.03	A commitment to offset any trees removed at the Mtkvari crossing has been included in response to stakeholder comments	

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Table 2: Updates, Additional Information and Clarifications

Updates,	odates, Additional Information and Clarifications					
Chapter	Section	Table / Figure / Commitment	Description			
1	1.3		CSG1 is co-located with the existing BTC facility near Rustavi			
1	1.3		Added "co-located with the existing SCP station, Area 80" to pressure reduction and metering station description			
1	1.6	T1-1	Chapter 10 contents amended; Landscape modelling also included in Appendix A; Appendix C1, C2 and C3 and their contents has been added			
1	1.5.3		The definition of screening has been amended and defining the Project added as a step within the ESIA process			
2			The glossary has been reviewed and additional definitions have been added to aid the readability of the document			
3	3.5		Clarity added that consultation with NGOs and scientific community also occurred to inform the scope of the ESIA			
3	3.8		Soil survey and additional information on the content of the socio-economic surveys has been added			
3	3.9.2		The definition of a mitigation measure has been updated to explain that mitigations include measure to avoid, eliminate, reduce or compensate impacts not only manage and reduce impacts as was previously stated			
3	3.9.6		Text has been added to explain the HIA connection to ESIA			
3	3.9.6		Text has been added to explain the ecological sensitivity and magnitude tables			
3	3.9.6		Groundwater: Note that there are currently no planned discharges to groundwater			
Updates,	Jpdates, Additional Information and Clarifications					
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Chapter	Section	Table / Figure / Commitment	Description			
3	3.9.6	T3-12	The table has been amended to clarify the distinction between sensitivity criteria used for dust and sensitivity for criteria for NO ₂ , benzene and PM ₁₀			
3	3.9.6		The construction noise standards for activities of duration lasting longer than one month, will be applied to activities of shorter duration, despite not being strictly applicable			
3	3.9.6		Social Impacts: Footnote 1 - has been amended to clarify that land acquisition refers to the permanent loss of use of the land and subsequent restrictions on use during pipeline and facility operation.			
3	3.1		Risk assessment methodology for unplanned events described previously in Chapter 12 has also been included in the methodology			
3	3.12		Text amended to state that if there are changes which may significantly alter the impacts arising from the Project, that these will be communicated to the MoE			
4	4.3.2		Clarity that the pipeline loop is in both Azerbaijan and Georgia for options 2 and 3 and A, B and C has been provided and that all options require additional compression power at Sangachal which is outside of the scope of this ESIA has been included			
4	4.4.1		The text has been amended to reflect that no previous construction camps or laydown areas have been able to be re-used as described later in Chapter 4.			
4	4.4.3		The text on deviations from the existing BTC/SCP pipeline route has been updated due to a deviation from KP52-55 down a steep slope			
4	4.6.3		Clarity added that there are no significant differences between the potential environmental and social impacts of either of the PRMS location options has been inserted			
4	4.7.2		Clarity that site power includes building heating, lighting and not gas compression or heating as these selected options have been discussed and identified in previous sections			
4	4.7.3		Clarity provided that the compressor gas turbines fitted with DLE combustion systems are technically capable of achieving relevant air emission standards (i.e. measure within the turbine stack)			
4	4.7.4		An update to the Project design has meant that vegetation cover will be retained within more of the vent exclusion zone, apart from that area required to support and maintain the vent and for health and safety reasons			

Updates,	Jpdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
4		4.8.1	Clarity provided that the compressor driver equipment is sized to supply 5% more than the peak power required instead of 13%		
4	4.9.2		Section on micro-routing of CSG2 access road has been added to reflect further information obtained during the disclosure period		
4	4.10.1		A section on the CSG2 Access Road Camp and Alternative Options has been inserted as the need for and the location for this site has now been identified		
4	4.10.1	F4-15	The updated location for the Pipeline Camp due to occupational H&S reasons has been added		
4	4.10.1	F4-16	The figure has been updated with new rail offloading area location which has moved south east along the same rail line		
4	4.10.1		This chapter has been updated to reflect the project decision to retain two potential options for the construction camp location at the PRMS and to select the most appropriate option based on the results of pre-construction ecological surveys		
4	4.10.2	F4-18	The section has been updated to reflect that Option A which has been determined as the access road to CSG1		
5	5.2.1	F5-2	An updated Project Schedule has been included and the supporting text within this Chapter amended accordingly		
5	5.2.2	T5-1	The table has been updated with the CSG2 access road camp construction area, the area of pipeline ROW, which was mentioned in the text below but incorrectly in the table and a reduced CSG1 area and an increased PRMS area. CSG1 permanent land has been increased, however the majority of this is the vent area which will now mostly remain as natural ground cover. The estimated project footprint total value has also been updated to reflect this		
5		T5-1 to 5-3	Titles have been updated to clarify that these are estimates of land requirements		
5	5.2		Section 5.2 has been updated to describe the steps in the Project development		
5	5.2.2	T5-3	Pipeline ROW (previously included only in the text), CSG1 camp (moved from Table 5-2), CSG2 Access Road Construction camp (new site) and PRMS Camp and Access Road (omission) have been added to the table. Clarity added within the text that the pipeline ROW will be purchased permanently		

Updates,	Ipdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
5	5.2.2		Commitments 39-02 and 39-03 have been added to this section		
5	5.3.2	F5-3	The updated pipeline camp location has been added to this figure		
5	5.3.2		The pipeline route deviates from the SCP route in four locations as described in this section		
5	5.3.3		The use of thermo electric generators at the pigging station has been inserted		
5	5.4.1	T5-5	The pipeline construction schedule has been updated		
5	5.4.2	F5-9	The figure has been updated in accordance with the current Project schedule		
5	5.4.2	F5-10	The figure has been updated to show new camp location at Poladaantkari and new rail offloading area location		
5	5.4.2		The pipeline camp location has been changed from Gamarjveba to Poladaantkari		
5	5.4.4		The section has been updated to show that pipe which is not pre-coated will be coated in the pipe yard		
5	5.4.6		Clarification that numbers are estimates only in Table 5-6		
5	5.4.7		Clarity added that there will be additional ROW width at side slopes		
5	5.4.7		The SCPX ROW will generally be 36m wide, including a 7m wide topsoil stack		

Updates,	Jpdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
5	5.4.7		Commitment 30-23 has been added to this section		
5	5.5.1		Power requirements at each compressor station have now been included - 66MW		
5	5.5.1		Definition of site power for CSG1 included		
5	5.5.1		The CSG1 diesel distribution system has been removed, as this facility will be shared with PSG1		
5	5.5.12		Clarification that seal gas leakage is a normal part of compressor operation		
5	5.5.4		WBH rated heat output of 4.7 MW included		
5	5.5.4		This section has been revised to account for the new power generation philosophy at the PRMS, which will now be supplied from the adjacent engines at Area 80		
5	5.5.4		Definition of site power for PRMS included		
5	5.5.4		Noise attenuation measures for the new power generation facilities at PRMS have been deleted as these facilities are no longer required - instead power will be generated using the existing engines		
5	5.5.4		The PRMS diesel tank and system has been deleted as due to integration with Area 80 this is no longer required		
5	5.5.5		Due to integration at CSG1/PSG1 and PRMS/Area 80, oily water separators will not be installed at these sites. The oily water system section has been updated to reflect this plus a change to the use of local bunding rather than a centralised system at all sites		
5	5.6		Text to describe the linkage between the ESIA, including the ESMMP has been added to this section		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
5	5.6.1	F5-3	The figure has been updated to show the location of the CSG2 access road construction camp		
5	5.6.1		Two potential options for the PRMS construction camp have been included with a commitment to select a preferred location based on a multi-disciplinary evaluation and ecological surveys		
5	5.6.1		The text has been updated to state that there may be concrete and asphalt batching plants installed during the construction of the CSG2 access road		
5	5.6.2	F5-33	The figure has been updated with amended manpower profiles for total construction workforce, in accordance with the new Project schedule		
5	5.6.3		This section has been updated to be consistent with Chapter 4 as the majority of the major facility equipment will be transported to the site by road		
5	5.6.3	F5-34	This figure has been updated to include the CSG2 access road camp location		
5	5.7.3		The reinstatement philosophy has been updated to remove leaving any track for access during operation, instead limited vehicular access will be permitted along the ROW. An update has also been made to allow for the active re-seeding of areas where necessary. Text has also been added regarding the reinstatement of fences, services, structures, roads, tracks, pavements to a condition at least as good as that prior to construction		
5	5.8.2		The section has been updated to describe facility water supply sources		
6	6.2.4		Clarity added that the HGA is the prevailing legal regime of Georgia for SCP and the SCPX Project		
6	6.6.1	T6-5	The application of the phosphorous and nitrogen standards included will be subject to a risk assessment to determine if the receiving environment is vulnerable to eutrophication and the levels in the receiving environment could be exceeded		
6	6.6.7	T6-11	The air emission standards for gas engines have been deleted as no new engines will be installed by SCPX		
6	6.7.1		The BP Code of conduct section has been updated to align with the current version of the code		

Updates,	pdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
7			Text introducing the sensitivities at the end of each section has been updated to align with that used in Chapter 10		
7	7.4.3		A cross reference to the relevant sections of the ESBR and the ESIA has been added		
7	7.7.2.6		This section has been added to reflect the survey undertaken at the CSG2 access road construction camp location		
7	7.7.3.8		This section has been updated with baseline survey results from the CSG2 Access Road Camp ecological survey		
7	7.7.3.10		This section has been included to describe the baseline ecological conditions at the PRMS construction camp options		
7	7.7.4.4		This section has been updated to reflect the presence of the corncrake along the CSG2 access road as was noted in the previous sections		
7	7.8.1.3		Clarification that the OSRB is near Tsalka has been inserted		
7	7.8		The air quality baseline has been updated to include results for further ambient air quality surveys undertaken during the ESIA disclosure period		
7	7.10.3		Information has been added to describe the cultural heritage baseline of the CSG2 access road construction camp		
7	7.10.4.1		Information has been added to clarify the baseline cultural heritage on the pipeline loop after further investigation of archived BTC/SCP data		
7	7.10.4.3		Information has been added to describe the cultural heritage baseline of the CSG2 access road construction camp and provide more detail on the baseline at the CSG2 access road which was gathered during the preparation for Phase 2 cultural heritage evaluation		
7	7.10.5		This section has been updated to align with the new baseline information which has been added		

Updates,	Jpdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
8	8.2.2		Additional text to describe that the baseline reflects the results of surveys undertaken on the original 39 identified PACs and it was not considered necessary to update this due to similarities between these and the additional 6 PACs which were added during the disclosure phase		
9	9.4.2		Update to PAC numbers with additions due to pipeline camp location and CSG2 access road camp location		
9	9.5.5		Text regarding consultation with government bodies on other projects within the vicinity of SCPX has been added		
10	10.1		Text has been added to clarify that unplanned construction phase events are discussed in Chapter 10 has been added		
10	10.1.1		DE = Decommissioning Commitment has been clarified and an additional paragraph to clarify when generic commitments are used has been inserted		
10	10.1.1		A new section has been added explaining that generic impacts do not vary in significance with location and to clarify that mitigation measures are not repeated unnecessarily in throughout the chapter but may mitigate more than one potential impact		
10	10.1.5.2		A paragraph on the consideration of cumulative impacts has been added to clarify how existing and future Project's have been addressed		
10	10.1.6		A section on management of change has been included collating previous commitments on this topic		
10	10.2.2		A cross reference to Chapter 12 for how the facilities are designed to account for geological sensitivities has been included		
10	10.2.3		Additional cross references have been added to other sections of the impact assessment to clarify where related impacts to geology and geomorphology are addressed		
10	10.3.2		Pipeline crossings underneath overhead transmission lines has been added as a sensitivity		
10	10.3.3		Update of facility areas of permanent soil removal to align with Chapter 05		

Updates,	pdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
10	10.3.3	T10-4	Commitment 2-05, OP61 added to issue A2		
10	10.3.3	T10-4	Commitments 3-07, 3-08, 3-17, 4-18 were omitted and have been added to issue A3		
10	10.3.3	T10-4	Commitments 4-15 and 4-22 were omitted and have been added to issue A4		
10	10.3.3	T10-4	Commitment D5-065 added to issue A4 and 2-06 deleted		
10	10.3.3	T10-4	Issue A6 has been updated to apply to other contaminated land and therefore termed Disturbance, treatment and disposal of known/unknown contaminated land. Commitments 6-13, 6-14, 6-16, 6-22 and X6-04 have been added		
10	10.3.3	T10-4	Commitments 6-24, 7-08, 7-10, 7-11, 7-12, 7-13, 7-14, 7-15, D5-029 have been added to issue A7 and OP-05 to OP-07 deleted		
10	10.4.1		Borrow or spoil disposal pits have been added to the list of temporary uses of land		
10	10.4.3		Pipeline camp is now not located on a brownfield site as described in Chapter 04, this statement has therefore been corrected		
10	10.4.3	T10-7	Commitments 9-02 and 9-04 have been added to issue A9		
10	10.4.3	T10-7	Commitments D8-01, 3-20 and X4-04 have been deleted and X4-03, X3-02, 8-03 and OP141 added		
10	10.5.1		Accidental discharge of drilling mud and increased sediment run-off have been added to the Project aspects list for completeness, as these activities were assessed in Table 10-9		
10	10.5.2		The text has been amended to state that "The Algeti and Ktsia rivers flow from areas that are not considered to be significantly affected by anthropogenic activities"		

Updates,	pdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
10	10.5.3		The sub-section flow rates has been re-named as abstraction of water and impacts on the water supply rate have been moved from section 10.15 to this section		
10	10.5.3	T10-9	Potential impact "Reduced flow may restrict use by local people" has been moved from section 10.15 to this table		
10	10.5.3	T10-9	Mitigation 3-23, 31-05, 14-02, 14-06 deleted from issue A7 to reduce repetition and cross reference has been made in the text back to section 10.4.3. Commitments 6-08, 6-26, 7-10 to 7-13, OP41-43 added		
10	10.5.3	T10-10	Potential impact "Impeded flow of channel disrupting downstream users" moved from Section 10.15 and added to this table. Table has been revised to be consistent with Appendix B		
10	10.6.3	T10-11	Potential impact "Reduced availability of such as springs for local users" moved from Section 10.15 and added to this table.		
10	10.6.3	T10-11	Repetition of commitments has been deleted from issue A7 and a cross reference added to Section 10.3.4 and 10.5.4		
10	10.7.2		The reference to the corncrake has been amended to describe that it is considered to be in decline by local surveyors not vulnerable, to avoid confusion with an official IUCN designation		
10	10.7.3		Affected land estimates have been revised to be consistent with Chapter 05 and for the vent areas remaining predominately as natural ground cover		
10	10.7.3		A clarification that riparian scrub at the Mtkvari may need to be cut back has been added, as it is not yet confirmed that the scrub will be cut down		
10	10.8.1		There is 1+1 water bath heater at CSG1 also, therefore the final bullet under fuel combustion has been updated		
10	10.8.2		This section has been updated to align with the new baseline information which has been added to Chapter 07		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
10	10.8.3	T10-18; 10-19; 10-20	Air emissions modelling results have been updated for CSG1 due to an increase in heater size and at PRMS due to the change in power generation philosophy. The assessment of impacts is not affected by this update. A correction in the assessment of sensitivity in accordance with the methodology in Chapter 03 however has been made due to an error in the disclosure version. The assessment of impacts remains unchanged except for the residual impact significance at CSG1 which is reduced to a low to reflect that baseline air quality is generally good and less than 75% of the relevant ambient air quality standards		
10	10.8.3	T10-19	The residual impact assessment at Krtsanisi has been amended to medium following a review of this assessment in accordance with the methodology in Chapter 03		
10	10.8.4		A clarification that use of electricity from the Georgian grid will reduce overall emissions because hydroelectric power is the primary source of electricity within the Georgian grid has been added		
10	10.9		The noise modelling at the PRMS has been updated due to the removal of the new power generation equipment. A table of noise modelling results for all sites has been included Table 10-29		
10	10.9.3	T10-28	Section has been updated with revised noise modelling due to removal of new power generation at PRMS. Additional mitigations have been added to issue A25: 37-10 and 37-20 and the potential impact has been updated to recognise the potential for shift workers to be disturbed by noise. The impact significance for the new pipeline camp location has been assessed as it is closer to residences, and the assessment of residual impact at Krtsanisi has been increased to a Medium following a reviewing of the previous assessment		
10	10.10.1		Text to acknowledge that during operations small scale maintenance activities could affect cultural heritage has been added		
10	10.10.2; 10.10.3	T10-33	The sensitivities and potential impact sections have been updated to align with the amendments to Chapter 07		
10	10.10.4	T10-32	The potential impacts have been updated to clarify that they related to loss of known and previously unknown archaeology; impacts on archaeology have been separated into a separate row to add clarity to the assessment		
10	10.11.1		The text relating to the Project schedule has been updated		
10	10.11.1	F10-16	This figure has been updated in line with the current Project schedule and total manpower estimates		

Updates,	pdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
10	10.11.2		The key sensitivity regarding pensioners, disabled and IDPs within CSG2 and PRMS PACs has been added		
10	10.12.1		Additional information on the HIA has been included		
10	10.12.3	T10-36	Post mitigation impact significance of delaying transport to a medical facility has been reduced from high to medium in accordance with the methodology in Chapter 03		
10	10.12.3	T10-36	The commitments have been updated to reduce repetition, especially under accidental releases and cross references have been added to other sections where these mitigations are discussed		
10	10.13.1		Areas of land affected have been updated in accordance with Chapter 05 and the decision to leave the majority of the vent area as natural ground cover. Also clarity added that the RoW may be wider then 36m at steep slopes		
10	10.13.2		The sensitivities have been aligned with Chapter 08 and the dependency on springs and wells for irrigation water has been moved to here from section 10.15		
10	10.13.4		Land take figures have been revised in accordance with Chapter 05 and the decision to leave the vent area predominately as its native vegetation		
10	10.13.4	T10-37	Issue A36 has been updated to include severed access to irrigation supply		
10	10.14.2		The sensitivities have been aligned with Chapter 08 and the temporary blockage to irrigation channels has been moved to section 10.13		
10	10.14.3		This section has been updated to reflect the current Project schedule and commitment 19-05 deleted from Table 10-39 to correct an error		
10	10.15.2; 10.15.2	T10-40	The sensitivities and potential impacts have been revised in accordance with the change of the scope of the section and to align with Chapter 08. Commitment D30-1 has been added to issue A35 as it also mitigates damage to third-party infrastructure		
11	11.1		The introduction section has been updated following a review of the chapter to distinguish between two types of cumulative impacts, additive and in-combination impacts		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
11	11.2		The construction camp location has been changed in accordance with Chapter 05		
11	11.3		The Chapter has been updated with information on potential construction projects in the vicinity of SCPX as received from a number of Ministries and to further describe the approach and methodology used		
11	11.3.1	F11-1	The existing developments section has been updated with latest information available at the end of 2012		
11	11.3.5		Text has been added to clarify that there are 4 additional pylons associated with the Vardzia transmission line re-route		
11	11.3.6		Information on the Tbilisi-Rustavi Highway project has been added		
11	11.4		This section has been updated to clarify the assessment of impacts - where the Project considers that there is insufficient information available regarding the specific details/location/schedule of other projects, potential cumulative impacts have been assessed using professional judgement as either negative, neutral or beneficial; where sufficient information exists the Project has applied the methodology in Chapter 3 to assess the significance of the potential cumulative impact. Clarity has also been provided on where the existing impact significance assessment for the SCPX Project in Chapter 10 has remained valid and not been increased due to potential cumulative impacts.		
11	11.4.8		The updated air modelling results in Chapter 10, mean that annual mean results at CSG1-1, would be increased to 18.38 instead of 18.37. The cumulative impact significance remains the same as the SCPX Project residual impact assessment, which has been updated to align with changes to Chapter 10.		
11	11.6.2		Emergency power generation has been added as a further source of Nox and Sox and PRMS gas engines reference has been deleted due to a change in the Project design. Ambient air concentrations across the border have been changed from 1.5 to 2.5 ug/m3 in accordance with the updated modelling in Chapter 10.		
13	13.2.1		Clarity that BP is referred to in the chapter when describing Project responsibilities has been included		
13	13.3.2		Clarity that operation phase commitments are assigned to the operations management system has been added to the Plan Stage		
14	14.3.1	T14-2	The NO _x emissions increase has been amended from 21 to 22% of the ambient air quality standard consistent with the changes to Chapter 10		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
14	14.3.3		A summary of the in-combination impacts from Chapter 11 has been included		
14	14.3.4		The CSG2 Access Road Construction Camp location has been identified so this section has been updated to remove this as an issue which requires finalisation. The final identification of access roads has been identified as an issue which requires finalisation as it had been erroneously omitted.		
14	14.3.6		Commitments have been removed from this section to reduce repetition, altering of the access road route at CSG2 has been added		
Арр В	B-1; B-2		A new issue number A0 has been added to cover mitigations which apply across the entire project and mitigate a wide range of potential impacts i.e. 1.13; 39.04, OP18 and OP19		
App C1			The PCDP has been updated to reflect the disclosure consultation process and additional PACs due to the CSG2 access road camp and updated pipeline camp location; Information on pre-construction, construction and operations phase consultation has also been added.		
App D			The ESMMP has been updated with amends to the commitments which are described below. Additional requirements have been added to reflect continuous improvements identified during the drafting of the SCPX Azerbaijan ESIA and lessons learned from the start of the request for proposal process. These amends relate predominately to - the Waste Management Plan: change to the waste management strategy and roles and responsibilities with the construction contractor responsible for the management (segregation, treatment, transport and final disposal) of waste to Company approved facilities; - Ecological Management Plan: The inclusion of a requirement for site-specific ecological management plans for priority areas; - Pollution Prevention Plan: Additional details regarding sanitary discharges, hydrotest treatment, blasting and vibration monitoring and a change to the spill response strategy; - Land Management Plan: Further detail on the scope of the plan - Appendix B: Correction of errors to align with Chapter 6 - Appendix F: A new appendix describing time constrained ecological commitments has been added.		
App E	CMTMT	1.05	This commitment has been amended to include spoil disposal pits and that the Company shall determine the frequency of periodic audits		
App E	СМТМТ	1.07	The commitment has been amended to clarify that excavated materials will be screened and reused to the extent deemed feasible by the Company		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	1.08	This commitment has been updated to require Project approval to use existing aggregate for site landscaping or returning aggregate to Company approved disposal areas to reduce the potential for uncontrolled use		
App E	СМТМТ	1.14	A new commitment that excavated sub-soil will be screened and used for padding has been added to increase the re-use of excavated material		
App E	СМТМТ	2.01	The word Project in this commitment has been changed to Company to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	2.03	This commitment has been updated to clarify that Company approval will be needed for driving all the ROW in excessively wet conditions to allow for driving in case of necessity or emergency		
App E	СМТМТ	2.04	This commitment has been amended to clarify that the locations of temporary drainage will be determined by the Company to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	3.15	The commitment has been updated to include inspection for signs of erosion also, and BP changed to Company personnel to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	3.21	This commitment has been updated to include the implementation of measures which reduce the sediment load of surface waters during hydrotest water or other discharges		
App E	СМТМТ	3.24	This commitment has been updated to require reinstatement of all eroded areas, not just those at banks of rivers and channels		
App E	СМТМТ	3.26	This commitment has been updated to clarify that it includes temporary facilities (e.g. construction camps) and has been made applicable to both construction and operations		
App E	СМТМТ	3.28	This commitment has been updated to require erosion control measures immediately after initial land disturbance not just before winter working suspension		
App E	СМТМТ	4.05	This commitment has been amended to recognise that, depending on the depth of topsoil in a particular area, topsoil stacks may need to be greater than 2m but less than 3m to avoid requiring additional land outside of the current RoW		
App E	СМТМТ	4.15	A new commitment to require a pre-construction survey on the pipeline route to determine topsoil depth and stripping requirements has been added		

Updates,	Ipdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	4.18	A new commitment to require additional topsoil storage pre-cautions in areas with a shallow depth of topsoil has been added		
App E	СМТМТ	4.22	A commitment to undertake soil surveys of camp sites and pipe storage areas has been included to inform reinstatement requirements		
App E	СМТМТ	6.01	The commitment has been updated to include a baseline contamination survey of the camps and pipe storage areas also		
App E	СМТМТ	6.02	This commitment has been updated to clarify that known areas of surface contamination within the project footprint will be cleared prior to construction		
App E	СМТМТ	6.05	This commitment has been updated to clarify that any deviations to this requirement will be subject to company approval		
App E	СМТМТ	6.18	The commitment wording has been changed from contaminated land storage areas to contaminated material storage areas to cover a wider potential range of contamination		
App E	СМТМТ	6.20	This commitment has been updated to include the provision of spill kits in vehicles delivering fuel or hazardous liquids, not just refuelling vehicles		
App E	СМТМТ	6.24	A new commitment has been added to require an environmental risk assessment for disposal of drilling mud		
App E	СМТМТ	6.26	A new commitment has been added to define storage requirements for drilling mud		
App E	СМТМТ	7.01	The text has been amended for Project approved to Company approved to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	7.02	The text has been amended for Project approved to Company approved to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	7.08	A new construction phase commitment to increase waste segregation has been added		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	7.10	A new construction and operation phase commitment has been added to require bunding of diesel storage tanks at the construction camps and CSG2		
App E	СМТМТ	7.11	The commitment has been updated to clarify that hazardous waste will be securely stored and to remove the text on volume as it cannot be quantified. This commitment is applicable to construction and operation		
App E	СМТМТ	7.12	Commitment OP06 has been re-numbered to 7.12 and made applicable to both construction and operations		
App E	СМТМТ	8.03	The word Project in this commitment has been changed to Company to clarify responsibilities between the Company and the construction contractors and the statement for the life of Project has been deleted as it was considered superfluous		
App E	СМТМТ	8.04	A commitment to shroud lights at the construction sites, camps and pipe storage areas has been added		
App E	СМТМТ	9.01	The word Project in this commitment has been changed to Company to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	9.04	A new commitment has been added to prohibit side-casting of material		
App E	СМТМТ	10.02	The commitment has been updated to require Company approval for any direct discharges of trenchwater to a watercourse to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	10.06	The commitment has been updated to require Company approval for the hydrotest plan to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	10.11	The commitment has been updated to require the flow rate of hydrotest water discharge to be controlled to reduce the risk of erosion and disturbance to the river bed		
App E	СМТМТ	11.06	This commitment has been deleted as it is not considered necessary to transfer fish around crossings due to the additional stress this may place on them and the relatively short duration of any temporary damming		
App E	СМТМТ	14.02	The word domestic wastewater has been updated to domestic sewage to add clarity to the commitment		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	CMTMT	14.03	This commitment has been updated to include groundwater use for potable water use as well as irrigation (agriculture)		
App E	СМТМТ	15.03	The commitment has been updated to set abstraction rates taking into account the information the Contractor is able to acquire about downstream users		
App E	СМТМТ	15.09	A new commitment has been added to periodically monitor groundwater quality and sustainability in boreholes used by the Project has been added, to confirm there are no adverse impacts on known users		
App E	СМТМТ	17.14	A new commitment has been added to require a record to be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features along the pipeline ROW before construction		
App E	СМТМТ	18.01	This commitment has been amended to add clarity that seed mix will not contain species that are considered likely to outcompete the indigenous plant species		
App E	СМТМТ	20.01	The commitment has been updated to include the provision of gaps for public use		
App E	СМТМТ	22.01	This commitment has been updated to refer to Energy efficiency monitoring in the camps as it is a construction phase commitment. An additional operations phase commitment has been added, refer to OP147		
App E	CMTMT	23.05	This commitment has been amended to clarify that dust monitoring will be at communities near construction activities and the word nuisance has been changed to disturbance		
App E	СМТМТ	24.06	The word Project within this commitment has been changed to Company to clarify responsibilities between the Company and the construction contractors		
App E	CMTMT	25.02	This commitment has been made applicable to construction and operation		
App E	CMTMT	25.07	The word nuisance has been changed to disturbance within this commitment		
App E	CMTMT	25.09	This commitment has been updated to include noise monitoring at the construction camps and pipe storage areas where these are very close to communities and to clarify that periodic readings of 10 minutes duration will be undertaken		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	25.14	This commitment has been updated to include a survey of buildings in close proximity to the ROW		
App E	СМТМТ	27.05	The term Project archaeologist has been changed to Company within this commitment to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	27.13	A new commitment has been added to prevent damage to cultural heritage during reinstatement		
App E	СМТМТ	28.10	The commitment has been updated to stand alone and to clarify that it is a workforce training program which aims to ensure workforce have necessary understanding and knowledge		
App E	СМТМТ	28.18	This commitment has been updated to develop a plan to discourage the workforce from purchasing from informal vendors, as it is recognised that this is not completely within the Project's sphere of influence		
App E	СМТМТ	30.15	The commitment has been updated to clarify that random drug and alcohol testing is of the workforce		
App E	СМТМТ	30.21	This commitment has been amended to aim to ensure that vehicles join the road in a safe manner as the Project has no control over other 3rd party users behaviours		
App E	СМТМТ	31.06	The word suitably has been deleted from this commitment and it has been amended to include the use of Company approved incinerators as well as licensed medical contractors		
App E	СМТМТ	32.05	The environmental representative has also been included as part of the reinstatement inspection team and the word Project has been amended to Company to clarify responsibilities between the Company and the construction contractors		
App E	СМТМТ	33.08	The commitment has been updated to specify that the Company policy on alcohol at the construction camps should limit consumption		
App E	СМТМТ	33.14	This commitment has been updated to cover other local events		
App E	СМТМТ	33.16	The commitment has been updated to stand alone and clarify that information will be disclosed to PAC leaders on potential community health and safety impacts and mitigations		

Updates,	Ipdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
APP E	СМТМТ	35.06	This commitment has been updated to require the contractor to aim to maintain the integrity and viability of irrigation and drainage systems, and to seek Company approval if this is not possible		
APP E	СМТМТ	37.10	This commitment has been updated to clarify that the avoidance of night time driving will reduce the safety risks associated with driving as well as community disturbance and will only be approved by the Company		
App E	СМТМТ	D12.02	The commitment has been amended to clarify that heavy wall pipe will be used within KP22-43		
App E	СМТМТ	D12.05	Design standards for pipeline systems at the facilities have been added to this commitment		
App E	СМТМТ	D17.08	This commitment has been updated as the CSG2 access road has been re-routed to avoid the majority of the wetland area near Kuschi		
App E	СМТМТ	D27.04	A new commitment has been added to identify special design considerations to avoid certain cultural heritage sites along the CSG2 access road		
App E	СМТМТ	D27.05	A new commitment has been added to mitigate impacts on the Cultural Heritage feature identified at the CSG2 Access Road Camp		
App E	СМТМТ	D5.029	The commitment has been amended to clarify that the landfill at Rustavi is BP operated		
App E	СМТМТ	D5.036	The commitment has been amended to include that locating the pipe storage area close to the rail offloading area will reduce the number of HGV movements		
App E	СМТМТ	D5.039	The commitment has been updated to stand alone and clarify that louvres are used within the buildings housing the gas turbine and compressor units		
App E	СМТМТ	D5.043	This commitment has been deleted due to the updated power generation philosophy at the PRMS which will now be supplied by the existing Area 80 engines		
App E	СМТМТ	D5.044	This commitment has been deleted due to the updated power generation philosophy at the PRMS which will now be supplied by the existing Area 80 engines		

Updates,	pdates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	D5.046	A new commitment regarding undertaking surveys to inform the selection of the PRMS construction camp location has been added		
App E	СМТМТ	D5.098	This commitment has been amended to clarify that site power is referring to uses such as for heating and lighting		
App E	СМТМТ	D5.099	This commitment has been amended to clarify that site power is referring to uses such as for heating and lighting		
App E	СМТМТ	D6.04	Clarification that this commitment applies to CSG2 only as the CSG1 and PRMS sewage discharge will be integrated into the existing systems has been included		
App E	СМТМТ	DE.05	Commitment DE-05 wording has been amended to clarify that agreement is the HGA and that the abandonment plan is subject to governmental approval		
App E	СМТМТ	OP02	This commitment has been revised due to a new containment philosophy at the facilities		
App E	СМТМТ	OP03	The requirement for a visual inspection, and sampling based on the results of this inspection has been added to the commitment.		
App E	СМТМТ	OP04	A new commitment has been added to describe the stormwater drainage system		
App E	СМТМТ	OP13	OP13 has been updated to clarify that as an OP commitment it refers to dust generated by operational activities and the word nuisance has been changed to disturbance		
App E	СМТМТ	OP141	A new commitment has been added to expand the existing landscape monitoring to include SCPX ROW, Facilities and Temporary Sites		
App E	СМТМТ	OP147	The requirement for energy efficiency monitoring during operation of the facilities has been added to this commitment		
App E	СМТМТ	OP23	The word nuisance has been changed to disturbance in this commitment		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	OP43	Has been amended to cover commitment OP49 also		
App E	СМТМТ	OP47	This commitment has been amended to clarify that groundwater quality monitoring will be carried out post-construction and prior to operation of the facilities		
App E	СМТМТ	OP48	The commitment has been updated to clarify that noise monitoring will be conducted at identified receptors outside the Facilities (CSG1, CSG2 and PRMS)		
App E	СМТМТ	OP49	OP49 has been deleted and the requirements merged with OP43		
App E	СМТМТ	OP51	A new commitment regarding the monitoring of offset tree planting has been added		
App E	СМТМТ	OP52	A new commitment regarding the maintenance of offset tree planting has been added		
App E	СМТМТ	OP61	A new commitment has been added regarding the use of horse patrols during pipeline operation		
App E	СМТМТ	X10.01	The commitment has been amended because detailed routing evaluation is on-going to determine whether these features can be avoided by the pipeline Right of Way. In addition a further review of the records from BTC and SCP construction indicates that CH06 was identified as a series of small anomalies during SCP trench excavation, and no artefacts or cultural materials were found in association with these anomalies. A subsequent SCPX Phase 1 survey noted "No sign of archaeological monument was observed during the superficial survey of the site". Only four artefacts were found in the whole area during the walkover and these "could have been washed down from the hill located SE of the energy corridor." Chance find monitoring during SCPX construction is deemed sufficient to mitigate any potential impacts at this location.		
App E	СМТМТ	X10.02	Additional cultural heritage features were identified during the topographical survey of the access road, a number of features have been avoided through re-routing and hence added to this commitment		
App E	СМТМТ	X10.04	Additional cultural heritage features were identified during the topographical survey of the access road and at the CSG2 access road construction camp and hence have been added to this commitment		
App E	СМТМТ	X10.05	This commitment has been expanded to cover cultural heritage sites along the CSG2 access road and at its associated construction camp		

Updates,	Updates, Additional Information and Clarifications				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	X10.06	An additional remnant of the historical road has been identified along the access road closer to the CSG2 location. The same mitigation measures will be applied to this section		
App E	СМТМТ	X10.08	This commitment has been updated to require Phase II archaeological excavations at CH41 as a re-route has not been possible due to topographical constraints		
App E	СМТМТ	X10.14	A new commitment has been added to carry out Phase II excavations at additional sites along the CSG2 access road		
App E	СМТМТ	X15.02	A new commitment has been added to maintain community access at the new pipeline camp location		
App E	СМТМТ	X4.05	The commitment has been amended to clarify that it refers to CSG2		
App E	СМТМТ	X4.09	The commitment has been amended to clarify that it refers to the PRMS		
App E	СМТМТ	X5.07	The correct KPs have been included in this commitment to be consistent with Chapter 07 and 10		
App E	СМТМТ	X7.01	The word project has been change to Company to clarify responsibilities between the company and the construction contractors		
App E	СМТМТ	X7.07	Clarification added to the commitment that reinstatement planting at the Algeti will be subject to planting restriction zones on the pipeline		
App E	СМТМТ	X7.14	This commitment has been updated to cover wetland areas along the CSG2 access road as well as ornithological surveys at the CSG2 site		
App E	СМТМТ	X7.17	The commitment has been amended to state the avoidance of trees shall be as deemed practicable by the Company		
App E	СМТМТ	X7.18	The word marked has been changed to identified within this commitment		

Updates,	Updates, Additional Information and Clarifications			
Chapter	Section	Table / Figure / Commitment	Description	
App E	СМТМТ	X9.01	The commitment has been updated to include periodic noise monitoring of 10 minutes duration at residences in Rustavi which are close to the pipeline construction activities	
App E	СМТМТ	X9.03	Due to the revised location of the pipeline camp, a new commitment has been added to mitigate noise impacts due to the camp's greater proximity to communities	

Table 3: Modifications on Typographic Error and Inconsistencies

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
1	1.1		Amended SCPX HGA to SCP HGA and clarified that the agreement is between the Government of Georgia and BP Exploration (Azerbaijan) Limited		
1	1.3		Shah Deniz field changed to Shah Deniz Stage 2 Development and length of subsea pipeline amended to 125km to match Figure 1-2		
1	1.3		The block valve KP has been changed from KP27 to KP28		
3	3.3.1		Definition of PAC amended to be consistent with Chapter 08 and correct an error regarding distance of pipeline above ground installations to communities of 2km, which is used to define PACs		
3	3.9.6		Duplicated text within the medium health impact severity classification has been deleted		
3	3.9.6	Т3.6	Surface water: Deleted sensitivity criteria related to risk assessment as this was included erroneously		
3	3.9.6	T3.8	Ground water: Deleted sensitivity criteria related to risk assessment as this was included erroneously		
3	3.9.6		The noise tables have been developed from (not assessed against as previously stated) acceptable noise emissions derived from a review of appropriate guidance		
3	3.9.6		The tables below consider the potential impact of the Project (not only the pipeline as previously stated)		
3	3.11		Deleted BP non-hazardous waste landfill near to Akhali Samgori, as this development was not considered during the assessment of cumulative impacts		
3	3.12		The Final ESIA will be submitted to the MoESD for approval not MoE as previously stated		

Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description	
3	3.12		Deleted reference to ecological expertise validity period of one year as this is inaccurate	
4	4.2		If the SCPX Project does not go ahead, it will have no environmental and social impacts (social was previously omitted) from construction	
4	4.3.2		Clarity provided on the reasoning for locating the compressor station close to the Azerbaijan/Georgia border has been included, and the rationale for investigating a 56" diameter option has been amended. 60MW power output at each compressor station for the 56" pipeline concept has been corrected to 66MW.	
4	4.7.1	T4-7	Technical implications of Option 4 have been changed to Increased complexity in design, operation and maintenance; complex technology to remote location with no previous experience to correct an error in the previous version	
4	4.7.2		CO ₂ emissions savings from electrical grid connection changed from 25,600 to 27,200 tonnes per year	
4	4.8	T4-12	Inaccuracy in previously reported GHG emissions savings figures, therefore updates have been made	
4	4.8		Inaccuracy in previously reported total GHG emissions figures, therefore updates have been made. 60MW power output at each compressor station for the 56" pipeline concept has been corrected to 66MW	
4	4.9		Access road length changed from 15km to 16km to correct an error	
4	4.11		The conclusion has been updated to refer to the impact assessment in Chapter 12 also	
5	5.2.2	T5-2	CSG1 camp has been removed from the permanent land requirements and added to T5-3, the total has been revised accordingly.	
5	5.3.3		The following statement was deleted as it is inaccurate: The block valve firewalls will be designed to withstand the maximum pressure generated by the explosion from a full bore rupture	
5	5.4.10		Commitment 16-02 incorrectly referenced and has been replaced with commitment 16-01	

Modificat	Modifications on Typographic Error and Inconsistencies			
Chapter	Section	Table / Figure / Commitment	Description	
5	5.5.12		Deletion of power generation turbines having ISO output of 30MW (5MW is the correct value as stated in the previous sentence)	
5	5.5.4		PRMS does not have a pigging station and has therefore been deleted	
5	5.13		Two table totals have been corrected to align with the remainder of the figures in the table	
5	5.8.3	T5-15	Emissions values updated as inaccurately reported for CSG1 leading to incorrect sub-totals and a value now added for the pigging station	
5	5.8.3		Total direct GHG emissions amended to 599,500 Total indirect CO ₂ emissions amended to 4,000	
6			Chapter title has been amended to Policy, Legal and Regulatory Framework on Table of Contents as it was previously incorrect	
6	6.4		The Stockholm convention has been added to the table as it was erroneously omitted	
6	6.5.3		Incorrect abbreviation change to MoE as approver of the ESIA	
6	6.6		Changed reference from Chapter10 to Chapter7 to show where the applicability of salmonid and cyprinhid surface water quality standards is discussed	
6	6.6.8	T6-12	The erroneous footnote number 2 has been deleted and the other footnotes re-numbered appropriately	
7	7.2.4.1		Changed from several major river crossings to two major river crossings	
7	7.3.5		The KP's in this section have been updated to be consistent with those within those reference in the preceding sections	

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
7	7.5.2.2	T7-8	Analytical methods for selenium and aluminium have been added to this table as they were omitted erroneously		
7	7.7.1	T7-20	A legend has been added to this table		
7	7.10.5.4		Recommendation regarding cultural heritage monitoring at the PRMS has been deleted as it is covered in Chapter 10 as a generic mitigation measure		
7	7.11		The sensitivities section has been updated to align with the amendments to the Chapter which are described above and to delete reference to landslides at the PRMS which was erroneous		
8	8.2		The section has been re-named to Socio-Economic Baseline Survey Methodology		
8	8.8.2		The infrastructure sensitivity has been added to the summary of CSG2 sensitivities as this was previously omitted as an error; Similarly land sensitivities have been added to the sensitivity summary		
9	9.4.1	T9-1	Table title changed to Regional and Local Government Structure		
10	10.3.3		Formatting error corrected Wetlands between KP0 and KP01, CSG2 and CSG2 access road included as last key sensitivity, had previous been included in Section title by mistake		
10	10.3.3		Commitment 9-01 has been moved from the facilities section to general restoration as it applies to both the facilities and pipeline		
10	10.4.2		Sensitivity of visual receptors has been included to align with Chapter 07		
10	10.4.3		Reference to Photomontages changed to reference appropriate map in Appendix A		
10	10.4.3		Reference to Garji village corrected to Lemshveniera to match Landscape Modelling in Appendix A		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
10	10.5.3		Additional sources of contamination have been added to the construction phase as these were previously noted as operations phase sources only		
10	10.5.3	T10-9	Commitment 10-22 added and D17-03 deleted from issue A10 as they were not strictly applicable		
10	10.7.3		The reference to a running track used for pipeline monitoring and maintenance has been deleted as it is incorrect		
10	10.8.4	T10-21	Table title has been changed to stack emissions monitoring		
10	10.9.3	T10-28	Potential impact significance of maintenance events amended to high as per assessment of C5		
10	10.9.3	T10-30	Commitment X9-03 deleted as this was an error		
10	10.11.3	T10-36	The potential beneficial impact regarding increased birth rate has been deleted as the nature of this impact will vary on a case by case basis and it is not felt that the statement that this would be a beneficial impact can be substantiated		
10	10.11.3	T10-36	Commitments 28-01 and 28-08 have been added to mitigate reduce out-migration impacts and 1-02 delete to correct errors. The last row issue A29 has been deleted to remove duplication		
10	10.12.3		The reference to two construction camps has been amended to four to correct this error and manpower estimates updated in accordance with the new Project Schedule		
10	10.12.4		Commitment 17-01 has been deleted as it was erroneously included in Chapter 10 and was not within Appendix E, the requirements of the commitment are covered by 30-23		
10	10.15.1		The scope of this section has been amended to remove impacts to water supply rates and these have been moved to section 10.13 and 10.5. The scope of this section now covers roads, railways, service (water and electricity) supply infrastructure. Cross references to other relevant sections have been added to Section 10.14.1		
10	10.16	T10-42	The scope of this section has been amended to remove impacts to road infrastructure and focus solely on impacts of increasing traffic and the sub-sections amended accordingly		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
11	11.1, 11.2, 11.3.3, 11.4.14		The chapter has been updated to move impacts associated with existing developments as these had been considered as part of the baseline. Developments with on-going operational impacts are however discussed in more detail. Section 11.4.14 has been updated to explain the spatial extent of the impacts		
11	11.3.3		Updated number of river crossings replaced within the WREP SR Project from two to three and new block valves number has been amended from three to two		
11	11.4		Information on the potential additive impacts between SCPX activities and the existing pipelines (BTC and SCP) maintenance activities has been included in this section as it was incorrectly omitted from the chapter. The relevant sub-sections have therefore been updated		
11	11.5		A new section has been added regarding the in-combination cumulative impacts as this had been omitted previously in error		
11	11.6.3		Total direct and indirect GHG emissions have been changed to align with Chapter 05 and to reflect emissions from the Azerbaijan operational phase also		
11	11.6.3	T11-2	The nitrous oxide row has been deleted as it was incorrectly included and fuel consumption and CO2 emission estimates updated as these were incorrectly reported		
12	12.2.1	T12-1	The table has been amended to state the design pressure is 95.5 barg, not the maximum design pressure which was inaccurate		
12	12.2.3		Number of crossing points of BTC and SCP increased from two to four to correct an error		
12	12.2.3		The text has been revised to state that a separation distance of 28m between the SCPX pipeline and the existing pipelines at block valves, would not effect the existing wall foundations and there should be a maximum distance of 3m between the edge of any crater and the existing block valve walls		
12	12.2.3		Text on block valve walls being designed to withstand the maximum pressure generated by a full bore rupture has been deleted as it was erroneous		
12	12.2.4, 12.3	T12-7, D11.09	The last row of the table regarding Pipeline Protection Zones has been deleted as it was inaccurate. D11.09 was an erroneous commitment which was not included in the commitment register which has been deleted		
12	12.3.1	29.05	This was an erroneous commitment which was not included in the commitment register which has been deleted		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
12	12.3.1	D5.003	The commitment has been deleted from the Chapter as it was an erroneous commitment which was not included in the commitment register and is a repeat of D11-02		
14	14.1		The reference to pipeline integrity has been deleted as this was erroneous		
14	14.3.1	T14-1 and T14-2	Damage to irrigation channels has been moved from the infrastructure section to surface water section, consistent with the re-structuring of Chapter 10. Loss of wetland patches which have the potential to support corncrake has been added Delays in transfer of a patient to a medical facility has been added as this was mistakenly not included in the disclosure version Damage to infrastructure has been moved from the traffic section to the infrastructure section The construction phase residual noise and vibration and air quality impacts have been added following a review of the assessment.		
14	14.3.6		Greenhouse gas emissions contribution value amended from 0.017% to 0.016% of global emissions		
Арр А			The constraints maps have been updated to include the additional PACs described in Chapter 09 and to align PAC population figures with Appendix C1 and with additional cultural heritage sites as described in Chapter 7		
Арр В	A30, A31		Rankings amended for issue A30 - A31 as inconsistent with Chapter 10		
Арр В	A5		Inserted Ground settlement following decommissioning of section of SCP pipeline at Area 72 as issue description as it was mistakenly omitted		
App E	CMTMT	1.04	This commitment has been deleted as it is covered by 39.01, 39.02 and 39.03		
App E	CMTMT	2.06	Commitment has been deleted as it was felt this conflicted with the commitment to reinstate to near original condition		
App E	CMTMT	3.06	This commitment has been deleted as it was duplicated by commitments 3.03 and 3.07		
App E	CMTMT	3.16	This commitment has been deleted as it is duplicated by 8.03		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
App E	СМТМТ	7.13	The commitment has been re-numbered from OP07 and amended to state that relevant training will be provided for monitoring of effluent discharges (the word solid has been deleted as this was an error)		
App E	СМТМТ	7.14	The commitment has been re-numbered from OP44 and site staff and contractors has been amended to personnel and HSSE as been deleted from the induction as other topics may be covered. The last statement has been deleted as it was considered to superfluous as the word induction implies that this is delivered to new personnel		
App E	CMTMT	7.15	The commitment has been re-numbered from OP45 and staff changed to personnel		
App E	СМТМТ	10.14	The commitment has been amended to recognise that where engineering protection measures are required at river crossings, it will not be possible to reinstate watercourse banks disturbed by Project crossings to near original condition		
App E	CMTMT	17.01	This commitment has been deleted as it is covered by 21.01		
App E	CMTMT	25.17	This commitment has been deleted as it is duplicated by 25.17		
App E	CMTMT	27.04	The commitment has been amended to the Ministry of Culture and Monument Protection		
App E	CMTMT	27.06	The commitment has been amended to the Ministry of Culture and Monument Protection		
App E	СМТМТ	27.08	The commitment has been amended so that it stands alone and does not require further explanation		
App E	СМТМТ	28.01	The word policy has been changed to strategy within this commitment		
App E	CMTMT	28.08	The word BP has been deleted from this commitment as the construction contractors will also have community liaison officers who will be involved in this activity		
App E	CMTMT	30.01	This commitment has been deleted as it was duplicated by commitment 37.06		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
App E	CMTMT	30.14	Re-numbered to an operations commitment OP140		
App E	CMTMT	30.19	This commitment has been deleted as it was duplicated by commitment 6.12		
App E	CMTMT	30.20	This commitment has been delete as it was duplicated by commitment 6.10		
App E	CMTMT	31.09	This commitment has been deleted as it was duplicated by commitment 31.21		
App E	CMTMT	32.06	Commitment 32.06 has been deleted as it is repeated by OP25		
App E	СМТМТ	33.03	The word BP has been deleted from this commitment as the construction contractors will also have community liaison officers who will be involved in this activity		
App E	CMTMT	33.13	This commitment has been updated to clarify that mechanisms will be put in place to allow grievances about the project to be raised		
APP E	СМТМТ	36.02	This commitment has been re-numbered as D30.01		
App E	СМТМТ	37.16	Commitment 37-16 has been deleted as it is in the majority repeated by 25-02, commitment 25-02 has been updated to also include strictly observing speed limits and not accelerating or braking aggressively		
App E	СМТМТ	D11.05	This commitment has been amended to a separation distance of 28m between the existing pipeline and the SCPX pipeline at the block valve location to correct an erroneous value of 20m		
App E	СМТМТ	D12.04	This commitment has been deleted, as this is not a commitment it is an estimate of the amount of greenhouse gases which would be emitted		
App E	СМТМТ	D23.01	This commitment has been amended to state seal gas leaks from the compressors, not the gas turbine compressor drives which is consistent with chapter 05 and 10.		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
App E	CMTMT	D27.02	This commitment has been amended to remove the CH site numbers which have been avoided by the CSG2 access road, sites are now described in Chapter 10, not within the commitment		
App E	CMTMT	D27.03	This commitment has been deleted as it is duplicated by X10.01		
App E	CMTMT	D30.01	The text regarding setting in concrete has been deleted as it was incorrect and clarification that setting in concrete will be at open-cut crossings has been added		
App E	СМТМТ	D5.010	The commitment text has been amended to remove the number of crossings from the commitment		
App E	CMTMT	D5.011	The commitment has been updated to stand alone and not require additional clarifications		
App E	СМТМТ	D5.034	The wall thickness has been changed from 0.5 to 0.6 to correct an error in this commitment		
App E	CMTMT	D5.038	CSG1 has been deleted from this commitment has it was mistakenly included - the use of louvres at CSG1 means there is no requirement for panels		
App E	CMTMT	D5.055	The text has been amended to delete the reference to a haul road and replace it with along the ROW as it was felt to be potentially misleading		
App E	CMTMT	D5.061	Commitment D5.061 has been re-numbered as a construction phase commitment 3-34		
App E	CMTMT	D5.088	This commitment has been deleted as it is duplicated by 1-08		
App E	CMTMT	D5.099	This commitment has been deleted and the intent covered by modifications to commitment OP122		
App E	СМТМТ	D5.105	Commitment D5.105 has been renumbered to 30.23		

Modificat	Modifications on Typographic Error and Inconsistencies				
Chapter	Section	Table / Figure / Commitment	Description		
App E	CMTMT	OP122	Due to duplication OP122 has been deleted and commitment D5-095, which was a duplicate, has been re-numbered as OP20;		
App E	CMTMT	OP126	OP126 has been deleted as it is repeated by OP128		
App E	СМТМТ	OP20	This is D5.095 re-numbered as it is an operations commitment		
App E	СМТМТ	OP25	The word BP has been changed to operations in this commitment		
App E	СМТМТ	OP44	This commitment has been re-numbered to 7.14 and made applicable to both construction and operation		
App E	СМТМТ	OP45	This commitment has been re-numbered to 7.15 and made applicable to both construction and operation		
App E	CMTMT	X10.13	The number of sites in this commitment has been amended as CH03 was mistakenly omitted		

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1 INTRODUCTION

1.1 Overview

An environmental and social impact assessment (ESIA) has been undertaken to assess and report the environmental and social impacts associated with the proposed South Caucasus Pipeline Expansion (SCPX) Project. The ESIA has examined negative and positive, biophysical and socio-economic effects of the components of the proposed SCPX Project.

During the course of the ESIA process, design decisions have been made that take account of the need to avoid, minimise and reduce negative environmental and social impacts. Where potential adverse impacts have been identified, the ESIA has examined the extent to which these impacts would be mitigated through the adoption of good practice working methods.

This Environmental and Social Management and Monitoring Plan (ESMMP), including the Management Plans provided in the sections below, describes the environmental and social management measures to be adopted and implemented to satisfy the Construction Phase ESIA commitments associated with the Project.

1.2 Scope and Purpose

The ESMMP is not a legally binding document. While it draws on and replicates commitments made in the main body of the ESIA, it does not make and should not be read as making any new, amended or additional commitments by the Project. The definitive source for all commitments made in the ESIA is the Commitments Register. The ESMMP is a tool designed to help implement those commitments and is considered a "live" document that is likely to evolve during the lifetime of the SCPX Project to encompass the construction and commissioning phase consistent with a continuous improvement approach (as defined by ISO 14001). The plans have been updated to include regulator and stakeholder feedback received during the disclosure of the draft ESIA and will be updated whenever necessary as the Project proceeds. The ESMMP provides details of how the Project proposes to implement and monitor the commitments made in the ESIA.

These Management Plans provide an essential link between the legally binding commitments made in the ESIA for the SCPX Project and their implementation, by allocating those commitments to Management Plans and describing how adherence to the plans will be monitored and audited. Notwithstanding, COMPANY intends to require CONTRACTOR to comply with the requirements set forth in the SCPX Project ESIA, of which this ESMMP is an integral part, as approved by the Government of Georgia. The Management Plans prescribe the approach that the Project, and therefore COMPANY and/or CONTRACTOR, plan to use to avoid or mitigate the identified environmental and social impacts, maximise social benefits, help deliver regulatory compliance and carry the ESIA commitments into effect.

Consistent with the non-binding nature of this document, references below to respective accountabilities, in particular as between COMPANY and CONTRACTOR, indicate no more than COMPANY's present plan for how it intends to allocate those accountabilities. Statements that a party "shall" or "is required to" take an action or be responsible for a particular matter are to be understood as no more than describing the COMPANY's present intent in the relevant respect, subject to the considerations described above.

Each commitment in the ESIA has been allocated a reference number to facilitate transparency and cross-referencing. The Construction Phase Commitments are included in

this ESMMP and its Management Plans; general commitments (i.e. those that are applicable at many locations) are presented in tabulated format as illustrated below:

24-02	A strict Project speed limit of 30km/hr will be enforced for Project vehicles using
	unmade tracks and the ROW.

Commitments made within the Project design that are relevant to construction are prefixed with the letter D. Commitments that are specific to a limited number of locations have been allocated a reference number prefixed with an "X" and are included in tabular format with details of the nearest aerial marker post. An example is as follows:

X7-08	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded
	using hay and an appropriate seed mix.

Maps showing the referenced features are provided in the SCPX ESIA.

The objectives of the ESMMP, including its Management Plans are to:

- Help COMPANY to achieve its intended environmental and social management outcomes and mitigate the SCPX Project's identified environmental and social impacts to the levels predicted in the ESIA
- Describe COMPANY requirements that CONTRACTOR shall meet to ensure that the commitments made in the ESIA for the SCPX Project are fully implemented
- Provide a mechanism for the COMPANY to achieve compliance with legal obligations and demonstrate conformance with COMPANY's environmental and social policies
- Provide a framework for the appointed CONTRACTOR to develop Environmental and Social Implementation Plans as required by the CONTRACT.

CONTRACTOR is required to develop Environmental and Social Implementation Plans that address the commitments and requirements in this ESMMP, including those in the constituent Management Plans (Sections 6–20). In the Implementation Plans, CONTRACTOR shall propose methods of work that will implement COMPANY's commitments taking account of local conditions. This flexible approach recognises and accommodates the preferences, experience and existing systems/processes of individual CONTRACTORs. The Environmental and Social Implementation Plans shall be approved by COMPANY.

COMPANY will also implement some of the commitments. The responsibilities of the COMPANY and CONTRACTOR are defined in each plan. Refer to Sections 6.1.1, 6.1.2 and 6.1.3 for a breakdown of primary and secondary CONTRACTOR responsibilities. CONTRACTOR shall assume responsibilities for the implementation of all commitments within this plan unless a commitment is specifically identified as a COMPANY responsibility.

Section 21 of this ESMMP describes the environmental and social performance criteria (key performance indicators) to be met by CONTRACTOR. During the Project, COMPANY will audit CONTRACTOR's work against the requirements expressed in COMPANY's Management Plans (this ESMMP) and CONTRACTOR's Implementation Plans to assure the prescribed measures are implemented effectively. Section 22 sets out the procedures that will be adopted to verify that high levels of environmental and social performance are maintained.

It is necessary for CONTRACTOR to read and address the whole series of Management Plans taking account of links between them (see Section 6) as well as to the general requirements set forth within other sections of this ESMMP.

1.3 Environmental and Social Management System Framework

The SCPX Project will have an environmental and social management system (ESMS) that is consistent with the plan-do-check-act cycle as depicted in Figure 1-1 below. CONTRACTOR shall establish an environmental and social management system to meet the commitment below:

1-13	The construction contractor will have a documented and operational ESMS aligned
	with the requirements of ISO 14001 Environmental Management Systems.



Figure 1-1: ESMS Cycle

2 ABBREVIATIONS AND DEFINITIONS

Pipeline locations are referred to by SCPX KP Number 0–56 for the new pipeline loop, existing SCP KP142 is used to refer to CSG2 location only.			
Commitments from the ESIA are numbered as per the Commitments Register			
Location-specific commitments from the Commitment Register are numbered with an X prefix, e.g. X-150			
shall	used to indicate that a provision is mandatory		
should used to indicate that a provision is not mandatory, but is recommended a good practice			

Abbreviation	Definition
ADR	European Agreement concerning the International Carriage of Dangerous Goods by Road
ATS	action tracking system
BPEO	best practicable environmental option
CITES	Convention on International Trade in Endangered Species
CLO	community liaison officer
COSHH	control of substances hazardous to health
CWAA	central waste accumulation area
EHS	environmental, health and safety
ESIA	environmental and social impact assessment
ESMMP	Environmental and Social Management and Monitoring Plan
ESMS	environmental and social management system
GRL	Georgian Red List
HDPE	high-density polyethylene
HGA	Host Government Agreement
HSE	health, safety and environment
HSSE	health, safety, security and environment
IPLOCA	International Pipeline and Offshore Contractors Association
ISO	International Standards Organisation
KPI	key performance indicator
LRTIP	Local Recruitment and Training Implementation Plan
MSDS	materials safety data sheet
ROW	right of way, i.e. the area within which the pipeline installation takes place, including topsoil and subsoil storage; also applicable to CSG2 access road ROW
STD	sexually transmitted disease

Abbreviation	Definition
STP	sewage treatment plant
WCP	waste collection point - an area established close to the work fronts to segregate and collect waste for transfer to the WSA
SCP Co.	South Caucasus Pipeline Company
SCPX	South Caucasus Pipeline Expansion
WCP	Waste Collection Point - an area established close to the work fronts to segregate and collect waste for transfer to the WSA
WPRC	waste processing and recycling centre
WSA	waste storage area - an area designed and developed to accumulate, store, segregate, treat and transfer waste
WTN	waste transfer note

Term	Definition			
additional land	land outside the approved Project working areas and other areas occupied by the Project for temporary construction support or permanent facilities			
agricultural area	area used for growing crops commercially (including areas temporarily out of use); excludes land used exclusively for grazing			
biorestoration	the restoration of flora and fauna and the establishment of vegetation cover (post seeding) to return the vegetation cover and species diversity to meet the Project long-term targets			
carcinogenic	substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may induce cancer or increase its incidence			
COMPANY	the South Caucasus Pipeline Company and as defined in Section 1 of the CONTRACT, Conditions of Contract			
CONTRACTOR	all construction CONTRACTOR's responsible for pipeline installation, early works and facility construction, special crossings and access road construction, except where one of these parties is specifically identified and as defined in Section 1 of the CONTRACT, Conditions of Contract			
cradle to grave	the principle that waste management responsibility extends from the point of generation, or cradle, to its final destination, or grave			
drilling mud/drilling waste	fluids used and wastes generated during drilling and tunnelling			
driver	includes drivers of passenger vehicles, goods vehicles and tracked or wheeled plant and machinery			
due diligence survey	a survey conducted to identify pre-existing liabilities, e.g. soil contamination, of a site			
duty of care	the principle that states a waste producer has a duty to ensure that a waste is properly managed even after that waste has been transferred to a third party			
ECOLOGICAL MANAGEMENT CONTRACTOR	a specialist contractor appointed by COMPANY to address pre-constructio ecological surveys, species translocation, bio-restoration and provide techn expertise on seeding			
environmental and social assessment	an internal assessment (following the ESIA methodology) to identify the potential environmental and social impacts and proposed mitigation measures of a proposal. The scope and scale of the assessment is appropriate to the nature of the proposal and the range and magnitude of potential impacts identified. The results of the assessment will be made available to the regulator on request			

Term	Definition			
explosive	substances and preparations which may explode under the effect of flame or which are more sensitive to shocks or friction than dinitrobenzene			
facilities	CSG1, CSG2 and the PRMS			
flammable	liquid substances and preparations having a flash point equal to or greater than 21°C and less than or equal to 55°C			
Georgian Red List	list of protected species designated by Law of Georgia on Red List and Red Data Book (2003)			
harmful	substances and preparations which, if they are inhaled or ingested or if they penetrate the skin, may involve limited health risks			
highly flammable	liquid substances and preparations having a flash point below 21°C (including extremely flammable liquids); substances and preparations which may become hot and finally catch fire in contact with air at ambient temperatures without any application of energy; solid substances and preparations which may readily catch fire after brief contact with a source of ignition and which continue to burn or to be consumed after removal of the source of ignition; gaseous substances and preparations which are flammable in air at normal pressure; and substances and preparations which, in contact with water or damp air, evolve highly flammable gases in dangerous quantities			
infectious	substances containing viable micro-organisms or their toxins which are known or reliably believed to cause disease in man or other living organisms			
IUCN	International Union for Conservation of Nature (IUCN). The IUCN Red List of Threatened Species (also known as the IUCN Red List or Red Data List), founded in 1963, is the world's most comprehensive inventory of the global conservation status of biological species. The IUCN Red List assesses the extinction risk of species			
irritant	non-corrosive substances and preparations which, through immediate, prolonged or repeated contact with the skin or mucous membrane, can cause inflammation			
leachate	liquid product of leaching process which normally drains from landfills			
mutagenic	substances and preparations which, if they are inhaled or ingested, or if they penetrate the skin, may induce hereditary genetic defects or increase their incidence; substances and preparations which release toxic or very toxic gases in contact with water, air or an acid; substances and preparations capable by any means after disposal of yielding another substance, such as a leachate which possesses any of the characteristics listed above			
oxidising	substances and preparations which exhibit highly exothermic reactions when in contact with other substances, particularly flammable substances			
project ecologist	a competent ecologist appointed by the Ecological Management Contractor to supervise and implement ecological surveys and implementation of mitigation measures			
protected area	a protected area designated under Law on the Status of Protected Territories, 11 March 2011			
protected species	A species designated by the IUCN vulnerable, endangered or critically endangered, species listed by CITES and species included in the Georgian Red List (as defined in Law on the Red List and Red Book of Georgia, 2003)			
purpose built batching plant	batching plant facilities that are CONTRACTOR or subcontractor established for SCPX			

Term	Definition
reinstatement	the process of restoring the area to its prior state after pipeline laying (includes installation of erosion control measures, replacement of topsoil, topography, fences, etc. and preliminary seeding, to all disturbed areas associated with the construction of the pipeline or pipeline facilities after their installation)
	Note the re-instatement of vegetative cover and species diversity beyond the CONTRACT WARRANTY PERIOD is not included in this definition (see biorestoration)
seeding	initial seeding required to obtain Erosion Class 3 or better, restore vegetative cover and return areas to a condition which is visually similar to the surrounding area during the CONTRACT WARRANTY PERIOD
sensitive/priority area	Project-defined term that refers to areas along the right-of-way that have been raised to a higher level of environmental significance owing to the presence of sensitive vegetation and/or fauna (including Georgian Red List; IUCN Vulnerable; Caucasian Endemic Species and CITES species). This term applies specifically to the SCPX Project and does not correspond to any national or international designation.
subsoil	the layer or layers of soil below the topsoil which are not fertile and normally, but not necessarily, of a different texture and/or colour to the topsoil
teratogenic	substances and preparations which, if they are inhaled or ingested, or if they penetrate the skin, may induce non-hereditary congenital malformations or increase their incidence
third-party	private individual, enterprise or state organisation, i.e. any person or organisation which is not the COMPANY or CONTRACTOR
third-party facility	a facility owned and operated by a third-party entity
third-party land	land outside the ROW and other areas occupied by the Project for temporary construction support or permanent facilities
topsoil	topsoil is the top layer of soil on the surface which is suitable for sustaining agriculture or natural vegetation growth
toxic	substances and preparations (including very toxic substances and preparations) which, if they are inhaled or ingested, or if they penetrate the skin, may involve serious, acute or chronic health risks or even death
vehicle	includes passenger vehicles, goods vehicles and tracked or wheeled plant and machinery
WARRANTY PERIOD	refer to CONTRACT definition
waste	materials produced during operational activities that are of no use or value to the process that generated them.
waste generator(s)	all personnel, plants and processes comprising the SCPX Project (including COMPANY, CONTRACTOR and subcontractors)
waste minimisation	a management process through which an increased efficiency in the use of ingredients and consumable materials is achieved, resulting in a reduction in the amounts of waste generated. This also includes the efficient storage and handling of materials to prevent loss through spillage and leakage.

3 POLICY, LEGAL AND ADMINISTRATIVE FRAMEWORK

COMPANY intends to manage the SCPX Project in accordance with:

- The applicable requirements of the SCP Georgian host government agreement (HGA)
- The commitments made in the SCPX Project ESIA and associated documents
- COMPANY's corporate policies.

3.1 HGA Standards and Practices

The HGA between the Government of Georgia and the SCP Participants governs any future expansion to the SCP system and thus establishes the legal obligations for the SCPX Project. The provisions of the HGA override any inconsistent provisions in national legislation, with the exception of the provisions in the *'Constitution of Georgia'*.

The HGA sets out the obligation for the Project participants to implement certain standards when designing and operating the pipelines. In summary the construction and operation of the SCPX Project in Georgia is required to conform with:

Environmental standards

- "World Bank environmental standards and practices
- Standards and practices generally observed by the international community with respect to Natural Gas pipeline projects comparable to the Project,
- Standards shall be no less than those applicable in the United Kingdom."
- Social standards
 - *"using best endeavours to minimise potential disturbances to surrounding communities and the property of the inhabitants*
 - completing a social impact assessment in general conformance with World Bank standards (excluding the prescribed time periods for review and consultation)."

3.2 COMPANY's Corporate Requirements

The Company's document, "What We Stand For¹" states the COMPANY's overarching principles:

"BP wants to be recognised as a great company – competitively successful and a force for progress. We have a fundamental belief that we can make a difference in the world. We help the world meet its growing need for heat, light and mobility. We strive to do that by producing energy that is affordable, secure and doesn't damage the environment. BP is progressive, responsible, innovative and performance driven."

These values are fulfilled throughout Company's business through the application of various policies and requirements, and reflected in the measures set out in the Management Plans.

¹ What we Stand For available at

http://www.bp.com/liveassets/bp_internet/globalbp/STAGING/global_assets/downloads/W/what_we_stand_for.pdf

3.2.1 Company Code of Conduct

Company corporate policy, specified in the Company Code of Conduct (2012)², summarises the standards for the way in which Company behaves and are the foundation on which its business is built and carried out.

The Code of Conduct applies to all Company activities worldwide and focuses on five areas:

- **Operating safely, responsibly and reliably** including provisions regarding protection of the natural environment, the safety of communities in which Company operates, and the health, safety and security of Company's people
- **Our people** encompassing fair treatment and equal opportunities, providing guidance for dealing with cases of harassment or abuse and for protecting privacy and employee confidentiality
- Our business partners containing detailed guidance on giving and receiving gifts and entertainment, conflicts of interest, competition, trade restrictions, money laundering and working with suppliers
- The governments and communities we work with covering such areas as bribery, dealing with governments, community engagement, external communications and political activity
- Our assets and financial integrity providing for accurate and complete records and reporting, protecting company property, intellectual property, insider trading and digital systems.

3.2.2 HSSE Policy Commitment

Company's health, safety, security and environmental performance policy is provided in Appendix A.

3.2.3 Group Defined Practice and Group Recommended Practice

Company has a number of Group defined practices (GDP) that establish requirements and standards within Company and a set of Group recommended practices (GRP) that provide further guidance and recommendations.

The following GDP and GRP are of particular relevance to the Project and will be implemented as relevant:

- Environmental and Social Requirements for New Access Projects, Major Projects, International Protected Area Projects and Acquisition Negotiations GDP ("Environmental and Social GDP")
- GRP-3.6-0001 Environmental and Social Recommendations for Projects ("Environmental and Social GRP"), which supports the GDP 3.6-0001 described above and provides recommendations on the management of environmental and social impacts from projects
- GRP 7.1-0001 Legal and Regulatory HSSE Compliance, which sets out recommendations on how to develop, implement and maintain effective and fit-forpurpose (risk-based) HSSE legal and regulatory compliance management processes.

The environmental and social GDP and GRP have been developed having regard to international standards and guidelines that represent good practice in the energy industry, including pipelines. SCPX, therefore, has considered them during preparation of the ESIA and when defining mitigation measures and practices.

² BP Code of Conduct (2012) available at

http://www.bp.com/sectiongenericarticle.do?categoryId=9038306&contentId=7006600

3.3 **Project Environmental Standards**

As defined by the HGA, the Project has considered the following sources of information to define the Project environmental standards:

- International Finance Corporation (IFC)³ Performance Standards and Environmental, Health and Safety (EHS) Guidelines
- International Industry Standards and Practices including World Health Organization (WHO) guidelines, guidance issued by oil and gas industry associations, practice and standards in the UK and other European Union jurisdictions and general industry practice
- Standards and practices in the UK and EU (as representative of UK requirements).

Standards applicable to the Project are detailed in Appendix B – Project Environmental Standards.

3.4 Permits

Permits required for the SCPX Project are listed in Appendix C – Georgian Permit Requirements relevant to Environmental and Social Management; however, this is not an exhaustive list, as permitting requirements may change. CONTRACTOR shall be responsible for identifying and obtaining all necessary permits for activities within their scope of work. CONTRACTOR's indicative responsibilities for acquiring permits are described in Appendix C. CONTRACTOR shall develop and implement a Regulatory Compliance Plan that shall include a process for identifying and maintaining a list of applicable regulations, permits, codes and work place standards and practices.

CONTRACTOR shall submit data as necessary to the regulator as per the terms and conditions of any licences or consents that they hold. CONTRACTOR shall maintain copies of all permits and authorisations in English and Georgian.

³ The IFC is the private lending arm of the World Bank Group.

4 GUIDANCE DOCUMENTS

To define the ESIA mitigation measures and management plan requirements consistent with the above HGA requirements, the following sources of guidance have been reviewed by the SCPX Project as guidance on good international natural gas industry standards and practices and UK standards and practices. They have been considered by COMPANY during preparation of the ESIA and this ESMMP and applicable sections implemented.

- IFC Policy on environmental and social sustainability, January 2012
- International Finance Corporation's IFC Performance Standards, 2007 and their associated Guidelines
- IFC/World Bank: 'General EHS Guidelines' and 'EHS Guidelines for Onshore Oil and Gas Developments', 2007
- International Pipeline and Offshore Contractors Association (IPLOCA): 'Onshore Pipelines – The Road to Success' (2nd edition - 2011), Section 6: 'Best Practice in Planning and Construction Techniques'
- World Health Organization Guidelines (as referenced in the Pollution Prevention Plan)
- Standards and practices in the EU and UK (as referenced in the Waste Management Plan and Pollution Prevention Plan)
- General industry practice.

Examples of good international practice and specific EU and UK standards and practices are provided in each of the Management Plans. These documents are indicative of the standards and practices that COMPANY expects CONTRACTOR to implement. The intent of this guidance and applicable sections has been used to formulate the content of this Management Plan.

There is significant overlap between the recommendations in each of the above reference documents. Unless otherwise stated, the wording used in the Guidance section of each Management Plan is a synthesis of recommendations rather than a direct quote from any one source.

5 ROLES AND RESPONSIBILITIES

5.1 Company

COMPANY has the ultimate responsibility for management of environmental and social impacts and the development of mechanisms for dealing with environmental and social problems.

COMPANY shall be responsible for:

- Development of the ESMMP and its Management Plans
- Communicating the contents and requirements of the ESMMP and its Management Plans to CONTRACTOR to assist with the development of its Implementation Plans before construction starts
- Review and approval of CONTRACTOR's Implementation Plans
- Updating the ESMMP following disclosure and approval of the ESIA and communicating any additional commitments to CONTRACTOR
- Monitoring that Project personnel engaged on the Project receive appropriate environmental and social awareness training
- Implementation of a programme of planned and unplanned, documented environmental inspection, monitoring and reporting to verify the implementation of its commitments and auditing CONTRACTOR performance with respect to the requirements of the Management Plans and Implementation Plans
- Tracking the KPI data reported by CONTRACTOR and reporting performance to the authorities (as required by the HGA or permitting requirements) and within COMPANY
- Identifying non-conformance with the Management and Implementation Plans and determining the appropriate corrective action through its non-conformance procedures
- Stopping work in the event of non-conformance that presents an immediate threat to people, environment and property
- Implementation of a programme for follow-up and analysis of all environmental or social incidents or accidents
- Developing and maintaining a Commitments Register for the Project that lists the commitments generated during the Project's comprehensive ESIA process, which will be updated as a live document during the course of the Project. The Commitments Register will also record the Management Plan(s) that incorporates each commitment and responsibility for implementation
- Maintaining a Public Consultation and Disclosure Plan (PCDP) for the Project to ensure effective management of consultations with third parties during the design and construction stages of the Project. The PCDP will be updated as necessary to reflect current status and planned activities.

To carry out the above tasks, COMPANY shall appoint the following personnel to work in conjunction with CONTRACTOR's management team to ensure that environmental and social concerns are adequately addressed:

- Environmental and social manager: responsible for ensuring environmental and social commitments are implemented effectively
- Environmental and social adviser(s): responsible for monitoring compliance with and performance against the ESMMP; raising and tracking corrective actions as necessary; compiling appropriate documentation as necessary; and providing

advice and assistance to construction personnel on environmental and social issues

- Community liaison officer(s): responsible for monitoring construction on site and ensuring CONTRACTOR and subcontractors comply with the ESMMP; raising and tracking corrective actions as necessary; compiling appropriate documentation as necessary; and providing advice and assistance to construction personnel on social issues
- Cultural heritage officer(s): responsible for monitoring construction on site and ensuring CONTRACTOR and subcontractors comply with ESIA cultural heritage commitments; raising and tracking corrective actions as necessary; compiling appropriate documentation as necessary; and providing advice and assistance to construction personnel on heritage issues.

In addition, COMPANY shall contract directly with the ECOLOGICAL MANAGEMENT CONTRACTOR and CULTURAL HERITAGE CONTRACTOR.

5.2 Contractor

CONTRACTOR shall be responsible for:

- Implementation of and adherence to all requirements included in this ESMMP and its Management Plans
- Implementation of any other public commitments as advised by the COMPANY
- Securing all relevant permits and licences (as per Appendix C)
- Monitoring the performance of its activities and those of its subcontractors with regard to implementation of, and adherence to, all relevant mitigation measures outlined in the ESMMP
- Proposing a programme of regular environmental self inspection and audit, and a programme of community liaison and feedback gathering, and implement an action tracking system to record the findings and track progress on actions taken to address them
- Translating important project information including, but not limited to, material data sheets, signage, labelling, contracts and risk assessment requirements into the local language
- The requirements detailed in Sections 5.2.1–5.2.7.

In addition, CONTRACTOR shall provide an option for contracting directly with a specialist subcontractor for seeding and matting related to reinstatement.

5.2.1 CONTRACTOR's Implementation Plans

Within 60 days of CONTRACT award and at least 30 days in advance of mobilisation, CONTRACTOR shall develop an equivalent 'Implementation Plan' for each of the Management Plans in this ESMMP (as updated following disclosure and approval of the ESIA) for review by COMPANY.

CONTRACTOR's Implementation Plans shall:

- Follow the structure and content of the ESMMP
- Specify CONTRACTOR's organisational structure including the lines of responsibility for ensuring the implementation of generic and site-specific environmental mitigation measures
- Define the roles and responsibilities of CONTRACTOR's Project environmental and social management personnel
- Specify how the communication of the contents of Management Plan requirements will be relayed to the workforce

- Specify the environmental and social awareness training that it will provide to its personnel engaged on the Project and to its subcontractors' personnel
- Define how CONTRACTOR proposes to monitor its environmental performance and the KPIs specified in Section 21.3
- Define how CONTRACTOR proposes to inspect and audit its own work to ensure that the commitments made in its Implementation Plans are delivered effectively
- Meet all relevant policy and legislative requirements
- Explain the document control procedures that will be implemented for recording environmental and social information and reporting it to COMPANY.

5.2.2 Procedures and Method Statements

Before starting construction work, CONTRACTOR shall develop technical procedures and method statements as required by the CONTRACT; these shall be consistent with the requirements of this ESMMP and incorporate the relevant environmental and social mitigation measures. COMPANY shall review and approve CONTRACTOR'S Procedures and Method Statements. The method statements and procedures shall define the timing of implementation and the person responsible for ensuring implementation of the mitigation measures. All procedures and method statements shall be submitted according to the timescales detailed in the CONTRACT.

5.2.3 Management of Change

CONTRACTOR shall develop a Management of Change procedure that fulfils the following requirement:

39-04	Management of change procedures will include environmental and social assessment
	before any changes that may have detrimental effects on environmental or social
	receptors are adopted.

5.2.4 CONTRACTING Strategy

The contracting strategy is outlined in Table 5-1.

Table 5-1: Contracting Strategy for the SCPX Project

SCPX Construction	Early Works	Pipeline	Facilities		
Project management	BP				
Front end engineering	Incumbent EPMS contractor				
design					
Detailed engineering					
Equipment and	International contractor	BP/EPMS and construction co	ntractors		
materials					
procurement					
Construction		International pipe-lay	International facilities		
		contractor	contractor		
Reinstatement	Early works contractor for	Pipe-lay contractor/local	Facilities		
	additional land not required	contractor	contractor/local		
	during construction		contractor		
		Ecological management			
		contractor			
Tie-in	N/A	Specialised international contr	actor		
Commissioning		BP			
Waste management	Contractor is responsible to t	ransfer waste from all their pro	ject sites (worksite) to		
	their Waste Storage Area (WSA) where waste will be se	egregated, processed,		
	packaged and stored. External to the worksites the CONTRACTOR shall transfer				
	waste from the WSA to final BP approved disposal or storage location.				
	CONTRACTOR to transfer all segregated and recyclable waste to BP approved				
	recycling companies				
Cultural heritage	Cultural Heritage contractor				

5.2.5 CONTRACTOR Organisation

CONTRACTOR shall ensure that appropriately experienced and qualified personnel are employed. As a minimum, personnel should include:

Table 5-2: CONTRACTOR E&S Organisation

Position	PIPELINE CONTRACTOR	MICRO TUNNELLING	FACILITIES CONTRACTOR	TIE IN CONTRACTOR ¹	EARLY WORKS CONTRACTOR
Environment &	1		1		1
Social Manager					
Environmental	1				
Coordinator					
Social Coordinator	1				
Community Liaison	1		3		3
Officer					
Environmental	1				
Adviser					
Environmental and		1	3	1	3
Social Advisor					
Waste Adviser	1		3		2
Total	6	1	10	1	9

Note: COMPANY shall review and approve CONTRACTOR'S proposed organisational structure and personnel qualifications.

¹ Positions to be confirmed by COMPANY subject to final contracting strategy

5.2.6 Training

CONTRACTOR shall provide to all its personnel and subcontractors engaged on the Project, an environmental and social training programme approved by COMPANY that communicates to them the contents of each Management Plan and ensures that all personnel are aware of their environmental and social responsibilities.

The environmental and social training programme shall aim to ensure that all site personnel fully understand:

- The environmental and social requirements of the Project and how they will be implemented and monitored on site
- The potential impacts of the Project, the mitigation measures that have been adopted to address those impacts and how and where to apply these measures
- The environmental sensitivities of the areas through which the pipeline and other facilities will be constructed
- The social sensitivities of communities located close to the pipeline route and facilities
- The procedures to be followed in the event of a non-compliance with the environmental or social requirements
- How to deal with unforeseen environmental incidents
- The requirements set forth in these plans.

CONTRACTOR shall ensure that all construction personnel attend regular site-specific 'toolbox' training sessions on environmental and social issues throughout the term of the CONTRACT.

CONTRACTOR shall keep auditable records of the training that has been provided to each person working on the Project.

The environmental and social training programme shall include an initial site induction for delivery to all site personnel before they carry out any work on site.

CONTRACTOR shall update the training package in accordance with changes made in scope/requirements, etc.

5.2.7 Reporting Environmental and Social Performance to COMPANY

All environmental and social incidents shall be reported to COMPANY immediately as per CONTRACTOR and COMPANY's incident reporting requirements.

CONTRACTOR's environmental and social manager shall attend weekly progress meetings with COMPANY.

CONTRACTOR shall compile and report weekly summary reports on activities carried out and of conformance with the environmental and social requirements stated in the Management Plans. The content and format of this report shall be agreed with COMPANY.

CONTRACTOR shall compile monthly reports on environmental and social performance containing data on KPIs (Section 21.3) and submit them to COMPANY. The content and format of such reports shall be agreed with COMPANY.

6 OVERVIEW OF THE MANAGEMENT PLANS

6.1 Management Plans

Whereas Sections 1–5 of this ESMMP present the generic approach to environmental and social management and the general environmental and social monitoring procedures to be established by CONTRACTOR, each of the Management Plans provided herein presents specific impact avoidance and mitigation measures relating to particular issues.

Each Management Plan contains:

- Introduction
- Plan-specific good practice guidance
- Plan-specific roles and responsibilities of COMPANY and of CONTRACTOR
- Specific impact avoidance and mitigation measures that are requirements reflecting good practice as well as binding commitments made in the Project's ESIA.

6.1.1 Environmental Management Plans

Table 6-1 lists the key issues covered in the Environmental Management Plans and to whom the plans principally apply.

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
7	Reinstatement Plan	 Top soil and sub-soil management Erosion control during construction (e.g. at crossings, steep slopes, trench breakers) and after construction Engineered reinstatement of ROW and watercourse crossings Seeding and matting 	Pipeline contractor Facilities contractor Ecological management	Heritage Early works (pre- entry works)
8	Landscape Management Plan	 To describe the short- and long- term goals for the landscape proposals associated with the development. It has been drafted in the interests of the visual amenity, wildlife and nature conservation of the surrounding area 	Facilities contractor Early works contractor Pipeline contractor	Landscape consultant Ecological management
9	Ecological Management Plan	 Ecological training Location of protected species and sensitive/priority areas Preconstruction ecological surveys Habitat and species protection before and during construction (e.g. working width restriction, translocation, avoiding seasonal sensitivities, traffic restrictions, code of conduct, aquatic environment protection) 	Ecological management Pipeline contractor, facility contractor and early works (spatial and seasonal constraints)	

Table 6-1: List of Environmental Management Plans

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
		 Biorestoration (e.g. re-vegetation, selection and procurement of seeds, seeding methods, seed collection) Monitoring and reporting 		
10	Waste Management Plan	 Wontoning and reporting Waste management training Identification and classification of waste Waste hierarchy and waste minimisation strategy (i.e. reduction at source, reuse, recycling, energy recovery, responsible disposal) Waste handling (i.e. collection, segregation and containers, storage and treatment, transport and documentation, disposal,) Monitoring and reporting 	Pipeline contractor Facility contractor Early works	All
11	Pollution Prevention Plan	 Notificing and reporting Pollution prevention training Energy efficiency (vehicle and equipment selection and maintenance) Emissions and dust management (i.e. vehicle, equipment and generator emissions, dust management) Wastewater management (e.g. run-off, trench dewatering, hydrotest water disposal and use of chemicals in hydrotest water, vehicle and equipment washing) Sewage treatment and disposal Noise and vibration management (i.e. storage, handling and spill prevention) Treatment contaminated soil Management of hazardous liquid waste Monitoring and reporting 	Pipeline contractor Facility contractor Early works	All
12	Resource Management Plan	 Training (incl. energy efficiency and water use minimisation) Aggregates management (estimation of requirement, identification of quarries and borrow pits, transportation, control of third parties) Water management (water supply, hydrotest water abstraction 	Pipeline contractor Facility contractor Early works	

6.1.2 Social Management Plans

Table 6-2 lists the key issues covered in the Social Management Plans.

	Table	6-2:	List of	i Social	Managemen	t Plans
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ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
13	Construction Camp Management Plan	 Consultation with local communities before construction camp is developed Restriction of access to camp and use of its facilities Training (incl. induction briefing on camp rules and awareness of local issues and sensitivities) Camp rules (e.g. discipline and restrictions on alcohol, drugs; noisy activities and illegal activities, community liaison, ethnic tensions, market distortion and communicable diseases) 	Pipeline Facility Early works	
14	Infrastructure and Services Management Plan	 Disruption to infrastructure (transport; electricity; irrigation) Prevention and repair of community infrastructure damaged by Project activities Management of disruption to communities and individuals 	Pipeline Facility Early works	
15	Community Safety Plan	 Worker-community interaction (e.g. spread of communicable diseases) Management of construction sites (e.g. access to ROW and open trench philosophy) Traffic safety (e.g. control of traffic flows through villages) 	Pipeline Facility Early works	Heritage Ecological management
16	Community Liaison Plan	 CLO requirements Maintaining good relations with communities, landowners and land users (e.g. meetings, complaints management/grievance procedure) Community access. 	Pipeline Facility Early works	Heritage Ecological management Early works
17	Local Recruitment and Training Plan	 Recruitment for construction- phase workforce (e.g. local employment, recruitment procedure, transparency, definition of skilled and unskilled work roles) Equal opportunities Skills and HSE training 	Pipeline Facility Early works	Heritage Ecological management
18	Procurement and Supply Plan	 Maximising local procurement of goods and services Transparency of procurement process 	Pipeline Facility Early Works	Heritage Ecological Management

6.1.3 Other Management Plans

Table 6-3 lists the key issues covered in the other Management Plans relevant to the management of environmental and social issues.

ESMMP Section	Plan	Issues Covered	Primary Contractor	Secondary Contractor
19	Cultural Heritage Management Plan	 Protection and evaluation of existing and new finds during planning and construction of the 	Cultural Heritage contractor	Pipeline Contractor
		Project		Facility
		Chance Finds Procedure		Early works
20	Land Management	CONTRACTOR interaction with COMPANY's Land Acquisition	Pipeline	Heritage
	Plan	team (e.g. on requirement for additional land)		Ecological management
		Land Acquisition Process		F - 210
		Minimising livelihood impacts (approachment issues and		Facility
		penalties, borrow pit		Early works
		management, compensation, land exit and return of land for use)		

Table 6-3: List of Other Management Plans

6.1.4 Pre-Construction Surveys and Activities

A table of preconstruction surveys and activities is provided in Appendix E. The table identifies the locations for the surveys where appropriate and also the subject of the survey to be undertaken (topic).

7 REINSTATEMENT PLAN

7.1 Scope

This Reinstatement Management Plan is applicable to the reinstatement of all areas disturbed by construction work, including the ROW, facility construction sites and all other Project areas used to support construction, including (but not limited to) construction camps; pipe dumps; offloading areas; staging and maintenance areas; access roads/tracks and other transport facilities; waste transfer stations; material extraction and spoil disposal sites; and other facilities (such as Project concrete batch plants) associated with the SCPX Project. Reinstatement of the permanent facilities is not addressed; refer to the Landscape Management Plan for relevant requirements.

This plan applies during the Project's construction phase to the end of the CONTRACT WARRANTY PERIOD.

The scope of this Management Plan relates specifically to the following reinstatement management issues:

- Overall reinstatement management
- Buildings
- Soils
- Seeding
- Biorestoration
- Surface water
- Landscape and social
- Special and Sensitive/Priority areas
- Site cleanup and disturbance of contaminated land
- Ecology
- Health and safety
- Materials and waste management.

7.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below:

• IFC General EHS Guidelines: Construction and Decommissioning (April 30, 2007) specifically:

Reducing or preventing erosion by:

- Mulching to stabilise exposed areas
- Re-vegetating areas promptly
- Designing channels and ditches for post-construction flows
- Lining steep channel and slopes (e.g. use jute matting)

Reducing or preventing off-site sediment transport through use of settlement ponds, silt fences, and water treatment.

- IFC EHS Guidelines for Onshore Oil and Gas Development (April 30, 2007) including:
 - Clean-up and fully reinstate following construction activities (including appropriate re-vegetation using native plant species following construction activities) the pipeline right of- way and temporary sites such as workforce accommodation camps, storage yards, access roads, helipads and construction workshops, to the pre-existing topography and drainage contours
 - Reinstate off-site aggregate extraction facilities including borrow pits and quarries
 - o Implement repair and maintenance programmes for reinstated sites
 - Install temporary and permanent erosion and sediment control measures, slope stabilisation measures
 - Providing adequate drainage systems to minimise and control infiltration.
- IPLOCA guidance (Vol.1, Appendix 6.3):
 - Careful reinstatement of pipeline working width, following the completion of construction activities, reduces the potential for pipeline projects to have a residual impact on habitats. Consideration of reinstatement should be undertaken early in the construction process, and may entail seed collection, tree felling, specialist machinery for topsoil stripping, the need to source local plant material, or the requirement for water to establish plants. Where possible pipelines are often routed through agricultural land whereby, although there is a temporary disturbance to habitat and farming land, typically due to the seasonality of the land use, complete reinstatement occurs very quickly. Reinstatement and post-construction monitoring should be undertaken for a minimum of two years to ascertain the success of environmental recovery. Monitoring is particularly important in those areas where habitat is of significance for conservation. Careful consideration should be given to ensuring that the ground conditions are conserved by storing and replacing topsoil and soil layers in the correct order and controlling decompaction and drainage.
 - Act to reduce the risk of third party damage by increasing awareness of the pipeline (e.g. using landowner liaison, overland markers, ROW monitoring and one call systems for third parties).

7.3 Roles and Responsibilities

The general roles and responsibilities with respect to overall implementation of this plan and specifically to environmental and social management and performance are described in Chapter 5. Specific roles and responsibilities related to engineering reinstatement are detailed below.

7.3.1 Company Responsibilities

- Preliminary design of reinstatement
- Review and approval of method statements and procedures in accordance with the Reinstatement Specification
- Ongoing monitoring and maintenance of reinstatement works following final acceptance of CONTRACTOR reinstatement works
- Biorestoration (of ROW, facility construction sites and associated temporary facilities using an Ecological Management Contractor, as defined in the Ecological Management Plan and Site-specific ecological management plans)
- Specification of seed mix for CONTRACTOR's erosion control seeding.

7.3.2 Contractor Responsibilities

• Implementation of all erosion control and reinstatement works in accordance with the requirements of this plan

- The provision of an experienced project manager supported by personnel who can demonstrate full knowledge of reinstatement and the contents of the Reinstatement Plan
- Development and implementation of site-specific method statements
- Matting and seeding on non-agricultural areas as agreed with COMPANY
- Performance of all required pre-entry surveys
- Monitoring and maintenance of reinstatement measures to achieve the reinstatement targets until the end of the CONTRACT WARRANTY PERIOD
- Engagement of an independent party to plan and execute due diligence surveys
- Reinstatement of all temporary areas
- Interface with COMPANY and the ECOLOGICAL MANAGEMENT CONTRACTOR to facilitate successful biorestoration of the ROW and other temporary areas
- Consultation with local experts, specialist organisations and government authorities in order to ensure the reinstatement works are appropriate to the local, site-specific conditions
- Land entry and exit in accordance with the Land Management Plan.

7.4 Impact Avoidance and Mitigation

7.4.1 General Commitments

As per the commitments below, CONTRACTOR shall implement all reinstatement measures as defined in this plan and the Reinstatement Specification and shall meet the following commitments:

4-09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.
4-14	In the case of an unplanned event, any damage will be reinstated and compensated where appropriate.

The CONTRACTOR shall prepare an erosion control and stabilisation plan and submit for COMPANY approval at least 30 days prior to abandoning the work site for any reason, e.g. winter.

7.4.2 Reinstatement Management

7.4.2.1 Pre-entry survey

CONTRACTOR shall carry out a pre-construction survey (as per the CONTRACT requirements and Land Management Plan) of all Project areas including permanent facilities land, borrow and spoil pits, quarries, proposed temporary areas, roads, batching plants, lay-down areas, spoil disposal sites, etc., and after final reinstatement against which the quality of reinstatement will be assessed. This shall be carried out simultaneously with social representatives (refer to Land Management Plan) from COMPANY and records agreed with landowners and occupiers.

For roads, local authority representatives should be involved in the pre-construction survey to witness road condition or be provided with the results as per the Infrastructure and Services Management Plan. The pre-construction survey shall be submitted to COMPANY for approval. The CONTRACTOR shall also undertake a pre-condition survey of buildings on or close to the ROW (pipeline and CSG2 access road), as described in the Infrastructure and Services Management Plan (Section 14.4.8).

The CONTRACTOR will prepare a Reinstatement Implementation Plan following the preentry survey to include measures to reduce and control erosion and sediment run-off during construction and reinstatement, soil handling, storage and replacement, seeding and revegetation of the ROW. In addition, surveys should be planned to facilitate the development of site-specific reinstatement method statements for all special areas and sensitive areas, (Section 7.4.7), temporary working areas including the construction camp, lay-down areas and pipe storage areas and others as referenced in this plan. CONTRACTOR shall develop, and submit to COMPANY for approval a detailed site-specific reinstatement method statement and plan for these areas.

A suite of erosion control measure 'toolboxes' was used on the BTC and SCP pipelines and has proved effective. These erosion toolboxes are methods of erosion control that define the detailed requirements at specific locations. The toolboxes are used to design the location specific erosion control measures that are included on the pipeline alignment sheets. The measures are summarised below and will be implemented along the new pipeline loop according to the erosion risk at each location.

7.4.2.2 Environmental due diligence

CONTRACTOR shall implement the following commitment:

17-14	A record will be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features along the pipeline ROW
	before construction to inform the reinstatement work.

CONTRACTOR shall engage an independent and competent consultant to carry out environmental due diligence surveys at areas that are purpose built and dedicated to the Project and which have the potential to cause significant environmental impact (to be agreed with COMPANY), including concrete/asphalt batching plants, construction camps and lay-down areas. The independent consultant shall:

- Produce a survey plan for COMPANY approval that shall include as a minimum:
 - Photographic/video record of the area
 - Assessment of soil productivity including nutrient content (depending on pre-construction land use)
 - Pre-construction clearance surveys (if required)
 - Ecological surveys
 - Phase 1 and Phase 2 contamination assessment
 - Due diligence samples in areas designated for fuel/chemical storage or other potential sources of contamination (to confirm any pre-existing hydrocarbon and other contamination)
 - o Groundwater and surface water sampling
 - Cultural heritage assessment
 - Sampling protocol
 - Analytical standards (parameter-specific standards with which the results will be compared to derive inferences about base line environmental quality)
 - Laboratory selection
 - QA/QC protocol
 - Plan for two years of post-construction monitoring as part of site reinstatement and close out
- Execute the survey in accordance with this plan (including ecological and cultural heritage surveys, note pre-construction clearance and cutting of vegetation shall be executed by the CONTRACTOR)
- Implement post-construction monitoring and produce a site close-out report for COMPANY approval.

The site close-out report shall demonstrate that the areas have been returned to near the original condition and that there is no potential for future environmental, social and other liabilities associated with the site.

CONTRACTOR shall carry out appropriate due diligence surveys as described by the Land Management Plan for all additional land.

7.4.2.3 Reinstatement on pipeline ROW

Erosion class 3 (as defined in the Reinstatement Specification) or better shall be achieved for the duration of the CONTRACT WARRANTY period.

Seeding shall be carried out by CONTRACTOR as necessary to meet erosion class 3 and to meet the vegetative cover target described in Section 7.4.4.

CONTRACTOR shall undertake the following commitments:

17-05	Temporary works areas will be reinstated to near original condition (as compared to
	pre-construction survey reports or adjacent areas).

As a minimum the CONTRACTOR's method statements will cover:

- Recording of the original channel width, depth and slope prior to disturbance to allow reinstatement as near to the original as is practicable
- Re-contouring of banks to match surrounding slopes
- Installation of erosion protection measures at areas susceptible to washout or runoff. These may include the provision of riprap, gabions or impervious membranes. An ecological survey will be undertaken before any reinforcements are constructed, with appropriate mitigation measures identified and implemented
- Replacement of the channel substrate
- Replacement of the bank topsoil
- Reseeding of the banks.

7.4.2.4 Reinstatement of land other than ROW

This shall include land at construction support facilities, hydrotest water treatment areas, waste transfer stations, concrete batch plants, borrow pits and spoil disposal sites.

The SCPX ESIA has committed to the reinstatement of construction support facilities.

CONTRACTOR shall undertake the following commitments:

4-09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.
3-28	Temporary erosion control measures will be developed and implemented after initial land disturbance and if construction activity on the working areas is suspended over the winter before reinstatement has been completed.
17-05	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).

Construction support facilities for the pipeline and facilities and other off-ROW impact areas include (but are not limited to) construction camps, pipe dumps, hydrotest water treatment areas, Waste Storage Areas (WSA), concrete batch plants, and Project operated borrow pits. CONTRACTOR is required to remove all aboveground and underground infrastructure and utilities, and reinstate the site to near original condition at all construction camps, lay-down areas and other temporary areas.

CONTRACTOR shall ensure that there shall be no encroachment onto adjacent land throughout the duration of the work. Should CONTRACTOR require additional land as working area or for storage or disposal requirements then the requirements of the Land Management Plan shall apply. CONTRACTOR shall be responsible for reinstatement of all additional areas in accordance with the requirements of this plan, the Reinstatement Specification and the Landscape Management Plan.

Temporary facilities/works shall be designed so that they can be removed completely (including all underground infrastructure), unless approved by COMPANY in writing. CONTRACTOR shall produce a site-specific method statement for the construction support facilities describing the procedure for closure, decommissioning and reinstatement of the facilities.

Temporary facility removal shall commence as soon as possible when it is no longer required to support construction. Reinstatement of the land shall commence immediately on removal of each individual facility. This is to ensure that misuse, degradation or erosion of the land does not occur.

The support facilities shall be reinstated to near original condition including topography, soil characteristics and vegetation cover and composition (Section 7.4.4).

CONTRACTOR shall permanently reinstate the area as agreed with the owner/authority and with the COMPANY in accordance with the conditions in the pre-entry agreement and shall obtain written approval from owner/authority of the level of reinstatement. Notwithstanding such agreement, final approval of all reinstatement will be given by COMPANY. The pre-entry survey and due diligence close out report will be referred to.

There may be some instances where construction support facilities are to be handed over to COMPANY on completion of construction to continue to be used on subsequent projects or operations. At COMPANY'S request CONTRACTOR shall produce a site-specific handover report documenting the current site conditions.

Extraction sites (borrow pits/spoil pits, quarries)

Extraction sites shall not be located within sensitive areas (defined by COMPANY) unless otherwise agreed by COMPANY. CONTRACTOR shall provide an assessment of proposed extraction sites, with justification of those to be used to the COMPANY for final approval. Reinstatement shall be in accordance with Section 7.4.9.

CONTRACTOR shall undertake the following commitments:

1-08	When camps and lay-down areas are taken out of service, the existing aggregate will be used, as approved by the Company, to landscape areas of the site before topsoil is spread; where this is not possible, the aggregate will be returned to borrow pits/Company approved disposal areas
1-09	All temporary borrow pits will be reinstated (unless instructed otherwise by regulatory authorities).
1-11	Where benching is required, surplus subsoil will be stored on the ROW or, if disposal is necessary, it will be transported to an approved disposal site and/or approved borrow pits.
1-12	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface.
4-09	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.
17-05	Temporary work areas will be reinstated to near original condition (as compared to pre- construction survey reports or adjacent areas).

CONTRACTOR shall ensure that all borrow material will only be sourced from (both existing and new) licensed and authorised sites or sources (as described in the Resource Management Plan). Where new quarries need to be opened CONTRACTOR will obtain the necessary permits and licences and conduct the required Environmental and Social Assessment (as per the Land Management Plan).

All temporary Project operated borrow pits/ and or spoil pits shall be reinstated to near original condition.

Spoil and Rock disposal sites

Spoil (excess soil and rock) disposal sites shall not be located within nationally or internationally protected areas or sensitive areas (defined by COMPANY) unless otherwise agreed by COMPANY. CONTRACTOR shall provide an assessment of proposed spoil/ rock disposal sites, with justification of those to be used to COMPANY for final approval. Reinstatement shall be in accordance with Section 7.4.9.

CONTRACTOR shall not indiscriminately place excavated material and the like on areas of land not acquired by COMPANY or temporarily acquired by CONTRACTOR. All spoil disposal sites shall be identified, assessed and acquired in accordance with the Land Management Plan. The preference will be to dispose of spoil in areas where disposal would be beneficial; priority shall be given to using spoil to reinstate Project-opened borrow pits. CONTRACTOR shall undertake the following commitments:

9-04	No side-casting of excess spoil outside the working area will be permitted.

Existing roads and access

CONTRACTOR shall undertake the following commitments:

37-07	Following construction, the Contractor will repair roads to at least their pre-construction	
	condition.	

It is expected that some existing roads will require upgrades to a condition suitable for use by the Project. CONTRACTOR shall reinstate all existing access roads to at least their original condition or better and to COMPANY approval following completion of construction activities. CONTRACTOR's pre-entry survey results will be referred to.

CONTRACTOR shall also undertake pre-condition surveys and regular inspections and repair as described in the Infrastructure and Services Management Plan (Section 14.4.7).

7.4.2.5 Restricting access

CONTRACTOR shall undertake the following commitments:

3-09	Local people will be actively discouraged from using the ROW as an access road
	(through use of signage, public education, leaflets etc.).

To prevent rutting, subsequent erosion problems, and damage, measures should be taken where there is risk of the ROW being utilised as a local roadway. CONTRACTOR shall conduct regular toolbox talks/training to all drivers and block access, at locations specified by COMPANY representatives, by suitable means. This may include the:

- Construction of berms of sufficient height to provide a barrier to vehicles
- Erection of permanent fences in accordance with COMPANY specification
- Placing of rocks excavated during construction.

The criteria used in choosing the method shall include likely effectiveness, availability of local materials, and ecological and visual impact. The method of restriction at each location shall be approved by COMPANY representatives.

CONTRACTOR's Community Liaison Implementation Plan (refer to the Community Liaison Management Plan) shall also take a proactive approach to addressing and discouraging ROW access issues through liaison with local communities and landowners.

The ROW shall be monitored for:

- Subsidence of the pipeline trench (below natural grade)
- Slope wash from improperly placed berms
- Slumping and soil movements from cut and fill slopes
- · Loss of stored topsoil, subsoil or cuttings
- Off-ROW disturbances.

7.4.2.6 Reinstatement during land exit

CONTRACTOR shall comply with the requirements of the Land Management Plan. Notwithstanding such agreement, all reinstatement shall be to the satisfaction of COMPANY.

7.4.3 Soils

7.4.3.1 Handling wet soil

During handling, damage to soil structure and the seedbed shall be avoided. Soil handling under wet conditions is to be avoided other than in areas having obviously sandy soils (e.g. riverbanks).

CONTRACTOR shall cease soil-handling activities when any of the following apply:

- Persistent heavy rain (as advised by COMPANY)
- Further handling will cause damage to the soil structure or seed bed
- COMPANY anticipates that further handling will damage the soil and/or seedbed.

CONTRACTOR shall adopt the minimum requirements for handling wet soils as detailed in the Reinstatement Specification.

7.4.3.2 Minimising compaction

CONTRACTOR shall undertake the following commitments:

2-01	Load bearing materials, such as bog mats and geotextile membranes, will be used to support heavy loads in areas of soft ground (including wetland areas) unless deemed
	impractical by the Company.

CONTRACTOR shall minimise compaction of soft and waterlogged ground to aid subsequent reinstatement and to prevent damage in archaeological areas. CONTRACTOR's Reinstatement Implementation Plan shall include details of locations where soil compaction may be a particular issue and shall include provision for:

 Preparing a method statement to address construction through soft ground and which includes a consideration of the use of load-bearing materials (e.g. bog mats, geotextile membranes or other as proposed by CONTRACTOR) to support heavy loads in soft ground
Identifying fragile and sensitive soils in advance of work and implementing the method statement as necessary or as advised by COMPANY.

7.4.3.3 Topsoil stripping

Where excavation is necessary, CONTRACTOR shall establish the depth of the topsoil.

Topsoil and sub-soil shall be stripped separately. Topsoil stripping shall be in accordance with the Reinstatement Specification requirements as outlined below:

- Where the depth is equal to or less than 300mm, the topsoil shall be carefully stripped to its full depth and stored in a dedicated place
- Where the depth of topsoil is greater than 300mm, only the top 300mm shall be similarly stripped and stored. Topsoil below 300mm shall only be removed if this is required by the Reinstatement Specification; where that is the case, it shall be stored as topsoil provided the stockpiling specification given below can be reasonably met
- Topsoil shall not be stripped from areas that will only be used for storing topsoil
- Modification of these requirements may apply subject to COMPANY approval, e.g. for areas where the ground is solid rock.

CONTRACTOR shall undertake the following commitments for the pipeline route:

4-15	A soil survey will be undertaken (based on a representative sample) prior to
	construction to measure the depth of the topsoil layer along the pipeline route and will
	be used to determine the depth of topsoil stripping.
4-18	In sensitive areas of thin topsoil (as defined by Company) additional precautions will be
	taken with the aim of preserving the topsoil for subsequent replacement where
	deemed feasible by the Company.
4-22	A soil survey of camp sites and pipe storage areas will be undertaken.

Additional precautions in areas of thin topsoil that should be implemented by the CONTRACTOR (other methods can be proposed for COMPANY approval) include:

- Constant supervision during topsoil stripping so that only the agreed topsoil strip depth is implemented
- In areas where machinery is not able to achieve the topsoil strip depth and there is a risk of subsoil mixing, stripping by other means will be implemented
- In areas of narrow erodible ridges where conservation and good handling of topsoil is of paramount importance, topsoil shall be removed by other means if removal by machine risks mixing with subsoil
- Stripped topsoil in sensitive (thin) topsoil areas shall be stored at the edge of the ROW
- Consideration will be given to covering topsoil piles where topsoil is very thin and at risk of wind and water erosion
- If significant amounts of topsoil are lost due to poor topsoil handling then CONTRACTOR may be required to replace it with topsoil of similar chemical, biological and physical characteristics. Soil survey at camp, pipe yards, laydown areas including top soil depth and fertility testing to inform reinstatement
- CONTRACTOR will provide a method statement on how to deal with sensitive soils.

7.4.3.4 Topsoil and subsoil storage

CONTRACTOR shall comply with the following SCPX ESIA commitments for topsoil storage:

3-01	Topsoil removed from the facilities (and any excess subsoil) will be stored in
	designated areas within the site area for notantial use in the landscape works
	designated areas within the site area for potential use in the landscape works.
4-02	Stored subsoil and topsoil will be segregated in a manner that avoids mixing.
4-03	Topsoil will be stored outside the running track used by construction plant equipment
	and vehicles
	and vehicles.
4-05	Topsoil stacks along the ROW will be free draining and stored in accordance with the
	Project Dejectatement Creation
	Floject Reinstatement Specification.
4-06	Soil storage areas will be protected from vehicle movements to avoid soil compaction
100	
4-08	The topsoil and subsoil stack surface will be compacted sufficiently with the aim of
	proventing erasion without loading to the development of apparation anditions
	preventing erosion, without reading to the development of anaerobic conditions.
13-02	Gaps will be left in soil stacks at strategic locations to allow water through

Topsoil shall be stored where it will not be compacted by vehicles (i.e. outside the running track) or contaminated and shall be stored in a manner that will minimise its loss and/or degradation.

Topsoil shall not be mixed with rocks or subsoil and shall be stored on the opposite side of the ROW to subsoil. If sufficient storage space exists, topsoil and subsoil may be stored on the same side provided precautions are taken to prevent them becoming mixed. In widthrestricted areas, topsoil and subsoil shall be stored in accordance with the relevant specification for these areas. Signs or other identification shall be erected on the topsoil and subsoil stockpiles to make sure they are not mixed during removal and restoration activities.

Topsoil and subsoil stacks at the construction camps and permanent facilities should be positioned to shield communities from disturbance where possible and shall be maintained through aeration, seeding and water as necessary to maintain the soil fertility as far as possible. This shall apply especially at the pipeline construction camp near Poladaantkari.

CONTRACTOR shall comply with the following commitment at watercourse crossings:

3-23	At watercourses, bank and bed material will be stored separately, away from the active
	channels and will not be placed where flow or drainage will be obstructed.

CONTRACTOR shall ensure that watercourse bed and bank materials will be separately excavated, segregated and replaced following pipeline installation. CONTRACTOR shall not store stripped or excavated material at watercourses on steep slopes. CONTRACTOR shall maintain a sufficient distance between the watercourse bank and material storage areas to avoid erosion and sediment entering the watercourse.

7.4.3.5 Topsoil maintenance

CONTRACTOR shall undertake the following commitments:

4-04	If topsoil is stored for more than six months, the stacks will be monitored for anaerobic conditions and manual aeration will be undertaken if they develop.
4-13	Topsoil stacks will be regularly inspected for compaction and erosion; corrective measures will be implemented if compaction or erosion is identified.

CONTRACTOR shall be responsible for developing a monitoring procedure for topsoil maintenance that details the monitoring strategy, types of analysis to be undertaken and a suite of corrective actions that meets the above commitments. Topsoil stockpiles shall be protected (e.g. using silt fences) from erosion to avoid washout and loss of topsoil during heavy rains.

Where anaerobic conditions occur in the topsoil this may affect the soil fertility and subsequent seeding and biorestoration performance and should be avoided to maximise chances of successful vegetative growth.

7.4.3.6 Reinstatement of soils

CONTRACTOR shall undertake the following commitments:

2-05	Backfill will be adequately (but not excessively) compacted to prevent future settlement.
1-12	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface.

CONTRACTOR shall carry out monitoring to demonstrate soil compaction targets have been achieved and shall detail the monitoring procedure in the Reinstatement Implementation Plan.

CONTRACTOR's reinstatement implementation plan shall comply with the following commitments:

D5-086	To facilitate natural re-vegetation of the ROW, the separately stockpiled topsoil and vegetation debris will be spread over the surface of the ROW following completion of grading, as appropriate.
2-07	After backfilling, the subsoil beneath the running track will be ripped prior to reinstatement of agricultural land.
3-11	Once the topsoil has been replaced it will be stone picked to remove any large stones that are not in keeping with the surrounding soil texture.

Topsoil shall not be mixed with subsoil during replacement. Topsoil shall not be used for bedding material in the trench, and topsoil from unstripped/undisturbed areas shall not be used to cover disturbances.

Any make-up topsoil shall only be obtained from stockpiles of pre-excavated material and its use is subject to COMPANY approval. Topsoil shall not be used for padding material or to support line pipe or any other construction-related uses.

Topsoil replacement in agricultural land shall include tilling etc. in accordance with COMPANY procedure.

Any imported soil will have similar physical characteristics to soil in the area where it will be deposited. The soil will be free from contaminants. The CONTRACTOR will undertake an analysis of the topsoil and maintain records for COMPANY review.

7.4.3.7 Soil cuttings control

Wooden fences or other methods to be proposed by the CONTRACTOR and agreed with the COMPANY (e.g. wire fencing, interlocked logs between trees, etc.) shall be installed in areas of side slope and ridge construction to retain cuttings during construction and reinstatement of the ROW. CONTRACTOR shall implement the following commitment:

The above commitment shall apply at the CSG2 access road ROW also.

CONTRACTOR shall ensure fences are capable of safely supporting the loads imposed. CONTRACTOR shall be aware that the use of wooden fences may pose localised problems. In certain areas, firewood is a valuable commodity; therefore, the fence material will be attractive to locals for firewood. Suitable geotextile material may be an alternative as approved by COMPANY.

Fences shall be regularly inspected to ensure safe operation and structural integrity. Fences shall be removed, unless directed otherwise by COMPANY, during reinstatement of the ROW.

7.4.3.8 Erosion control measures

The following SCPX ESIA commitments apply to erosion control and shall be addressed in CONTRACTOR's Reinstatement Implementation Plan.

2-03	Driving along the ROW will not be permitted in excessively wet conditions unless otherwise approved by the COMPANY.
2-04	Temporary drainage will be provided where to prevent ponding or waterlogging of the working area.
3-03	Erosion control measures will be implemented to achieve erosion Class 3 or better.
3-05	Temporary dewatering or trench stabilisation will be undertaken where required to minimise slumping of trench walls.
3-28	Temporary erosion control measures will be developed and implemented after initial land disturbance and if construction activity on the working areas is suspended over the winter before reinstatement has been completed.
4-07	Where the project considers that ground is sufficiently steep (generally greater than 25%), topsoil stockpiles will be protected with silt fence to help reduce washout and loss of topsoil during heavy rains.
10-12	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.
3-30	When discharge velocities have the potential to create erosion, energy dissipaters will be used to establish sheet flow. Trenches will be dewatered in such a manner that no heavily silt-laden water flows into any wetland or water body.
16-01	The land drainage system will be reinstated to achieve pre-existing functionality.

CONTRACTOR shall undertake the following commitments:

Temporary erosion control measures shall be installed and maintained by CONTRACTOR along the ROW during construction and reinstatement, as detailed in the Reinstatement Specification in order to protect the environment and to achieve the performance standards as set out in Section 7.4.2. Temporary erosion control measures shall also be installed at the facility construction sites during earth stripping work as required. Additional silt fencing shall be provided at the request of the COMPANY.

Erosion matting

Erosion matting shall be installed as per the Reinstatement Specification to provide an immediate protection to the slope against erosion, prevent washing-out of seeds and enhance the micro-climatic conditions in the soil for plant growth.

Erosion matting shall provide temporary protection to the soil surface until sufficient vegetation cover has been established to control erosion and meet the performance criteria as set out in Sections 7.4.2 and 7.4.4. Erosion matting shall be biodegradable and meet the requirements of the Reinstatement Specification.

Topsoil preparation and seeding shall be undertaken by CONTRACTOR prior to laying erosion matting. CONTRACTOR shall make any holes in erosion matting required by COMPANY in advance of laying matting to allow shrubs to be planted.

Sediment interception

Where sediment run-off could affect a watercourse, wetland, water body or environmentally sensitive area, sediment interception shall be provided where required to prevent sediment leaving the ROW or facility construction sites. Sediment interception shall be provided for run-off that may occur during construction and reinstatement activities until the establishment of sufficient vegetation to meet the requirements of Section 7.4.4.

Sediment interception may take the form of the following devices;

Silt fence

Silt fences shall be installed in areas of low sheet flow and in accordance with the requirements of the Reinstatement Specification requirements regarding drainage area, flow path length, slope and filter fabric criteria.

Sediment shall be removed prior to the sediment reaching one-third of the height of the silt fence and collected and disposed of in accordance with the Waste Management Plan.

Straw bale barrier

Straw bale barriers shall be installed in areas where small amounts of temporary sediment interception are required.

Straw bale barriers shall not be installed where sediment control is required for periods greater than three months. Where they are installed on the working width, they should follow a slight gradient towards a natural channel, waterway or lined chute. Barriers shall be installed in accordance with the Reinstatement Specification.

Filter berms

Filter berms shall be installed where there is a requirement to temporarily retain run-off water after a storm event, allowing sediment to settle.

Filter berms shall be designed to allow for the drainage area under consideration and sitespecific requirements, in accordance with the Reinstatement Specification.

Sediment traps

Temporary sediment traps shall be installed as required in the following locations:

- At outlets of ROW drainage systems
- At the outlet of any structure which concentrates sediment-laden run-off
- Above a storm water drain that is in line to receive sediment-laden run-off.

Sediment traps shall be installed and maintained in accordance with the Reinstatement Specification to meet the requirements of each site. Sediment shall be collected and disposed in accordance with the Waste Management Plans.

7.4.3.9 Permanent erosion control devices

CONTRACTOR shall undertake the following commitments:

3-03	Erosion control measures will be implemented to achieve erosion Class 3 or better.
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Permanent erosion control measures (which are described below) shall be installed, maintained and monitored by CONTRACTOR as per the Reinstatement Specification to meet the performance requirements in Sections 7.4.2 and 7.4.4.

Diverter berms

Diverter berms shall be placed across the slope of the ROW to intercept run-off and convey it to a safe outlet. Diverter berms shall be installed as detailed in the Reinstatement

Specification requirements, which includes details on the berm width and preliminary designs of site-specific berm spacing. CONTRACTOR shall make minor adjustments to the berm spacing to ensure that each berm has a suitable and non-erosive outlet.

The berm shall be stabilised or seeded as needed in order to maintain structural integrity.

Diverter berm outlets

Water outlets shall provide disposal of run-off generated along the ROW. The run-off shall not cause soil erosion or sediment transportation.

Outlets shall be installed at the end of each diverter berm. Outlets shall effectively dissipate the energy of runoff from the ROW and take the water to a disposal point that is safe and avoids environmental impact. At outlet locations where stable vegetation is not present the outlet will be lined with rock, or erosion control matting will be positioned at the slope breaker outlet.

Gabions

Gabions and gabion mattresses shall be used where there is a requirement to form flexible, permeable, monolithic structures such as retaining walls, revetments and weirs for earth retention.

Gabion walls may be constructed and utilised for permanent recovery of the right of way and prevention or stabilisation of riverbanks and steep slopes.

Trench (ditch) breakers

CONTRACTOR shall undertake the following commitments:

3-07	Trench breakers will be installed where downhill flow within the backfilled trench may lead to erosion.
D5-065	In sloping terrain (usually 10 degrees and over), trench breakers (e.g. bags filled with soil/cement mix) will be installed across the width of the trench at suitable intervals up to the graded ground level.

Trench breakers shall be installed within the trench at locations along the pipeline route where the natural profile, drainage pattern and backfill materials may cause the trench to act as a drain.

CONTRACTOR shall design the spacing and location of trench breakers based on typical details provided in the Reinstatement Specification. Trench breakers may also be required at bases of slopes adjacent to wetlands and where needed to avoid draining of wetlands.

7.4.4 Seeding and Re-Vegetation

Seeding describes the first round of re-vegetation that is generally necessary to achieve an erosion class 3 or better, re-establish vegetative cover and initiate the biorestoration process. CONTRACTOR shall carry out seeding, which is likely to be required on all areas designated as non-agricultural as is described in the Reinstatement Specification. At facility construction sites, the need for seeding during the reinstatement of temporary areas will be carried out by the CONTRACTOR as agreed by the COMPANY, however it is currently assumed that due to their nature, seeding will not be required at CSG1 or PRMS temporary facilities or the pipeline camp. At CSG2, any seeding necessary will be undertaken by the ECOLOGICAL MANAGEMENT CONTRACTOR.

COMPANY shall advise on detailed seeding locations and the location of all non-agricultural land shall be agreed between CONTRACTOR and COMPANY. CONTRACTOR shall carry out seeding as necessary to meet Erosion Class 3 and the near-term reinstatement targets, including vegetation cover, as described in Figure 7-1.

COMPANY shall be responsible for specifying seed mix (ensuring no invasive species are used), quantity and sowing locations. It is likely that the seed composition will include:

- The species originally found in each route section or Project area
- Other species, e.g. fast growth types, suited to the local environment and indigenous to the region
- An ecologically compatible mixture of these two groups.

CONTRACTOR shall be responsible for procurement of a commercially available seed, testing to ensure there are no alien and/or invasive species present, seed storage, seed bed preparation, seeding rates, application of additives, e.g. fertiliser, pesticides; watering, in accordance with method statements produced by the ECOLOGICAL MANAGEMENT CONTRACTOR and approved by COMPANY (as described in the Ecological Management Plan).

CONTRACTOR shall be responsible for all subsequent aftercare and monitoring to meet the erosion class and vegetative cover targets (Figure 7-1) during the CONTRACT WARRANTY PERIOD, after which COMPANY shall retain responsibility.

CONTRACTOR shall undertake the following commitments:

18-02	No invasive species will be used in seed mixes for erosion control or bio-restoration.
X7-08	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded using hay and an appropriate seed mix.

CONTRACTOR shall meet the near-term re-vegetation monitoring and performance requirements given in Figure 7-1.

This will minimise surface erosion and provide a sustainable, self-generating plant community. However, COMPANY recognises that actual rates of vegetation growth depend on-site specific soil, slope and climatic conditions. Any deviations from this requirement will be subject to CONTRACTOR justification and COMPANY approval. COMPANY will provide information regarding the location of the specific habitats.

SCPX Reinstatement Performance Monitoring: Near Term (Contract Warranty Period) Objectives Performance objectives Establish conditions which achieve sufficient surface erosion control and a Achieve erosion performance class III or better sustainable, self-generating 'native' plant community to create the right Increasing trend in vegetation re-growth conditions for natural procresses to proceed, and demonstrate that the Increasing trend in species diversity (and specifically trend towards pre-disturbed vegetation is evident species composition) **Prompt intervention Prompt intervention** Prompt intervention н (Same Year) (Same Year) (Same Year) Inputs Randomly selected **Erosion Class** Carry out field 5-7=v. high **Prompt intervention Prompt intervention** quadrats. % VC, Erosion class, assessment, active monitoring and intervene M 4=high (Same Year) (Same Year) 1-3=low to medium species diversity etc if necessary Intervene if trend does not Carry out field assessment. improve in next No Intervention L active monitoring and monitoring round intervene if necessary С в Δ Xeric grassland combined with South- Eastern Xeric Subalpine Category Vegetation Cover (after one year) Sub-Mediterranean deciduous thickets (shibljak) grassland Grassland A Vegetation cover increasing progressively >40% >40% >60% В Vegetation cover increasing progressively 10-40% 10-40% 20-60% C Vegetation cover showing little or no signs of increase between monitoring periods <10% <10% <20%

Figure 7-1: Re-Vegetation Monitoring and Performance Requirements (Near Term)

CONTRACTOR shall ensure that:

17-11 Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.

CONTRACTOR shall provide the option to appoint an appropriately experienced and qualified subcontractor for the Project duration to implement matting, seeding and revegetation in accordance with this plan. Subcontractor shall be approved by COMPANY and provided with appropriate vehicles, offices and administrative support by the CONTRACTOR.

7.4.4.1 Agricultural/developed areas

In agricultural and other developed areas CONTRACTOR shall return the land to the landowner in accordance with the land exit requirements as per the Land Management Plan. CONTRACTOR shall assume that the land is to be made ready for re-planting with crops: the land shall be graded and tined to remove compaction. Application of fertiliser and planting of seeds on permanent growing areas will be carried out by the landowner or tenant. Site-specific requirements shall be agreed within the pre-entry agreement.

CONTRACTOR shall undertake the following commitments:

3-19	Field	boundaries	will	be	reinstated	to	pre-existing	condition	on	completion	of
	construction.										

2-07	After	backfilling,	the	subsoil	beneath	the	running	track	will	be	ripped	prior	to
	reinst												

All field boundaries (whether natural or man-made) shall be correctly reinstated in their correct location on completion of construction. ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for any planting required to reinstate boundaries (as outlined in the Ecological Management Plan). CONTRACTOR shall retain a log of all boundaries that have been removed or damaged, including the number of trees removed. CONTRACTOR shall be responsible for reinstatement of all other types of boundaries.

7.4.4.2 Non-agricultural areas/undeveloped areas

CONTRACTOR shall seed all undeveloped areas in accordance with COMPANY requirements (Section 7.4.4). Preliminary seeding locations are detailed in the Reinstatement Specification.

7.4.5 Surface Water

Many of the mitigations detailed above are also directly applicable in respect of drainage maintenance and management. The following specific measures are also applicable to watercourses.

CONTRACTOR shall include and detail in each crossing method statement measures to minimise erosion and sedimentation through erosion control devices such as silt fencing.

Site-specific method statements shall be produced for all watercourses that have CONTRACT detailed crossing drawings associated with them or occur in sensitive areas or agricultural areas.

The method statement shall ensure compliance with the following commitments which the CONTRACTOR shall undertake:

3-23	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.
11-04	Any temporary dams in watercourses to be removed as soon as pipe installation and reinstatement at that crossing is complete.
10-14	Watercourse banks, disturbed by Project crossings will be restored to near original condition, which will be assessed individually for each watercourse and defined in the Contractor's Reinstatement Implementation Plan. Any deviations (e.g. because hard reinforcement is required for erosion control) shall be subject to Company approval.
13-03	Any flood defence banks breached by the pipeline will be replaced during reinstatement.
3-26	Surface water drainage from operational areas including access roads and temporary facilities will be designed to minimise soil erosion in accordance with sustainable urban drainage systems (SUDS) principles.

The principles of SUDS should be applied to the construction areas to minimise surface run off and reduce flash increase in flow rates in local surface water and drainage ditches.

Watercourse banks shall be stabilised within 48 hours of backfilling. Where this is not possible CONTRACTOR shall propose site-specific solutions with engineering justification, this shall be included in COMPANY approved method statement.

All watercourses shall be inspected regularly in accordance with the requirements of the Reinstatement Specification.

7.4.6 Landscape and Social

CONTRACTOR shall implement the following ESIA commitments:

17-05	Temporary works areas will be reinstated to near original condition (as compared to
	pre-construction survey reports or adjacent areas).

Topographical survey results and pre-construction survey results shall be referred to in order to demonstrate conformance with this requirement.

7.4.6.1 Reinstatement of third-party property

CONTRACTOR shall reinstate, or provide replacement of, any third-party property or infrastructure that is damaged, lost or relocated as a result of construction activities to the pre-construction condition or better. Such reinstatement or alternative provision shall be carried out before or immediately after the damage or loss has been incurred, except where there are relevant provisions in an agreement between the third party and COMPANY. (See also the Infrastructure and Services Management Plan).

7.4.6.2 Third-party land

CONTRACTOR shall reinstate third-party land in accordance with any pre-entry agreement, in accordance with this Reinstatement Management Plan and Land Management Plan and all other relevant ESMMP requirements. If there is no pre-entry agreement, CONTRACTOR shall fully reinstate any land disturbance caused by construction or associated activities to COMPANY satisfaction and provide a close out report of the reinstated site.

7.4.7 Special Areas and Sensitive/Priority Areas

7.4.7.1 *Erosion class* > 3

At areas where the original erosion class is greater than 3, CONTRACTOR shall develop a site-specific method statement and submit to COMPANY for approval. This shall include a review and update as necessary of the reinstatement measures within the Reinstatement Specification.

Method statements shall include (but not be limited to) the following information:

- Scope of work, QA/QC Plan and HSE Plan
- Field sampling exercise to include physical description of the landscape, slope geometry, evidence of existing erosion, photographic survey, verification of geology and soil type, PSDs, nutrient sampling, etc.
- Identification of adequate sources of all necessary resources, e.g. jute matting.

The basis of the assessment shall be the Universal Soil Loss Equation as further described in the box below.

Universal Soil Loss Equation

This equation predicts the long-term average annual rate of erosion on a field slope based on rainfall pattern, soil type, topography, crop-system and management practices. USLE only predicts the amount of soil loss that results from sheet or rill erosion on a single slope and does not account for additional soil losses that might occur from gully, wind or tillage erosion. This erosion model was created for use in selected cropping and management systems, but is also applicable to non-agricultural conditions such as construction sites. The USLE can be used to compare soil losses from a particular site with a specific management system to 'tolerable soil loss' rates (see Reinstatement Specification). Alternative management may also be evaluated to determine the adequacy of conservation measures in planning.

Five major factors are used to calculate the soil loss for a given site. Each factor is the numerical estimate of a specific condition that affects the severity of soil erosion at a particular location. The erosion values reflected by these factors can vary considerably due to varying weather conditions. Therefore, the values obtained from the USLE more accurately represent long-term averages. The equation is written as follows:

A = R x K x LS x C x P

Where:

- A potential long-term average annual soil loss in tons per acre per year
- **R** rainfall and run-off factor by geographic location
- K soil erodibility factor
- LS slope length-gradient factor
- **C** vegetation and management factor
- P support practice factor

For further information, refer to: http://www.omafra.gov.on.ca/english/engineer/facts/00-001.htm

CONTRACTOR shall use this methodology to determine the estimated removal rates and recommend appropriate mitigation measures required to meet the erosion performance and vegetative cover targets of this Plan (Sections 7.4.2 and 7.4.4).

CONTRACTOR shall demonstrate that this work has been completed in the Special Area Reinstatement Method Statements and shall provide the necessary competent personnel to execute this work. Method statements shall be submitted to COMPANY for approval.

7.4.7.2 Side slopes and cuttings

In all areas the side slope shall be restored to near original contours. CONTRACTOR shall produce a site-specific method statement to describe how this will be completed and submit it for COMPANY approval.

As described in the reinstatement specification the subsoil layers shall be arranged so that the outer edges effectively restore the slope to its original (ground) level. On no account shall subsoil extend beyond the original line of slope or a new slope be created that is steeper than the original slope.

7.4.7.3 Sensitive/Priority areas

CONTRACTOR will be informed on any additional sensitive area requirements separately. CONTRACTOR shall refer to Section 9.4.2 for details of priority areas and CONTRACTOR requirements.

7.4.8 Site Clean Up: Disturbance of Contaminated Land

7.4.8.1 Clean up of sites

CONTRACTOR shall implement the following commitment:

D5-093	Before construction personnel and equipment are demobilised, temporary buildings
	and equipment, tools and any excess material brought on site or generated during the
	construction and commissioning programme will be removed.

On the ROW, CONTRACTOR shall, after backfilling and before replacement of topsoil, clean up all areas affected by construction operations. In other Project areas, CONTRACTOR shall clean up immediately on cessation of activity in that area. Clean up includes removal of all plant, equipment and materials not required for replacement of topsoil. A further clean-up exercise shall be undertaken following topsoil replacement and a final clean up after any seeding/ planting.

In pre-developed areas (either for agriculture or industry) the cleaned condition shall be near the original condition. As a minimum, all surface contamination and waste shall be removed whether pre-existing or not. The full remediation of contaminated land is not covered by this plan and reference should also be made to the Waste Management and Pollution Prevention Plans.

All waste materials shall be managed and disposed of in accordance with the requirements of the Waste Management Plan.

Clean up shall be implemented in accordance with the Pollution Prevention Plan and to the satisfaction of COMPANY. For construction camps, WSAs and other facilities, clean up will be dependent on the results of the due diligence assessment and site close out report (Section 7.4.2). Until COMPANY approval is received CONTRACTOR shall maintain capability on-site to undertake additional cleanup work to gain COMPANY approval.

7.4.8.2 Disturbance of contaminated land

All known pre-existing contamination, e.g. fly tips, within the right-of-way will be cleaned up by CONTRACTOR to COMPANY requirements prior to or during the Project construction. Where new contamination is discovered within the right-of-way, CONTRACTOR will be responsible for ensuring corrective action to COMPANY standards as detailed in the Waste Management Plan and the Pollution Prevention Plan.

7.4.9 Materials and Waste Management

Waste management for all construction work including reinstatement shall be in accordance with the Waste Management Plan. Further reinstatement specific requirements are detailed below

- CONTRACTOR shall assess alternative methods of excavation and make a selection for each Project area that minimises surplus excavated material as far as practicable. All material that is excavated shall be re-used to the maximum extent practicable
- Blasting will only be used where other excavation methods are considered technically impracticable or uneconomic
- Fill and padding materials for any purpose may be obtained by deliberate extraction or from a third party if those materials cannot be obtained practicably by re-use of surplus excavated material.

7.4.9.1 Management of waste soil and rock

Generally, all soil and rock shall be returned to the excavated areas where practicable. In some locations, however, there will be surplus subsoil or rock that cannot be returned, and

this must be disposed of both safely and in line with the requirements of this plan. The CONTRACTOR'S implementation plan shall address the following items.

CONTRACTOR shall undertake the following commitments:

3-01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.
9-01	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.
9-02	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.
D5-066	Any surplus subsoil from trench excavations will normally be spread within the working width and within zones that exhibit similar subsoil types. The spreading work will be carried out in a manner that avoids the mixing of soil types to the greatest extent possible.

Material remaining as surplus after final reinstatement shall be removed from the ROW as waste. CONTRACTOR retains the same responsibilities for excess soil and rock as for any other waste material as specified in the Waste Management Plan. CONTRACTOR shall be responsible for all transport of spoil and management of spoil disposal sites.

Excess soil and rock shall be managed according to the following priorities. Irrespective of the disposal location, disposal of waste soil and rock shall not adversely affect re-use of an area by landowners. For example, rock shall not be buried in agricultural land where this is inconsistent with pre-existing condition and land access agreements. On cultivated land, the first priority will be to not dispose of surplus waste rock and material in the ROW or working areas.

First priority: ROW reuse

Where surplus soil and rock is suitable for use as a construction material it will be first considered for reuse on Project area (e.g. Project infrastructure works materials; stability, erosion control, construction camps, roads etc.).

Second priority: ROW/Project-area disposal

Excess material can be re-used or disposed of on the ROW or other Project areas (e.g. for hillside contour blending) or in landscape contour areas as detailed in the Reinstatement Specification requirements.

Note: all disposal on the Project areas shall be done without environmental impact to off-Project areas.

Third priority: off-ROW reuse:

Transfer to third Party for re-use purposes as raw or semi-finished materials (e.g. crushed andecites that may be suitable for road construction materials or for rail ballast).

Fourth priority: off-ROW disposal (all sites to be agreed prior to use with COMPANY)

Disposal sites for waste soil and rock: Potential disposal sites shall be identified and assessed by CONTRACTOR and a Waste Soil and Rock Disposal report submitted to COMPANY for approval. The report will contain technical and environmental assessments (in accordance with the Land Management Plan) on all the sites considered and propose, with justification, those to be used. CONTRACTOR shall plan, develop, operate and reinstate those sites. CONTRACTOR shall be responsible for obtaining and maintaining regulatory approval for the chosen sites. CONTRACTOR shall submit the Pre-Construction Survey of such sites and follow other requirements as described in Section 7.4.2.

Further detail is provided within the Reinstatement Specification requirements.

Spoil shall not be deposited:

- Without COMPANY approval for each disposal location
- Within sensitive areas
- In, or adjacent to, watercourses or valley bottoms
- In windrows over the pipe
- Where it will potentially interrupt flow of rainwater along rills and gullies
- In such a way as to cause a landscape (visual) impact (credit may be taken for final condition); and
- On any open area where the slope exceeds 30°.

7.4.9.2 Sites for permanent disposal of waste soil and rock

Approved sites for the disposal of excess excavated material will be reinstated in accordance with the Reinstatement Specification and to be similar to the original condition. Sites that are used only for the disposal of excess soil and rock shall be closed, capped and landscaped in accordance with the Specification, except as otherwise required by COMPANY. Each site shall be vegetated, as necessary, to meet the erosion control and vegetative cover requirements and to blend in with the local environment as required by COMPANY.

7.5 Verification and Monitoring

7.5.1 Reinstatement Monitoring and Reporting

All COMPANY and CONTRACTOR verification and monitoring activity related to the provisions of this plan shall be in accordance with the requirements given in Section 21.

7.5.1.1 Monitoring and corrective actions

CONTRACTOR shall undertake the following commitments:

3-08	Soil loss will be monitored and corrective actions taken if it exceeds erosion class 3, in accordance with the Reinstatement Plan.
3-15	Upon completion of subsoil and topsoil reinstatement, the contractor and Company personnel will inspect disturbed areas jointly for signs of erosion, slope stability, relief, topographic diversity, acceptable surface water drainage capacity and function, and compaction. Remedial measures will be implemented, if necessary, at locations where reinstatement does not meet the Project criteria.
17-11	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.

Post-CONTRACT WARRANTY PERIOD the following commitments will be undertaken by the COMPANY and the ECOLOGICAL MANAGEMENT CONTRACTOR.

OP52	The Project will carry out annual maintenance operations until any new tree planting for off-setting purposes has established.
OP51	Follow-up monitoring to record survival of planted or re-planted trees for off-setting purposes will be undertaken until sustainable growth is achieved.

During construction and until the end of the CONTRACT WARRANTY PERIOD CONTRACTOR shall be responsible for monitoring erosion and vegetative cover in accordance with the parameters and frequencies identified in the Reinstatement Specification. CONTRACTOR shall maintain the standard of reinstatement, taking all

corrective action as necessary (within the timeframe specified in the Reinstatement Specification) to ensure that the stated erosion class (Section 7.4.1) and vegetative cover targets (Section 7.4.4) are met.

The checklist below provides a guide to the reinstatement issues that need to be monitored. CONTRACTOR shall consider this list in development of the Reinstatement Implementation Plan to detail reinstatement monitoring requirements. It should be noted, however, that the list is a guide only and that further inspection and audit points will be developed as necessary.

- No risk of the depth of cover above the pipeline being reduced
- Very low risk of off-site pollution and sedimentation
- Low risk of damage to seeding/biorestoration by washing out of seeds and plants
- Continuous networks of channels over the slopes prevented, ensuring that the depth of material above the pipe is not reduced
- Bed and banks of each watercourse restored in line with pre-approved method statement packages, as documented by sign off
- Number of sediment control measure or device failures that repair work has not started on within 24 hours of inspection or notification
- Number of non-compliances with top soil management requirements in Reinstatement Plan
- Stripping of topsoil to the required depth, and over the required area of land
- Appropriate storage and handling of topsoil
- Compaction of backfilled material
- Provision and maintenance of suitable sediment interception devices
- Disposal of trench water so as to prevent erosion and sedimentation
- Provision and maintenance of suitable permanent erosion control devices
- Success of seeding establishment
- · Landowner satisfaction with reinstatement, in agricultural/developed areas
- At river crossing locations, return of the river bed and banks to their pre-construction condition and contours
- Minimal landscape impacts after reinstatement
- Prevention or minimisation of disturbance to old landfills and contaminated land.

8 LANDSCAPE MANAGEMENT PLAN

8.1 Scope

The purpose of this landscape management plan is to describe the short- and long-term goals for the landscape proposals associated with major permanent SCPX Facilities i.e. CSG1, CSG2 and the PRMS. It has been drafted in the interests of the visual amenity, wildlife and nature conservation of the surrounding area. With these goals in mind, the document also provides information for the maintenance of native tree and shrub planting and long-term health of grassland areas.

Although this document sets out detailed long-term goals and landscape management practices for the first five years of the operation of the Project, it is not intended to be a stationary document that prescribes maintenance procedures for the entire lifespan of the pipeline. The management of habitats and communities is an imprecise science. To undertake such management, assumptions must be made about the direction that a habitat will take. The management plan is a document that will change and adapt as required as conditions of the site change over time.

This document should be read in conjunction with all other sections of this ESMMP and in particular the requirements of the Reinstatement and Ecological Management Plans.

8.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and management plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1).

This plan has taken into consideration IFC's Performance Standard 6 on Biodiversity Conservation and Sustainable Management of Living Natural Resources and its accompanying guidance note, which are described in Section 9 Ecological Management Plan.

8.3 Roles and Responsibilities

The roles and responsibilities with respect to the various parties required enabling the successful implementation of the landscape scheme and management plan are described below.

8.3.1 Company

COMPANY responsibilities are as detailed in Section 5 of this ESMMP, primarily:

- Obliged to follow legislation and guidelines
- Supply of all relevant data
- Ensure adequate provision is given to ensure sufficient supervision of implementation and maintenance works.

8.3.2 Landscape Consultant

- The provision of overall direction for the implementation and performance of the plan to include regular monitoring and an annual review
- Provide assistance to the contractor, ensuring adherence to guidance
- Coordination and supervision of the installation and ongoing maintenance of the landscape mitigation works

8.3.3 Contractor

CONTRACTOR shall:

- Provide reports to the COMPANY on an agreed regular basis with respect to the status of the site
- Adhere to the requirements of this plan
- Provide a detailed programme as to when works are scheduled and access arrangements are required
- Where subsoil is to be used in earth forming work, topsoil from receiving areas to be removed and stored separately for replacement following grading of subsoil
- Prior to topsoil/ subsoil spreading, contractor to cultivate (ripping) the ground in those areas identified to receive topsoil
- Strip topsoil from facilities area and transport to those areas identified on the plans
- Loose tip topsoil to locations and to settled depths as specified on the plans

8.3.4 ECOLOGICAL MANAGEMENT CONTRACTOR

- Provide reports to the COMPANY on an agreed regular basis with respect to the status of the site
- Adhere to the requirements of this plan
- Provide a detailed programme as to when works are scheduled and access arrangements are required.
- Cultivate the ground in those areas identified to receive tree and or shrub planting.
- Plant trees and or shrubs in percentage mixes and locations as specified on the landscape proposals plans

8.4 Impact Avoidance and Mitigation

COMPANY shall incorporate the following commitment into the Project design that shall be implemented by the CONTRACTOR during construction:

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D8-02 Sensitive material and colour finishes will be used for the external facades of buildings.
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A darker colour scheme (greys and browns, e.g. pure grey RAL 000 55 00, Mushroom RAL 080 7010 (BS10B19) Svelte Grey RAL 080 50 20 (BS 10B23)) with matt finish will be used on buildings to make the facility less visually prominent.

8.4.1.1 Topsoil

Contractor shall ensure:

3-01	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated
	areas within the site area for potential use in the landscape works.

CONTRACTOR shall undertake the following general commitments:

16-01	The land drainage system will be reinstated to achieve pre-existing functionality.

The COMPANY shall undertake the following general commitments:

8-03	The Company will carry out annual maintenance operations to help maintain the integrity of the landscape planting.
X4-12	At CSG1, CSG2 and the PRMS, the project will maintain the unobtrusive colour scheme.

The ECOLOGICAL MANAGEMENT CONTRACTOR shall hand over the landscape planting areas to the COMPANY on completion of the defect liability period for ongoing maintenance

CONTRACTOR shall undertake the following location-specific commitments:

X3-01	Topsoil from the access road will be stored in allocated areas along the access road and used preferentially for reinstatement of road banks. Surplus topsoil from the CSG2 access road construction will be spread at agreed locations or on municipal land.
X4-03	At CSG2, the excess subsoil will be used to create bunding north of the facility.
X4-06	Where the CSG2 access road has been cut into the hillsides, some of the excess subsoil and topsoil will be used to blend the road into the landscape if slope stability and drainage allow. The remainder of the material will be removed from site to reinstate borrow pits or disposed of to an agreed location.
X4-08	At the PRMS, topsoil from the facility will be used to create bunding east and south of the facility.
X4-09	Once the landforming at the PRMS has been completed the land will be reinstated for grazing use.

The ECOLOGICAL MANAGEMENT CONTRACTOR will undertake the following locationspecific commitments:

X4-02	At CSG1, locally occurring native trees and shrubs will be planted along field boundaries to the north and east to screen PSG1 and CSG1 facilities from Jandari Road providing sufficient land is available.
X4-05	Planting of coniferous trees on a bund north of the CSG2 facility will screen the facility from Rekha.
X7-10	At CSG2, tree planting to screen the visual impact will avoid planting on the seasonal wetland areas.

The landscape management plan aims to provide a coherent strategy to achieve the design intentions of the landscape mitigation proposals for the proposed CSG1, CSG2 and PRMS sites. The management plan aims to promote the long-term success and sustainability of the landscape proposals for CSG1, CSG2 and PRMS, detailing maintenance prescriptions designed to achieve them.

The primary aims of this are as follows:

- Establish and maintain the visual screening for CSG1, CSG2 and PRMS, and to aid integration of the proposed developments into the existing landscape
- Ensure the proposed landscape planting has a viable future to provide a long-term feature within the landscape, managed using sustainable management and cost effective maintenance techniques
- Utilising native species indigenous to the area encouraging the presence of native Georgian and locally important species and visually in keeping with the existing vegetation
- Enhance the visual quality of each individual area and habitat
- Maintain in a safe manner and minimise potential hazards so landscape elements are appropriate to enable full operational procedures within the site.

These aims can be further broken down into more direct objectives as follows.

8.4.2 General Objectives

Existing ecologically valuable landscape elements such as trees and shrubs should be retained. Diversity should be increased throughout the areas by managing existing vegetation in accordance with best practice to promote an ecologically valuable landscape for the long term.

Manage new shrub planting, trees and tree belts to ensure full establishment/cover of existing and new planting to include regular shrub maintenance, herbicide applications and mulch top up. Seasonal watering may be required dependent on weather conditions. Upon maturity vegetation will require regular pruning in accordance with the specification detailed below:

- The sites should be cut frequently enough to remain tidy
- All management operations are to be undertaken to ensure the safe operational procedures of each of the CSG1, CSG2 and PRMS sites. Maintain a functional site, ensuring that vegetation does not encroach on to hard surfaces or buildings etc., and similarly does not obscure security cameras or signage
- Ensure site remains free of pest species such as rats with regular inspection and control regimes as required
- Maintain fencing suitable for protection of the tree planting areas
- Site security measures should be inspected on a regular basis to minimise the potential for incursions
- All landscape works will be undertaken in accordance with good practice
- The defects liability period is completed and planting failures have been reinstated.

8.4.3 Site-specific Objectives

Conceptual landscape proposals have been developed for the facilities and are shown in Figure 8-1 to Figure 8-3.

8.4.3.1 CSG1

Establish linear tree and shrub plantations to act as a windbreak type planting similar to existing, established landscape patterns.

Where appropriate diversify planting using native vegetation, utilising species indigenous to the area such as:

- Honey locust, Gleditschietum tricanthos
- Cork barked elm, Ulmus suberosa
- White mulberry, *Morus alba*
- Russian olive, Elaeagnus angustifolia.

Ensure adequate planting density is maintained to ensure a viable landscape screen.

Replace failed tree and specimens as required.

Erect suitable fencing to prevent grazing damage to planted trees

Establish amenity grass areas within the proposed planting areas and maintain regularly to ensure a vegetation exclusion zone, maintaining an aesthetic appearance and preventing encroachment. Grass will be managed on a regular basis throughout the growing season. Frequency will be dependent on growing conditions.

Retain standing and fallen deadwood to provide habitat for fungal and invertebrate species.

Prevent widespread encroachment of scrub from adjacent woodlands into open areas.

8.4.3.2 CSG2

Establish coniferous plantations to act as visual screen, similar to existing, established landscape patterns using native vegetation, utilising species indigenous to the area such as:

• Caucasian pine, *Pinus kochica*

- Caucasian fir, Abies normanniana
- Oriental spruce, *Picea orientalis*.

Ensure adequate planting density is maintained for a viable landscape screen.

Erect suitable fencing to prevent grazing damage to planted trees

Replace failed tree and shrub specimens as required.

Monitor establishment ensuring broadleaf weed species are eradicated on regular inspection visits.

Retain standing and fallen deadwood, and trees felled due to construction activities to provide habitat for fungal and invertebrate species.

Newly planted tree belts will require thinning on a cyclical basis. Initial thinning of approximately 50% is required and will be staggered in to reduce initial impact. Weak and failed specimens are to be removed as a priority. Sections are to be revaluated after approximately five years and a further 50% thin implemented if required.

Primarily allow regeneration of grasslands with minimal requirement for additional seeding.

Prevent widespread encroachment of scrub from adjacent woodlands into open areas.

Manage grasslands to diversify all meadow areas, cut and remove arisings on an annual basis in accordance with good practice to ensure depletion of nutrients (nitrogen (N), phosphorus (P) and potassium (K)) and establishment of a seed bank.

If poor re-establishment, diversify grasslands by over-sowing alpine meadow grass areas and applying appropriate annual management. Employ indigenous, native species mix designed for the site location.

Alternative options to manage grassland through rotational grazing options may be applicable.

Establish amenity grass areas within the proposed planting areas and maintain regularly to ensure a vegetation exclusion zone, maintaining an aesthetic appearance and preventing encroachment. Grass will be managed on a regular basis throughout the growing season. Frequency will be dependent on growing conditions.

Ensure the access road remains functional during all conditions including snow clearance as required.

8.4.3.3 PRMS

Primarily allow regeneration of grasslands with minimal requirement for additional seeding.

Manage grasslands to diversify all meadow areas, cut and remove arisings on an annual basis in accordance with best practice to ensure depletion of nutrients (nitrogen (N), phosphorus (P) and potassium (K)) and establishment of a seed bank.

If poor re-establishment, diversify grasslands by over-sowing steppe/xeric grass areas and applying appropriate annual management. Employ indigenous, native species mix designed for the site location.

Alternative options to manage grassland through rotational grazing options may be applicable.

Establish amenity grass areas within the proposed planting areas and maintain regularly to ensure a vegetation exclusion zone, maintaining an aesthetic appearance and preventing encroachment. Grass will be managed on a regular basis throughout the growing season. Frequency will be dependent on growing conditions.



Figure 8-1: PRMS Conceptual Landscape Proposal

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Figure 8-2: CSG1 Conceptual Landscape Proposals

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Figure 8-3: CSG2 Conceptual Landscape Proposals

Verification and Monitoring

Initial works to implement the landscape design proposals will include:

- Site clearance and preparation to include the removal of existing unwanted vegetation and preparation of ground conditions to include importation of topsoil as required
- Tree and shrub planting
- Grass seeding
- Fencing.

ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for all subsequent aftercare and monitoring to meet the vegetative cover target during the CONTRACT defects liability period (five years), after which COMPANY shall retain responsibility.

8.4.4 Cyclical Maintenance

As part of the initial planting programme the ECOLOGICAL MANAGEMENT CONTRACTOR will be expected to maintain vegetation for a minimum five-year defects liability period (during the CONTRACT WARRANTY PERIOD). A preliminary maintenance schedule is outlined in Table 8-1.

During this time they will be expected to maintain the landscape vegetation to ensure all three sites (CSG1, CSG2, CSG2 access road and PRMS) are managed to ensure the successful establishment of the planting (e.g. no more than 10% loss of planted trees over five-year period) and 100% sward cover for seeded areas within two years.

Upon practical completion, general maintenance requirements will include but shall not be limited to the following:

- Site inspection and reporting to include security issues
- Replacement of dead trees
- Fence maintenance
- Cleansing litter picking.
- Grass cutting amenity mowing, rough grass and alpine meadow cuts
- Weed control hardstanding, seeded areas, tree and shrub beds and tree pits. Monitoring and control of broadleaf weeds species within grass areas allowed to naturally recolonise
- Tree and shrub bed maintenance, maintenance of new trees and shrub planting to include watering, weed control, checking and securing stakes, guards and ties and replacements as required
- Path and hardstanding area maintenance to include snow clearance, removal of leaf litter and clearance of drains
- Clearance of drainage gullies and ditches
- Pest control
- Lighting inspections.

8.4.5 Monitoring the Effectiveness of Landscape Planting

The SCPX ESIA has committed to monitor the effectiveness of landscape planting.

8.4.5.1 Maintenance for five years after construction

Annual inspections will establish the numbers and species of failed plants within the landscape mitigation scheme. Failed plants will be replaced with healthy specimens on an annual basis.

A borehole or diversion of an existing spring to a holding pond shall be provided to ensure a supply of water for summer irrigation of the planting areas at CSG2 and CSG1.

8.4.5.2 Long-term monitoring

Maintenance for five years after construction will bring the CSG1, CSG2 and PRMS compounds in to a cyclical rotation that provides a robust maintenance schedule, ensuring an aesthetic landscape and encouraging greater diversity owing to the establishment of new habitats in areas where they will not affect operational procedures.

Beyond this period, with the full establishment of vegetation the proposed landscape will aid integration of the development into the existing landscape through screening by provision of a sustainable planting strategy, thus ensuring the long-term future of all retained planting.

- It is recommended that management following the initial five-year plan should continue to ensure that the existing vegetation is of a suitable state to promote the presence of those locally important species previously recognised
- Annual inspection to establish the numbers and species of failed plants within the landscape mitigation scheme occurs. Replacement of failed plants with healthy specimens on an annual basis
- Woodland thinning can be carried out on a cyclical basis to vary the age of the woodland within the development site. Regeneration from the initial thinning will supply variation. Continue thinning regime within tree belts when appropriate in approximately a 7–10 year cycle
- Continue tree monitoring in accordance with revised tree condition reports.
- Clear non-native ornamental shrubs within woodlands and cyclical scrub clearance as and when they re-establish
- Continue annual meadow grass cutting regime, ensuring that all arisings are removed to provide a beneficial habitat for invertebrates
- Access to certain areas should continue to be monitored and regulated to prevent disturbance of protected species
- Provide varied habitat types in an attempt to increase biodiversity further.

Table 8-1: Five-Year Maintenance Schedule

Maintenance	Year 1									Т	Year 2												Year 3											Year 4												Year 5									
Operation	М	JJ	Α	s c	N	D	J	F	M	A I	ΛJ	IJ	Α	S	0	Ν	D	J	FΙ	MA	A N	ΛJ	J	Α	S	0	Ν	D	J	FΝ	ΛA	м	J	J	A	s c	N	D	J	F	М	А	м.	J.	JΑ	s N	0	Ν	D	J	FΝ	ΛA			
Site Inspection and Reporting																																																							
Cleanse site compounds and access roads										I											Ι																					I													
Amenity Grass Maintenance																																																\square							
Path Edging					_																																											\square	\square						
Alpine Meadow, Steppe and Xeric Grass Maintenance																																																							
Oversowing Grassland Areas																																																							
Shrub Bed Maintenance	Π									T																																						Π				T			
Tree Planting Maintenance																																																\square							
Native Tree and shrub belt Maintenance																																																							
30% Ditch Vegetation Clearance																																																							
Harstanding Maintenance inc weed control																																																							
Snow clearance and Gritting																																																							
Pest Control										Ι																																		Ι				\Box							
Removal of stakes guards and protective fencing																																																							
Management of Existing Woodlands and Tree belts																																																							
Replacement Planting				Τ						Τ								Τ			Τ								Τ				\square		Τ							T						Π	T		Τ				

9 ECOLOGICAL MANAGEMENT PLAN

9.1 Scope

The scope of this management plan relates specifically to the following ecological management issues:

- Training
- Minimising habitat disturbance
- Preconstruction ecological surveys and translocation of flora and fauna
- Habitat and species protection.

9.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

This plan has taken into consideration **IFC's Performance Standard 6** on Biodiversity Conservation and Sustainable Management of Living Natural Resources and its accompanying guidance note.

Operators constructing similar projects to the SCPX Project generally adopt the following good practices to achieve sustainable management and use of resources:

- Projects preferentially use brownfield sites and minimise the footprint of all permanent and temporary facilities and access roads by:
 - Sharing with other operators in the area where this can reduce the cumulative footprint (e.g. shared roads, pipeline right-of-ways)
 - Using directional drilling, tunnelling etc., in sensitive areas where conventional construction may result in permanent damage to plant or animal communities
 - Considering the offset of losses through the creation of comparable habitats or compensation to directly impacted users
- Projects minimise any major, long-term change in land or water use or modification of a habitat that substantially reduces the habitat's ability to maintain viable population of its native species, and shall identify opportunities to enhance habitat and protect and conserve biodiversity
- Projects avoid significantly changing land or water use or modifying a habitat in a way that substantially reduces its ability to maintain viable population of its native species, unless there are no technically and financially feasible alternatives and any conversion or degradation is appropriately mitigated
- Projects use pesticides only as a last resort and only after alternative pest control
 methods have been considered, and in that case they select products that are low
 in human toxicity and are the least environmentally harmful type that are known to
 be effective against the target species, but have minimal effects on non-target
 species and the environment
- Projects do not intentionally introduce any new alien species unless it has been risk assessed in the ESIA as having a low risk of invasive behaviour and will exercise diligence to prevent accidental or unintended introductions.

In addition, the IPLOCA guidance (Vol.1, Appendix 6.3) states:

- Habitat disturbance and soil erosion can be mitigated by appropriate soil handling techniques during construction; limiting the amount of topsoil stripped to the absolute minimum required, and for as briefly as possible. In addition regular watering of stripped topsoil areas can help reduce dust generation and surface wind erosion, as can limiting traffic and speed of traffic on the pipeline spread. Appropriate storage of stripped and excavated soil, and limiting the gradients of slopes/trench sides during construction and timing construction works to avoid the wettest times of the year are also important considerations
- The spread of invasive or alien species and contaminated soils along pipeline routes can be mitigated by appropriate weed control measures, limiting vehicle movements and appropriate separate soil storage.

9.3 Roles and Responsibilities

COMPANY shall employ a specialist ECOLOGICAL MANAGEMENT CONTRACTOR who will be responsible for implementing activities related to species translocation and biorestoration. References to CONTRACTOR in this plan refer to all main construction CONTRACTORs other than the ECOLOGICAL MANAGEMENT CONTRACTOR.

9.3.1 Company

COMPANY responsibilities are as detailed in Section 5 of this ESMMP.

9.3.2 Contractor

CONTRACTOR shall be responsible for:

- Developing an Ecological Management Implementation Plan that meets the requirements of this plan (as it relates to CONTRACTOR's scope of work)
- Carrying out the prescribed tasks listed in Table 9-1
- Leading all Pre-Construction/Entry surveys as required in Section 7.4.2
- Adhering to and implementing the mitigation measures as determined by ECOLOGICAL MANAGEMENT CONTRACTOR'S pre-construction ecological survey as communicated through COMPANY
- Giving a minimum of 30 days' notice to the ECOLOGICAL MANAGEMENT CONTRACTOR prior to entry into an area for construction to allow preconstruction and pre-clearance surveys to be completed
- Providing local labour, equipment, HSSE and site supervision to pre-clearance surveys (Table 9-2)
- Providing labour, equipment and materials for relocation of wildlife/livestock from the open trench (in a humane manner) to an area of suitable habitat
- Facilitating biorestoration activities as carried out by ECOLOGICAL MANAGEMENT CONTRACTOR, e.g. by allowing bulbs to be planted in advance of securing erosion control matting as communicated through COMPANY.

9.3.3 Ecological Management Contractor

ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for:

• Developing an Ecological Management Implementation Plan that meets the requirements of this plan (as it relates to ECOLOGICAL MANAGEMENT CONTRACTOR's scope of work)

- Definition of the procedures, protocols and method statements by which the pre-construction surveys, translocation and bio-restoration measures will be implemented
- Carrying out the prescribed technical tasks listed in Table 9-1
- Ensuring that the ecological management procedures established in the Ecological Management Implementation Plan are complied with
- Undertaking pre-construction ecological surveys
- Undertaking an inventory of all trees to be removed during construction
- Monitoring and verification of activities in accordance with the monitoring and verification requirements as applicable
- Record keeping including weekly updates and monthly reports identifying sensitive species and habitats
- Marking sensitive plants for avoidance, translocation or protection before construction
- Translocation of floral species as identified in the SCPX ESIA with assistance from CONTRACTOR who will provide the equipment and labour
- Undertake translocation of fauna to suitable habitat (in a humane manner) during pre-construction phase of work and providing specialist advice and assistance to the CONTRACTOR during construction phase
- Propagation of species as identified in the SCPX ESIA
- · Collection of seeds from native flora for use during reinstatement
- Managing bio-restoration of all Project areas
- Post-construction bio-restoration monitoring.

9.3.4 Summary of Technical Responsibilities

The term 'execution' in the table below refers to the main party responsible for carrying out the work required for that particular key activity. The term 'interface' means there is an action or task required to be completed by another party to allow the main execution party to carry out their activity.

Key Issue/Activity	CONTRACTOR	ECOLOGICAL MANAGEMENT CONTRACTOR	COMPANY	Relevant Plan
General ecological management commitments	Execution		Monitoring and audit	Ecological MP
Provision of awareness training for the workforce	Execution		Monitoring and audit	Ecological MP
Preconstruction Ecological Survey	Attendance and Implementation of Survey Results	Execution	Monitoring and audit	Ecological MP

Table 9-1: Summary of Technical Tasks for Ecological Management

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Key Issue/Activity	CONTRACTOR	ECOLOGICAL MANAGEMENT	COMPANY	Relevant Plan
		CONTRACTOR		
Preconstruction clearance survey (Relocation of protected animal species from within the ROW and working areas) if needed	Interface: Notification of start of clearing and grading (minimum 48 hours' notice required)	Execution - Immediately (within 48 hours) prior to construction clearing and grading to verify absence of sensitive fauna species. Fauna species moved where applicable or encourage to move to adjacent similar habitats	Monitoring and audit	Ecological MP
Tree inventory	Interface: Notification of start of clearing and grading (timing as per section 9.4.3 regarding tree inventories)	Execution – detailed tree inventory included Red Data Book species to be completed prior to CONTRACTOR entry to site	Monitoring and audit	Ecological MP
Bird sensitive areas	Implementation of survey results, e.g. monitoring noise during periods of work activity	Execution: detailed identification of sensitive areas	Audit	Ecological MP
Translocation of sensitive plant species from the CSG2 site	Interface: Notification of planned entry to Ecological Management Contractor	Execution: To be completed prior to CONTRACTOR entry to site	Monitoring and audit	Ecological MP
Translocation of fauna - before construction	Interface: Notification of planned entry to Ecological Management Contractor	Execution: To be completed prior to CONTRACTOR entry to site	Monitoring and audit	Ecological MP
Translocation of fauna – construction (after topsoil stripping)	Execution: Translocation of fauna from trench/working areas	Interface - specialist advice and assistance	Monitoring and audit	Ecological MP
Propagation of specific sensitive plant species (if required)		Execution	Monitoring and audit	Ecological MP
Collection and storing of seed (non-commercially available) for seeding and bio-restoration	Interface: Notification of seeding schedule	Execution	Monitoring and audit	Ecological MP
Procurement and storage of commercially available seed	Execution	Specification of seed	Approves seed specification Monitoring and audit	Reinstatem ent MP/ Ecological MP

Key Issue/Activity	CONTRACTOR	ECOLOGICAL MANAGEMENT CONTRACTOR	COMPANY	Relevant Plan
Seeding of all non- agricultural areas (ROW and temporary areas)	Execution during construction (seeding, fertiliser application; irrigation etc.)	Specification of seed mix and timing; Fertiliser specification	Monitoring and auditing	Reinstatem ent MP/ Ecological MP
Bio-restoration of natural/semi-natural habitats in temporary works areas	Interface: Notification of reinstatement schedule; Facilitate biorestoration measures, e.g. holes in jute matting	Execution	Monitoring and auditing	Ecological MP/
Monitoring erosion control Seeding Success, Corrective Actions and Performance Reporting	Execution (During Construction and CONTRACT WARRANTY PERIOD)	Monitoring during CONTRACT WARRANTY PERIOD; Execution after CONTRACT WARRANTY PERIOD	Monitoring and auditing	Reinstatem ent MP/Ecologic al MP
Bio-restoration monitoring, corrective actions and reporting		Execution	Monitoring and auditing	Ecological MP

9.4 Impact Avoidance and Mitigation

ECOLOGICAL MANAGEMENT CONTRACTOR AND CONTRACTOR shall implement the commitments as outlined below.

A summary of all commitments related to ecological management that have potential timing or seasonal constraints is included in Appendix F. This table should be consulted to identify activities that need to be carried out at a specific time of year, or periods when activities cannot be completed without COMPANY approval of a deviation.

9.4.1 Training

The SCPX ESIA has committed to including an understanding of ecological sensitivities in induction training.

With respect to ecology, CONTRACTOR shall ensure that all personnel understand:

- The ecological sensitivities of the pipeline sections, facility sites and access roads
- The potential ecological impacts of the Project, the mitigation measures that have been adopted to address those impacts and how and where to apply these measures
- Identification of the main protected species that could be encountered in the works areas, e.g. spur-thighed tortoise
- The sensitivity of wildlife to physical disturbance and noise
- The need to avoid encroachment on habitats outside the demarcated work areas and approved access routes
- The need to protect mature trees from physical damage to their trunks, roots or crown
- The need to report any incident involving the accidental injury or death of fauna
- The risks of attack from animals that present a threat to human safety.

CONTRACTOR shall arrange more detailed training on ecological management issues for Managers and Supervisors with specific responsibilities in this area or areas with work with potential for significant ecological impact. The information gained by supervisors during training shall be cascaded to the rest of the work team, including labourers and general operatives, by routine toolbox talks that include updates on specific local issues such as seasonal constraints and the recognition of rare and protected species.

9.4.2 Minimising Habitat Disturbance

At the Algeti and Mtkvari Rivers, the ROW passes through areas where the protected species Mediterranean spur-thighed tortoise (*Testudo graeca*) has been observed. There is a risk that open-cut crossing construction activities at the Algeti or clearance of vegetation and soil by the Mtkvari River could harm individuals of this species or restrict its breeding sites and foraging areas (refer to Section 9.4.4 and 9.4.5).

COMPANY has incorporated a narrowing of the working width at certain areas into the Project design to reduce permanent ecological impacts. CONTRACTOR shall at a minimum comply with working widths as specified on the alignment sheets to reduce ecological impacts. Refer to commitment D5-054, Section 9.4.5.

CONTRACTOR shall plan facilities and work areas to minimise the area to be cleared to that strictly necessary for the safe construction and operation of the pipeline Project. In sensitive areas, CONTRACTOR shall consider the extent to which the working width/area and the width of any necessary access roads can be reduced without compromising safety.

CONTRACTOR shall only remove vegetation from the vent exclusion zone as necessary to construct the vent, supporting pipework and fence in order to meet the following commitment.

D17-09	The inert surface area of the vent exclusion zone at the facilities (CSG1, CSG2 and
	PRMS) will be reduced to that required for safety purposes, thereby reducing the
	amount of habitat removed.

During pre-construction surveys, sensitive flora areas and mature trees will be demarcated by ECOLOGICAL MANAGEMENT CONTRACTOR for avoidance where possible as agreed with COMPANY.

X7-17	At the Algeti River crossing, individuals of the smooth-leaved elm shall be marked prior
	to construction and shall be avoided where deemed practicable by the Company
	during the setting out of the ROW.

All trees that are to be avoided will be identified by ECOLOGICAL MANAGEMENT CONTRACTOR and will include at locations along the CSG2 access road and at the Algeti and Mtkvari River crossings (see Construction Constraints Schedule for pipeline construction constraints and access road alignment sheets).

COMPANY will identify sensitive areas and protected areas within the Construction Constraints Schedule. Further updates to the constraint schedule will be provided and sensitive areas will be identified on the 'Approved for Construction' alignment sheets. Sensitive areas may be further defined during the pre-construction ecological survey.

To facilitate the physical avoidance of sensitive areas, CONTRACTOR shall clearly delineate the ROW, access road ROW and facility boundaries in accordance with the precise route alignment and site plans where the working width passes through or adjacent to such areas. Notices and signs shall be erected and maintained by CONTRACTOR to indicate the location of sensitive areas (e.g. watercourses, ecologically sensitive and protected areas). Workers shall be made aware of the location of sensitive habitat and species in the vicinity of work camps or the right-of-way and facility construction sites, and unnecessary access shall not be permitted.

Delineation in all areas, including sensitive areas shall take the form of:

- Staking/pegging out of agricultural and pasture land and meadow
- Taping of forested and scrub areas.

Should CONTRACTOR require additional access routes these shall also seek to avoid sensitive areas, minimise erosion and comply with the requirements of the other Management Plans, including the Land Management Plan.

CONTRACTOR shall ensure that wild animal water sources are avoided during excavation and construction work. If they cannot be avoided, and nearby alternative sources are not available, alternative sources of drinking water will be supplied.

CONTRACTOR shall implement the following commitments:

X7-16	At CSG2 the large wetland area to the east of the facility area will be fenced with
	protective barriers to protect it from construction activities while allowing access for livestock

ECOLOGICAL MANAGEMENT CONTRACTOR shall prepare Site-Specific Ecological Management Plans with requirements that the CONTRACTOR shall include within their site-specific method statements, which shall be agreed with the COMPANY prior to construction to meet the commitments below:

19-10	The Company will prepare Site-Specific Ecological Management Plans for priority
	areas. CONTRACTOR will incorporate the requirements of these plans into site-specific
	method statements.

The CONTRACTOR's method statements will address competency of staff for flora and fauna species identification and any additional training for staff required.

The priority areas, at a minimum, shall include the following locations:

- The Algeti River crossing
- The reed beds at KP7–10 and KP50–51
- The potential corncrake habitat at the CSG2 access road (KP6–8)
- The areas of marsh orchid habitat at CSG2
- The wetland at KP0–0.5 (to meet the commitment below).

At the wetlands at KP0–0.5 and reed beds at KP7–10 and KP50–51, CONTRACTOR shall cut wetland vegetation within the ROW to ground level and vegetation shall be removed from site prior to construction. Topsoil with entrained roots and rhizomes shall be stored separately for replacement to point of origin. If determined necessary in the site-specific ecological management plan, the ECOLOGICAL MANAGEMENT CONTRACTOR shall collect seeds from adjacent areas and spread over the disturbed ROW as soon as practicable on completion of reinstatement.

CONTRACTOR shall meet the following commitment:

X7-01	A method statement will be produced and agreed prior to construction of the pipeline
	through the wetland at KP0–0.5 with the aim of reducing damage to the wetland during
	construction by use of bogmats or an alternative as approved by the Company.

Additional priority areas may be added as a result of the pre-construction ecological surveys.

9.4.3 Pre-construction Ecological Surveys

The SCPX ESIA has committed to carrying out pre-construction ecological surveys that shall be executed by THE ECOLOGICAL MANAGEMENT CONTRACTOR.

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop an Ecological Survey Plan that gives details of the surveys to be carried out (e.g. flora, fauna and waterways) including the areas to be surveyed, the survey methods to be employed and how the survey findings will be reported.

ECOLOGICAL MANAGEMENT CONTRACTOR, in coordination with CONTRACTOR, shall undertake staged, progressive pre-construction ecological surveys at all sensitive areas identified in the ESIA, taking account of seasonal constraints (e.g. migration patterns, breeding seasons and spawning seasons) when planning the surveys to:

- Identify ecological resources and dynamics that may be affected by construction work in the ROW or CSG2 access road corridor or at the facility sites taking account of seasonal constraints, and compile a comprehensive photographic record including key habitats or topographical features of ecological significance (e.g. river crossings, woodlands, forests, meadows, gullies, canyons, slopes, outcrops, eroded terrain) prior to vegetation clearance, topsoil stripping, grading, cutting and other major earthworks
- Confirm the presence of floral or faunal species that may require translocation and any protection status (e.g. red list species)
- Identify the presence of floral species to be preserved by avoidance
- Confirm or identify seasonal constraints on work activities
- Facilitate the reinstatement of a similar plant community to that existing prior to construction and inform the reinstatement seed specification
- Revise the location specific commitments or propose additional mitigation measures as necessary.

Specific sensitive areas include the following identified priority areas to be surveyed as a minimum:

- KP0–12
- KP54–55 Algeti River crossing
- KP29–31 Mtkvari River crossing
- CSG2 and CSG2 access road.

At least 60 days before construction starts, ECOLOGICAL MANAGEMENT CONTRACTOR shall submit a pre-construction survey report to COMPANY on mitigations in sensitive areas that include:

- Minimisation of tree felling and scrub clearance
- Reduction of working width
- Seasonal restrictions
- Translocation of species or turfs
- The provision of fish passages
- Measures to minimise the impacts of heavy machinery (e.g. moveable equipment mats or plates)
- Close supervision by field ecologists throughout the construction and reinstatement period.

COMPANY shall communicate results of the pre-construction survey and any permit conditions and revised or additional mitigations, including any need to implement a seasonal constraint within a defined area (work shall be avoided in a pre-defined area as instructed by COMPANY), to CONTRACTOR. CONTRACTOR shall implement all mitigation measures as they relate to CONTRACTOR's scope of work.

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following location-specific commitments:

Pipeline:

17-18	A pre-construction survey between April and July inclusive will be undertaken at the pipeline camp location, of the plants and animals present on site to identify any need for site apacitic mitigation management.
X7-12	Pre-construction ecological surveys will be carried out at dusk/night in June/July to record details of bats at KP2–12. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.
X7-13	Pre-construction ecological surveys will be carried out at night at dusk/night in June/July to record details of bats at KP54–55. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.
X7-02	Where trees are removed on the banks of the Algeti River, compensation planting will be undertaken to off-set the essential removal of trees.
X7-06	To facilitate the re-establishment of smooth-leaved elm populations by the Algeti River, seeds will be collected from mature tree specimens in nearby habitat and saplings will be produced from the collected seeds at a recognised nursery.
X7-07	After construction has been completed, seed-grown plants of 50cm or more in height will be planted in areas of the Algeti riparian woodland where populations of smooth-leaved elm occurred prior to clearance (subject to planting restriction zones), suitable protection will be provided to protect them from grazing.
X7-08	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded using hay and an appropriate seed mix.

CSG2:

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following location-specific commitments:

X7-14	Ornithological surveys will be carried out at CSG2 and at wetland areas along the the
	CSG2 access road in the breeding season (May-June) and in the migration season
	(September) before and during construction work to identify bird species using the
	area and the effect of construction.

The CONTRACTOR shall implement the following location specific commitments:

X3-02	The CSG2 access road embankments will be reinstated with an appropriate seed mix.
X4-07	Where the CSG2 access road is routed through pine plantations, felled trees will be preferentially left within the existing plantation to rot and provide habitat for fungal and invertebrate species, pending agreement with the landowner.

The ECOLOGICAL MANAGEMENT CONTRACTOR shall conduct faunal pre-clearance surveys (inspection and translocation if required) within areas with sensitive species and habitats (as identified by the Pre-Construction Survey Report,) no more than 48 hours before entry to each section to verify that animals belonging to protected species are absent

from the construction area. CONTRACTOR shall notify ECOLOGICAL MANAGEMENT CONTRACTOR a minimum of 48 hours in advance of his intent to enter each section for clearance.

Before construction starts ECOLOGICAL MANAGEMENT CONTRACTOR, with the presence and assistance of CONTRACTOR shall:

- Mark areas to be cleared and to be used as storage areas, such that plant cover is not excessively eliminated in sensitive areas
- Mark the limits of all areas to be cleared to ensure that clearance does not take place outside designated areas
- Mark and flag any sensitive plant situated immediately adjacent to or on the edge
 of the ROW before vegetation clearing and tree felling, topsoil strip and other
 earthmoving activities so that plant cover and other habitat elements (such as
 rocks) are not disturbed outside of approved work areas by clearing and grading or
 stockpiling of materials to meet the following commitments:

D5-045	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.
X7-17	At the Algeti River crossing, individuals of the smooth-leaved elm shall be marked prior to construction and shall be avoided where deemed practicable by the Company during the setting out of the ROW.

• Clearly mark any trees or sensitive flora within the ROW or construction areas that may be avoided as described above.

Before construction starts CONTRACTOR shall:

- Train personnel involved in clearing and grading activities about the need to protect sensitive plant species
- Place signs with environmental protection information in areas immediately adjacent to the ROW where sensitive flora has been identified during the Preconstruction Survey.

CONTRACTOR shall provide the following equipment and labour in support of the preconstruction surveys.

Table 9-2: CONTRACTOR Support Requirements for Pre-Construction/ Clearance Surveys

Location	Labour	Plant/Equipment
All	As required to meet Ecological Management Plan requirements	Paint; marker poles/tape or similar to mark sensitive features to be retained

To fulfil the commitment below, the CONTRACTOR shall acquire any permits required to fell trees in accordance with Appendix C. The CONTRACTOR shall consider the need for tree inventories which shall be carried out by the ECOLOGICAL MANAGEMENT CONTRACTOR within the permit schedule. CONTRACTOR shall provide the ECOLOGICAL MANAGEMENT CONTRACTOR within the permit schedule. CONTRACTOR shall provide the ECOLOGICAL MANAGEMENT CONTRACTOR with a minimum of 14 days' notice of the need to carry out an inventory in support of the permit application, and CONTRACTOR shall assist with the marking out of workspace boundaries during the inventory. The ECOLOGICAL MANAGEMENT CONTRACTOR shall carry out an inventory of all trees felled during the Project construction phase, including Red Data Book species, in accordance with the requirements of national legislation including the Law of Georgia on
Red List and Red Data Book and Forestry Code of Georgia; Decree N 242 of Government of Georgia on Approval of Rules of Forest Use to meet the following commitment.

17-15	An inventory will be made of all trees felled during the Project construction phase,
	including Red Data Book species, in accordance with the requirements of national
	legislation.

The CONTRACTOR shall mark all trees within the work area boundaries which require removal (only those trees which cannot be avoided where practical and as agreed with the COMPANY) and have been included in the inventory. CONTRACTOR shall only remove marked trees during felling operations.

The CONTRACTOR shall provide a minimum of 48 hours' notice before tree felling to allow for mobilisation of the ECOLOGICAL MANAGEMENT CONTRACTOR to count and record details of all trees removed.

9.4.4 Translocation

ECOLOGICAL MANAGEMENT CONTRACTOR's report on mitigations in sensitive areas shall allow for the translocation of any plants that the ESIA identifies as requiring translocation because they are sensitive or protected.

ECOLOGICAL MANAGEMENT CONTRACTOR's survey report shall recommend which species are to be replanted during reinstatement, which are to be replanted in adjacent areas and/or which species should be propagated for additional individuals to be replanted during reinstatement, to meet the commitment below.

X7-18	Marsh orchids within the temporary and permanent footprint at CSG2 will be
	surveyed, identified and translocated prior to construction. A proportion of the plants
	will be moved to similar habitat in unaffected areas.

Marsh orchid on the plots at CSG2 in the following locations shall be marked when still in leaf:

- Plot P26 E8403770/N4615052; E8403770/N4615051; E8403768/N4615051; E8403770/N4615052
- Plot P40 E8403880/N4614733; E8403879/N4614731; E8403877/N4614733; E8403879/N4614735.

They shall be translocated prior to construction. The location of translocated plants will be agreed with the COMPANY and GPS referenced for monitoring purposes. The ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for carrying out all translocations. In addition, depending on the survivability of translocated plants, seeds from the marsh orchid shall be collected from nearby populations to ensure genetic consistency. They shall be grown in nursery conditions and acclimatised and planted in agreed locations once established.

The SCPX ESIA has committed to translocate spur-thighed tortoises from the ROW, which shall be carried out by the ECOLOGICAL MANAGEMENT CONTRACTOR (during the faunal pre-clearance survey prior to topsoil stripping) and by a trained CONTRACTOR Representative after topsoil stripping to meet the following commitment.

19-03	If Testudo graeca (spur-thighed tortoise) is found within the work site, individuals will
	be moved to a safe distance (50m+) from the works by the Project ecologist. Any eggs
	or hatchlings will be placed in a box of sand and transferred by the Project ecologist to
	suitable nearby habitat where a nest will be created.

Movement of tortoise and nesting or hibernating animals identified by the ecologist or trained representative should be carried out using suitable secure and species appropriate containers. Suitable receiving habitat should be identified for the release site at least 50m away from the working areas.

After the preconstruction survey of sensitive areas, ECOLOGICAL MANAGEMENT CONTRACTOR's report on mitigations in sensitive areas shall propose translocation of sensitive or protected faunal species of low mobility (which cannot readily evacuate the ROW or construction site upon commencement of clearing activities) to appropriate habitat outside of the right-of-way or construction area prior to construction. (High-mobility animals that do not instinctively flee before bulldozers and backhoes arrive should be encouraged to flee, but may be captured and relocated to nearby suitable habitat.)

In support of translocation, ECOLOGICAL MANAGEMENT CONTRACTOR's reports on mitigations in sensitive areas shall include a statement on:

- The proposed approach to the identification, trapping, capture, handling and relocation of amphibians and reptiles and other smaller mammals associated with site clearance activities
- The identification of safe zones for release of the translocated animals before they are captured, that are similar to the habitats from which the individuals were removed
- Methods of capture (e.g. hand, net, noose, traps or snake hook) that will not result in harm to the fauna
- How, and for how long, animals will be held and transported before release into safe zones.

9.4.5 Habitat and Species Protection during Construction

9.4.5.1 General

CONTRACTOR and COMPANY shall meet the following commitment:

18-05	The Contractor shall inspect and wash, all plant and equipment prior to shipping to the country of use with the aim of ensuring, as far as practical, is free from soil and plant material.
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CONTRACTOR shall document the condition of equipment in a photographic record prior to shipping to the country of use, which shall be made available to COMPANY for auditing purposes on request. CONTRACTOR shall inspect all earth-moving equipment to aim to ensure it is free from soil and plant material prior to any cross-border movements.

9.4.5.2 Terrestrial species protection

CONTRACTOR shall implement the following commitments that will minimise disturbance or loss of wildlife.

Where animals are found within working areas during construction (after the execution of pre-clearance surveys by the ECOLOGICAL MANAGEMENT CONTRACTOR Sec 9.4.3) they shall be moved by a trained and competent CONTRACTOR representative, in a safe manner at least 50m away from the working areas. CONTRACTOR shall implement the following commitments:

Pipeline:

21-02	Each section of open pipeline trench will have sloped ends or other mechanisms to aid
	egress from the trench.

21-04	The trench will be checked regularly for wildlife (particularly in sensitive locations), e.g.
	where tortoises are found (KP29–31 and KP54–55) and where the four-lined snake
	may be present (KP0-12).

The areas of interest, for checking for fauna within the open trench, are predominantly the wetland areas, (KP0-1) and irrigation channels along the first 11km of pipeline, although Brandt's hamster (GRL) is also known to be in the area KP0–12.

COMPANY shall incorporate the following commitments into the Project design, which shall be implemented by the CONTRACTOR during construction:

CSG2 and Access Road:

D17-01	Construction of CSG2 facility and lay-down areas will avoid building on the larger area of wetland at the site.
D17-02	The CSG2 access road route has been selected to follow existing roads and tracks and to avoid plantations, wetlands and cultural heritage sites as far as practicable.
D17-08	During detailed design, the CSG2 access route has been adjusted to avoid the majority of the wetland area near Kushi and to route the permanent and temporary footprint away from the area of active corn crake habitat between Kushi and Berta villages.

Pipeline:

D5-054	Where the ROW passes through riparian woodland by the Algeti River crossing, the SCPX ROW will be a reduced working width, and topsoil will be removed from the
	ROW to a storage area.

CONTRACTOR shall implement the following commitments and location-specific commitments:

Pipeline:

21-01	The length of the continuous open trench (including trench with pipe installed but not backfilled and a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.
X7-09	At the Mtkvari crossing, the scrub will be cut back and coppiced to accommodate the guide cable for the micro-tunnel machine. Plant roots will remain undisturbed, as far as practical.
X7-11	The Algeti River crossing will be constructed outside of the fish-spawning season, which is May–June.
X7-15	The irrigation channel at KP12 will be crossed using a trenchless method thus avoiding disturbance to flora and fauna.

CONTRACTOR shall ensure that only short sections of pipeline trench are open (maximum 10km in any one spread) and that the open trench shall contain mechanisms to aid egress from the trench at a spacing of not less than every 500 meters to permit any fauna that may enter the trench to escape. CONTRACTOR's personnel will inspect the open trench to check whether animals have fallen in and CONTRACTOR's E&S personnel should rescue them, if it can be done safely and relocate individuals to a suitable habitat.

CONTRACTOR's Ecological Management Implementation Plan shall address these issues, and shall ensure that there are sufficient trench crossings to allow the passage of wild animals.

CONTRACTOR shall erect temporary fences or protective barriers to protect retained trees from accidental damage during construction within and immediately adjacent to ROW and CSG2 Access Road ROW.

CONTRACTOR shall store equipment on-site necessary to remove wildlife if they become trapped in the trench or other working areas.

CONTRACTOR shall implement the following commitments:

Pipeline and CSG2 Access Road (as applicable):

19-04	Welded pipe sections will be capped to prevent entry.
20-01	Gaps will be left in soil stacks at strategic locations to allow passage of animals and people where the Project considers it safe to do so.
32-08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.

CONTRACTOR shall minimise the time between pipe stringing and backfill in order to reduce the temporary barrier effect on wild and domestic fauna and any risk of injury caused by falling into the trench.

9.4.5.3 Aquatic environment protection

CONTRACTOR's Ecological Management Implementation Plan shall include proposals to preserve aquatic habitats, minimise diversions, maintain uninterrupted water flow and preserve the landscape in river crossing areas.

Where possible, CONTRACTOR shall construct river crossings when streams are dry, and where this is not possible, CONTRACTOR shall maintain downstream water flow while the crossing is constructed. If techniques using dams and pumps are used to maintain the water flow, CONTRACTOR shall install meshes upstream and downstream of the works area to prevent the pump from harming fish, fry, shrimps and other aquatic organisms.

CONTRACTOR should cut back vegetation from riverbanks but shall not use methods that will disturb tree roots and destabilise the banks.

CONTRACTOR shall implement the following location-specific commitments:

Pipeline:

X7-11	The Algeti River crossing will be constructed outside of the fish-spawning season, which is May–June.
D5-078	If water is sourced from rivers (or channels), no more than 10% of water flow will be extracted at any time.
D5-079	Before extracting water the Project will consider the presence of any IUCN/Georgian Red List fish species particularly during fish spawning season (which normally occurs within the period May to June) and the mitigations such as 10mm fish screens will be determined by a site assessment and approval by the Company.

As part of its pre-construction survey, ECOLOGICAL MANAGEMENT CONTRACTOR shall locate and identify fisheries, fish farms and places where local communities use the river. ECOLOGICAL MANAGEMENT CONTRACTOR shall identify rivers that are important for migrating or breeding fish as part of their pre-construction ecological survey.

CONTRACTOR's Ecological Management Implementation Plan shall include method statements that pay special attention to sediment control measures where a pipeline crosses a river upstream of fisheries, fish farms, places where the river is used by local

communities or if the river is important for migrating or breeding fish as identified during the survey referenced above.

9.4.5.4 Worker rules and regulations

CONTRACTOR's Ecological Management Implementation Plan shall establish worker rules and regulations for its personnel and subcontractor's personnel which shall include the prohibition of the introduction of foreign or non-adapted vegetation to ROW, camps, work areas and surrounding areas and the requirements detailed below.

The Project has committed to prohibit the sale of vegetation from the ROW or facility construction sites to prevent the movement of alien or invasive species.

CONTRACTOR shall undertake the following commitments:

18-02 No invasive species will be used in seed mixes for erosion control or biorestoration.

CONTRACTOR'S Ecological Management Implementation Plan shall prohibit Project personnel from collecting or gathering and selling wild plants and vegetation from the ROW and other work areas, and from buying wild plants or products made from them from protected plants from local communities.

CONTRACTOR shall prohibit Project personnel from hunting, fishing and carrying of firearms, buying or selling live wild animals, obtaining or keeping pets at work areas or camp sites. CONTRACTOR shall report third party hunters found on site to the appropriate authorities.

CONTRACTOR shall prescribe the use of existing roads where practical to access the rightof-way, construction camps and other Project sites and limit the use of new access points. CONTRACTOR personnel will keep to these roads avoiding the need to travel off-road and disturb sensitive species except where COMPANY has given specific approval. CONTRACTOR shall not allow personnel, vehicles and machinery to enter areas that have not been specifically authorised for Project activities, especially sensitive areas.

CONTRACTOR shall require construction personnel to keep within the right-of-way or the limits of the work site at all times while working (where applicable and practicable) and to keep out of areas demarcated for the purposes of protecting sensitive species or habitats.

CONTRACTOR shall train its drivers in toolbox talks to drive with caution, keep to approved roads, reduce speed when there are animals on the road and allow safe passage of wildlife across public roads and access roads.

CONTRACTOR shall not prevent harmless invertebrates, amphibians, lizards, small mammals or birds from entering in work areas and camps so long as they are not exposed to risks or causing a nuisance. CONTRACTOR shall take lawful means to control infestations, pests and vermin that pose a risk to human health that are consistent with the requirements of the Pollution Prevention Plan.

On receiving an incident report regarding the accidental injury or death of fauna, CONTRACTOR's Environmental Manager will record the circumstances, time, species, size and habitat and determine the appropriate actions to be taken.

If any reptile or mammal is found within camp and yard areas where they are at risk or pose a nuisance or hazard, CONTRACTOR's Environmental Manager will be advised and shall determine the appropriate actions to be taken. CONTRACTOR shall take any action necessary to prevent the introduction of non-native fauna into the ROW, work sites and camp facilities.

CONTRACTOR shall prohibit lighting fires in the ROW, at other work sites or at camps unless they have been specifically authorised by COMPANY.

CONTRACTOR's Ecological Management Implementation Plan shall include proposals to maintain and operate vehicles and machinery so that sensitive areas, where the potential for impact exists, are not disturbed by high levels of noise.

9.4.6 Re-vegetation

9.4.6.1 Erosion control seeding selection

Erosion control seeding of the ROW is crucial to successful biorestoration and ECOLOGICAL MANAGEMENT CONTRACTOR is required to provide technical expertise to facilitate the success of this activity.

ECOLOGICAL MANAGEMENT CONTRACTOR shall produce an Ecological Management Implementation Plan that specifies the seed mix to be used by CONTRACTOR during seeding. The choice of species to be used for seeding shall be proposed by ECOLOGICAL MANAGEMENT CONTRACTOR based on the pre-construction survey records. This shall include a consideration of both seed collection and any seeds that are commercially available.

ECOLOGICAL MANAGEMENT CONTRACTOR shall specify the appropriate seed mix to be used during seeding the right of way and other Project areas that allow the variety and distribution pattern of the original plant species to be replicated with the aim of meeting both the Erosion Performance Targets within the Reinstatement Specification and the long-term objectives to restore vegetative cover and species diversity as part of biorestoration. ECOLOGICAL MANAGEMENT CONTRACTOR shall ensure that this initial seeding does not preclude subsequent restoration of the natural vegetation.

The proposal should allow for the use of species originally found in each route section or Project area and/or rapid growth species that have a dense, fibrous horizontal root structure close to the surface and are resistant to damage by run-off or trampling in areas where erosion control is important. Proposals shall be consistent with planting restrictions along the pipeline centre line.

ECOLOGICAL MANAGEMENT CONTRACTOR'S Ecological Management Implementation Plan shall consider alternative sources of local seeds, such as locally grown hay cut at the seed stage to allow for the eventuality that non-domesticated native plant species are not commercially available.

The SCPX ESIA has committed to selecting plant species that will not out-compete indigenous species and to ensure that invasive species are not used for bio-restoration.

ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following commitments:

Pipeline:

18-01	No species that are considered likely to out-compete the indigenous plant species will
	be used in seed mixes.

9.4.6.2 *Erosion control seeding implementation*

ECOLOGICAL MANAGEMENT CONTRACTOR shall produce a Seeding Method Statement for COMPANY review that shall allow for the seed bank of species remaining in the preserved topsoil to be supplemented by appropriate seeds, bulbs, and plants bought from suppliers.

Initial seeding shall be undertaken by CONTRACTOR to obtain erosion class 3, restore vegetative cover and return areas to a condition that is visually similar to the surrounding area during the CONTRACT maintenance period.

The seeding method statement shall include the following:

- Species mix
- Seed source
- Quality control (including checking for alien and/or invasive species)
- Seed bed preparation measures
- Seeding rates
- Seeding methods
- Soil additives selection and use
- Watering requirements
- Seeding schedule (allowing for growing season and site-specific meteorological conditions)
- Seed protection measures
- Use of pesticides.

The method statement shall:

- Ensure that sowing or planting is scheduled in appropriate growing seasons for a period that is likely to be followed by sufficient rainfall to promote germination and establishment
- Make allowance for testing seeds bought from commercial suppliers in advance of bulk purchase
- Propose seeding methods appropriate to each area, such as broadcast and hydroseeding methods
- Target seeding rates and species mixes that replicate initial conditions established in the preconstruction survey, where practical
- Ensure the use of any proposed pesticides is in accordance with the Pollution Prevention Plan.

In areas where rapid vegetative growth is necessary to control erosion, ECOLOGICAL MANAGEMENT CONTRACTOR's Method Statements may propose the application of low-motility fertilisers (e.g. ammonium sulphate nitrate or calcium ammonium nitrate) so that the natural nutrient balances in the adjacent ecosystems are not altered. ECOLOGICAL MANAGEMENT CONTRACTOR should consult local universities, ministries and landowners for advice on rates of application for fertilisers, and shall conduct field trials to check them.

ECOLOGICAL MANAGEMENT CONTRACTOR'S Ecological Management Implementation Plan shall include proposed Seeding and Bio-restoration Method Statements to cover reseeding and replanting schemes, within the contracted period of post-planting maintenance (e.g. watering, weeding and application of fertiliser) in each Project area for approval by COMPANY.

CONTRACTOR shall maintain and irrigate stored topsoil to the extent required to suppress dust formation so that the seeds will be viable when the topsoil is replaced.

9.4.7 Biorestoration

The COMPANY has committed to the following long-term targets for biorestoration:

17-07	The Project will seek to achieve an increasing trend in vegetation re-growth and
	species diversity (specifically species composition) in reinstated areas with reference
	to nearby areas undisturbed by Project activities, as recorded by the percent similarity
	and commonality indices.

Biorestoration is the restoration of flora and fauna and the establishment of vegetation cover (after seeding) to return the vegetation cover and species diversity to meet the following long-term targets (taking account of COMPANY restrictions on planting adjacent to pipelines and the need for vehicular access for pipeline security and maintenance activities) on non-agricultural, temporary areas:

- Reinstate the variety and distribution pattern of the original plant species with the long-term objective of reinstating to a condition that is close as possible to the original.
- Reforestation of the right-of-way or adjacent areas wherever a forest existed before construction of the new pipeline, aiming to replicate the pre-construction composition and density of the vegetation.

This will involve a trend-based annual monitoring approach for reinstated areas, involving the analysis of vegetation cover and species diversity (composition) with reference to adjacent areas that were undisturbed by project activities. This approach will be aligned with that currently used on the BTC and SCP pipelines in Georgia.

The COMPANY will endeavour to meet the long-term vegetation cover targets below (based on BTC/SCP experience) within five years of reinstatement commencing.





Figure 9-1: Re-Vegetation Monitoring and Performance Requirements (Long Term)

Biorestoration may involve seeding of species to provide new growth or planting bulbs, shrubs or trees.

ECOLOGICAL MANAGEMENT CONTRACTOR shall carry out any planting of bulbs, shrubs and or trees necessary to meet the above targets and shall produce Bio-restoration Method Statements describing the planting process.

The ECOLOGICAL MANAGEMENT CONTRACTOR shall implement the following commitments:

17-08	Compensation planting will be based on the number of trees to be removed. A re- planting ratio will be developed which will be species and region specific.
X7-02	Where trees are removed on the banks of the Algeti River, compensation planting will be undertaken to off-set the essential removal of trees.
X7-06	To facilitate the re-establishment of smooth-leaved elm populations by the Algeti River, seeds will be collected from mature tree specimens in nearby habitat and saplings will be produced from the collected seeds at a recognised nursery.
X7-07	After construction has been completed, seed-grown plants of 50cm or more in height will be planted in areas of the Algeti riparian woodland where populations of Smooth-leaved elm occurred prior to clearance (subject to planting restriction zones),, suitable protection will be provided to protect them from grazing.

ECOLOGICAL MANAGEMENT CONTRACTOR shall also undertake any planting to reinstate field boundaries.

3-19	Field	boundaries	will	be	reinstated	to	pre-existing	condition	on	completion	of
	const	ruction.									

ECOLOGICAL MANAGEMENT CONTRACTOR'S Ecological Management Implementation Plan shall include proposals for the biorestoration of the pipeline working width, temporary areas and temporary roads (except for those that will be retained by local communities) to maintain habitat continuity as far as is practicable.

9.4.7.1 Planting and reforestation

A tree removal, replacement and offset planting strategy shall be developed by the COMPANY and the ECOLOGICAL MANAGEMENT CONTRACTOR that will take account of the species removed during construction, variety of species to be planted and the region-specific environmental characteristics.

17-08	Compensation planting will be based on the number of trees to be removed. A re-	Ī
	planting ratio will be developed which will be species and region specific.	

As noted above, subject to planting restrictions adjacent to pipelines and the need for operational access for security and maintenance activities, reforestation of the right-of-way or adjacent areas will be undertaken wherever a forest existed before construction of the new pipeline, aiming to replicate the pre-construction composition and density (number/unit area) of the vegetation.

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop method statements that shall include the following (as required):

- The removal of any trees, shrubs or plants prior to construction; their storage and maintenance and subsequent replanting
- The acquisition of tree and shrub cuttings and other plant species grown by commercial nurseries
- Replacing rare plants that were removed from all Project areas to botanical gardens before construction.

ECOLOGICAL MANAGEMENT CONTRACTOR shall refer to the preconstruction surveys when deciding where translocated plants should be re-introduced as part of bio-restoration.

9.4.7.2 Aftercare and maintenance

After the CONTRACT WARRANTY PERIOD, ECOLOGICAL MANAGEMENT CONTRACTOR will also be responsible for carrying out any additional seed and/or planting of areas as required to meet the above targets.

ECOLOGICAL MANAGEMENT CONTRACTOR's Method Statements shall make provision to protect seed and plants from damage by livestock or wild animals until successful revegetation has been achieved.

In areas where livestock or wild animals are present, ECOLOGICAL MANAGEMENT CONTRACTOR shall take precautions to prevent seeds and plants from damage. This should include a combination of security patrols; liaison and agreements with livestock managers; and stock proof fencing and supplementary boundary fencing.

ECOLOGICAL MANAGEMENT CONTRACTOR shall develop after-care and maintenance procedures, which shall be defined on a location-specific basis and meet the following commitment.

17-07	The Project will seek to achieve an increasing trend in vegetation re-growth and
	to nearby areas undisturbed by Project activities, as recorded by the percent similarity and commonality indices.

9.5 Verification and Monitoring

9.5.1 Ecological Monitoring

All COMPANY, CONTRACTOR (including ECOLOGICAL MANAGEMENT) verification and monitoring activity related to the provisions of this plan shall be in accordance with the requirements of the Environmental and Social Management and Monitoring Plan.

ECOLOGICAL MANAGEMENT CONTRACTOR shall be responsible for documenting the preconstruction surveys, for the implementation of mitigation actions (as described above), and for monitoring the success of the mitigation measures implemented under its own quality system.

CONTRACTOR shall monitor at least the following ecological management issues:

- The implementation of the pre-construction survey mitigation actions as they relate to CONTRACTOR's activities
- That construction workers have been trained, have received toolbox talks and are aware of/complying with CONTRACTOR's rules and regulations with regard to ecological protection
- That the required signs and notices have been erected
- That sedimentation control works at river crossings are effective and that sediment is not visible in the river water
- That works are not encroaching outside the designated works areas or on any sensitive habitats.

ECOLOGICAL MANAGEMENT CONTRACTOR shall monitor at least the following ecological management issues:

• That the Field Ecologists are suitably qualified

- That all the required pre-construction surveys have been undertaken in advance of construction
- That vegetation, nesting and roosting sites, holts, etc., have been cleared where identified as an appropriate mitigation measure in light of a pre-construction survey
- That areas of ecological significance identified in preconstruction surveys have been clearly marked
- That their Ecological Management Implementation Plan addresses specific measures for protecting flora/habitats before and during construction and the restoration of each individual environmentally sensitive area
- That all ecological mitigation measures are implemented with respect to the successful reinstatement of habitats on the right-of-way (e.g. translocation of plants and animals, and the removal, nurture and replacement of turfs of endangered or threatened plant species).

CONTRACTOR and ECOLOGICAL MANAGEMENT CONTRACTOR shall each submit a monthly Environmental Report to COMPANY during the term of their respective CONTRACTs with details of the ecological protection and bio-restoration measures that have been implemented, and the monitoring inspections that have been carried out.

COMPANY shall develop and implement a monitoring programme for sensitive habitats and aquatic ecosystems before construction starts and maintain it throughout the construction period and into reinstatement and operation. The monitoring plan shall include a strategy for monitoring each applicable environmental component related to the Project. COMPANY shall develop an audit schedule to verify that CONTRACTOR and ECOLOGICAL MANAGEMENT CONTRACTOR are fulfilling the commitments for ecological protection and bio-restoration that COMPANY made in the ESIA. COMPANY shall assign a Field Environmental Supervisor to the Project who shall be responsible for checking CONTRACTOR's and ECOLOGICAL MANAGEMENT CONTRACTOR's compliance with the requirements of this Ecological Management Plan.

CONTRACTOR will report the dates, locations, species and quantities of seeding/hydroseeding and planting undertaken and fertiliser used the following on a weekly basis. The report will include measures taken to control noxious/invasive alien species and other environmental aspects relating to air quality, noise, water quality, waste management and soil and erosion control and which are directly or indirectly linked to bio-restoration management.

9.5.2 Monitoring the Effectiveness of Species Translocation

ECOLOGICAL MANAGEMENT CONTRACTOR shall monitor the success of translocation of plants, and inspect the sites to which they are transplanted to check that they are surviving.

ECOLOGICAL MANAGEMENT CONTRACTOR shall check regularly on the condition of stored turfs and topsoil.

ECOLOGICAL MANAGEMENT CONTRACTOR shall regularly inspect the safe zones in which small animals of limited mobility have been translocated to assess whether they are thriving at the new location.

9.5.3 Monitoring the Effectiveness of Bio-restoration

The SCPX ESIA has committed to monitor the effectiveness of bio-restoration.

17-10	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.
3-14	A monitoring plan will be developed to determine the success of re-vegetation and biorestoration activities, including the appropriateness of species composition.

17-11	Corrective measures will be implemented if establishment of vegetation is not
	successful or if, following survey and data analysis, the species composition is
	considered by a Project ecologist to be unsuitable for the area.

CONTRACTOR's and ECOLOGICAL MANAGEMENT CONTRACTOR's Ecological Management Implementation Plan shall address these requirements as it relates to their scope of work and responsibilities. CONTRACTOR shall be responsible for monitoring and corrective action to the end of the CONTRACT.

ECOLOGICAL MANAGEMENT CONTRACTOR shall monitor the re-vegetation of disturbed areas until COMPANY has accepted that restoration is complete in accordance with the long-term re-vegetation targets.

ECOLOGICAL MANAGEMENT CONTRACTOR'S Ecological Management Implementation Plan shall propose periodic evaluations by Field Ecologists of all re-vegetated areas and will document plant development (e.g. survival, damage, species mortality rates, and the presence of noxious alien species and invasive species) and prepare an aftercare and biorestoration maintenance plan to monitor and remedy any deficiencies with regard to the biorestoration objectives.

During the CONTRACT period, COMPANY's Field Environmental Supervisor shall:

- Verify the proper application of plant materials during re-vegetation activities, including density, distribution pattern, and species
- Verify that re-vegetation achieves vegetative coverage goals
- Verify that noxious alien species and invasive species do not colonise the ROW and other disturbed areas
- Audit the success of physical restoration and re-vegetation.

10 WASTE MANAGEMENT PLAN

10.1 Scope

The scope of this Management Plan relates specifically to the following waste management issues:

- Identification and classification of waste
- Waste hierarchy and waste minimisation strategy (i.e. reduction at source, reuse, recycling, treatment, stabilisation and responsible disposal)
- Waste handling (i.e. collection, segregation, storage, treatment, transport and, disposal and documentation)
- Monitoring and reporting.

It does not cover wastewater effluent streams; these are addressed in the Pollution Prevention Plan.

10.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

Specific guidance is listed below:

- IFC Policy on environmental and social sustainability (Performance Standard 3) January 2012
- IFC General EHS Guidelines (1.6 Waste Management) April 2007
- EU revised Waste Framework Directive (2008/98/EC), particularly Annex III defining hazardous waste properties
- The European Waste Catalogue (2002), issued under EU Commission Decision 2000/532/EC (as amended)
- Landfill Directive 1999/31/EEC
- EU Council Decision 2003/33/EC on the acceptance of waste at landfills
- Directive 2008/98/EC on waste management
- EU Directive (94/62/EC) on Packaging and Packaging Waste.

Operators constructing similar projects to the SCPX Project generally adopt the following good practices to achieve sustainable management and use of resources:

- Projects develop a waste management and minimisation plan that includes:
 - Identification and characterisation of all potential waste streams
 - Waste avoidance and minimisation, (e.g.use products that do not generate waste, return unused products or empty containers to vendors, reuse and recycling measures, toxicity reduction)
 - \circ $\;$ Segregation, treatment, stabilisation, labelling and storage requirements
 - \circ $\;$ Details of how each waste stream will be managed
 - Recording and manifesting requirements
 - The process for assessment, selection, management and monitoring of waste management

- Reporting systems, including waste management KPIs for reduction or recycling
- Training and awareness programmes
- Projects forecast the nature, quantity and characteristics of anticipated waste streams and assess the HSE impacts and risks of waste. They review the capacity of in-country, regional and local waste management infrastructure and transport infrastructure to meet the Project's requirements
- Projects adopt a waste hierarchy that preferentially avoids or minimises waste generation at source and reduces the quantity of waste disposed to landfill by re-use, recycling and, if appropriate, incineration
- Projects aim to minimise the handling and transportation of waste and complete a transportation risk assessment prior to transport, that includes consideration of:
 - Identification of potential hazards posed by transportation
 - The suitability of containers
 - o Provision of suitable spill kit or equivalent
 - Appropriate labelling
 - Transportation documentation (e.g., transfer and delivery notes, information on the potential risks and hazards of the waste consignment)
 - Remedial clean-up requirements in the event of a spill
- Projects put a process in place to segregate waste according to hazard classification and type (e.g. recyclable/non-recyclable), and label and store wastes in suitable receptacles
- Projects may treat waste prior to storage to render it less hazardous and reduce its volume
- Projects implement a waste tracking system governing all waste to be stored, reused, treated and transferred to recycling and/or disposal sites
- Projects document the location, treatment, disposal or storage of all produced waste, and of proposed future management of wastes in storage
- Projects set up a system to periodically assess the waste management chain of custody documentation (from generation through to disposal, recycling or reuse).

10.3 Roles and Responsibilities

COMPANY intends to discharge its obligations in respect of waste management during pipeline construction, and in respect of the Project as a whole, through the CONTRACTOR which will have primary operational accountability for the safe and compliant management, treatment and/or disposal of waste.

Responsibilities relating specifically to waste management are defined below.

10.3.1 Company

COMPANY shall be responsible for:

- Approving the final destination for all waste streams ensuring that a "cradle to grave" solution is applied and that disposal sites comply with appropriate requirements
- Ensuring that list of approved waste management subcontractors is kept up to date and that waste management contractors maintain all necessary permits.

10.3.2 Contractor

It is CONTRACTOR's responsibility to adequately handle and dispose of contractor generated wastes under COMPANY supervision and according to the requirements in this plan.

CONTRACTOR shall put these responsibilities into effect by:

- Undertaking removal of waste from Waste Collection Points (from camps, ROW, work sites etc.) to the Waste Storage Areas (WSAs) in Project-approved vehicles for segregation, treatment, stabilisation, labelling and storage
- Providing sufficient competent personnel to undertake the required actions in this plan including: a waste advisor to be located at each camp site and/or facility construction site if the two are not co-located and support staff along the Project worksites
- Carrying out an initial waste identification, estimation, minimisation and classification study, identifying appropriate handling/treatment options, for different classes of waste expected to be generated and including this information in their tender documents for costing purposes
- Designing and constructing bunded and sheltered waste management areas at all main campsites. Layout designs of waste management areas shall require COMPANY approval
- Undertaking segregation (at the source and at the WSA) and transfer of the waste they generate in full compliance with this plan and SCPX Project requirements
- Segregation, collection, treatment and final disposal of all organic/putrescible waste and food-contaminated waste
- Reduction of waste volume at source including but not limited to the provision of composters and/or incinerators, compactors and balers (for paper, plastic, cardboard, aluminium cans, metal shavings, paint cans, etc.); aerosol piercers and crushers; oil filter bleeding and crushing, drum washing and crushing, shredding, bulb and fluorescent tube crushing and mercury recovery
- Transporting segregated re-usable and recyclable waste from WSA to COMPANYapproved recycling facilities
- Transporting surplus uncontaminated soil to its approved disposal locations where surplus soil will be landscaped in accordance with SCPX Reinstatement and Landscape Management Plans
- Supply and maintenance of portable toilets at worksites
- Transporting portable toilet sewage from all worksites to the CONTRACTOR's site Sewage Treatment Plants (STPs)
- Ensuring that the supply of appropriate containers for transport and final storage is sufficient and compatible with the types of waste produced and stored
- Designing and establishing appropriately designed Waste Collection Points and WSAs in accordance with this WMP and the Pollution Prevention Plan
- Handling, transporting, treating and disposing of medical waste in accordance with SCPX Project requirements, e.g. autoclave and/or other thermal treatment (incineration)
- Treatment and disposal of drilling and tunnelling muds/fluids
- Preparing hazardous waste for collection and ensuring waste is within clearly labelled fit for purpose containers for transportation
- Ensuring the return of all surplus hazardous materials and empty receptacles to vendor, and where possible, left over hazardous material to vendor
- Receiving sewage waste from remote work areas for treatment in CONTRACTORs STPs
- Transporting non-hazardous, non-recyclable, non-reusable and non-putrescible waste from WSAs to the COMPANY-approved landfill site or other COMPANYapproved facility
- Transporting hazardous waste from WSAs to COMPANY-approved treatment or storage area
- Transportation and bioremediation of oil contaminated soils
- Undertake transfer of the waste generated and implement the final treatment/recycling/disposal option in full compliance with this plan and SCPX Project requirements

- Supplying appropriate containers, e.g. skips or similar to store waste at the WSA and to be used to transfer to the final destination
- Ensuring that the supply of appropriate containers for transport and final storage is sufficient and compatible with the types of waste produced and stored
- Reporting weekly and monthly waste statistics and status (including each type and quantity of waste generated) in a format agreed with COMPANY.

10.4 Impact Avoidance and Mitigation

10.4.1 Training in COSHH

CONTRACTOR shall train personnel to understand the potential of Project waste activities and the environmental consequences of failure to contain hazardous wastes.

Site induction training will be supplemented by regular 'toolbox' talks with site staff and technicians if inspections or audits highlight failings in waste management.

10.4.2 Prediction of Waste Types and Quantities

Upon award of CONTRACT, CONTRACTOR shall undertake a Waste Study. The study shall be a component of CONTRACTOR'S Waste Management Implementation Plan (WMIP) and shall be carried out using a cradle-to-grave approach, identifying all potential waste streams at their point of generation, their nature (classification) and the quantity likely to be generated during construction. CONTRACTOR shall maintain the predictions of waste and produce updated six-monthly forecasts.

CONTRACTOR shall keep the waste identification study data up to date, including new waste streams, or waste streams that have not yet been classified, and/or approved disposal locations in accordance with COMPANY requirements.

Pipeline, camps, access roads and all facilities:

CONTRACTOR shall undertake the following site-specific commitment:

X3-03 1	The existing micro-tunnelling shaft on the east bank of the Mtkvari is full of waste
r r	material that has not been classified. The waste will be dug out, assessed and managed in accordance with the Pollution Prevention Plan and Waste Management Plan *

*It is the responsibility of the CONTRACTOR to dig out, assess and manage the waste in accordance with the Pollution Prevention Plan and Waste Management Plan.

CONTRACTOR shall refer to the Pollution Prevention Plan to address sewage effluent disposal and sewage treatment.

10.4.3 Identification and Classification of Waste

10.4.3.1 Waste classification

CONTRACTOR shall classify wastes as hazardous, non-hazardous or inert by applying the principles described below.

10.4.3.2 Hazardous

Hazardous wastes pose potential risks to public health and environmental quality because they exhibit one or more of the following inherent characteristics:

- Ignitability
 - Flammable, highly flammable or explosive
- Reactivity

- o Corrosive
- Oxidising
- Biologically harmful
 - Toxic or eco-toxic
 - Infectious, irritant, carcinogenic, mutagenic, teratogenic.

Medical waste (including sharps, syringes, needles, dressings and surplus medicines) is a sub-category of hazardous waste that is associated with causing biological harm.

Radioactive waste is a sub-category of hazardous waste that is associated with causing carcinogenic, mutagenic or teratogenic harm to organisms.

CONTRACTOR shall refer to the EU revised Waste Framework Directive for further definition of hazardous waste.

CONTRACTOR shall ensure that a team of personnel trained in the use of spill kits will be mobilised in the event of any spillage of hazardous materials (as required by the Pollution Prevention Plan).

10.4.3.3 Non-hazardous

Non-hazardous waste is waste that is neither hazardous, nor inert, nor wastewater. Types of waste that do not have inherently harmful properties are categorised as non-hazardous. These include:

- Material that is chemically inert
- Material that will rapidly biodegrade.

10.4.3.4 Inert waste

Inert waste is any waste as defined in Article 2 of the Landfill Directive 1999/31/EEC and includes non-degradable, non-leaching and non-reactive material such as stone, gravel, glass, bricks, etc. For the purposes of this project it will also include cured and clean cement (cement where diesel or oil spills have occurred will be treated as hydrocarbon contaminated soil).

CONTRACTOR shall re-use inert waste for Project construction to the fullest extent practicable; for example, for erosion protection measures, road construction, site fill material. If necessary it shall be pre-treated; for example, excavated rock should be crushed and used as padding and back-fill.

CONTRACTOR shall implement the following commitment:

1-14	Excavated subsoil will be screened and reused for padding, wherever practicable.

10.4.3.5 Waste streams

Waste stream identification shall include, but not be limited to:

Hazardous waste:

- Medical waste
- Used oil
- Hydrocarbon contaminated material (rags, drums, soil, used spill response equipment)
- Paint and solvents
- Used oily filters

- Batteries (dry-cell/lead)
- Used drums (chemical cans, drums, containers, packages should be treated and disposed as hazardous waste if their content was defined as hazardous material)
- Contaminated soil (any other waste process chemicals, oily water, fluorescent tubes)

Non-hazardous waste

- Rubber tyres
- Glass
- Paper and card
- Plastics
- Scrap metals
- Wood
- Domestic waste

Inert waste

• Surplus uncontaminated soil (including uncontaminated waste rock).

Waste stream identification and classification shall be carried out according to COMPANY regional guidelines, which will be supplied to CONTRACTOR.

10.4.3.6 Contaminated soil as waste

CONTRACTOR's Waste Management Implementation Plan shall propose methods for removing, containing and handling contaminated soil (hydrocarbon, dangerous substances, other hazardous or non-hazardous waste) as hazardous waste and transferring it to the WSA.

6-16	The preferred options for the treatment of contaminated soil will be based on the risks
	posed by the material. In keeping with the aim of minimising the transportation of
	hazardous materials and minimising waste generation, preference will be given to in-
	situ and low technology remedial approaches.

CONTRACTOR shall be responsible for removal from the WSA, transport and treatment of contaminated soil.

10.4.4 Waste Avoidance and Minimisation Strategy

CONTRACTOR'S WMIP shall adopt a waste hierarchy that preferentially avoids or minimises waste generation at source and reduces the quantity of waste disposed to landfill by re-use and recycling. COMPANY shall monitor CONTRACTOR'S performance in reducing the amount of waste generated.

10.4.4.1 Reduction at source

CONTRACTOR shall undertake a Waste Study, which will identify waste minimisation options by means such as selecting materials for use that avoid waste generation (e.g. purchasing in bulk) and contracts to be established to allow return of excess product to vendor.

10.4.4.2 Minimisation

CONTRACTOR shall implement waste minimisation techniques such as maceration, dewatering and composting of food waste and sludge, and treatment (see Section 10.4.5) prior to transport from site. All waste minimisation options shall be approved by COMPANY. The CONTRACTOR shall return surplus material to vendors where possible.

CONTRACTOR shall within procurement and supply contracts ensure the return of all unused hazardous materials and empty receptacles to the vendor, and where possible, surplus non-hazardous material.

10.4.4.3 Re-use and recycling of materials

CONTRACTOR shall identify any of its waste streams that include waste materials that could be segregated for re-use or recycling (e.g. packaging wood for reuse in Project construction and plastic bottles, cardboard/paper or metal for recycling).

CONTRACTOR shall identify organisations in the region that carry out processes to re-use and recycle waste materials and recommend them to COMPANY for approval. CONTRACTOR shall not release waste materials to individuals or non-commercial or noncommunity entities without the approval of COMPANY.

10.4.4.4 Waste collection and handling

CONTRACTOR'S WMIP shall establish plans for waste collection areas to allow the collection of waste at source (waste collection points, WCPs) as well as secure transfer/storage locations (waste storage areas, WSAs). Duty of care will be imposed on CONTRACTORs to ensure that waste is stored and disposed of safely and legally and that the risk of escape is reduced.

10.4.4.5 Waste collection points (WCP)

Waste collection containers shall be placed at numerous strategic points around the construction site and/or pipeline spread by CONTRACTOR and be sized in accordance with the type of activity planned and numbers of personnel.

Locations for waste collection around the campsites can include offices, warehouses, equipment yards, kitchen facilities, etc.

CONTRACTOR shall provide a combination of waste containers of different type and volume that are fit for purpose around the each site. Waste containers shall include wheelie bins; hippo hopper bins; euro-bins; drums, waste skips and lockable standard bins for medical waste.

CONTRACTOR shall clearly label all waste containers (with labels of the appropriate colour) to indicate the waste for which they are to be used.

The containers shall be clean drums or other rigid walled vessels properly labelled for particular types of waste.

Hazardous Waste	Colour Code
Medical waste	Yellow
Oily solid wastes (rags, filters, etc.)	Black
Other hazardous wastes (fluorescent tubes;	Red
aerosol cans, chemical handling equipment	(Segregated depending on type of waste with specific
etc.)	label)
Non-hazardous Waste	
Glass	To be advised
Paper and card	White
Plastics	Grey
Scrap metals	Blue
Wood	Brown
Food waste	Green

This will allow for greater segregation of recyclable waste, reusable, treatable and waste for disposal.

All waste containers at the WCP (bins, skips, drums etc.) shall be clearly labelled in appropriate languages (Georgian and English) to show which wastes can be disposed into them and which wastes they contain. Any previous labelling will be removed or covered to avoid confusion.

CONTRACTOR'S WCPs shall have illustrated information posters about the principles for segregation and the precautions to be taken when handling waste. WCPs shall be accessible to appropriate transportation equipment (e.g. forklifts) for transfer to the WSA as appropriate.

Different types of wastes shall be segregated as detailed in Section 10.4.4.4. Waste storage containers used shall be appropriate in terms of volume, composition, shape, and opening for the material that is being stored. Containers shall be maintained in good condition, with no holes, gashes, dents, or excessive rust and must be equipped with lids.

Containers shall have a cover, depending upon their contents and needs for litter or dust control, prevention of bird access, or to keep rain out of the skips. Skips containing paper or cardboard for recycling shall be protected from rain. Bungs and lids will be securely fastened or other forms of covering shall be provided.

Waste will be stored and disposed of by CONTRACTOR in a way to prevent, as far as possible, attracting and access by stray dogs and vermin. Waste shall not be stored on the ROW overnight unless security is provided. Waste will only be stored for as long as necessary before being transferred off-site for appropriate treatment and disposal.

CONTRACTOR shall implement the following commitment:

19-08	Construction contractors will be required to manage the storage and disposal of food
	and organic wastes to avoid attracting vermin.

CONTRACTOR shall ensure appropriate numbers and types of waste containers are available in their area (e.g. ROW, work site, camp offices, warehouse, equipment yard, kitchen) in places that are easily accessible from the places that waste is generated and that allow for segregation at source.

Should any short-term storage of hazardous liquids (i.e. waste fuel, oil or chemicals) be required, as a minimum, a geomembrane lined and bermed storage shall be constructed or materials stored within a drip tray or similar. Camps, yards re-fuelling areas and other temporary worksites will have hard standing bunds for the storage of hazardous liquids. These storage areas shall be able to contain at least one hundred and ten (110) percent of the volume of the largest container. These wastes should be transferred to the WSA within 24 hrs.

All hazardous liquid or semi-liquid waste containers shall be bunded.

Solid waste will be stored in such a way as to prevent it blowing away in high winds.

CONTRACTOR shall exercise good housekeeping to remove waste and ensure that the ROW, facility construction sites, camp, pipe yards and work sites are tidy and appear well maintained.

10.4.4.6 Waste segregation

Different types of wastes shall be segregated. This will typically require separate storage areas or physical separation for hazardous and non-hazardous wastes and/or the segregation of different types of hazardous wastes.

CONTRACTOR shall identify all waste at the source, and provide separate containers to allow for segregation of the following individual waste streams (not an exhaustive list):

- Hazardous waste streams:
 - Used oil
 - Hydrocarbon contaminated material (rags, drums, soil, used spill response equipment)
 - o Paint and solvents
 - Used oily filters
 - o Batteries (dry-cell/lead)
 - Used drums (chemical cans, drums, containers, packages should be treated and disposed as hazardous waste if their content was defined as hazardous material)
 - Any other waste process chemicals
 - Fluorescent tubes
 - o Contaminated soil
 - Printer toner
- Non-hazardous waste streams identified in CONTRACTOR's Waste Study, for which approved organisations exist that can recycle/re-use the materials, potentially including:
 - Scrap metal and welding waste
 - Rubber (e.g. end-of-life tyres)
 - o Glass
 - Plastics
 - $\circ \quad \text{Wood} \quad$
 - o Paper and card
 - o Organic/biodegradable waste
 - o Other non-hazardous waste
- Inert waste.

Only one category of hazardous waste may be placed in any one container. Solid and liquid wastes shall not be mixed.

If a hazardous waste is mixed with other wastes the entire consignment shall be considered as hazardous.

CONTRACTOR shall segregate any waste that cannot be positively identified as nonhazardous and contain it as hazardous waste until identification or chemical analysis determines its correct classification.

At the WSA, CONTRACTOR shall segregate waste and treat waste (see Waste Treatment below) prior to transport.

10.4.4.7 Waste storage area (WSA)

CONTRACTOR shall establish a waste storage and segregation facility within each campsite or where camps are not used, at the worksite or at another COMPANY-approved Project support facility. The size of the WSA shall be determined by the number of Project personnel (including COMPANY, CONTRACTOR, and subcontractors) and the anticipated volume of waste. The size of WSAs shall incorporate a factor of at least 1.5 above maximum capacity to account for unforeseen circumstances (e.g. inclement weather) and additional guests and personnel.

The CONTRACTOR construction camp plans shall include the locations of the waste storage area ensuring that living quarters are placed at a distance from waste locations in accordance with COMPANY's approved camp layout.

The CONTRACTOR shall submit the design for their waste management areas to COMPANY for approval, prior to construction. Waste management areas will be fenced have lockable gates and as a minimum will be bunded and sheltered where waste is segregated and treated and where waste liquids and hazardous wastes are stored.

Working areas and all emergency installations and escape routes shall be kept free from wastes. Safety areas (muster point, eye-wash station, etc) shall be established and equipped with fire extinguishers and spill response equipment.

All wastes shall be transported to the closest waste storage area from the worksites by the CONTRACTOR prior to distribution to the final disposal sites or to approved third parties for recycling. These facilities will serve as a collection, segregation, treatment, stabilization, labelling, packaging, storage and transfer stations for both hazardous and non-hazardous wastes.

At the WSA CONTRACTOR shall segregate waste and treat waste (see Waste Treatment below) prior to transport.

The WSA shall comprise of a fenced and lockable area with concrete hardstand, shelters, storage containers, and secondary containment for hazardous liquid wastes (oils etc.). Separate storage containers shall be provided for prime recyclables (paper, cardboard, scrap metal), domestic waste, and hazardous waste requiring segregation including oils, oily solids, chemicals and batteries. Care will be taken to ensure that chemicals are kept in separate containers and stored taking into account compatibility in order to avoid a chemical reaction.

The CONTRACTOR WSA facilities shall comply with the following requirements:

- WSA shall be constructed on a concrete pad
- The area shall be fenced and access controlled
- No drums or containers shall be stored directly on the soil
- Facilities shall be designed to prevent any contamination of the adjacent ground
- Liquid wastes shall be stored within a bund that will contain 110 per cent of the volume of the largest container or 25% of the inventory, whichever is greatest.
- Collection areas shall be covered to avoid the deterioration of materials
- Vehicle/equipment access shall be maintained
- Areas shall be ventilated
- Dedicated areas for segregated hazardous and non-hazardous wastes shall be provided
- Dedicated areas for the segregation of recyclable and reusable materials from those items intended for disposal
- Signage shall be installed informing employees about the hazard and PPE requirements within the WSA
- Winterisation if necessary, depending on the location of the site (e.g. CSG2)
- An oily water separator shall be provided which could service other parts of the site (e.g. vehicle/drum wash area, vehicle maintenance areas etc.). This shall be regularly maintained to prevent build-up of mud and ensure the separator is functioning efficiently. Residence time shall be increased if surfactants and detergents from washing activities enter the separator to ensure discharge meets the environmental standards –listed in Appendix B.

CONTRACTOR shall submit the WSA design and location plans to COMPANY for review and approval as per the design requirements found within the Camp Specification.

CONTRACTOR shall determine storage container requirements to ensure they are compatible with transport vehicles.

CONTRACTOR shall implement measures to control vermin and prevent the WSA from becoming a health risk.

CONTRACTOR shall display signs informing employees about site hazards and the requirement to wear PPE and shall equip the areas with fire extinguishers and spill recovery equipment as per COMPANY HSE requirements.

CONTRACTOR shall maintain an inventory MSDSs and the quantity of each type of waste that is held at each the WSA.

The SCPX ESIA has committed to collect and store solid waste during the construction phase and CONTRACTOR shall implement the following commitments:

D5-028	In accordance with the SCPX Waste Management Plan, solid wastes generated by construction activities will be collected in Waste Storage Areas (WSA) located at the camps.
7-08	Waste will be segregated to facilitate recycling and reuse.

The SCPX ESIA has committed to store hazardous waste temporarily and CONTRACTOR shall store segregated hazardous waste securely at the WSA to meet the following commitment:

7-03	A secure hazardous waste accumulation area that meets Project requirements will be
	used for temporary storage at Project sites prior to transfer to an approved final
	hazardous storage or disposal facility.

CONTRACTOR shall arrange transport of waste sufficiently frequently to avoid problems with odours, rodents and insects. Storage volumes for all waste types are to comply with permit and COMPANY requirements.

10.4.4.8 Waste handling

CONTRACTOR and COMPANY shall implement the following design commitment:

D5-029	All wastes from the SCPX Project will be managed with the aim of minimising: (a)
	impacts to the natural environment and (b) health hazards to personnel Where
	appropriate, waste materials will be reused or recycled, with disposal to landfill as a
	last resort. In this case, inert and non-hazardous waste will be disposed of to the
	licensed BP operated landfill site near Rustavi.

CONTRACTOR shall have biodegradable wastes treated at or collected from the campsites at adequate intervals to avoid odours and avoid vermin.

Once pipeline, facility or road construction has been completed, and equipment removed from the ROW, work sites and/or the camp, CONTRACTOR shall remove any type of remaining material, including material left in the machinery maintenance and fuel storage areas, to the WSA for disposal as waste.

CONTRACTOR'S WMIP shall explain the process by which vehicles utilised for transporting waste from the ROW and work areas to the transfer stations are selected, equipped, inspected, approved and maintained in accordance with COMPANY HSE requirements.

10.4.4.9 Medical wastes

CONTRACTOR's medical personnel shall collect any medical wastes generated at Project camps and work sites (including syringes, needles, dressings, body tissue, spent medicines), package it in puncture-proof boxes and yellow bags and store it in lockable containers made of appropriate materials. CONTRACTOR's medical personnel shall clearly label the containers as medical waste, make sure they are appropriately documented and have them transported to a COMPANY-approved facility. CONTRACTOR shall ensure the medical provider includes transportation and disposal services for medical waste in accordance with COMPANY requirements. Disposal of medical waste is a CONTRACTOR responsibility and shall be in accordance with the following commitment:

31-06	Medical waste will be disposed of via a licensed medical contractor or a Company
	approved incinerator.

10.4.4.10 Food wastes

CONTRACTOR shall install macerators and de-waterers at each of the WSAs at the construction camps to treat food waste. It is assumed that wastewater from de-watered food waste can be disposed of via the site sewage treatment plant (STP) and CONTRACTOR shall include this requirement in the STP specification (Section 11.4.7). Refer to Section 10.4.5 also.

10.4.4.11 Drilling/tunnelling waste

CONTRACTOR shall implement the following commitment:

6-24	Disposal of the drilling mud will be subject to an environmental risk assessment.
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The CONTRACTOR shall carry out an environmental risk assessment for the disposal of waste drilling mud or tunnelling fluid to determine appropriate disposal methods based on the material properties and the characteristics of the receiving environment. COMPANY shall approve CONTRACTOR's proposed method.

10.4.5 Waste Treatment

CONTRACTOR shall treat waste prior to storage or disposal to render it less hazardous and to reduce its volume (crushing, composting etc.) where possible. Measures to reduce the volume of waste generated as source, shall be implemented by the CONTRACTOR, including but not limited to the provision of composters and/or incinerators, compactors and balers (paper, cardboard, plastic, aluminium cans, metal shavings, paint cans, etc.); aerosol piercers and crushers; oil filter bleeding and crushing; drum washing and crushing; shredding; bulb and fluorescent tube crushing; and mercury recovery. CONTRACTOR'S WMIP shall propose treatment of waste at the WSA prior to storage or ultimate disposal to render waste less hazardous and reduce its volume.

CONTRACTOR shall immediately treat wastes that cannot be stored for long periods, specifically organic/biodegradable waste and food-contaminated waste. CONTRACTOR shall investigate the following options for the treatment and disposal of food waste: thermal treatment, biological treatment or other. All options shall be in compliance with national legislation and the HGA requirements (Section 3.1).

CONTRACTOR shall propose a plan for the treatment and disposal of organic/biodegradable waste and food-contaminated waste and shall submit it to the COMPANY prior to mobilisation. CONTRACTOR shall identify areas designated for waste treatment and their design and how treated waste could be used to improve soil fertility during reinstatement, if applicable.

CONTRACTOR shall not burn waste or any material, including during ROW clearance. No burning (controlled or uncontrolled) or burial of waste shall be undertaken, with the exception of COMPANY-approved incinerators.

CONTRACTOR shall implement the following commitment:

7-01	Controlled or uncontrolled burning of waste will not be allowed (with the exception of
	Company-approved incinerators).

10.4.6 Waste Disposal

CONTRACTOR shall be responsible for transporting segregated re-usable and recyclable waste (at a minimum, paper and cardboard, plastics, glass, scrap metal and any other waste streams where CONTRACTOR or COMPANY identifies suitable COMPANY-approved re-use or recycling facilities) from WSAs to COMPANY-approved recycling facilities. Additional recycling and re-use destinations shall be identified and assessed by CONTRACTOR and approved by COMPANY and bulletins shall be issued when destinations are added or removed.

The SCPX ESIA has committed to dispose of hazardous waste to an approved site, CONTRACTOR shall be responsible for the final destination of hazardous waste.

D5-030	Hazardous waste will be forwarded to a waste disposal contractor licensed to receive
	and treat or export hazardous waste.

CONTRACTOR shall be responsible for the transport of all hazardous waste from the CONTRACTOR WSA to the COMPANY-approved treatment or storage area. CONTRACTOR shall ensure that all wastes are packaged securely in containers appropriate to the nature and toxicity of the waste, and clearly labelled, in-accordance with COMPANY policy (including but not limited to the requirements of ADR (European Agreement concerning the International Carriage of Dangerous Goods by Road).

The SCPX ESIA has committed to dispose of specific waste types at a COMPANY approved Project landfill site.

7-02	Waste will be disposed of at a Company and Government-approved landfill site.

All waste with the exception of surplus soil and sewage and medical waste and drilling/tunnelling mud shall be sent to the WSA. CONTRACTOR shall not make any arrangements for routing waste or waste materials to any other location without COMPANY approval.

10.4.7 Waste Transport and Transfer Notes

CONTRACTOR shall develop a waste transfer and tracking system, incorporating the use of waste transfer notes (WTNs) to track waste movements from the point of generation to the final destination.

Only authorised personnel (i.e. those that have received the appropriate training) will be allowed to complete the WTNs. The notes will be in both English and Georgian. The CONTRACTOR's WTN's format will follow the same format as that currently used in existing operations by COMPANY.

CONTRACTOR shall apply the duty of care principles to waste management activities to ensure that waste is managed from "the cradle to the grave" in accordance with the

requirements of this plan and that waste does not pose a threat to human health or the environment.

10.4.7.1 WCP to WSA

Each CONTRACTOR work crew shall be responsible for transferring generated waste to the WCP. CONTRACTOR shall also consider having a mobile waste crew to handle any accumulated waste at the end of the day.

CONTRACTOR shall minimise the handling and transportation of waste, and shall complete a transportation risk assessment of each transport route that includes consideration of

- Identification of potential hazards posed by transportation
- The suitability of containers
- Provision of suitable spill kit or equivalent
- Appropriate labelling
- Transportation documentation (e.g. transfer and delivery notes, information on the potential risks and hazards of the waste consignment)
- Remedial clean-up requirements in the event of a spill.

CONTRACTOR shall ensure that vehicles utilised to transport waste are legally compliant and fit for purpose and equipped to prevent leaks or spills of liquid waste and are covered to prevent dry or solid wastes from being dropped or blown away. CONTRACTOR shall ensure that all vehicles only load waste onto a vehicle that is authorised by the competent authority to transport the appropriate category of waste. CONTRACTOR is required to use vehicles for the collection of waste (liquid and solid) that are fit for purpose, are roadworthy and incorporate contractual safety features.

CONTRACTOR'S WMIP shall identify COMPANY-approved routes for transporting wastes between the WCP and the WSA.

CONTRACTOR shall implement a COMPANY-approved waste tracking system governing all waste transfers from the WCPs to the WSA and from the WSA to the final destination (see below).

At the WSA, CONTRACTOR shall enter waste volumes per the WTN into an electronic register in a format to be agreed with COMPANY.

At a minimum, the following will be recorded:

- Waste originator
- Waste description and type(s)
- Consignment reference number
- Form (e.g. solid, liquid, sludge)
- Quantity(ies) (weight) and units (e.g. number of containers, drums)
- Name and signature of originator, and
- Name and signature of waste transporter plus receiving party.

CONTRACTOR shall keep waste records in accordance with the legislation cited above.

10.4.7.2 WSA to final destination

CONTRACTOR shall transport properly segregated non-hazardous, non-recyclable, nonreusable and non-putrescible waste and segregated hazardous waste from the WSA to its final approved destination (COMPANY central waste accumulation area, waste processing and recycling centre, COMPANY landfill or other COMPANY-approved site).

CONTRACTOR shall be responsible for transporting segregated re-usable and recyclable waste (at a minimum, paper and cardboard, plastics, glass, scrap metal and any other

waste streams where CONTRACTOR or COMPANY identifies suitable COMPANYapproved re-use or recycling facilities) from WSAs to COMPANY-approved recycling facilities.

In addition, CONTRACTOR is responsible for the transport (if required) of putrescible waste residues, medical waste, uncontaminated soil and drilling/tunnelling mud to a COMPANY-approved facility, in accordance with the requirements of this plan.

Transfer of waste from the WSA to a third-party facility shall be fully documented on a WTN. At a minimum, the following will be recorded:

- Waste originator
- Waste description and type(s)
- Consignment reference number
- Form (e.g. solid, liquid, sludge)
- Quantity(ies) (weight) and units (e.g. number of containers, drums)
- Name and signature of originator, and
- Name and signature of waste transporter plus receiving party.

Where appropriate, material safety data sheets (MSDS) will accompany waste consignments to identify any special waste handling requirements and properties. MSDS shall be provided by the CONTRACTOR for all hazardous wastes.

The WTNs shall be signed by the WSA operator and by the driver when the waste leaves the WSA. CONTRACTOR shall retain a copy at the WSA and enter the data from it into an electronic waste management database.

Another copy of the WTN shall be signed by the receiver at the reuse/recycling organisation or storage/disposal facility when the waste is delivered. This copy shall be kept on file by the receiving party. CONTRACTOR (depending on who is responsible for the transfer of the waste) shall keep a third copy of the completed WTN on file that has been signed by all parties. A fourth copy of the WTN shall be returned to CONTRACTOR at the WSA. CONTRACTOR shall maintain all records of waste transferred.

WTNs will be regularly reviewed in order to confirm consistency between copies and identify any issues. In addition, an assurance check of WTNs will be undertaken by COMPANY in order to provide assurance that all WTNs are properly reconciled.

CONTRACTOR shall submit a monthly waste report to COMPANY stating the types and quantity of wastes received at the WSA and the quantity of waste delivered to each recycling organisation or disposal facility or off-site storage area.

10.4.7.3 Transboundary disposal of wastes

Transboundary shipment of wastes shall be restricted to those hazardous wastes for which there is no final disposal route available in Georgia.

The transboundary movement of hazardous wastes and other wastes shall be:

- Reduced to the minimum consistent with the environmentally sound and efficient management of such wastes
- Conducted in a manner that will protect human health and the environment against the adverse effects that may result from such movement
- Restricted to countries that are party to the Basel Convention and who have not prohibited waste imports.

Information about a proposed transboundary movement of hazardous wastes shall be provided to the recipient country in accordance with the requirements of the Basel Convention, and shall include details of the effects of the proposed movement on human health and the environment within the context of the Basel Convention. All waste will be accompanied by a movement document (waste transfer note) from the point at which the transboundary movement commences to the point of disposal. Each person that takes charge of the waste shall sign the movement document upon either delivery or receipt of the waste. Confirmation of receipt and disposal of the waste by the final disposer should be received. If confirmation of correct disposal is not received, the appropriate authorities should be informed. The following information shall be provided on the movement document:

- Exporter of the waste
- Generator(s) of the waste and site of generation
- Disposer of the waste and actual site of disposal
- Carrier(s) of the waste or his agent(s)
- Subject of general or single notification
- The date the transboundary movement started and date(s) and signature on receipt by each person who takes charge of the waste
- Means of transport (road, rail, inland waterway, sea, air) including countries of export, transit and import, also point of entry and exit where these have been designated
- General description of the waste (physical state, proper UN shipping name and class, UN number, Y number and H number as applicable)
- Information on special handling requirements including emergency provision in case of accidents
- Type and number of packages
- Quantity in weight/volume
- Declaration by the generator or exporter that the information is correct
- Declaration by the generator or exporter indicating no objection from the competent authorities of all States concerned which are Parties
- Certification by disposer of receipt at designated disposal facility and indication of method of disposal and of the approximate date of disposal
- Full names and addresses, telephone, telex or telefax numbers of the exporter, generator(s), disposer and carrier(s) of the waste, and the name, address, telephone, telex or telefax number of the person to be contacted in case of emergency.

Wastes that are to be the subject of a transboundary movement shall be packaged, labelled, and transported in conformity with generally accepted and recognised international rules and standards in the field of packaging, labelling and transport.

10.5 Verification and Monitoring

10.5.1 Waste Monitoring and Reporting

The SCPX ESIA has committed to monitoring and auditing waste management.

CONTRACTOR shall implement the following commitment:

7-04 Waste management practices will be subject to regular monitoring and auditing.

CONTRACTOR shall maintain a record of waste management activities including but not limited to:

- An inventory of the quantity of each category of waste that is held at the WSAs
- A record and volume of waste deliveries from the specific WCPs to the WSAs by category and source
- A record and volume of waste deliveries from the WSA to final destination by category
- All completed WTN documentation.

CONTRACTOR shall:

- Maintain a record and volume of waste deliveries from the WSA to final destination by category and final destination
- Keep all completed WTN documentation
- Undertake audits and inspections of third-party waste management facilities in coordination with COMPANY.

10.5.2 Waste Reporting Requirements

CONTRACTOR shall provide to COMPANY monthly:

- A summary of its waste data
- A report of field inspection results, corrective actions implemented and close out of audit actions
- A report of performance on the KPIs for waste (see Section 21.3).

11 POLLUTION PREVENTION PLAN

11.1 Scope

The scope of this Management Plan relates specifically to the following pollution prevention issues:

- Training in pollution prevention and COSHH
- Energy efficiency
- Air emissions
- Wastewater management (e.g. sanitary effluent, site effluent, hydrotest water)
- Noise and vibration management
- Oil and chemical management
- Hazardous liquid wastes.

11.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below:

- World Health Organization Air Quality Guidelines, Global Update 2005
- World Health Organization Air Quality Guidelines for Europe, 2nd Edition, 2000
- EU Directive on ambient air quality and cleaner air for Europe (2008/50/EC)
- UK Air Quality Standards Regulations 2007 (enacting EU Directive (2008/50/EC)
- IFC Policy on environmental and social sustainability (Performance Standard 3) -January 2012
- IFC Environmental Health and Safety Guidelines: Onshore Oil and Gas Development, 2007
- British Standard 5228 Part 1; 2009 'Code of practice for noise and vibration control on construction and open sites – Part 1: Noise'
- British Standard 5228: Part 4: 1992 'Code of practice for noise and vibration control applicable to piling operations'
- British Standard 7385: Part 2: 1993 'Evaluation and measurement for vibration in buildings Part 2. Guide to damage levels from ground-borne vibration'
- EU Urban Wastewater Treatment Directive (91/271/EEC)
- UK Urban Waste Water Treatment Regulations (England and Wales, 1994)
- EU Freshwater Fish Directive (2006/44/EC
- Model Procedures for the Management of Contaminated Land (CR11) (DEFRA and the Environment Agency, 2004)
- Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Environment Agency, 2006).

Specific guidance considered is described below.

• Projects apply pollution prevention and control technologies that avoid, minimise or reduce adverse impacts on human health and the environment while remaining technically and financially feasible and cost-effective

- Projects optimise energy efficiency and greenhouse gas (GHG) emissions by:
 - Promoting the reduction of Project-related GHG emissions
 - Use substitutes for halon in fire protection systems, and select refrigerants based on their environmental impact.
- Projects control air quality by:
 - Maintaining an emissions inventory
 - o Identifying sensitive receptors and identifying ambient air quality guidelines
 - Specifying use of low sulphur content fuel
 - Implementing air quality monitoring.
- Projects control dust, noise, vibration, odour and light pollution by:
 - Minimising or modifying activities that lead to elevated dust levels, and watering areas from which topsoil has been stripped
 - o Insulating and locating equipment to reduce noise where appropriate
 - Designing out odour
 - Creating opportunities to eliminate or minimise visual intrusion by lighting.
- Projects minimise their physical impacts and adapt for changes in climate by:
 - Designing, locating and constructing projects to minimise impacts associated with water run-off, leaching of contaminants and dust fallout
 - Selecting inert materials to stabilise pipelines or provide foundations
 - Evaluating the potential for changes to soil, surface water and groundwater properties from contamination caused by leaching, run-off and acid drainage (e.g. acid sulphate soils, pyritic soils and construction materials such as aggregates and from waste disposal sites such as landfills)
 - Assessing natural water and sediment flow (e.g. in streams, rivers, wetlands and as surface/sheet flow) during site evaluation and implementing mitigation measures (including bridge and culvert construction) to minimise disruption to natural water flow (taking account of flood conditions).
- Projects implement the following pollution prevention and control measures if pipeline hydrotest water is discharged to surface waters or land surface and in accordance with relevant approvals by national agencies:
 - Reduce the need for chemicals by minimising the time that test water remains in the pipeline
 - Select chemical additives based on environmental criteria (concentration, toxicity, biodegradability, bioavailability, and bioaccumulation potential
 - Re-use the same hydrotest water for multiple tests
 - Using a lined and fenced holding pond to allow time for the toxicity of the water to decrease where necessary
 - Consider the volume and composition of the test water and the stream flow or volume of the receiving water body when selecting a discharge site. Dissipate the discharge flow with break tanks, riprap, sheeting, tarpaulins etc., and install sediment control methods (e.g. silt fences, sandbags or hay bales) to protect aquatic biota, water quality and water users
 - Monitor receptors both upstream and downstream of any discharge to a water body
 - Select site for discharge to land that avoids flooding, erosion or lowered agriculture capability of the receiving land.
- Projects carry out an assessment of soil, sediment and groundwater contamination for the Project-impacted area (including an appraisal of pre-existing and existing soil and groundwater conditions) and implement appropriate measures to address any risks.
- Projects minimise wastewater and treat it to meet a quality specification by:
 - Treating grey and black water from showers, toilets and kitchen facilities to a specified standard
 - Using measurement, control and sampling methods that achieve the specified wastewater discharge standards
 - Maintaining the capability to segregate and store treated waste water that does not meet the specified standard to allow for subsequent treatment

Projects avoid the non-routine or accidental release of pollutants by installing bunding, drainage and treatment for areas that could be contaminated with oil and implementing fuelling restrictions near watercourses.

11.3 Roles and Responsibilities

Roles and responsibilities are defined in Section 4 of the ESMMP.

11.3.1 Company

COMPANY shall be responsible for:

- Developing an interface Emergency Response Plan to link CONTRACTOR emergency response plan to COMPANY plan
- Assisting CONTRACTOR with response to Tier 1 spills
- Provision of a Spill Response CONTRACTOR to respond to Tier 2–3 spills.

11.3.2 Contractor

In addition, CONTRACTOR shall be responsible for:

- Developing an Emergency Response Plan to respond to all Tier 1 spills and identifying protocols for reporting Tier 2–3 spills to COMPANY
- Providing assistance to response to Tier 2–3 spills as directed by the COMPANY
- Identifying locations where specific pollution prevention and control measures may be required
- Maintaining a register of all emissions and discharges
- Providing and maintaining adequate stocks of pollution prevention and control equipment (e.g. drip trays, spill kits and booms) at locations to be agreed with COMPANY
- Ensuring that the workforce is adequately trained in the deployment and use of pollution prevention and control equipment
- Reporting any spills or pollution events to COMPANY in accordance with the Project Incident Reporting System
- Identification and agreement of ground- or surface-water abstractions and liquid effluent discharges with Government departments and support on-site visits in accordance with permit/approval conditions.

11.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to prevent pollution and mitigate impacts of any pollution that may occur during the construction or commissioning phases of the SCPX Project. CONTRACTOR shall develop a Pollution Prevention Implementation Plan that, as a minimum, complies with the measures included in this Pollution Prevention Management Plan.

11.4.1 Training in Pollution Prevention and COSHH

CONTRACTOR shall train personnel to understand the potential of Project activities such as the discharge of wastewater and hydrotest water to pollute watercourses, and the environmental consequences of failure to contain potentially harmful chemicals.

The SCPX ESIA has committed to induction training on noise minimisation and to training personnel in the safe handling of hazardous materials and in response to spills.

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

6-09	Relevant personnel will be trained in safe use and handling of hazardous materials.
6-11	Relevant construction personnel will be trained in use of spill kits and disposal practices.
25-03	Project induction training will include instructions about minimising noise disturbance.
6-12	A trained rapid response team will be mobilised in the event of spillage of hazardous materials.

With respect to pollution prevention, CONTRACTOR shall ensure that all of its personnel fully understand:

- The importance of switching off equipment when it is not in use
- The potential environmental impacts of the Project with regard to noise, dust, wastewater discharges and the containment of fuel, chemicals and hazardous liquid waste
- The potential health impacts of exposure to fuel, chemicals and hazardous liquid waste
- The mitigation measures that have been adopted to address those impacts and how and where to apply these measures
- The positioning of machinery on-site to reduce noise emissions to neighbouring communities
- Any restrictions on working hours to reduce noise impacts
- That fuel and chemical storage is only allowed in designated areas
- The procedures to be followed in the event of a non-compliance with the environmental requirements
- How to deal with unforeseen environmental incidents including spill response and reporting procedures; and
- Their roles and the roles of other CONTRACTOR staff and COMPANY personnel with respect to environmental issues.

CONTRACTOR shall arrange more detailed environmental training courses for those supervising refuelling activities; chemical handling, those responsible for treating and discharging wastewater and hydrotest water into watercourses and other activities deemed to have the potential to cause pollution.

11.4.2 Air Emissions from Vehicles, Plant and Equipment

COMPANY shall undertake pre-construction ambient air quality monitoring around the facilities.

22-03	Ambient air quality monitoring will be carried out prior to construction to establish a
	baseline on the boundary fence and at receptors in the vicinity of CSG1, CSG2 and
	PRMS.

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

23-02	Equipment and vehicles will be regularly maintained in accordance with the
	manufacturer's recommendations to maximise fuel efficiency and help minimise
	emissions.

14-10	The applicable air emissions permits will be obtained for combustion equipment, prior
	to the emission commencing.

CONTRACTOR and COMPANY shall implement the following commitment:

23-03	Preferentially, the Project will use fuel that has low sulphur content of 0.1%, where
	practical and available within Georgia.

CONTRACTOR shall select vehicles that are appropriate for the task required, modern, well maintained and in good working order.

CONTRACTOR shall develop a routine maintenance and inspection programme, including a maintenance log, for all vehicles and stationary equipment (e.g. generators and boilers). Routine maintenance shall be to a high standard to ensure that vehicles and equipment are safe, are operating efficiently and that emissions and noise are minimised. All vehicles and equipment shall be identified by CONTRACTOR using a sticker system or similar to demonstrate that they have a valid maintenance and inspection certificate.

All vehicles and equipment, including vehicles and equipment not purchased 'as new' after the CONTRACT award, shall be maintained by CONTRACTOR so that emissions levels are maintained at levels that are as low as is reasonably practicable. Any vehicles or equipment seen to be emitting black smoke shall not be permitted to continue work and shall be sent for maintenance or replaced by CONTRACTOR.

CONTRACTOR shall establish a workshop area in the camps to perform maintenance work on construction machinery and vehicles, as needed. The area shall have a sealed (e.g. concrete) floor, a roof to protect it from rain/snow and a bund to protect surrounding soils and provide containment measures in the event of a spill of lubricants, fuel or other potentially hazardous substances. The area shall be connected to oil-water separator via an oily water drainage system and shall have a shut-off valve with padlock.

CONTRACTOR shall ensure that its generators, including camp generators, comply with manufacturer's specifications.

CONTRACTOR shall use diesel fuel with a low sulphur content (0.1%), as this is known to be available in Georgia.

CONTRACTOR shall carry out quantitative exhaust emissions monitoring on vehicles and equipment to ensure it meets manufacturer's specifications at COMPANY's request.

11.4.3 Dust Management

Before and during construction, CONTRACTOR shall identify areas where dust from the ROW and from access roads is likely to have an impact on human, plant or animal receptors within 300m, taking account of soil types, locations of communities, sensitive crops and weather conditions.

CONTRACTOR shall implement the following commitments:

24-01	Contractor will be required to have an adequate supply of bowsers and to regularly damp down the ROW, access roads and village roads used by construction traffic during dry conditions.
24-02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.

Pipeline, camps, access roads and all facilities:

23-06	Vehicles carrying fine materials will be sheeted to help prevent dust blow and spillages.
10-19	Protection measures will be put in place to prevent any water used for dust suppression from causing silt problems for nearby wetlands or watercourses.
24-07	Treated waste water will be used for damping down road surfaces to mitigate dust generation.

If CONTRACTOR is proposing construction work in such areas where dust has the potential to impact receptors or is carrying out types of work that could give rise to wind-borne dust and chemical particles, it shall propose dust suppression measures that shall include:

- Water spraying the running track within the ROW and/or the surface of the access road with water; CONTRACTOR shall provide dedicated water bowsers for this task
- Imposing a speed limit of 30km/h on unmade roads
- Storing and handling soil, aggregate and chemicals in a way that presents fugitive particles (e.g. water spraying soil piles, water spraying when aggregate is mixed)
- Requiring vehicles transporting soil and aggregate to be covered for example using tarpaulins or covers that prevent the escape of dust, and prohibiting such vehicles from stopping near settlements
- Keeping site roads and approaches to watercourse crossings free from deposits of mud and silty material
- Using windbreaks, netting screens or semi-permeable fences to reduce dust emissions from working areas close to sensitive residential or agricultural locations or natural habitats.

The selection and frequency of dust suppression measures shall be dictated by site-specific conditions and selected to prevent nuisance to local communities, dusting of crops or other flora. During windy conditions, it is likely that additional measures will be required compared to during calm conditions.

CONTRACTOR shall implement the following location-specific commitments:

X8-01	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the military camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).
X8-02	Particular attention will be paid to the implementation of dust suppression measures where the CSG2 access road passes close to Nardevani and Berta/Oliangi.

Protection measures (e.g. silt fencing) will be implemented where necessary to prevent water used for dust suppression from causing silt problems for nearby wetlands or watercourses.

CONTRACTOR's Pollution Prevention Implementation Plan shall define measures for these locations and shall identify:

- The range of dust suppression measures and situations when they are to be applied
- The frequency of water spraying
- Dust monitoring methods to be used to demonstrate that dust suppression is effective
- Monitoring of dust levels to demonstrate conformance with the Project environmental standards.

CONTRACTOR shall obtain all necessary permits from the relevant authorities for the extraction of water used for dust suppression (or if treated wastewater is proposed for use in water spraying). If treated wastewater is to be used for water spraying CONTRACTOR shall demonstrate that it poses little or no risk to human health and is in compliance with the Project standards.

11.4.4 Fault Crossings

COMPANY shall incorporate the following commitments into the Project design that shall be implemented by the CONTRACTOR during construction:

D5-006	The section of the pipeline trench that crosses the Rustavi fault will be excavated in a trapezoidal shape, double lined with geotextile membrane and filled with non-cohesive, graded aggregate.
D5-034	An increased wall thickness with a design factor of 0.6 will be applied at major road, railway and river crossings and where the pipeline passes seismic faults to meet the requirements of API RP 1102.

11.4.5 Road and Rail Crossings

COMPANY shall incorporate the following commitments into the Project design that shall be implemented by the CONTRACTOR during construction:

D11-02	There will be increased depth of cover at crossings: road crossings will generally be installed with 2.0m cover; rail crossings have at least 3.0m cover and unpaved roads will have at least 1.5m cover.
D11-03	Concrete slabs will be installed at open-cut road crossings to protect SCPX from future road construction activities and excavations along roads or the verges.

11.4.6 Watercourse Crossings

COMPANY shall incorporate the following commitments into the Project design that shall be implemented by the CONTRACTOR during construction:

D5-009	The large irrigation channel, drainage ditch and road at KP12 will from part of a single trenchless crossing.
D17-04	The Mtkvari River crossing will be constructed by micro-tunnelling or horizontal directional drilling under the river.
D6-03	A hydrology study will be undertaken during the detailed design of the CSG2 site and access road to determine catchment areas, flow rates and water quality in the stream crossings and wetland areas.

Pipeline, camps, access roads and all facilities:

CONTRACTOR shall carry out the following commitments

4-12	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.
6-26	Drilling and tunnelling mud will be stored in impermeable lined bunded areas or tanks
9-03	Muds used will be water based.
6-26	Drilling and tunnelling mud will be stored in impermeable lined bunded areas or tanks.
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10-18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally the construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.
11-02	Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and fluming.
11-05	Watercourse crossing methods will be developed with the aim of minimising the mobilisation of sediments.

CONTRACTOR shall implement the following location-specific commitments:

X5-02	The Mtkvari River at KP30 will be non-open-cut (micro-tunnel or HDD) and use existing/abandoned launch pit on east bank if practicable.
X5-03	The contractor will prepare a plan to respond to an outbreak of mud including clean up and remediation for outbreak on land and liaison with downstream users in the event of outbreak in the water.
X5-04	At the Algeti River, the crossing trench will be backfilled with the excavated material and, where existent, the watercourse's armour will be reinstated as soon as possible following pipeline installation.
X5-06	Water flow will be maintained at Irrigation channels that will be open-cut at KP00-11.
X5-07	At the slopes east of the Mtkvari between KP27and KP29, header drains or dewatering should be considered where large quantities of water are likely to enter the ROW.
X5-08	Where the CSG2 access road crosses hill slopes and springs, header drains or dewatering should be considered where large quantities of water are likely to enter working areas.

CONTRACTOR shall submit detailed method statements for river crossing construction to SCPX that include:

- The size and gradient of diversion pipes, channels or temporary flumes to channel • the river flow away from construction works (forming bridges across watercourses where necessary)
- Flume pipe sizes used during flumed watercourse crossing construction will be calculated so that the maximum anticipated flow in the watercourse will not exceed 80% of the flume pipe(s) capacity. Flumes will be cleaned out during construction as needed to maintain adequate flow capacity
- Entry and exit of river water into the diversion at the normal river level (without cascade from the pipe or channel)
- The use of sediment filters (e.g. straw bales) and sediment barriers (e.g. fencing), bunds or settling tanks to minimise any increase in sediment load on the river
- Plans to reduce the potential impact of the works in the event of unpredicted water flow or flooding
- Spill response equipment (for leaks from construction equipment). •

CONTRACTOR shall reinstate the banks and bed of the river at the crossing points to nearoriginal condition using riprap or gabions where necessary to reinforce the riverbanks and prevent erosion as per the requirements of the Reinstatement Plan.

11.4.7 Wastewater Management

11.4.7.1 General

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

14-06	All wastewater discharges will be in compliance with the Project Environmental Standards.
14-09	The applicable discharge permits will be obtained for any new planned liquid discharges, prior to the discharge commencing.

CONTRACTOR shall ensure that discharge of wastewater (including sewage from the temporary construction facilities and hydrotest water to surface watercourses) does not impact surface-water ecology.

CONTRACTOR'S Pollution Prevention Implementation Plan shall address the discharges described below and shall include an identification of all potential wastewater sources, potential composition, treatment techniques and discharge points. CONTRACTOR shall carry out an environmental appraisal for each potential discharge location to demonstrate discharges will not affect surface-water ecology, downstream water users or terrestrial ecology and will be in compliance with the Project environmental standards, Appendix B.

CONTRACTOR's Pollution Prevention Implementation Plan shall include control measures to prevent wastewater discharges causing erosion.

CONTRACTOR shall implement the following commitments:

Pipeline, camps, access roads and all facilities:

3-17	The rate of discharge of water will be controlled to reduce the risk of soil erosion.
10-15	Sediment reduction measures will be implemented including but not limited to discharge of pumped water via break tanks and sediment mats.

CONTRACTOR shall prohibit its staff and its subcontractors from bathing or washing clothes and vehicles/equipment in rivers or watercourses.

CONTRACTOR shall be responsible for obtaining all permits necessary for discharge of wastewater.

11.4.7.2 Sanitary discharges

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

14-02	Domestic sewage from camps and pioneer camps will be stored and transported to water treatment works or treated through a dedicated site sewage water treatment plant.
D5-106	The camps will discharge domestic wastewater treated by a sewage treatment package designed to meet the Project standards and permit requirements.

CONTRACTOR shall engage a specialist sewage-treatment package vendor that will design, install, operate and maintain the sewage treatment packages at construction camps in accordance with the Project environmental standards (Appendix B) for the discharge of sanitary effluent.

CONTRACTOR shall ensure that the specialist sewage-treatment package vendor supplies a dedicated, competent operator for each treatment unit. CONTRACTOR shall submit a contingency plan for treatment plant maintenance periods or downtime for COMPANY approval. This shall include, as a minimum, the provision of holding tanks that can be used to retain emergency overflows or discharges that do not meet the Project standards.

CONTRACTOR shall install an industry recognised manufactured grease trap at the outlet of the kitchen(s) facilities in consultation with the STP vendor to prevent greases and fats from entering sewage treatment streams. CONTRACTOR shall provide self-clean and low maintenance grease traps with an effluent quality of less than 100ppm of oil and grease. . Flow meters shall be installed at the entrance to all STPs.

CONTRACTOR shall preferentially discharge treated effluent, in accordance with the Project standards, to land. Prior to any discharge CONTRACTOR shall evaluate the soil permeability and construct engineered soakaways, where required, to avoid impacts on land, surface-water drainage and groundwater.

For areas located away from the construction camps, e.g. along the ROW and at other remote work areas, toilets shall be provided by CONTRACTOR and installed at a designated area to prevent surface water, ground water or soil contamination in case of accidental spill. CONTRACTOR shall investigate the feasibility of using dry or composting toilets at remote areas.

Workers shall be appropriately trained by CONTRACTOR in maintaining the portable toilets, including minimising odours and eliminating pathogenic microorganisms. CONTRACTOR shall maintain toilets in a clean and hygienic condition.

Toilets provided by CONTRACTOR shall be emptied regularly to prevent contamination of soil and water. Waste shall be transported for final treatment and disposal at the main construction camp by the CONTRACTOR. Sewage treatment units shall therefore be appropriately sized to allow for waste generated at the camp and for waste transported from remote locations, e.g. the ROW, which shall be discussed with the STP vendor.

All solid sanitary waste shall be disposed of in accordance with the Waste Management Plan.

11.4.7.3 Site effluent discharges

CONTRACTOR shall install wastewater treatment units where appropriate to remove oil, chemical residues and suspended solids so that all its wastewater generated from 'industrial' sources (including vehicle maintenance, waste transfer stations, concrete batch plants and other not-normally clean sources) meets the Project environmental standards (Appendix B) before it is discharged.

11.4.7.4 Trench water management and disposal

CONTRACTOR shall undertake the following commitments for the discharge of trench water, which is uncontaminated water that has accumulated in excavations or within the construction site (reference to trench water in the commitments below shall include water from these additional sources):

Pipeline, camps, access roads and all facilities:

3-21	Measures to minimise scour and reduce sediment load will be implemented at
• = ·	locations where hydrotest water or other pumped water (including trench water) is
	discharged to surface watercourses or to land (e.g. controlled rate of discharge and
	deployment of geotextile mats or other physical erosion prevention measures).

3-24	At locations where trench water or hydrotest water or other pumped water discharges causes scour or soil erosion, eroded areas will be reinstated.
10-02	The direct discharge of trench water to watercourses will be avoided, except where approved by the Company.
10-03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.
10-04	If discharge of trench water to a watercourse is unavoidable, discharge will be through a filtering medium.

CONTRACTOR shall implement measures to prevent silty/turbid discharge water from trench dewatering operations from entering any drain/water body/wetland, unless it is dry and well vegetated. All dewatering intake hoses will be elevated from the bottom of the trench to avoid drawing bottom silt through pumping operations. If the discharge point for trench dewatering is less than 30m from any watercourse, the discharge shall be directed through a filter bag or other filtering medium (to be approved by the COMPANY where there are downstream users that have the potential to be affected) and/or into areas contained by erosion control barriers. For discharges that are greater than 30m from a watercourse, depending on the local terrain and vegetative cover, filtering mediums may be required. CONTRACTOR shall assess the local conditions at the discharge location, considering these factors, and determine whether a filtering medium is necessary. This assessment shall be documented. Pumped discharges shall be made at a rate that does not cause riverbed disturbance. Sediment settling ponds shall be installed where other measures to control erosion and sediment in run-off are not effective.

11.4.7.5 Surface run-off

CONTRACTOR shall install such containment berms or ditches as may be necessary to prevent surface run-off originating from construction materials such as cement, fresh concrete, lime and clay from reaching water bodies or changing the quality of the soil.

CONTRACTOR shall monitor surface-water quality around the pipeline route and construction sites in waters that could be affected by run-off.

CONTRACTOR shall design new access roads with adequate slope and cross-fall drainage to channel run-off safely to off-road soakaways without causing erosion or siltation.

11.4.7.6 Storm water

Storm-water drainage systems shall be designed to perform for local rainfall/ snowfall conditions to ensure no surface water accumulation at the camp area.

CONTRACTOR shall provide an effective collection and disposal systems for storm water from all paved areas and buildings. Drainage shall be designed to prevent any inflow of storm water to camp sewerage system (e.g. via manholes) and to prevent any contaminated wastewater streams (e.g. vehicle wash area) from entering drainage systems.

CONTRACTOR shall design precautions against flooding and erosion to maintain the function of the camp and worksites in high rainfall and flash-flood conditions.

Design drawings of the site drainage system shall be submitted to and approved by COMPANY.

Potentially contaminated storm water shall be routed to wastewater treatment units to remove oil, chemical residues and suspended solids so that all wastewater generated from 'industrial' sources (including vehicle maintenance, vehicle wash areas, waste transfer stations, and other not-normally clean sources) meets the Project environmental standards (Appendix B) before it is discharged.

CONTRACTOR shall consider routing all potentially contaminated wastewater (excluding sanitary wastewater) where appropriate to an appropriately sized treatment unit capable of achieving the standards in Table 1-6 of Appendix B.

11.4.7.7 Disposal of hydrotest water

CONTRACTOR shall implement the following commitments:

Pipeline:

10-06	Before hydrotesting, the Contractor will prepare, and submit for Company approval, a hydrotest plan.
10-03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.

CONTRACTOR shall be required to prepare a comprehensive plan for the implementation of hydrostatic testing, which will include information on the quantity and quality of water needed, the proposed use of any chemical additives, an evaluation of available water resources in the relevant regions and proposed abstraction points, as well as a discharge proposal in accordance with the requirements below, the project environmental standards (Appendix B) and any relevant specifications. This shall also be in accordance with the requirements of the Resource Management Plan, including the hierarchical approach to the sourcing and use of water and the use of chemicals (Section 12.4.3).

CONTRACTOR's Pollution Prevention Implementation Plan shall propose measures to minimise the environmental impact of the discharge of hydrotest water.

CONTRACTOR shall line any holding ponds used for the storage of hydrotest water with an impermeable liner. Any deviations to this requirement shall be subject to COMPANY approval and based on the results of a risk assessment, assessing the potential impacts of the deviation, which shall be undertaken by the CONTRACTOR and provided to the COMPANY.

CONTRACTOR shall undertake the following commitments:

Pipeline:

10-10	Water (including hydrotest water) will be tested before discharge and treated to meet the Project environmental standards.
10-11	The hydrotest water will be treated using diffusers to entrain oxygen in a break tank, and filtration will be used to minimise suspended solids, prior to discharge. Flow rate will be controlled to reduce the risk of soil erosion and disturbance to river bed sediment.
10-21	The direct discharge of hydrotest water to watercourses and soakaways will be subject to the results of the chemical risk assessment. The use of evaporation basins will be considered subject to the availability of land and an environmental and social assessment.

CONTRACTOR's Pollution Prevention Implementation Plan shall nominate locations for the discharge of hydrotest water.

CONTRACTOR shall assess the nominated discharge locations on the basis that:

- All discharges will be in compliance with the Project standards
- Discharge into main rivers with significant volumes and flow has the potential for low impact if they can receive the discharges without altering their current regime

Selection of discharge locations with the greatest flow of water offer good dilution and prevent loss of fish

- Discharge back to the originating water body has the potential for low impact if the water quality parameters are no worse than those recorded when the water was abstracted
- CONTRACTOR's assessment should consider downstream uses of the river. Discharge into rivers with water not suitable for human consumption or irrigation shall be preferred
- Vegetated, non-erosive areas for discharge are preferable
- Discharge sites on land shall be selected to prevent flooding, erosion, or lowered agriculture capability of the receiving land. Direct discharge to land immediately upstream of community/public water intakes shall be avoided
- Discharge to areas of surface water vulnerability or groundwater vulnerability shall be avoided (as defined in the ESIA).

CONTRACTOR shall install erosion/scour protection at hydrotest water discharge points to slow the flow of the discharge and prevent substratum erosion. The use of sediment control measures before discharging into main rivers and/or water bodies (e.g. sedimentation ponds, sediment barriers, and water flow control devices) shall also be used to minimise any increase in sediment load on the river.

Facilities

With regards to hydrotesting during commissioning of facility equipment CONTRACTOR shall undertake the following:

10-06	Before hydrotesting, the Contractor will prepare, and submit for Company approval, a hydrotest plan.
10-03	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.

For facilities the test plan shall cover chemical cleaning of pipework, include a chemical assessment and quantify disposal quantities and disposal. Neutralisation is the preferred option and shall be implemented by CONTRACTOR, including the provision of competent analytical chemists and other specialists as necessary to design and implement the neutralisation process.

11.4.7.8 Vehicle and equipment washing and maintenance

The SCPX project has committed to the following which shall be implemented by the COMPANY and CONTRACTOR:

10-18	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally the construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.
10-22	Washing of Project plant and vehicles in watercourses will not be undertaken.

CONTRACTOR shall restrict vehicles and equipment from entering watercourses when water is present or prohibit them being washed in watercourses at any time.

Where vehicles must enter watercourses, they will be cleaned and inspected (using a predefined checklist) beforehand to prevent leaks of oil and lubricants into the watercourse. CONTRACTOR shall retain inspection checklists and these shall be made available to the COMPANY upon request. CONTRACTOR shall require all machinery, vehicles and vehicle wheels to be washed and maintained in dedicated areas which use a re-circulatory system with no overflow, have sealed (e.g. concrete) floors, kerbs or bunds and drains leading to oil/water separators. CONTRACTOR shall install and silt traps before the oil–water separator and regularly maintain the traps to prevent accumulation of sediment affecting separator performance. The effluent shall be contained for treatment and disposal in accordance with the Project environmental standards (Appendix B).

11.4.8 Noise and Vibration Management

11.4.8.1 Noise control measures

The SCPX ESIA has committed to noise abatement and to restrict working hours.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

25-01	During construction work, will generally be undertaken in daylight hours (excluding specified operations). Where people live in close proximity to the works, or there is a high potential for disturbance (e.g. blasting), a location-specific risk assessment will be undertaken for activities undertaken between 7pm and 7am.
25-05	Noise will be monitored periodically against the Project Environmental Standards.
25-09	During construction of the pipeline and facilities and operation of the construction camp and pipe storage areas where the works are less than 400m from residential buildings for longer than one month, periodic noise monitoring readings of 10 minutes duration (in accordance with the Project procedure) will be measured at the building facade at the start of the potentially noisy activities. If the noise exceeds Project Standards, measures will be implemented to aim to reduce noise levels (e.g. hoardings).

CONTRACTOR and COMPANY shall undertake the following commitment:

25-08	The project will avoid vehicle reversing where practical, and will preferentially use
	white noise type reversing alarms.

CONTRACTOR'S Pollution Prevention Implementation Plan shall identify activities that generate high noise levels and propose to carry them out in normal daytime working hours only. Night time activities shall be at COMPANY approval and shall be subject to a site-specific noise risk assessment that shall consider any exceedance of the Project environmental standards (Appendix B), the duration of the noise impact, additional control measures to meet Project environmental standards and community liaison measures which should be implemented.

CONTRACTOR shall implement best practice in noise and vibration control as defined in BS 5228 (2009) Parts 1 and 2 in so far as it does not conflict with the other requirements of this plan, including notifying local residents before undertaking noisy activities that could disturb or alarm people or animals, especially during approved 24-hour activities (e.g. hydrotest).

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

25-04	Local residents will be forewarned of planned activities that are considered by the
	project to be noisy (e.g. blasting, pile driving and release of test pressure).

CONTRACTOR shall provide adequate warning that loud activities will take place to residents that could potentially be impacted by the noise source. Near settlements,

CONTRACTOR shall schedule works and limit the speed of construction traffic to minimise disturbance by noise.

CONTRACTOR shall consider the noise level when selecting equipment and preferentially select equipment that generates low levels of noise, and operate it in a manner sympathetic to the ambient noise environment (e.g. not leaving equipment idling unnecessarily or revving engines unnecessarily). CONTRACTOR shall carry out documented machinery noise level checks as part of routine maintenance and before set up on site. All equipment shall be adequately maintained to minimise noise emissions.

The SCPX ESIA has committed to responsible use of vehicles to reduce disturbance due to noise, COMPANY and CONTRACTOR shall implement the following commitment:

37-16	Drivers will be trained to adopt 'low-noise' driving practices, for example, by strictly observing speed limits, switching vehicles off whenever possible during periods of inactivity, minimising the use of horns, not accelerating or braking aggressively
25-02	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.

CONTRACTOR shall require mufflers to be fitted to vehicle exhausts, machinery and heavy equipment and maintained so that tonal, impulsive or low frequency noise is eliminated.

CONTRACTOR shall locate power generators as far as possible from worker resting areas, populated areas and sensitive ecosystems. Plant known to emit noise strongly in one direction will be orientated, whenever possible, so that the noise is directed away from noise-sensitive areas.

CONTRACTOR shall implement noise-screening measures if it is likely that the Project environmental standards (Appendix B) will be exceeded. Noise screening should include:

- Housing noisy equipment in soundproof enclosures
- Erecting earth mounds or solid fencing between the sound source and affected dwellings
- Stockpiling site materials, soil or spoil where it can provide additional screening.

Special consideration shall be given to any sensitive receptors, including schools, hospitals and nursing homes, to ensure the Project environmental standards (Appendix B) are adhered to.

During construction of CSG1, CSG2 and the PRMS, the local community will be informed of when and where noisy activities (e.g. blasting, piling) will occur. Measures to reduce the impact of the noise levels will be implemented where necessary.

During commissioning and testing COMPANY shall implement the following commitments:

25-11	During commissioning and testing noise emissions from equipment will be minimised through use of acoustic insulation as deemed appropriate by the Project.
OP148	During early operations, 10-minute readings will be taken at the nearest noise sensitive receptors to CSG1, CSG2 and the PRMS to confirm that the site will meet the appropriate Project Environmental Standards.

11.4.8.2 Vibration control measures

CONTRACTOR's Pollution Prevention Implementation Plan shall identify activities that generate unusual levels of vibration (e.g. blasting, piling, heavy vehicle movements).

Blasting

CONTRACTOR shall schedule any blasting to minimise disturbance, i.e. avoiding early morning and late evening work where possible.

CONTRACTOR shall post announcements explaining the activities of detonation, precautions and signals to be employed in detonation zones at least one week in advance of the work occurring. CONTRACTOR shall notify occupants of nearby buildings and land at least three hours before detonations to allow for protection of people, properties and cattle.

Before any detonation, CONTRACTOR's representative will make sure that the personnel and the equipment are safe and that barriers, signals and watchmen are placed to stop any person from entering the danger zone. A warning system equipped with a siren will be used to notify of imminent detonation.

All blasting shall comply with the Blasting Specification. In addition to the monitoring required by this specification, blast-induced ground vibration monitoring and air-blast overpressure monitoring shall be carried out by the CONTRACTOR at sensitive receptors (i.e. residential or commercial buildings, site of cultural interest (e.g. the church at CSG2) or other locations as deemed necessary by the COMPANY). Monitoring locations shall be determined based on the results of a vibration-effects risk assessment, which shall be approved by the COMPANY, including the provision of sufficient justification where monitoring is proposed to be omitted.

All blasting shall be in accordance with the vibration levels described in the Project environmental standards and the Blasting Specification. CONTRACTOR should assume three monitoring locations at CSG2 (as a minimum the church in the vicinity of CSG2) and in the three in the vicinity of the pipeline loop, should blasting be required there.

CONTRACTOR shall fully document the external and internal condition of the church in the vicinity of CSG2 48 hours before blasting and immediately after blasting has occurred.

CONTRACTOR shall reduce the risks associated with fly rock by:

- Selection of a blast design appropriate for the hole diameter and charge mass
- Accurate implementation of the blast design by the shot-firing crew
- Establishment of an appropriate exclusion zone incorporating a proven safety margin
- Use of sentries to enforce the exclusion zone
- Clearance of the exclusion zone prior to firing.

Vehicle movements

CONTRACTOR shall implement the following measures to minimise vibration damage of buildings and to protect CONTRACTOR and COMPANY against spurious claims for compensation.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

25-15	The validity of any damage claims will be assessed; repairs will be undertaken or appropriate compensation paid if damage is associated with construction vehicle movements.
25-16	Correct tyre pressures will be monitored and maintained

CONTRACTOR shall also comply with commitments in the Infrastructure and Services Management Plan including 37-08, which requires regular inspections of roads, particularly close to fragile buildings. The record of condition of building at vibration-sensitive locations along the CSG2 access road (including specifically at the Berta monastery) and at other buildings within close proximity to access roads of the pipeline ROW shall be organised and maintained by CONTRACTOR with participation by COMPANY.

11.4.9 Light Emissions

CONTRACTOR shall design lighting to modern specifications to keep light spill to surrounding areas to a minimum. It will illuminate the ground but not the night sky as far as possible. Daylight sensors should be used where possible to prevent unnecessary lighting. CONTRACTOR shall consider the use of low-level, low-impact bollard lighting in the camp accommodation areas where possible and CONTRACTOR shall implement the following commitment:

8-04	Lights will be shrouded or directed with the aim of reducing off-site light spill at the
	construction sites, camp and pipe storage areas.

Light emissions are further covered in the Landscape Management Plan.

11.4.10 Oil and Chemical Management

CONTRACTOR's Pollution Prevention Implementation Plan shall demonstrate how the storage and handling of fuel and chemicals will be managed so that they are contained and are not discharged into the soil, groundwater or watercourses.

CONTRACTOR shall implement the following commitments:

2-02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).
6-21	All mobile plant (excluding vehicles) will be integrally bunded or will be equipped with a bund or drip tray that will be regularly inspected and emptied to prevent rainwater accumulating.

11.4.10.1 Chemical selection and inventory

CONTRACTOR'S Pollution Prevention Implementation Plan shall identify the chemical products that will be used, and wherever possible it will propose to replace environmentally harmful chemicals with less harmful alternatives. CONTRACTOR shall apply the following principles when selecting chemicals:

- CONTRACTOR shall reduce the environmental risk by selecting effective hazardous materials with the lowest environmental impact, where practicable
- CONTRACTOR shall select hazardous materials with reduced health impact wherever possible, in accordance the Control of Substances Hazardous to Health (COSHH) principles or equivalent
- The use of any hazardous materials that may cause tainting, known endocrine disruptors or heavy metals shall be avoided
- Ozone-depleting substances (ODS), as defined by the Montreal Protocol, shall not be used
 - CONTRACTOR shall not design for the use of halon-based fixed and portable fire suppression systems
 - CONTRACTOR shall not design and install new refrigeration systems that utilise hydrochlorofluorocarbon (HCFC) and chlorofluorocarbon (CFC) (note this requirement does not apply to air conditioners fitted to vehicles, hermetically sealed domestic-type appliances (e.g. refrigerators, chilling units and portable air conditioning with an inventory less than 3kg)

- All new equipment shall be free from all HCFCs and CFCs.
- Persistent organic pollutants, as defined in the Stockholm Convention, shall not be used unless no alternative is available. Alternatives shall be reviewed and the choice of chemical justified. Use and disposal of any chemicals listed in Annex A of the Convention shall be strictly in accordance with the provisions of the Convention and will be approved for use by COMPANY
- CONTRACTOR shall select chemical pesticides for pest control as a last resort and only after alternative pest control methods (such as biological) have been considered.
- When pest management activities include the use of pesticides, projects should consider the following:
 - Reducing the levels of harmful active substances by replacing the most dangerous with safer (including non-chemical) alternatives
 - Selecting pesticides that are low in human toxicity, known to be effective against the target species, and have minimal effects on non-target species and the environment
 - Designing the pesticide application regime to minimise damage to natural enemies and reduce the likelihood of pesticide resistance.

The SCPX ESIA has committed to minimise stored volumes of chemicals.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-08	Procedures will be established to determine acceptability of material storage and to
	promote the minimisation of storage volumes.

CONTRACTOR shall maintain a comprehensive chemical inventory for each chemical storage area. CONTRACTOR's Pollution Prevention Implementation Plan shall include procedures for inventory control to minimise stored volumes and track incoming and outgoing chemical materials in a chemical control register.

11.4.10.2 Fuel and chemical transport and storage

CONTRACTOR shall complete a hazard assessment for the transport of all hazardous materials, including: management actions, preventive measures and emergency responses, as well as the characteristics of the hazardous material and a history of any previous accidents and existing criteria for the safe transportation of hazardous materials. The assessment shall document any mitigation measures that are required to reduce risk.

Storage requirements

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

14-03	In areas of wetland and areas where the groundwater supplies wells for irrigation or potable use, the storage and use of hazardous materials will be carefully controlled.
6-06	The Contractor's implementation plan will detail requirements for record keeping and on-site maintenance of material safety data sheets (MSDS).
6-07	Materials that can potentially react with each other will be segregated during storage.
6-04	Requirements for the establishment of hazardous materials storage areas (e.g. bunding, impermeable surfaces, secure drainage, limited access, labelling) will be identified in the Contractor's Pollution Prevention Implementation Plan.

7-10	Diesel storage tanks at construction camps will be located in suitably sized bunded areas that are designed to be impervious to water and fuel. The bund volume will be designed to no less than 110% of the tank volume. Loading and offloading connections will be located over secondary containment.
7-11	Hazardous chemicals will be securely stored on site in special containers in a designated storage area.

CONTRACTOR shall store fuel and chemicals either:

- In double-skinned (capable of 110% containment of product) storage tanks with the filling connection within the outer skin, or
- In storage tanks/drums located in a concrete (or other suitably impermeable material) bund that is impervious to water and fuel/chemicals that has a capacity at least 110 % of the largest tank/drum within the bund:
 - The bund shall have no external drain and any penetration of the bund wall shall be sealed into the wall. The filling connection shall be within the bund. The bund shall be drained to the oil/water separator via a locked valve which is normally closed
 - Bunds shall be regularly inspected and emptied (only after inspection) to prevent the accumulation of rainwater

The loading and offloading area shall be hardstanding (e.g. concrete) and kerbed and/or bunded to allow vehicle access with no connection to external drains.

All chemical and fuel storage areas (excluding large volume diesel tanks) shall be roofed.

Chemical and fuel storage areas and refuelling areas shall have a sealed surface (e.g. concrete), be bunded and drain via a sump to a wastewater treatment system with an oil/water separator. Oil water separators shall be installed at fuel storage, refuelling and maintenance areas. They shall be industry recognised manufactured oil water separators with an effluent quality of less than 10ppm of oil and grease.

Underground storage tanks shall not be used unless with COMPANY approval, which will be subject to a review of the results of a risk assessment that the CONTRACTOR shall prepare.

CONTRACTOR shall implement measures to protect fuel storage tanks from vehicle impact damage. Measures should include restricting unauthorised vehicular access, speed limits (20km/h or less), minimising reversing requirements and signage (e.g. danger, inflammable fuel).

If CONTRACTOR proposes a temporary fuel tank to be used at a worksite, a temporary containment system shall be installed (e.g. impermeable geo-membrane and sand bags) capable of holding 110% of the volume stored. Filling connections shall be within the bund.

CONTRACTOR shall store chemicals (small volume containers) on shelves or pallets in covered and lockable buildings and flame-proof stores, in which temperature, ventilation and humidity conditions can be monitored to assure that storage meets the recommendations included in the manufacturer's MSDS. Chemicals shall be segregated as per the MSDS requirements. Cupboards and buildings should be bunded (internally or externally) to ensure that chemicals are contained and recovered in accordance with the MSDS and do not enter open floor drains.

All fuel and chemical storage areas shall be secured by CONTRACTOR to prevent unauthorised access.

All labelling and signage shall be in both English and Georgian, and other languages as necessary, to ensure understanding within CONTRACTOR workforce. MSDS sheets or a

synthesis of the applicable requirements shall be stored in an accessible place within all chemical storage areas.

Location

The SCPX ESIA has committed to protect watercourses and groundwater from stored hazardous materials, and to store such materials under controlled conditions. The following commitments shall be addressed in CONTRACTOR's Pollution Prevention Implementation Plan:

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-03	The storage of hazardous materials will be restricted to designated impermeable
	hazardous materials storage areas located at least 50m from any surface watercourse
	or seasonal water channel.

CONTRACTOR shall not locate fuel storage tanks, refuelling and maintenance points within 50m of any watercourse or dry riverbed or on steep river banks.

CONTRACTOR shall store oil and chemicals supplied in drums in an impermeable lined and bunded designated storage area and/or in the metal drip trays capable of holding 110% of the volume stored, at least 50m away from any surface water bodies. The storage of hazardous materials in areas of known groundwater vulnerability⁴ (as in the vicinity of CSG1 and 2) will be carefully controlled under pollution prevention procedures.

CONTRACTOR shall restrict the storage of fuel and chemicals within the camps and at the work site to designated areas.

11.4.10.3 Use of chemicals in hydrotest and chemical cleaning water

The following section applies to the use of chemicals for hydrotesting the pipeline and facility pipework (if required) plus chemical cleaning of facility pipework.

CONTRACTOR shall undertake the following commitments:

Pipeline and facility:

10-08	A risk assessment will be undertaken before any chemical additives are used in
	hydrotest water.

CONTRACTOR'S Pollution Prevention Implementation Plan shall include a review of the ecotoxicity data from the MSDS and demonstrate negligible risk to the aquatic environment from the residual chemicals in the hydrotest water or from the discharge of wastewater from chemical cleaning. CONTRACTOR may also refer to the results of ecotoxicity testing COMPANY has undertaken previously in relation to specific hydrotest chemical additives. COMPANY will supply this information on CONTRACTOR's request.

Chemical additives shall be evaluated for their toxicity, biodegradability, bioavailability and bioaccumulation potential. CONTRACTOR should design the hydrotest programme to minimise the residence time of hydrotest water in the pipeline to avoid or minimise the use of chemical additives.

COMPANY shall approve the use of any chemicals. All discharges shall meet the quality requirements for water discharges, as specified in this Plan.

⁴ Groundwater vulnerability is defined as the tendency and likelihood for general contaminants to reach the water table after introduction at the ground surface.

CONTRACTOR shall produce a comprehensive plan with supporting method statements for hydrostatic testing as described in Section 12.5, which will comply with the requirements of this plan and include the following:

- Information on quantity and quality of water needed and regional availability
- The proposed use of any chemical additives and appropriate risk assessment
- · Proposed hydrotest water abstraction points
- Hydrotest water discharge proposal including proposed treatment and actual discharge locations.

CONTRACTOR shall produce a comprehensive plan for chemical cleaning, which will comply with the requirements of this plan and include the following:

- Information on quantity and quality of water needed and regional availability proposed water abstraction points (if water is required)
- The proposed use of any chemical additives and appropriate risk assessment
- Chemical cleaning wastewater or chemical waste disposal including proposed treatment and actual discharge locations.

11.4.10.4 Refuelling and chemical handling

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-05	A refuelling procedure will be developed by the Contractor, which will include a restriction on refuelling within 50m of any watercourse. Any deviation will be subject to approval by the Company
6-20	Vehicles delivering fuel or hazardous liquids will carry appropriate spill kits to allow an initial response to any spill to be deployed.

Approval to refuel within 50m of a watercourse shall be subject to COMPANY approval.

CONTRACTOR shall ensure that all people involved in fuel and chemical handling have been appropriately trained.

CONTRACTOR shall implement measures to prevent spillage while handling fuel and chemicals, including:

- Prohibiting smoking
- Ensuring there are no naked flames within 50m
- Requiring vehicle engines, radios and other electronic equipment to be switched off and earthing lines to be connected to vehicles during transfers
- Restricting access to the fuel and chemical handling areas to authorised vehicles and personnel
- Stationary refuelling facilities to be equipped with automatically shut off refuelling guns on dispensers (with deadman-type switch)
- Attendants are not allowed to leave refuelling equipment without supervision
- Requiring personnel in charge of transfers to closely monitor levels to prevent overfilling of tanks.

Vehicles transporting fuel, chemicals, or other hazardous materials including waste shall carry appropriate documentation such as MSDS or as required.

11.4.10.5 Refuelling in the field

CONTRACTOR'S Pollution Prevention Implementation Plan shall identify the need to refuel certain vehicles and equipment on the ROW (e.g. side booms and trenching excavators) or at construction sites. Fuel tankers will transport fuel from the storage tank to the right-of-way using transfer pumps. Fuel tankers shall carry a spill kit and drip tray on board and refuelling operators shall be trained in the use of such equipment.

CONTRACTOR shall refuel using impermeable and suitably sized drip trays. Refuelling shall be at least 50m away from any surface water bodies and vulnerable unconfined aquifers.

CONTRACTOR shall develop mobile refuelling procedures to be approved by COMPANY.

CONTRACTOR shall require drip trays to be used under standing plant and equipment. CONTRACTOR shall use drip trays under large items of plant which will be stored in the field overnight e.g. cranes, side booms etc. Drip trays shall be regularly emptied and contaminated water treated through the oily water separators at the construction camps.

CONTRACTOR shall require all vehicles involved in in-field refuelling to use wheel chocks on unlevelled surfaces while refuelling is in progress.

CONTRACTOR shall undertake any scheduled maintenance activities for heavy plant and equipment, such as lubrication and oil changes, at least 50m away from any surface water bodies and vulnerable unconfined aquifers.

Pumps requiring in-field refuelling shall be installed on a platform at least 50m from any watercourse that is provided with secondary containment.

CONTRACTOR shall prohibit the discharge of oily materials of any kind be discharged into waterways or channels leading to waterways.

11.4.11 Hazardous Liquid Wastes

CONTRACTOR'S Pollution Prevention Implementation Plan shall identify work that will generate hazardous liquid wastes and shall propose measures to ensure that they are contained. All hazardous liquid wastes will be disposed of in accordance with the Waste Management Plan.

11.4.12 Spill Response

CONTRACTOR shall develop a Spill Response Procedure to handle all potential spills associated with their scope of activities and shall procure the necessary equipment to achieve this. This procedure shall be integrated within the Project Emergency Response Plan. This shall include any unintended or unauthorised release of a potentially hazardous material, identify locations where oil spill response equipment will be provided and include procedures for its deployment. It shall also include contact details for the rapid response team (and ensure that they always have access to an off-road vehicle) and spill response organisation. This procedure shall also address the following commitments:

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-10	Spill response equipment (absorbents etc.) will be available in hazardous materials
	storage areas.

OP130	All personnel are required to understand their roles and responsibilities described in
	the ERP and undertake training and instruction necessary to ensure that they are
	competent to carry out their roles and responsibilities. Regular drills, musters and
	training are detailed in the annual emergency response exercise programme that will
	be updated to include SCPX-specific training and emergency drills.

CONTRACTOR shall ensure that an adequate supply of oil and chemical spill kits shall be available on-site at all locations where fuel, lubricants, chemicals and liquid waste is stored or handled to remediate any accidental spills and within equipment where spills are especially likely such as fuel tankers. Each work team supervisor shall carry a spill response kit within their vehicle at all times to ensure that each work team has easy access in the event of a spill. Equipment working on its own or remotely shall also carry a dedicated spill kit.

Contractor's spill kits shall be logged, inventoried and maintained to ensure adequate spill response material is available if needed.

Responsibilities between the COMPANY and the CONTRACTOR are defined below for Tier 1–3 spills. Irrespective of the response organisation CONTRACTOR retains all liabilities associated with response, clean-up and remediation.

All spills shall be reported in accordance with the COMPANY's Incident Reporting requirements.

Tier 1 (minor spills)

CONTRACTOR is responsible for providing spill response personnel and equipment to contain, clean up and remediate Tier 1 spills.

Tier 1 events are defined as small local spills requiring no intervention from outside the CONTRACTOR organisation. Tier 1 spills can be managed using on-site resources such as spill response kits. Tier 1 spills have the potential to arise during activities such as refuelling.

The clean up will be effected using the spill response kits held at each work location plus the provision of additional spill response equipment (if necessary) by the CONTRACTOR.

Tier 2 (emergency)

Following CONTRACTOR notification, COMPANY is responsible for providing a spill response organisation to respond to, clean up and remediate Tier 2 spills (with CONTRACTOR assistance).

Tier 2 incidents are larger spills that require additional local (regional) resources and manpower. Tier 2 spills are likely to have resulted from integrity failure of safety and protection systems and equipment or large fuel losses.

This level of response requires the IMT to mobilise additional Georgia operations in-country manpower/resources and the spill response organisation (Georgia). These will be sourced from the nearest BTC oil-spill equipment base and additionally from the other bases.

In addition, rest of country-based oil-spill response equipment and resources could be mobilised from the spill response organisation.

Tier 3 (crisis events)

Following CONTRACTOR notification, COMPANY is responsible for the provision of a specialist spill response organisation to respond to, clean up and remediate Tier 3 spills (with CONTRACTOR assistance).

Tier 3 incidents are very large, possibly ongoing spills, which will require additional resources from outside Georgia and Azerbaijan. Such spills are considered very unlikely during SCPX construction.

11.4.13 Contamination

11.4.13.1 Existing contamination

COMPANY shall incorporate the following commitments into the project design that shall be implemented by the CONTRACTOR during construction:

D3-04	The selected pipeline route has avoided areas of soil contamination, such as the known anthrax-contaminated areas close to the Mtkvari crossing
6-22	The Company will carry out a due diligence exercise to identify and manage the risk of anthrax

Known areas of contamination located within the ROW or other Project areas as identified by CONTRACTOR's pre-construction survey (described in the Reinstatement Plan) shall be recovered and disposed of by the CONTRACTOR in accordance with the Waste Management Plan.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

X6-04	The fencing at the known anthrax pit at KP30 will be maintained during construction to help protect the area from disturbance and workers will be made aware of the risks posed by this area and the need to avoid disturbance
31-04	The Project will apply a risk assessment approach to contaminated land management to evaluate the potential impact of soil, surface water or groundwater contamination on local receptors
6-01	A baseline survey of visible contamination, has been carried out and will be repeated before construction begins to include camp and pipe storage areas
6-02	All known areas of surface contamination (within the Project footprint) will be cleared before construction begins

CONTRACTOR's Pollution Prevention Implementation Plan shall propose mitigation to prevent contaminated run-off from soil piles where contaminated soil is excavated and piled (segregated from uncontaminated soil) before disposal and could potentially impact on surface water and groundwater.

CONTRACTOR shall carry out a risk assessment using the approach defined in the Project environmental standards (Appendix B) if contamination is identified.

11.4.13.2 Contamination chance find

If unexpected contamination (e.g. oil-contaminated land, general fly-tipping, animal burial pits, unexploded ordnance) is encountered during the Project, CONTRACTOR shall notify COMPANY, who will assess the risk and advise CONTRACTOR on appropriate remedial action. CONTRACTOR shall provide training to construction staff on the implementation of this procedure and shall designate a member of staff with the responsibility for monitoring earth-moving activities for contamination.

In general, the process in Figure 11-1 shall be followed.



Figure 11-1: Contamination Chance Finds Framework

11.4.13.3 Remedial action

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-13	The need for remedial work in any specific area will be determined on the basis of the observed contaminants, sampling and analysis to determine their concentrations and the risks that they may pose to local receptors (social and environmental) in accordance with Project standards.
6-14	In each area of identified contamination, a site-specific remedial action plan will be developed. The plan will include a summary of the environmental risks posed by the contamination and the procedures that are to be adopted to mitigate those risks.
6-16	The preferred options for the treatment of contaminated soil will be based on the risks posed by the material. In keeping with the aim of minimising the transportation of hazardous materials and minimising waste generation, preference will be given to in situ and low technology remedial approaches.
6-18	Any contaminated material storage areas will be provided with containment measures (for example bunds, ditches, impermeable base membranes, covers) to help minimise run-off and airborne losses.
6-25	If any animal burial pits are identified during construction, works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax.
7-05	Contaminated soil will be segregated from uncontaminated materials and stored at least 50m away from any surface water or seasonal surface water bed.

Low-technology remedial approaches can include for example bioremediation.

CONTRACTOR shall assess the impacts of potential soil, surface water and groundwater contamination caused by any unintended releases from project activities. Site clean up and restoration shall be in accordance with the project environmental standards (Appendix B) and shall be further detailed in the Oil Spill Response Procedure.

11.4.14 Concrete Batch Plants and Extraction Sites

In addition to the requirements above the following requirements are applicable to concrete batch plants and extraction sites (borrow pits and quarries).

11.4.14.1 Project-owned concrete batch plants or asphalt batching plants

Should CONTRACTOR develop a Project-specific concrete batching plant it shall be located to minimise disturbance to the environment and local communities in accordance with the requirements of the Resource Management Plan.

CONTRACTOR shall design plants to minimise dust emissions including engineering design measures (shrouds or water mists, covered conveyor belts, central bag house collection line etc.), handling and wetting procedures and other dust suppression measures as necessary and in line with the general requirements above. The design shall be approved by COMPANY.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

10-01	Concrete batching plant (if required) will be sited at least 50m away from sensitive
	receptors such as watercourses; wash pits to be lined with an impermeable liner

CONTRACTOR shall make sure there is no concrete washout directly on the ground or into the watercourse. CONTRACTOR shall ensure all mixer truck drivers are trained. CONTRACTOR shall not wash out concrete waste to the ground and/or pump straight into a drainage/watercourse. CONTRACTOR shall use washout pits with impermeable liners to capture and hold concrete waste and washout run-off. Wastewater shall be analysed and disposed of in accordance with the requirements of this plan.

Sediment control measures shall be in place (sedimentation ponds) to ensure there is no direct discharge of the water from aggregate washing facility to the river. Fuel/lubricant storage area shall be provided for all hazardous substances on site in accordance with this plan. CONTRACTOR shall be responsible for waste management on site.

CONTRACTOR shall design washing facilities to maximise the reuse of water.

CONTRACTOR shall be responsible for waste management on site.

11.4.14.2 Project-owned extraction sites (borrow pits/quarries)

Sediment control measures shall be in place (sedimentation ponds) to ensure there is no direct discharge of the water from aggregate washing to the river. Fuel/lubricant storage area shall be provided for all hazardous substances on site in accordance with the Pollution Prevention Implementation Plan. CONTRACTOR shall be responsible for waste management on site.

11.5 Monitoring

CONTRACTOR shall monitor the implementation of the measures in its Pollution Prevention Implementation Plan Project in accordance with the requirements in Section 21 of this ESMMP.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

7-12	Regular inspections and maintenance will be carried out of secondary containment
	areas at camps and Facilities and emission control techniques at Facilities, to confirm
	that they are functioning effectively.

Facilities:

X6-01	At CSG1 and the PRMS, where existing boreholes will be used, the water will be sampled and analysed to monitor contamination.
X6-03	Groundwater quality at CSG2 will be monitored during construction using the installed monitoring wells.

11.5.1 Water Quality

The SCPX ESIA has committed to monitoring groundwater, if applicable, at locations where abstraction is carried out.

CONTRACTOR shall implement the following commitment:

X6-01	At CSG1 and the PRMS, where existing boreholes will be used, the water will be
	sampled and analysed to monitor contamination.

In addition CONTRACTOR shall implement the following commitments:

14-08	Periodic analysis will be undertaken of controlled stormwater, sanitary and industrial discharges and any receiving surface water upstream and downstream of the discharge point.
10-10	Water (including hydrotest water) will be tested before discharge and treated to meet the Project Environmental Standards.
10-16	Daily visual monitoring of turbidity will be undertaken at river crossings while works are being undertaken at that river. This will be supplemented as necessary by probe monitoring.
15-09	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored to confirm that the supply meets Project standards and does not impact adversely on other users.

COMPANY shall undertake the following commitment

OP40	Water quality testing will be undertaken annually downstream of the CSG2 access
	road crossing for a period of five years post construction or until there are no
	demonstrable changes, whichever is the sooner.

11.5.2 Monitoring and Recording of Emissions, Dust, Noise and Vibration

Monitoring shall be in accordance with the monitoring programme specified in Appendix D and any additional requirements below.

CONTRACTOR shall carry out, record and document daily site inspections to check that:

- Exhaust emissions from vehicles and machinery is clean
- Dust suppression water spraying is effective.

CONTRACTOR shall notify COMPANY of any accidental spill that has the potential to harm the environment. CONTRACTOR shall;

- Notify immediately where the spill poses a threat to sensitive receptors and/or has a pathway to sensitive receptors
- Notify within 24 hours of any spills to land in excess of one litre
- Notify immediately where hydrocarbon or other potentially hazardous material spills are in excess of 50 litres, or any volume of spill to water.

CONTRACTOR shall maintain a written record of all spills and shall submit it to COMPANY on a weekly basis.

CONTRACTOR shall follow COMPANY reporting requirements and in addition, the reporting requirements of the local or national authorities permits or approvals.

CONTRACTOR shall implement the following commitment:

23-05	Dust generation and concentrations in the air will be visually monitored during
	construction where activities are near communities. If dust is visible, additional
	mitigation measures, such as the imposition of tighter speed limits, will be implemented
	with the aim of avoiding causing nuisance to residents or land users.

CONTRACTOR's Pollution Prevention Implementation Plan shall address this requirement.

At appropriate times CONTRACTOR shall monitor:

- Noise levels at sensitive receptors including houses, communities (for example at the start of new activities, operation of new machinery, etc.)
- Hardstanding areas and access roads for the presence of mud and dusty materials (during construction).

The SCPX ESIA has committed to periodic noise and vibration monitoring that the CONTRACTOR shall undertake:

25-09	During construction of the pipeline and facilities and operation of the construction camp and pipe storage areas where the works are less than 400m from residential buildings for longer than one month, periodic noise monitoring readings of 10 minutes duration (in accordance with the Project procedure) will be measured at the building facade at the start of the potentially noisy activities. If the noise exceeds Project Standards, measures will be implemented to aim to reduce noise levels (e.g. hoardings.)
25-13	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.

The vibration-sensitive location that has been identified in the ESIA is at the monastery in Berta near CSG2, the church adjacent to the CSG2 site and in the vicinity of Krtsanisi

village (KP40) on the pipeline ROW. CONTRACTOR shall carry out vibration monitoring at representative locations (including Berta village monastery and the church at CSG2 and Krtsanisi village) to determine that vibration levels are within the acceptability criteria identified in the Project environmental standards (Appendix B). Vibration monitoring requirements are described in Appendix D.

CONTRACTOR shall undertake the following location-specific commitments:

X9-01	At the military camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32) and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project standards, appropriate measures will be implemented (e.g. hoardings).
X9-02	Where the CSG2 access road passes close to Nardevani and Berta/Oliangi,, if construction continues for longer than one month, 10-minute noise monitoring readings will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project standards, appropriate measures will be implemented (e.g. hoardings).

During construction, where the works are less than 400m from residential buildings, CONTRACTOR shall undertake noise measurements for a duration of 10 minutes during the works to demonstrate compliance with the Project environmental standards. A measurement may be required on several different occasions during the works if it is considered necessary to achieve readings representative of the entire works (for instance if the noise levels change significantly during the works). If the noise exceeds Project environmental standards, appropriate measures to reduce the impact of the noise levels shall be implemented. Appropriate measures could be mitigation such as screening, equipment substitution or maintenance and time constraints.

When the pipe yards and camps come into operation, measurements for a duration of 10 minutes will be undertaken of activities to demonstrate compliance. A measurement may be required on several different occasions if it is considered necessary to achieve readings representative of yard and camp activities. If the noise exceeds Project standards, appropriate measures to reduce the impact of the noise levels will be implemented such as hoardings and shielding noise sources.

CONTRACTOR's Pollution Prevention Implementation Plan shall address these issues.

CONTRACTOR shall record the findings of the inspections and monitoring and establish an action plan to implement such additional mitigation measures as may be required to prevent pollution. CONTRACTOR's CLO will also record any complaints that relate to emissions, dust, wastewater discharges, noise or failure to contain fuels and chemicals and CONTRACTOR's Pollution Prevention Implementation Plan will develop measures to address them.

11.5.3 Analysis of Wastewater before Discharge

CONTRACTOR shall meet the following commitment:

10-10	Water (including hydrotest water) will be tested before discharge and treated to meet
	the Project Environmental Standards.

CONTRACTOR's Pollution Prevention Implementation CONTRACTOR's Pollution Prevention Implementation Plan shall propose monitoring of all wastewater discharges in accordance with the monitoring requirements detailed in Appendix D to ensure the Project environmental standards (Appendix B) are met.

CONTRACTOR's Pollution Prevention Implementation Plan shall propose to analyse wastewater discharges from the sewage treatment plants, oily water separators and other sources in accordance with Appendix D.

CONTRACTOR'S Pollution Prevention Implementation Plan shall propose to carry out analysis of grab samples from any receiving waters, upstream and downstream of discharges of wastewater or hydrotest water during the discharge in accordance with Appendix D.

In addition, for hydrotest water discharges, CONTRACTOR shall conduct sampling at the point of discharge in accordance with the Project environmental standards and additionally the measurement of dissolved oxygen, turbidity/suspended solids, temperature, iron, colour, odour, visible oil and grease and conductivity to ensure the hydrotest water is suitable for discharge into the receiving body, which will allow the recovery of the dissolved oxygen levels in the discharged water.

CONTRACTOR shall also monitor, in accordance with Appendix D:

- The content of the sediments in water pumped from trenches or hydrotest water at the discharge point, and 200m below, to prevent loss of fish (when discharging water that contains an excess of sediments)
- Groundwater quality at wells.

11.5.4 Reporting Requirements for Emissions, Wastewater Discharges and Noise

CONTRACTOR shall provide to COMPANY daily reports that shall include details of any pollution incidents with the potential to result in a stoppage of work.

CONTRACTOR shall provide to COMPANY a fortnightly update that includes a summary of the daily reports and describes any pollution prevention incidents that have not been resolved within seven days.

CONTRACTOR shall provide to COMPANY monthly reports giving details of:

- Impact avoidance and mitigation measures planned and implemented
- All emissions and discharge monitoring results
- The fuel inventory reconciliation with tank measurements to determine whether there have been any losses
- Records of the findings of inspections and analyses.

12 RESOURCE MANAGEMENT PLAN

12.1 Scope

The scope of this Management Plan relates specifically to the following resource management issues:

- Training
- Aggregates management
- Water management
- Energy efficiency
- Timber.

12.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC General EHS Guidelines 1.1 Air Emissions and Ambient Air Quality (April 2007)
- IFC General EHS Guidelines 1.2 Energy Conservation (April 2007)
- IFC General EHS Guidelines 1.4 Water Conservation (April 2007)
- IFC General EHS Guidelines 3 Community Health and Safety (April 2007)
- IFC Performance Standard 6: Biodiversity Conservation and Sustainable Management of Living Natural Resources (January 2012)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific text from the guidance documents above is presented below.

- Projects endeavour to minimise the use of natural resources and to use renewable resources where practicable
- Where renewable or living resources are being used, projects:
 - Assess the use of the resources and the function the resource plays in the ecosystem (including potential cumulative impacts associated with using the resource)
 - Maximise benefits from use of the resources and minimise waste of the resources
 - Use a precautionary approach to avoid depleting the level of the resource available.
- Where the Project uses external suppliers of natural resources that are central to the Project's core functions, the projects adopt a sustainable resource procurement policy, and implement procedures and action plans to:
 - Identify the origin of the resources and purchasing them only from a legal and sustainable origin
 - Prevent the use of resources from international protected areas or sensitive areas
 - Demonstrate through independent verification or certification the sustainable management of the resource.

- Projects assess the potential positive role that local communities may play in assisting Project activities to promote sustainable ecosystem use.
- Projects measure and monitor water use with appropriate equipment and develop a water balance that accounts for actual water use.

12.3 Roles and Responsibilities

General responsibilities for environmental and social management are defined in Section 3 of the ESMMP. Responsibilities relating specifically to resources management are defined in this section.

COMPANY shall be responsible for:

• Applicable permits as described in Appendix C.

CONTRACTOR shall be responsible for:

- With the exception of those permits and authorisations obtained by COMPANY as mentioned above, CONTRACTOR shall obtain all local and government work permits and authorisations related to all required work activities including but not limited to permits/authorisations for the extraction of fill, sand, gravel and other construction materials, building permits, hazardous materials transportation/storage permits, water abstraction approvals, approval of liquid discharge into surface water body, approval of air emission limits, spoil disposal permit, transportation permits, etc.
- Obtain any easements from public and private agencies and parties required to perform required work with the exception of those obtained by COMPANY.

12.4 Impact Avoidance and Mitigation

12.4.1 Training

CONTRACTOR shall document the training delivered to its personnel and to its subcontractor's personnel, recording the training date, name of recipient, name of trainer and a brief description of training content.

The SCPX ESIA has committed to including energy minimisation in workforce training.

CONTRACTOR shall supply training that includes as a minimum:

- Guidance on minimising energy consumption
 - Drivers and operators of equipment shall be trained to use fuel efficiently
 - All personnel shall be trained to avoid wasting electricity
- Guidance on minimising water consumption:
 - Personnel involved in hydrotesting shall be trained to be aware of the abstraction requirements and the benefits of re-using water
 - All personnel shall be trained to avoid wasting water.

CONTRACTOR shall train the personnel responsible for sourcing and supplying aggregates to be aware of the environmental impacts of aggregate extraction and transport.

12.4.2 Aggregates

12.4.2.1 General requirements

Before starting construction activities, CONTRACTOR shall estimate the amount of aggregate materials that will be needed.

The SCPX ESIA has committed to use aggregates from licensed sources and to maximise re-use of excavated material.

CONTRACTOR shall implement the following commitments:

1-01	Aggregates will only be sourced from licensed sources as approved by MoENR.
1-07	All excavated materials will be screened and reused to the extent deemed feasible by the Company to minimise the need for new aggregates.

Wherever the material excavated from the pipeline trench is suitable (including after crushing, which shall be implemented by the CONTRACTOR) for use as bedding and fill around the pipeline CONTRACTOR shall use it rather than sourcing quarried material for that purpose. CONTRACTOR shall study the disposal of excess soil and rock and incorporate the priorities for reuse. Fill and padding shall not be obtained by extraction from third-party facilities unless CONTRACTOR can demonstrate to COMPANY's satisfaction that it cannot practically be obtained through reuse and/or processing of Project spoil.

CONTRACTOR shall conduct an E&S assessment for aggregate sourcing and spoil disposal sites. A pre-entry agreement (initial agreement between CONTRACTOR and third party) and close-out letter is required for each third-party portion of the land. Land exit will be subject to the requirements of the Land Management Plan.

Extraction shall be restricted to avoid altering the course of rivers and associated aquatic habitats. Extraction from rivers shall not be undertaken near any pipeline crossings (e.g. BTC/SCP).

CONTRACTOR shall ensure that the extraction of aggregate from existing or newly established quarries will be undertaken in a manner that verifiably minimises environmental and social risks and which is open to managerial and technical scrutiny.

Extraction areas shall be reinstated as per the project Reinstatement Plan.

12.4.2.2 Transportation

CONTRACTOR shall define routes by which aggregate will be transported to the point of use, and shall estimate numbers of traffic movements, speeds and times of travel to transport aggregate materials to the site.

If the aggregate has to be transported through residential areas, CONTRACTOR shall propose measures that will be used to ensure the safety of the community and minimise the nuisance impact of traffic movements. In this case, CONTRACTOR must justify selection of the proposed transportation route and, if necessary, take appropriate mitigation measures to avoid/minimise nuisance. CONTRACTOR shall monitor aggregate transportation and shall set clear recording of transported/used material.

12.4.2.3 Project facilities

Borrow pits

The SCPX ESIA has committed to assessing the environmental and social impacts of opening aggregate extraction sites (borrow pits) and to reinstate them when they are closed.

The CONTRACTOR shall implement the following commitments:

1-03	The project will give preference to using existing borrow pits where reasonably
	practical.

CONTRACTOR's Resource Management Implementation Plan shall address these issues.

If no existing aggregate extraction operations that meet the needs of CONTRACTOR are identified in the proximity of the pipeline route, CONTRACTOR shall consult with the relevant government agencies to identify the permits and procedures associated with the establishment of new aggregate extraction operations. CONTRACTOR shall identify suitable sites for quarries or borrow pits, make formal applications for approval to the relevant authorities and obtain the necessary permits and licences before extracting aggregate, and develop plans for the reinstatement of the quarries and borrow pits (in accordance with the Reinstatement Plan).

12.4.2.4 Third-party aggregate extraction, asphalt and batching facilities

The SCPX ESIA has committed to source aggregates legally from approved suppliers.

CONTRACTOR shall only source aggregates from licensed facilities. CONTRACTOR shall consult with the relevant government agencies (including the Ministry of Highways, Ministry of Energy and Ministry of Environment) to identify licensed quarries and borrow pits, and shall examine their authorisation documents before procuring any materials.

Third-party supplier-run sites, such as existing quarries, gravel extraction and batching plants, shall be formally inspected by CONTRACTOR prior to use to determine:

- Whether the off-site facility/site is compliant with the permit and regulatory conditions
- Whether the off-site facility management has a consistent track record of regulatory compliance
- If there are any complaints lodged against the environmental and social performance, and if so whether they have been dealt with efficiently and effectively
- Whether there is record keeping system in place
- The extraction site's potential impact on environmental receptors (residential area, waterways, agricultural land, inhabited dwellings, surface water bodies, cultural heritage sites, sensitive habitats and groundwater)
- Whether the quarry maintains documents that demonstrate compliance with its permit conditions, and details of water/air/noise monitoring systems in place;
- The nature of any complaints, dust, noise, or contamination of soil surface waters, or groundwater and how the issues were closed out
- The measures taken to prevent dust, prevent and respond to fuel spills and to manage waste
- How often the quarry has been inspected by the permitting authorities.

On-site HSSE practices will be used as criteria for supplier selection. Inspection and audit reports shall be made available to COMPANY on request. Approval shall be subject to the general conditions of the CONTRACT.

CONTRACTOR shall implement the following commitments:

1-06	Use of borrow pits will be managed in a manner that seeks to ensure that no illegal extraction (including by a third party) takes place.
1-05	Environmental audits will be undertaken at any proposed third-party borrow pits and/or spoil disposal pits before they are used. Periodic audits will be undertaken by the Contractor thereafter and as considered appropriate by the Company.

CONTRACTOR's Resource Management Implementation Plan shall address this issue.

Extraction areas and access roads shall be reinstated as per the Project Reinstatement Plan. They shall be returned to conditions similar to their original state as practicably

possible with stabilisation and re-vegetation done on a case-by-case basis and as approved by COMPANY.

12.4.3 Water Management

CONTRACTOR will use water for dust control, compacting soils, hydrotesting the pipeline, drilling and tunnelling and for domestic purposes in camps.

Before any abstraction from surface waters or groundwater takes place, CONTRACTOR shall obtain water use permits from the appropriate Georgian authority and comply with the following commitments:

15-01	All necessary permits/consents to drill and abstract groundwater will be obtained
	before water is abstracted for construction or domestic use. Groundwater will not be
	used for pipeline hydrotesting.

12.4.3.1 Water supply

Sources and abstraction

The SCPX ESIA has committed to identify other users that could be affected by abstraction of water for the Project and to determine the impacts of water abstraction and to construct river crossings in a way that minimises flow interruption.

15-02	All new and existing water abstractions for use by the Project will be subject to an environmental and social assessment to assess potential impacts; decisions on the acceptability of the source, and appropriate abstraction rates will be based on the results of the review, in accordance with the abstraction permit
15-03	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users
15-04	The abstraction borehole, when completed, will be test pumped and a sustainable yield will be determined together with aquifer characteristics such as hydraulic conductivity and radius of influence
15-05	Water features such as abstractions (boreholes, wells, springs) or environmental features (wetlands, springs, streams or surface water features in continuity with groundwater) will be identified within the likely radius of influence of the abstraction point.
15-07	Water conservation initiatives will be undertaken at construction camps
15-09	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored periodically to confirm that the supply meets Project standards and does not impact adversely on other known users

If the camps are to be supplied with water from either existing abstraction wells or new wells, CONTRACTOR shall carry out a sustainability assessment to avoid adverse effects on other users.

The CONTRACTOR shall implement the following location-specific commitment:

X6-02	The facilities will be supplied with water from either existing abstraction wells or new
	wells, and subject to a sustainability assessment.

CONTRACTOR shall estimate the likely radius of influence of each abstraction point on the groundwater or surface water and shall adjust abstraction rates so that existing uses will not be compromised.

CONTRACTOR's Resources Management Implementation Plan shall identify any water sources where the proposed rate of abstraction could affect the amount of water required for local use, and propose measures to prevent reduction in the water supply of local communities.

CONTRACTOR's Resource Management Implementation Plan shall address this issue.

Water conservation

CONTRACTOR shall monitor water consumption and record the litres used. Water meters will be installed to measure the quantities of water used at the camps, and such meters should be registered and sealed by relevant authorities in accordance with the mineral extraction licence requirements.

The CONTRACTOR shall implement the following commitments:

14-04	Waste water will be reduced by efficient use of raw water and the implementation of
	water management schemes that require water to be reused, whenever practicable,
	prior to treatment and disposal.

CONTRACTOR's Resource Management Implementation Plan shall propose management procedures to maximise water use efficiency and meet the above commitment. The design of the camps will include measures to ensure this is achieved.

Water treatment

CONTRACTOR's Resource Management Implementation Plan shall propose treatment of abstracted water as per Project specification.

12.4.3.2 Hydrotest water

The CONTRACTOR shall implement the following hierarchical approach to hydrotest water use and management:

- Water shall be abstracted from and discharged to the same watershed where the Project determines this is necessary
- The use of chemicals shall be eliminated where possible by reducing residence time of water in the pipe
- If chemicals are used (subject to COMPANY approval) they shall be biodegradable and the water shall be treated by the CONTRACTOR to neutralise chemicals prior to discharge
- Water treated with chemicals shall be reused in different sections as far as possible.

This hierarchy shall be the basis for the Hydrotest Management Plan, which the CONTRACTOR shall prepare and submit to the COMPANY for approval.

Sources and abstraction

CONTRACTOR's Resource Management Implementation Plan shall detail water abstraction requirements and procedures to avoid harm to the environment or significant effects on downstream users.

 11-01
 Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.

 11-02
 Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and

CONTRACTOR shall implement the following commitments:

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	fluming.
11-03	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.

CONTRACTOR'S Resource Management Implementation Plan shall seek COMPANY's approval of extraction locations for hydrotest water. CONTRACTOR shall source hydrotest water from watercourses and not from groundwater supplies. CONTRACTOR shall avoid extraction at times of drought or low flow. The abstraction rate will be determined using the following flow diagram in Figure 12-1.

The CONTRACTOR shall implement the following location-specific commitments:

X5-01	Water flow in the Mtkvari and Algeti Rivers will be assessed before and during abstraction of hydrotest water.
X5-05	Water quality and flow rate testing will be undertaken upstream and downstream of crossings on the access road to CSG2 prior to, during and after construction.



Figure 12-1: Hydrotest Abstraction Rate

Before extracting hydrotest waters from a water source, CONTRACTOR shall submit a sampling method statement and shall engage an independent laboratory, approved by COMPANY, to sample and analyse its water quality.

CONTRACTOR shall filter water extraction points to reduce the entrainment of fish, sediment and residues in the hydrotest water.

Containment and re-use

Where possible, CONTRACTOR shall recycle hydrotest water or cascade it into adjacent test sections for re-use. A Hydrotest Management Plan will be submitted that demonstrates maximum re-use and will be approved by COMPANY.

The CONTRACTOR shall implement the following commitments:

Pipeline:

10-09	Hydrotest water will be re-used between sections, where practical, to minimise the
	volume required.

12.4.4 Energy Efficiency

The CONTRACTOR shall implement the following commitments:

22-01	Energy efficiency in the camps will be monitored against Key Performance Indicators (KPIs) and measures will be identified and implemented with the aim of continual improvement.
22-02	The workforce training will include advice on minimising energy consumption.

CONTRACTOR's Resource Management Implementation Plan shall address energy management and how use will be monitored and minimised.

12.4.4.1 Fuel

CONTRACTOR shall monitor fuel consumption and record the litres used.

CONTRACTOR's Resource Management Implementation Plan shall propose methods to minimise fuel use and comply with the following commitment:

23-02	Equipment and vehicles will be regularly maintained in accordance with the
	manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.

CONTRACTOR shall propose to use vehicles and equipment that are appropriate for the tasks required and maintain them properly with a view to maximising fuel efficiency.

CONTRACTOR shall implement journey planning that minimises unnecessary travel.

CONTRACTOR shall implement procedures to turn off engines of vehicles and equipment when it is not in use. In winter, CONTRACTOR shall implement measures that allow vehicle engines to be turned off without their fuel freezing (e.g. use car ports, antifreeze etc.).

12.4.4.2 Electric power

Procedures for saving electricity

CONTRACTOR's Resource Management Implementation Plan shall detail measures to manage energy use and to implement energy efficiency processes. These shall include, but not be limited to the following measures.

- CONTRACTOR shall monitor the consumption of electricity and record the kWh used
- CONTRACTOR's Resource Management Implementation Plan shall propose methods to minimise electricity use
- If CONTRACTOR uses electricity from the grid, its Resource Management Implementation Plan shall propose measures to prevent the Project's energy draw having a negative impact on community access to power
- CONTRACTOR shall implement procedures to turn off non-essential electrical equipment when it is not in use and shall plan the warm-up or charge-up time where equipment requires it to minimise unnecessary time turned on
- CONTRACTOR shall select electrical equipment of a size that is appropriate for the functions to be performed with a view to maximising energy efficiency.

12.4.5 Timber

Any removal of trees shall be carried out by CONTRACTOR in accordance with the requirements of the Ministry of Energy and Natural Resources (MoENR; Forestry Dept) requirements.

CONTRACTOR shall be responsible for obtaining all necessary permits as per Appendix C.

12.4.5.1 Forest fund land

Trees on land designated as forestland shall generally remain the property of the MoENR (Forestry Department) who will grant permission for tree removal.

In summary CONTRACTOR shall:

- Advise MoENR of the area that requires removal including an inventory of trees that have Georgian Red Data Book status (CONTRACTOR shall liaise with the ECOLOGICAL MANAGEMENT CONTRACTOR who will identify these species)
- Obtain forest use agreement with MoENR, which will identify tree removal and disposal strategy
- Produce a detailed forest/area inventory in coordination with the MoENR representatives that shall be submitted to local and central forestry unit of MoENR
- CONTRACTOR shall generally be required to engage a forestry contractor approved by the Forestry Department that will remove trees to a location specified by the MoENR, which will become Ministry property. Trees shall be disposed of as directed by the MoENR and agreed by COMPANY.

12.4.5.2 Non-forest land

For other land, similar requirements including detailed inventory and identification of GRL species will apply. However, the agreement for the removal and disposal of trees on private land needs to be made with the landowner (which is generally a private individual, municipality authorities or the Ministry of Economy for state land) and agreed by COMPANY.

In all cases (both forest and non-forest fund land) CONTRACTOR shall engage a specialist subcontractor to remove the trees.

Trees that are not required by the MoENR or landowner shall be offered to the local community in sizes that are easily transportable or mulched and stored for use during pipeline reinstatement.

CONTRACTOR shall source any timber required for construction legally from sustainable suppliers. CONTRACTOR shall submit proposals for supply of timber that demonstrate this to COMPANY for approval.

12.5 Verification and Monitoring

CONTRACTOR is responsible for managing and tracking its actions.

CONTRACTOR shall be responsible for documenting resource use over time and for monitoring the success of the measures implemented under its own Resource Management Implementation Plan to promote sustainable use of resources. CONTRACTOR shall routinely submit monitoring data so COMPANY can evaluate the environmental performance of the Project.

CONTRACTOR shall record KPI data as specified in Section 21.3.

CONTRACTOR shall carry out site inspections to identify work practices that could be changed to reduce the requirement to aggregate to be supplied or water to be extracted and to improve fuel efficiency or reduce electricity use.

CONTRACTOR shall submit to COMPANY a monthly report containing the following quantitative measures:

- Cubic metres of water used at camp
- Cubic metres of water used for hydrotest
- Cubic metres of water abstracted from boreholes and rivers
- Cubic metres of aggregate material used for construction
- kWh electricity used at camp
- Litres of fuel used
- Cubic metres of discharged wastewater.

CONTRACTOR shall submit data as necessary to the regulator as per the terms and conditions of any licences or consents that they hold.

13 CONSTRUCTION CAMP MANAGEMENT PLAN

13.1 Scope

This Construction Camp Management Plan relates specifically to the following issues:

- Restriction of access to camp and use of its facilities
- Induction briefings on camp rules and awareness of local issues and sensitivities
- Camp HSE requirements.

13.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

The main international guidance on camp management that is relevant to the Project is the International Finance Corporation Performance Standard (IFC PS) 2: Labour and Working Conditions. Requirements relevant to this Project include the following:

- Investigate allegations of abuse of the workforce, child labour or forced labour
- Investigate and implement opportunities for local employment
- Provide information on terms and conditions of employment
- Allow workforce representation and consultation
- Develop and implement an employee code of conduct
- Promote a constructive worker-manager relationship based on clear human resources policies and equal opportunities
- Provide health and safety at work
- Implement a grievance mechanism procedure
- Assess potential impacts of security arrangements
- Raise awareness of employees, contractors and subcontractors.

13.3 Roles and Responsibilities

General responsibilities for environmental and social management are defined in Section 3. Responsibilities relating specifically to construction camp management are defined in this section.

13.3.1 COMPANY

COMPANY shall be responsible for:

- Verifying that worker welfare conditions within camps is maintained through a system of audits
- Routine monitoring of standards of camps being used during construction against initial documentation.

13.3.2 CONTRACTOR

CONTRACTOR shall be responsible for:

- Development of a Construction Camp Implementation Plan and related plans and procedures to address mitigation of environmental and social impacts associated with the construction camps
- Providing a mechanism to receive and respond to grievances of camp residents
- Ensuring rapid closeout of all construction-camp-related community grievances.

13.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to avoid and reduce impacts associated with development and occupation of construction camps that will be developed for the SCPX Project.

CONTRACTOR shall develop a Construction Camp Implementation Plan that, as a minimum, addresses the measures included in this Construction Camp Management Plan. The Construction Camp Implementation Plan shall be submitted to COMPANY for approval.

13.4.1 Security

CONTRACTOR shall ensure that necessary security measures are in place to restrict unauthorised access to, or use of, camp facilities, according to the following commitment:

33-10	No unauthorised access to, or use of, camp facilities will be allowed.

CONTRACTOR's Construction Camp Implementation Plan shall include details of camp security measures and of how these will be communicated to the workforce. The security procedure, as a minimum, shall include:

- Use of security passes for camp personnel
- Limit on hours of movement outside of camps
- No use of camp vehicles for non-work business
- Provision of induction training for personnel on security issues related to camp and surrounding community.

CONTRACTOR shall ensure that camps have adequate lighting to deter intruders.

13.4.2 Camp Induction Training

The SCPX ESIA has committed to implement a workforce training programme that includes a briefing on camp rules and awareness of local issues, which CONTRACTOR shall undertake:

33-09	Workforce training will include a briefing on camp rules and awareness of local issues
	and sensitivities.

CONTRACTOR's Construction Camp Implementation Plan shall include details of issues to be addressed during camp induction training session. These shall include, but not be limited to, the following subjects:

- Camp security
- Health and safety
- Environment and social requirements

- Code of Conduct:
 - Control of disruptive noisy activities
 - o Drug, alcohol and smoking policy
 - Other restricted activities
- Local culture and sensitivities
- Evacuation during emergency situation.

13.4.3 Workforce Health

The SCPX ESIA has committed to provide medical facilities at the camps. Health awareness training, including communicable diseases, shall be provided to all the workforce and an awareness campaign about communicable diseases will be run for communities close to the camps.

The CONTRACTOR and COMPANY shall implement the following commitment:

31-12	Project will prohibit the workforce from participating in illegal activities including use of
	illegal drugs.

The CONTRACTOR shall implement the following commitments:

31-10	A non-communicable disease (NCD) awareness programme will be implemented.
31-11	Pre-job fitness for task assessments will be implemented and will be repeated at regular intervals based on the employee risk profile.
31-13	Worker education and awareness programmes will be conducted and materials regarding the health hazards of smoking, alcohol and substance abuse will be provided.
31-14	A worker education and awareness programme regarding the risks and prevention measures associated with STIs including HIV/AIDS and other communicable diseases (e.g. TB) will be implemented.
31-16	Temporary Project housing structures will be constructed and maintained according to internationally accepted design specifications for space occupancy per person.
31-17	The Contractor will operate a personnel health programme which will aim to prevent illness and disease occurring, and will include immunisations as required.
31-18	A workplace TB control programme will be implemented.
31-19	A food sanitation programme will be developed and implemented within all Project catering facilities based on internationally recognised standards.
31-20	Food-borne illness investigation procedure will be implemented and workers will be educated regarding the prevention of food related illnesses (e.g. hygiene practices)
31-21	Food service operations, practices and facilities will be regularly inspected and findings and resolved non-compliance issues will be documented immediately.
31-22	Measures for preventing zoonotic disease transmission will be implemented.
31-23	A vector-related disease (VRD) prevention programme will be implemented.

CONTRACTOR's Construction Camp Management Implementation Plan shall address these issues.
The COMPANY shall implement the following commitment:

31-15	The project will make information on communicable diseases and STIs available to
	communities close to the camps.

13.4.4 Code of Conduct

The SCPX ESIA has committed to develop and implement a Construction Camp Management Plan that considers camp rules, community liaison and other issues related to camps, according to the following commitments:

19-05	No hunting, fishing or unauthorised gathering of products (including plants and cultural heritage artefacts) by the workforce will be permitted within the Project footprint.
25-07	Camp rules will be developed and implemented and will include restrictions on noisy activities (e.g. inappropriate use of personal radios) to help avoid causing disturbance.
33-04	An employee Code of Conduct will be in place and issued to all recruits and camp residents during the employee induction process.
33-06	The Employee Code of Conduct will prohibit the workforce from participating in illegal activities, including use of illegal drugs, bribery and corruption or requesting or receiving gifts from communities.

CONTRACTOR's Construction Camp Management Implementation Plan shall address these issues.

13.4.5 Noisy Activities

The SCPX ESIA has committed to mitigate impacts of noisy activities to avoid any public disturbance or disturbance of camp residents.

CONTRACTOR shall implement the following commitment:

Pipeline

X9-03	Site layout will be designed, where practical and feasible, to locate noisy plant in areas
	further away from houses at the pipeline camp where a risk assessment shows that
	there may be significant noise impacts on sensitive receptors.

CONTRACTOR'S Construction Camp Management Implementation Plan shall include measures that mitigate noise adequately to avoid disturbing local residents (e.g. locate generator away from households and provide noise-insulating housings on noisy equipment to minimise noise disturbance).

13.4.6 Restrictions on Drug and Alcohol Consumption

The SCPX ESIA has committed to control alcohol consumption through implementation of strict policy on drug and alcohol consumption.

CONTRACTOR shall implement the following commitment:

33-08	A Company policy limiting alcohol consumption in construction camps will be applied.

CONTRACTOR shall restrict consumption of alcohol and implement a zero tolerance policy of drunkenness in the workplace during on-duty hours. This programme will aim at preventing over-consumption of alcohol at construction camps and in communities along the route. It will include random testing in accordance with COMPANY's Health, Safety and Security Plan and CONTRACTOR's Drug and Alcohol Policy. The CONTRACTOR shall implement zero tolerance of drugs. The goal of this programme is to minimise the possibility of incidents whereby construction workers obtain and consume illegal substances. It will include random testing in accordance with COMPANY's Health, Safety and Security Plan and CONTRACTOR's Drug and Alcohol Policy.

13.4.7 Local Culture and Sensitivities

The SCPX ESIA has committed to avoid any local disputes through respecting local culture and values. CONTRACTOR shall ensure that camp workers are aware of local issues and sensitivities, and respect local culture and values to avoid any local disputes and crime.

The SCPX ESIA has committed to provide a range of recreational facilities within the camps to minimise the need for finding recreation in the local community and CONTRACTOR shall implement the following commitment:

33-11	A range of recreational facilities will be provided within the camps to reduce the need
	for finding recreation in the local community.

13.5 Monitoring and Verification

CONTRACTOR shall monitor the implementation on the measures in its Construction Camp Management Implementation Plan.

CONTRACTOR shall maintain a record of camp management activities including but not limited to:

- A community complaints register with camp-related community grievances identified
- A separate workforce complaints register with camp-related workforce grievances identified
- The number of alcohol- or drug-related incidents.

14 INFRASTRUCTURE AND SERVICES MANAGEMENT PLAN

14.1 Scope

The scope of this Management Plan relates specifically to the following infrastructure and services management issues:

- Crossing schedule and planning
- Accidental damage
- Water supply and land drains
- Flood control
- Roads
- Buildings
- Service integrity.

14.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific text from the guidance is presented below:

- Projects design, construct, and operate and decommission the structural elements or components of the Project in accordance with good international industry practice, and give particular consideration to potential exposure to natural hazards, especially where the structural elements are accessible to members of affected communities
- Projects employ qualified, certified and experienced professionals approved by competent professional organisations to design and construct infrastructure and services
- Projects seek to prevent the occurrence of incidents and accidents associated with the movement of equipment on the roads
- Projects design new facilities to avoid using fresh water for industrial purposes if it could impact on a community's ability to use fresh water.

14.3 Roles and Responsibilities

14.3.1 Company

COMPANY shall be responsible for the activities described in Section 5.1.

14.3.2 Contractor

CONTRACTOR shall be responsible for the activities described in Section 5.2 and for carrying out and documenting a detailed pre-construction survey of any area that the Project could impact due to CONTRACTOR activities.

14.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to prevent mitigate impacts infrastructure and services during construction of the SCPX Project. CONTRACTOR shall develop an Infrastructure and Services Management Implementation Plan that, as a minimum, complies with the measures included in this Infrastructure and Services Management Plan. The Infrastructure and Services Plan shall be submitted to COMPANY for approval in accordance with the CONTRACT requirements.

14.4.1 Community Relations

Liaison with communities is covered in the Community Liaison Management Plan. Of particular relevance to infrastructure and services is the role of CONTRACTOR's Community Liaison Officer (CLO) in providing information to communities (e.g. on the reasons for changes in infrastructure such as road upgrades) and in receiving complaints and feedback from communities with regard to the condition and or disruption of services and infrastructure.

CONTRACTOR shall communicate with communities about infrastructure and services issues as outlined in the Community Liaison Implementation Plan.

The SCPX ESIA has committed to consult with the affected communities if there is likely to be any disruption to the existing infrastructure and services. Advance warning (at least 72 hours) of any planned impact on infrastructure will be provided to local communities. Where disruption will be for more than 12 hours, CONTRACTOR shall carry out a risk analysis of effects on affected settlements. Where there will be a risk to health or livelihood to settlements or where the disruption is not acceptable to the affected settlements, CONTRACTOR shall provide alternatives. If alternatives are not available, the method statement must be revised.

CONTRACTOR shall implement the following commitment for all third-party assets:

35-09	Pre-entry agreements including reinstatement requirements will be agreed prior to
	work affecting third party assets.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

35-07	Affected landowners and occupiers will be consulted to determine their views on the requirement for temporary measures if irrigation systems are to be disrupted.
35-03	Any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works.
37-01	Advance warning (at least 72 hours) of any road/track closures will be provided to local communities.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues.

CONTRACTOR's CLO shall determine landowner requirements for temporary irrigation connections and water supply (e.g. to cattle troughs) during pre-entry negotiations as part of

ROW pre-entry survey to identify irrigation channels crossing the ROW. The CONTRACTOR shall be responsible for implementing agreed temporary measures.

CONTRACTOR'S CLO shall provide information to communities and local authorities on the reasons for changes in infrastructure such as road upgrades, advice on diversions and temporary closures and disruptions. Feedback from communities shall be taken into account during planning of the works.

Any complaints shall be handled in accordance with the Community Liaison Management Plan.

CONTRACTOR shall take necessary measures to minimise impact of water and power consumption on surrounded communities.

14.4.2 Crossings Schedule and Planning

A crossing schedule including all known roads, telephone and electricity facilities and oil, gas and water pipes shall be prepared by CONTRACTOR. CONTRACTOR will gain full agreement with the owners.

During construction CONTRACTOR shall be aware of the potential for unidentified services and structures and will take care to avoid any damage. CONTRACTOR shall repair any damage caused.

Where there will be planned diversions to infrastructure or services, this will be identified by CONTRACTOR with as much advance warning as possible. All planned diversions will be communicated to local authorities at least three days in advance and to communities through pre-construction meetings also at least three days in advance. The timing and duration of the diversion will be agreed between the CONTRACTOR and the affected party.

14.4.3 Accidental Damage and Interruption to Third Party Assets/Livelihood

Where infrastructure is damaged accidentally, CONTRACTOR shall agree a timetable for repair of the infrastructure with the authorities and the communities. Should the diversion result in loss of livelihood in the affected party's judgement, the validity of the claim and any necessary compensation will be determined in accordance with the Community Liaison Management Plan and the Land Management Plan.

Should infrastructure or services be disrupted accidentally, CONTRACTOR shall inform authorities of the affected communities of the reason for the disruption and CONTRACTOR shall work with the service owner to complete repairs in the shortest time possible. Within one day, written information shall be provided to the village trustee providing details of the disruption, information on alternative measures (if appropriate) and any measures that will be taken to assess any damage caused as a result of the disruption. CONTRACTOR's CLO shall ensure that there is an announcement in public places and that notices are posted on the community notice board so that local residents are fully informed of the disruption.

CONTRACTOR shall provide a dedicated team/resources to repair damage to services and structures within the shortest time possible and provide temporary, alternative sources where applicable.

CONTRACTOR shall implement the following commitment:

36-03	If impacts to third party land or crops is caused by Project activity, for example due to
	interruption of irrigation or drainage, the Project's procedure for land and crop damage
	will be applied.

COMPANY will only pay compensation to the CONTRACTOR if COMPANY approval has been sought prior to crossing works commencing.

14.4.4 Water Supply and Land Drains

A pre-construction survey (including photo material witnessed/approved by village trustees) of irrigation and drainage systems is required before construction begins. The information will be used by CONTRACTOR to maintain the continued viability of the pre-existing irrigation and drainage systems throughout the Project.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall detail provisions for CONTRACTOR to fulfil the following commitments:

Pipeline, camps, access roads and all facilities:	
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35-05	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.
35-06	The Contractor will aim to maintain the integrity and viability of functional irrigation and drainage systems throughout construction, for example, by using measures such as pumping, channel diversions and fluming. Any deviations shall be subject to approval by the Company.
35-08	Any disrupted irrigation or drainage systems will be reinstated on completion of construction to a standard at least equal to their original condition.

14.4.5 Flood Control

The SCPX ESIA has committed to monitor weather forecasts to minimise the risk of flooding agricultural land, property or infrastructure.

CONTRACTOR shall undertake the following commitment:

Pipeline, camps, access roads and all facilities:

13-01	The Construction Contractor will monitor weather forecasts and avoid creating
	temporary dams in watercourses if flooding is likely.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues.

14.4.6 Traffic

The SCPX ESIA has committed to minimising traffic disruption and CONTRACTOR shall employ temporary control measures and signs to ensure safety.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

2-02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).
37-02	A bypass/alternative routes will be provided at locations where road closure is unavoidable.
37-03	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.
37-14	Where it is necessary to maintain traffic flow, the crossing will be made in two stages, and only one half of the road width will be used at a time. Steel plates will be laid to maintain one lane of through traffic.

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D5-055	Line pipe shall be transported by trucks from the pipe yards to the ROW along
	approved access routes and then along the ROW to the required location.

CONTRACTOR and COMPANY shall implement the following commitment:

37-05	The authorities will be notified when oversize heavy loads need to be transported and
	the loads will be escorted by the Project.

COMPANY shall implement the following commitment:

D5-036	The line pipe will be transported by rail to off-loading points. The rail offloading point will be located close to the pipe storage area to reduce the number of HGV
	movements.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall prepare a schedule of locations where road closure is unavoidable and provide details of alternative routes. It shall also detail specify traffic control measures for road crossings where delays or public safety are an issue.

14.4.7 Roads (Access and Service)

The SCPX ESIA has committed to maintain surface of access roads through regular inspections and repair. The SCPX ESIA has committed CONTRACTOR to employ temporary traffic control measures at road crossings and junctions.

CONTRACTOR shall undertake the following commitments:

37-07	Following construction, the Contractor will repair roads to at least their pre-construction
	condition.
37-08	Surface of frequently used access roads will be subject to regular inspections and repair, with the aim of ensuring they are maintained in a good condition particularly where fragile buildings are close to roads (subject to site-specific survey).
37-17	The Project will undertake a road condition survey before construction begins in areas as defined by Project.
37-18	The Project will use the existing access roads established for construction of the BTC and SCP pipelines to access the pipeline ROW as far as practical.
37-20	Prior to selection all access routes will be subject to a multidisciplinary assessment.

Pipeline, camps, access roads and all facilities:

The CONTRACTOR's multi-disciplinary assessment of access routes shall be documented and shall give consideration to but not limited to the following factors: ecological sensitivity, known archaeological sites and potential impacts on community health and safety and infrastructure.

CONTRACTOR shall be required to perform an initial survey of the condition of roads to be used including bridges, drainage structures, signage, traffic management and other road infrastructure in coordination with COMPANY. The scope of the survey shall include all roads that are not major highways and shall be proposed by the CONTRACTOR and agreed by the COMPANY.

The survey report shall document the proposed use of the road (e.g. for major equipment/supply transport, light vehicle use, etc.) and shall include photographic and/or video and related technical documentation necessary to establish the condition of the road and supporting infrastructure and any repairs/safety upgrades that are required before construction starts. Photographs should be taken of any pinch points and residential buildings that are on the side of the road (within 20m) The survey shall be signed by CONTRACTOR and road/municipal authority (if practical) and any affected landowner or the

results made available to the road/municipal authorities. Each agreement shall be witnessed by COMPANY. Following the initial analysis and agreements, CONTRACTOR shall obtain the necessary permits to begin any necessary upgrade works.

COMPANY and CONTRACTOR'S social team shall undertake a visual survey of the dwellings located on any internal village roads to be used by CONTRACTOR. Information on each dwelling that could be impacted by Project transport shall be assessed and documented by written and photographic means. The assessment shall form part of a mutual agreement to be formed with the local municipalities.

CONTRACTOR shall improve the access routes as required to provide safe access for the duration of the Project. This work shall consist of clearing, rehabilitation of the road surface, and expansion of some curves as required so that the vehicles carrying materials and supplies can travel safely. The widths of roads and curves shall be established, bridges shall be strengthened and drainage works restored. If necessary, safety structures shall be built in areas affected by construction (dry walls, containment walls, etc.).

CONTRACTOR shall ensure that all personnel use only approved access roads.

CONTRACTOR shall inform COMPANY representative of any new access roads required. A cultural heritage survey, as well as an ES assessment as described in the Land Management Plan shall be prepared by CONTRACTOR, approved by COMPANY, before construction on any new road commences. All roads shall be constructed in line with Project technical, environmental and social requirements.

Following reinstatement of access roads as per the Reinstatement Plan, an exit survey shall be undertaken by CONTRACTOR. The survey shall cover all pre-entry areas surveyed and additional areas or property affected by access. Photographic evidence of road and infrastructure condition shall be taken of all areas covered in pre-entry above and any potential areas of concern. CONTRACTOR shall be responsible for closing out any actions on a timely basis arising from the exit survey to ensure a smooth return to the relevant authority/village or landowner. CONTRACTOR shall refer to the Land Management Plan for further requirements on hand-back requirements.

14.4.8 Buildings

The SCPX ESIA has committed to undertake surveys and monitoring to provide data and record the external conditions of buildings in the event of claims for damage.

The CONTRACTOR shall undertake the following commitment:

25-14	A survey will be undertaken to record the external condition of buildings in close
	proximity to the ROW or access roads prior to construction; this will provide baseline
	evidence in the event of claims for damage.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues and will include details for vibration monitoring at sensitive locations.

14.4.9 Service Integrity

The SCPX ESIA has committed to implement measures to protect the integrity of third party services, and to repair any accidental damage promptly.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

35-01	Contractor will prepare a Method Statement that includes measures to protect the
	integrity of the third-party services and is acceptable to the service operator.

35-02	Any damage to third-party services to be repaired promptly in consultation with, or by the service operator.
35-04	In the event of a disruption to services the Contractor will work with the service owner to effect repair in reasonable time.

CONTRACTOR's Infrastructure and Services Management Implementation Plan shall address these issues.

14.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation of the measures in its Infrastructure and Services Management Implementation Plan in accordance with the requirements of Section 21 of this ESMMP.

14.5.1 Infrastructure and Services Monitoring and Reporting

CONTRACTOR shall record communications with communities and with third-party infrastructure and service providers.

CONTRACTOR shall regularly inspect the condition of the existing infrastructure and services used by the Project, gather photographic evidence and collect data on the KPIs.

CONTRACTOR shall report any damage to existing roads, bridges, water supplies, power supplies and buildings to COMPANY immediately.

CONTRACTOR shall maintain a record of infrastructure and services activities including but not limited to:

- A community complaints register with infrastructure- and services-related community grievances identified
- Number of community improvement initiatives taken by the CONTRACTOR.

15 COMMUNITY HEALTH, SAFETY AND SECURITY PLAN

15.1 Scope

The scope of this Management Plan relates specifically to the following community health and safety management issues:

- Road safety in communities
- Right of way safety and communities
- Community Health
- Raising safety awareness in communities.

15.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007)
- IFC General EHS Guidelines 3 Community Health and Safety (April 2007)
- IFC General EHS Guidelines 4 Construction and Decommissioning (April 2007)
- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific text from the above guidance is described below:

- Projects prevent or minimise the potential for community exposure to hazardous materials that may be released by the Project
- Projects prevent or minimise the potential for community exposure to communicable diseases that could be present within the Project workforce
- Projects ensure that the effects of a Project's security arrangements (safeguarding of personnel and property) respect local community interests
- Projects should develop an Emergency Preparedness and Response Plan to avoid risks to human health within the Project facility.

15.3 Roles and Responsibilities

The roles and responsibilities of COMPANY and CONTRACTOR shall be as described in Section 3.

The CONTRACTOR will be required to keep the COMPANY informed in advance of the construction schedule, progress and key activities that may affect communities in order to facilitate COMPANY communications with local communities.

15.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to avoid and reduce risks to community health and safety during construction of the SCPX Project.

CONTRACTOR shall develop a Community Health and Safety Implementation Plan that complies, as a minimum, with the measures included in this Community Health and Safety Management Plan. The Community Health and Safety Implementation Plan shall be submitted to COMPANY for approval in accordance with CONTRACT requirements.

The CONTRACTOR will be required to keep the COMPANY informed, in advance of the construction schedule, of the progress and key activities that may affect communities in order to facilitate BP communications with local communities.

15.4.1 Design Commitments

COMPANY shall incorporate the following commitments into the Project design that shall be implemented by the CONTRACTOR during construction:

D11-04	A general minimum separation distance of 20m is applied between SCPX and SCP/BTC. At crossings, additional control of work measures will be applied.
D11-05	At the block valve location (KP28) the separation distance between 56" SCPX pipeline and the 42" SCP pipeline will be no less than 28m.
D5-010	Where the SCPX pipeline crosses buried services or pipelines, trenchless or open cut crossing methods will be adopted. A typical vertical separation between the SCPX pipeline and the existing service or pipeline will be 1500mm where trenchless techniques are used, and 900mm where open cut techniques are used.
D5-011	Construction of crossings of the existing BTC and SCP pipelines will be controlled under the existing pipeline operations permit to work system and the activity will be subject to a specific risk assessment undertaken by both the construction contractor and BTC and SCP operations team.
D12-01	A design factor of 0.5 has been allowed, and heavy wall pipe will be used in KP39–41 where a number of dwellings are less than 200m from the pipeline.
D12-02	A design factor of 0.5 has been allowed and heavy wall pipe will be used within KP22– KP43 around Rustavi to allow for future development and population expansion.
D5-034	An increased wall thickness with a design factor of 0.6 will be applied at major road, railway and river crossings and where the pipeline passes seismic faults to meet the requirements of API RP 1102.

15.4.2 Road Safety

CONTRACTOR'S Community Health and Safety Implementation Plan shall include detailed traffic management measures that address the risk of accidents occurring during construction that involve communities and their animals. CONTRACTOR shall implement the following commitments and prepare a Transport Management Plan (integrated with the other CONTRACT requirements) that will comply with and implement these requirements:

Pipeline, can	ps, access r	roads and a	II facilities:
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30-02	At sensitive locations where Project construction traffic will be using local roads, and particularly where schools and markets are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons.
30-15	Random drug and alcohol testing of the workforce will be conducted, recorded and audited regularly.

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30-21	Where traffic is diverted around crossings, traffic control or careful selection of the exit from the working areas will be provided with the aim of ensuring vehicles join the road in a safe manner.
30-22	The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable.
30-24	The contractor will be expected to use the designated access roads and to apply for Project consent to use any new or existing roads not designated for Project use.
37-03	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.
37-04	Temporary traffic control measures will be employed at road crossings and junctions (flagmen, temporary traffic lights) where a safety risk assessment has identified traffic control measures will reduce the risk of traffic accidents.
37-09	All contractors and subcontractors will adhere to BP driving rules.
37-10	Night-time driving will be by exception only, as approved by the Company, to minimise driving risk and disturbance to communities.
37-11	The Project will aim to provide buses to transport non-camp resident workers to the construction sites.

CONTRACTOR and COMPANY shall implement the following commitments

24-02	A strict Project speed limit of 30km/hr will be enforced for project vehicles using
	unmade tracks and the ROW.

CONTRACTOR's Transport Management Plan shall also include a journey riskmanagement study, to be agreed with COMPANY, which details the following:

- Access roads to be used by CONTRACTOR
- Identification of constraints along the route such as all schools, cattle markets etc.
- Proposal of additional mitigation measures such as restriction on driving hours, speed limits etc., using COMPANY pro forma.

15.4.3 General Access Safety

Pipeline, camps, access roads and all facilities

The CONTRACTOR shall implement the following commitment:

30-23	The ROW of the SCPX pipeline and any additional temporary workspaces will be surveyed and set out (i.e. marked out and, where necessary, fenced off). The
	Contractor will be required to keep within the designated footprint.

The SCPX ESIA has committed to consult communities to determine the requirements for people to cross the ROW, as specified in the commitments below, which shall be implemented by the CONTRACTOR:

Pipeline and CSG2 Access Road (as applicable):

32-08	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.
30-06	Bridges will be provided across open trenches and welded pipes at locations where there is a demonstrable need for people to cross, it is reasonable for them to do so, and can be accommodated safely, taking into account works being undertaken in that area at the time.

CONTRACTOR shall maintain safe access across the pipeline ROW to enable people and animals to move freely between land parcels.

CSG2 access road:

Safe crossing points shall also be provided along the CSG2 access road construction ROW through consultation with land users and local communities.

Pipeline, camps, access roads and all facilities:

In order to minimise disruption to local communities, the CONTRACTOR shall adopt the following measures:

30-17	Warning posts and bunting will be erected to mark overhead cables and temporary crossing points.
32-04	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.
20-03	Warning barriers and/or signs will be erected where the pipeline or CSG2 access road route crosses locations identified with local communities as being heavily used by people, including herders.

Open excavations present a risk to people and animals, particularly if they are flooded. The SCPX ESIA has committed to fence areas of open excavations and the ROW (both pipeline and CSG2 access road) in certain areas to minimise the risks of accidents. CONTRACTOR shall comply with the following requirements:

30-04	Protective barriers will be erected at excavations at a road or river crossing, close to a community or that are flooded temporarily in accordance with the Community HS&S Plan; warning barriers will be deployed around areas of lesser risk to members of the public.
30-18	Construction traffic warning signs will be positioned at road crossings and other appropriate locations as determined by the project, for example road signs will be positioned along access routes before they are used by construction traffic.
32-09	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.
3-34	If water accumulates in the open trench (either from rainfall or because of a high water table), it will be pumped out before the pipe is lowered into the trench. All trench water will be discharged safely with the aim of minimising erosion.
30-09	Water will be pumped from flooded excavations (e.g. with centrifugal pumps or well- points as appropriate) where a risk assessment concludes that they present a safety risk.

Note: Excavations shall also include drilling and/or tunnelling entry and exit pits/shafts.

As a minimum, protective barriers shall be erected at excavations where a community is present within 500m of the excavation (measured from the perimeter of the community). For flooded excavations this distance shall be increased to 2km. This distance may only be reduced subject to the results of a location specific risk assessment.

Protective barriers shall provide a deterrent to entry by a community member and will have high visible warning signs in the appropriate language(s) with supporting graphics.

15.4.4 Community and Security Interaction

CONTRACTOR and COMPANY shall apply due diligence to the selection of security providers, develop rules of engagement and provide training to security personnel. BP's Voluntary Principles on Security and Human Rights (2008) shall be applied and shall implement the following commitments:

30-10	The project will implement the Voluntary Principles on Security and Human Rights.
30-12	During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically.

15.4.5 Noise Impacts

Refer to Section 11.4.8.

15.4.6 Community Health and Safety

Pipeline, camps, access roads and all facilities:

CONTRACTOR shall be required to develop a personal health programme to educate workers in illness and disease prevention measures to minimise the occurrence or spreading of diseases and shall undertake measures to reduce the potential risk of accidents and injury to local community members.

CONTRACTOR shall implement the following commitments:

21-01	The length of the continuous open trench (including trench with pipe installed but not backfilled and with a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.
30-22	The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable.
31-02	Risk assessments will be carried out to identify sensitive receptors such as hospitals and clinics along Project access routes. The project will ensure that access to and from these facilities is not restricted by Project activities or an alternative access is in place and has been agreed with the hospital or clinic staff.
31-03	SCPX-related drivers will be briefed so they understand the importance of ensuring free access and egress of ambulances to the hospital and all traffic to clinics.
31-05	A risk assessment will be undertaken when considering waste water discharge options and locations.
32-09	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.
D30-01	Where it is considered that there is a higher risk of the pipeline being damaged or interfered with, or where other services are crossed and at track and road crossings, the pipeline will be covered by concrete slabs at open cut crossings.

CONTRACTOR shall develop a personal health programme to educate workers in illness and disease prevention to minimise the occurrence or spreading of diseases. CONTRACTOR's Community Health and Safety Implementation Plan shall provide details of the scope and the content of this programme and include who is responsible for implementing the programme. The programme will include immunisations as required.

CONTRACTOR shall provide health awareness training at induction and then periodically throughout construction to all national and expatriate staff, that includes awareness raising on health considerations, including sexually transmitted diseases.

CONTRACTOR shall provide details of the scope, content and frequency of the health awareness training to be provided to staff in its Community Health and Safety Implementation Plan (see also the Construction Camp Management Plan for details of induction training).

15.4.7 Raising Safety Awareness in Communities

The SCPX ESIA has committed to raising community awareness of the safety risks associated with construction. CONTRACTOR shall comply with and implement the following requirements:

Pipeline, camps, access roads and all facilities:

30-08	Community Liaison Officers (CLOs) appointed by the Contractor will participate in, or
	deliver safety awareness training to, local children and their parents and/or their
	teachers.

CONTRACTOR'S CLOs shall meet with local communities in advance of construction occurring in a particular area to describe the construction activities and to explain the dangers associated with the construction works. Particular emphasis will be placed on talking to children and their parents/teachers and explaining the dangers of road traffic, construction sites and open excavations. CONTRACTOR'S CLOs shall raise awareness of safety issues through village meetings and classroom lessons as per the Community Liaison Plan.

CONTRACTOR'S CLOs will also advise local communities of the routes that will be used by construction vehicles and will explain that extra care will be needed when walking along or crossing these routes.

The CONTRACTOR and COMPANY shall undertake the following commitments:

33-15	The Project will review measures to mitigate community health and safety impacts
	regularly, and consult PAC leaders every six months, informing them on the status of
	implementation and results, and discussing any changes needed to the 'Pollution
	Prevention Plan' or the 'Community Health, Safety and Security Plan' in advance of
	proposed changes.

15.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation on the measures in its Community Health and Safety Implementation Plan.

CONTRACTOR shall report to COMPANY all the safety incidents associated with construction traffic, farmers' access to the agricultural lands and the spread of disease from the Project personnel to community members.

CONTRACTOR shall monitor driving behaviours using VDR data in accordance with the health, safety and security requirements. Where this monitoring identifies inappropriate behaviours, CONTRACTOR shall implement corrective actions to improve driving behaviours.

CONTRACTOR shall monitor performance of security personnel against BP's Voluntary Principles on Security and Human Rights (2008).

16 COMMUNITY LIAISON PLAN

16.1 Scope

The scope of this Management Plan relates specifically to the following community liaison management issues:

- Community relations training
- Establishment and maintenance of good community relations
- Grievance procedure.

16.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been listed and described below:

- IFC Performance Standard 1: Assessment and Management of Environmental and Social Risks and Impacts (January 2012)
- IFC Performance Standard 4: Community Health, Safety and Security (January 2012)
- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement (January 2012)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

Specific guidance text from the above documents is described below:

- Projects implement measures to mitigate infrastructure and property damage when planning activities, and where the Project can cause damage beyond reasonable wear and tear to services and infrastructure the community relies on, such as roads, bridges, community centres, schools and places of worship or to homes or livestock
- Projects implement mitigation measures to address inconvenience to communities caused by impeded access, temporary or permanent blocking of access or restricted access to routes normally used by Project-affected people, thus creating longer and delayed journeys; or the temporary or permanent exclusion of affected people from areas of land traditionally used for cultivation, gaining access to water, grazing or leisure
- Projects engage with Project-affected people, documenting their concerns, explaining the reasons for and the duration of the inconvenience and listening to their suggestions
- Projects carry out an ongoing process of engagement, free of external manipulation, interference, coercion or intimidation, with communities that may be affected by risks or adverse impacts from a Project to build and maintain over time a constructive relationship with these communities
- Projects disclose relevant Project information to help affected communities understand the risks, impacts and opportunities of the Project and provides such communities with information on the purpose, nature and scale of the Project, the duration of proposed Project activities, and any risks to the communities
- Projects undertake a process of organised and iterative culturally appropriate consultation in a manner that takes account of the needs of disadvantaged or

vulnerable groups and provides the affected communities with opportunities to express their views on Project risks, impacts, and mitigation measures, and allows the COMPANY to consider and respond to them

- Projects incorporating the views of the affected communities on matters that affect them directly, such as proposed mitigation measures and the sharing of development benefits and opportunities into their decision-making process
- Projects inform the affected communities about the grievance mechanism they have established to receive affected communities' concerns and grievances about the Project's environmental and social performance and facilitate resolution of them. They address concerns promptly, using an understandable and transparent process that is culturally appropriate and readily accessible to all segments of the affected communities
- Projects may consider negotiating community investments that do not favour one grouping (e.g. political party, religious sect, ethnic group) over another and avoid exacerbating conflict between communities.

16.3 Roles and Responsibilities

COMPANY has the ultimate responsibility for community liaison during pipeline construction and in respect of the Project as a whole.

Community liaison will be a joint effort involving COMPANY and CONTRACTOR personnel working in parallel to communicate with affected communities and stakeholders.

16.3.1 Company

COMPANY shall be responsible for:

- Appointing COMPANY Community Liaison Officers (CLO)
- Consultation with key stakeholders
- Advising CONTRACTOR on the management of community interaction and liaison
- Approving the release of Project design information to stakeholders
- Maintaining a current list of all stakeholders as well as on-site contractors
- Facilitating resolution of complaints where applicable
- Facilitation, where appropriate, of communications between COMPANY, regulatory organisations, local people and other stakeholders on any social issue
- Ensuring that CONTRACTOR takes accurate and timely action on any grievance will be taken
- Oversight of the Project complaint management system
- Assurance on CONTRACTOR investigation and resolution of reported complaints
- Assurance on the progress of complaints through a Complaint Register
- Analysis of complaints to avoid recurrence of the concern or issues
- Being seen as an open-door authority for the complainant to be contacted at any time
- Facilitation (in support of CONTRACTOR CLO) in the event of a work stoppage.

16.3.2 Contractor

The CONTRACTOR shall be responsible for:

- Appointing CLOs as specified in Section 3.2.3 of this ESMMP
- Maintaining a complaints management system to register, investigate and resolve complaints received from communities

- Supporting COMPANY on conducting public meetings on specific topics (health, safety, preconstruction)
- Keeping the COMPANY informed in advance of the construction schedule, progress and key activities that may affect communities in order to facilitate COMPANY communications with local communities
- At the pre-construction phase of the Project, CONTRACTOR shall conduct public meetings regarding the employment opportunities and the recruitment process
- Implement corrective action (as agreed with COMPANY) to close out complaints.
- Resolution of complaints (applicable to CONTRACTOR)
- Taking accurate and timely action on any grievance will be taken
- Investigation and resolution of reported complaints
- Maintain an up-to-date Complaints Register
- Analysis of complaints to avoid recurrence of the concern or issues
- Key interface in the event of a work stoppage related to CONTRACTOR's activities.

16.4 Impact Avoidance and Mitigation

This section details measures that have been adopted by the Project to communicate effectively with local communities before and during construction of the SCPX Project.

CONTRACTOR shall develop a Community Liaison Implementation Plan that addresses, as a minimum, the measures included in this Community Liaison Management Plan. The Community Liaison Implementation Plan shall be submitted to COMPANY for approval. as per Section 3.2.2 of the ESMMP.

16.4.1 Community Relations Training

The induction training package provided by CONTRACTOR for its personnel and subcontractors' personnel shall include the control of direct communication of unauthorised Project personnel with third parties, but shall equip the workforce to explain to third parties how they can make a formal complaint and how they can contact the Community Liaison Officers to receive information from the proper channels. CONTRACTOR shall reinforce community relations training with additional toolbox training.

CONTRACTOR shall implement the following commitment:

Pipeline, camps, access roads and all facilities:

28-12	Particular emphasis will be paid to health and safety and community relations, with
	additional technical toolbox talks given on specific issues.

16.4.2 Establishment of Good Community Relations

COMPANY shall have primary responsibility for community liaison and will be the first point of contact for affected communities. CONTRACTOR shall appoint appropriately qualified and experienced CLOs (as detailed in Section 5.2.4), one of whom will be designated as the Lead CLO and will be appointed and mobilised to the Project at least six months before construction begins.

COMPANY has implemented any additional consultation required with PACs in the vicinity of the construction camps during the ESIA disclosure.

CONTRACTOR'S CLOs shall work in conjunction with COMPANY'S CLOs who have established relations with many of the Project-affected communities to implement the following commitments:

33-03	The community liaison teams will maintain regular liaison with local communities
	before, during and after construction.

CONTRACTOR shall implement the following commitment:

Pipeline, camps, access roads and all facilities:

33-14	To avoid disturbance of particular local events such as funeral ceremonies by construction traffic, the Community Liaison Officers will encourage local community authorities to provide advance warning of funerals (and other similar events) so that the Contractor can avoid the movement of heavy vehicles, equipment and pipe through settlements at these times
37-06	At locations where schools are very close to a road used by SCPX traffic, the construction contractor will plan works to minimise the delivery of heavy loads at times when children are likely to be walking to and from school.

CONTRACTOR'S CLOs shall meet regularly with the communities to keep them informed about Project activities. The SCPX ESIA has committed to consult with people regarding activities and buildings that may be particularly sensitive to disturbance.

CONTRACTOR with COMPANY approval shall be responsible for liaising with government authorities and PAC leaders.

The following commitments shall be implemented by the CONTRACTOR:

Pipeline, camps, access roads and all facilities:

24-05	Community Liaison Officers will identify any beekeepers whose hives are within 300m of the pipeline and facility construction, camp and pipe storage areas or access routes before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route for the season.
33-19	Land users and local communities will be consulted to determine their requirements for access across the ROW
25-10	During the construction of CSG1, CSG2 and the PRMS, the local community will be informed of when and where noisy activities (e.g. blasting, piling) will occur.
33-16	Information will be disclosed to PAC leaders regarding potential community health and safety impacts and mitigations, at a sufficient level of detail to help these stakeholders to fully understand current and expected risks, and, as necessary, additional measures to be implemented.

CONTRACTOR's Community Liaison Implementation Plan shall set out how and when consultation will be undertaken.

The CONTRACTOR and COMPANY will implement the following commitment:

32-07	The project will inform land owners/users about any reuse restrictions that apply to
	land used by the Project.

The COMPANY will implement the following commitment:

24-06	The Company will develop and implement a policy for the compensation of beekeepers
	adversely affected by Project impacts.

16.4.3 Grievance Procedure

The SCPX ESIA has committed to implement a grievance procedure.

CONTRACTOR shall implement the following commitments:

33-01	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.
33-13	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.
33-18	Community Liaison Officers may assist in raising community awareness about emissions-related issues and ensuring emissions-related complaints are followed up and responses provided.

CONTRACTOR's Community Liaison Implementation Plan shall set out a formal grievance or complaints procedure to record, investigate and resolve any complaints from communities and individuals about Project activities or personnel that aligns to this Plan's requirements. The grievance system shall include all grievances including land, infrastructure, health and safety, environment, local recruitment and any others as necessary. Note that the industrial relations complaints system will be separate.

CONTRACTOR'S CLO shall hear any complaints that the community or any individual makes, register the complaint in the grievance log and take action to resolve them in compliance with the Project requirements. CONTRACTOR'S CLO shall record the date and time, source, location and nature of each complaint in a Complaints Register.

CONTRACTOR's Community Liaison Implementation Plan shall set out the practical details of process it will implement for:

- Investigating each complaint to establish the root cause
- Determining whether an action should be implemented to stop the disturbance or impact or prevent its re-occurrence (e.g. changing or adding mitigation measures, disciplinary action).

Community complaints and their resolution shall be signed off by COMPANY.

COMPANY shall maintain a database of all complaints. CONTRACTOR shall be responsible for inputting complaints into this database in the required format.

CONTRACTOR shall:

- Communicate the actions taken with the individual, community or organisation that lodged the complaint
- Settle complaints and, where appropriate, compensate for damage caused by CONTRACTOR
- Work with COMPANY CLOs to ensure the process is closely adhered to.

CONTRACTOR's Complaints Register shall record how the complaint was dealt with and resolved and the time taken to deal with each complaint. Figure 16-1 presents the complaints management procedure.

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Final



Figure 16-1: Flow Chart for Complaints Management

16.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation of the measures in its Community Liaison management Plan.

CONTRACTOR shall as a minimum:

- Maintain minutes of all meetings with Project-affected communities and with potentially affected individuals that record the issues discussed and the strength of the opinions expressed about them
- Maintain a Complaints Register that holds details of the time a complaint was made; the nature of the complaint; the actions taken to respond to the complaint; the actions taken to investigate the complaint; the appropriate actions taken; how the findings of the complaint were communicated to the aggrieved party; and how and when the complaint was resolved.

CONTRACTOR'S CLO shall work closely with COMPANY'S CLO and shall report immediately any serious complaint and any complaint or enquiry that requires a response from COMPANY.

CONTRACTOR's Lead CLO shall conduct weekly CLO meetings, attended at COMPANY discretion, and submit a weekly update detailing the number and status of complaints and any outstanding issues to COMPANY.

CONTRACTOR's Social Manager shall meet with COMPANY's Social Manager at least monthly to decide what actions to take to address unresolved complaints.

17 LOCAL RECRUITMENT AND TRAINING PLAN

17.1 Scope

The scope of this Management Plan relates specifically to the following local recruitment and training management issues:

- Recruitment for construction-phase workforce (e.g. local employment, recruitment procedures, transparency, definition of skilled and unskilled work roles)
- Skills and HSE training.

17.2 HGA Standards and Practice

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered has been described below.

- IFC Policy on environmental and social sustainability, January 2012;
- International Finance Corporation's IFC Performance Standards, 2007 and their associated Guidelines;
- IFC/World Bank: 'General EHS Guidelines' and 'EHS Guidelines for Onshore Oil and Gas Developments', 2007.

The specific guidance considered is listed below:

- IFC General EHS Guidelines 3 Community Health and Safety (April 2007)
- IFC Performance Standard 2: Labour and Working Conditions (January 2012)
- IFC Performance Standard 5: Land Acquisition and Involuntary Resettlement (January 2012)
- ILO Convention providing for Equal Remuneration 1951 (C100)
- ILO Convention providing Right to Freedom of Association and Protection of Right to Organise 1948 (C87)
- ILO Right to Organise and Collective Bargaining Convention 1949 (C98)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

17.3 Roles and Responsibilities

COMPANY has the ultimate responsibility for local recruitment and training standards during pipeline construction and in respect of the Project as a whole.

General responsibilities for environmental and social management are defined in the ESMMP. Responsibilities relating specifically to local recruitment and training are defined in this section.

17.3.1 Company

COMPANY shall be responsible for:

- Review and approval of CONTRACTOR's Local Recruitment and Training Implementation Plan
- Monitoring implementation of/adherence to the Local Recruitment and Training Management Plan through its existing ESMS and liaison with CONTRACTOR and district recruitment centres
- Representing the Project at community meetings
- Advising CONTRACTOR on the management of local recruitment and training issues within this Plan.

17.3.2 Contractor

CONTRACTOR shall be responsible for:

- Not making any commitments or any direct arrangements with local communities without prior coordination of such actions with COMPANY
- Development of local recruitment plan for COMPANY review and approval
- Maintaining records of recruitment and employment process
- Conducting local recruitment-related meetings with community in coordination with COMPANY
- Deliver both induction and HSE training for employees.

17.4 Impact Avoidance and Mitigation

In order to enhance opportunities for local employment and to provide a suitably skilled workforce, CONTRACTOR shall implement appropriate measures that will involve a combination of:

- Developing and implementing an employment strategy
- Implementing a fair and transparent recruitment process
- Ensuring equal opportunities and worker welfare
- Planning and delivery of training.

The essential features of the above elements are outlined below, while specific details will be described in an Local Recruitment and Training Implementation Plan to be prepared by CONTRACTOR and approved by COMPANY prior to recruiting local labour.

17.4.1 Employment Strategy

The SCPX ESIA has committed to enhance local job opportunities. COMPANY shall agree targets for local employment with CONTRACTOR after the CONTRACT award.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

28-03	Applications for employment will only be considered if submitted via the official application procedure.
28-04	Targets for local recruitment from PACs will be agreed with the Contractor.
28-02	Unskilled labour will be preferentially recruited from the Project affected communities.

28-20	The Contractor will advise workers about risks of neglecting their land during recruitment process.
aa a t	
28-21	I he Contractor will prepare a retrenchment plan, with the aim of reducing the impacts
	of cessation of employment contracts.
00.00	The Original Weights the transmission of the Line to the second second
28-22	I he Contractor will explain the temporary nature of jobs during the recruitment
	analyze and evaluate to weather the need to preserve for locing iche and to menore
	process and explain to workers the need to prepare for losing jobs and to manage
	their income windly while employed
	their income wisely while employed.
20.22	The Project will give priority to people from the construction comp BACs for
20-23	The Project will give priority to people from the construction camp PACs for
	employment opportunities within the camp (e.g. cook, housekeeper, etc.) where
	employment opportunities within the camp (e.g. cook, housekeeper etc.) where
	suitably qualified
	Sullably Judilleu.

As part of the tendering process, CONTRACTOR shall propose a transparent Employment Strategy that shall include:

- Proportion of professional and non-professional staff proposed for the CONTRACT
- How community expectations about employment opportunities are to be managed
- How CONTRACTOR shall recruit for local jobs (e.g. through local recruitment centres, the principles of fair and equitable recruitment policy and the rationale for employing foreign nationals).

Following award of CONTRACT, CONTRACTOR shall further develop requirements into the Local Recruitment and Training Implementation Plan (LRTIP). The plan shall include employment targets agreed with COMPANY.

CONTRACTOR'S LRTIP shall include measures to prevent worker in-migration through careful documentation of worker registration records (e.g. length of time at residence etc.).

The CONTRACTOR shall use the principles contained within the IFC Good Practice Note No. 4: Managing Retrenchment, 2005 when developing the retrenchment plan.

17.4.2 Local Recruitment

The SCPX ESIA has committed to liaise with Project-affected communities about job vacancies.

COMPANY shall undertake the following commitment:

14		
	28-08	Community Liaison Officers will monitor that PACs are given priority in recruitment
		and that recruitment is non-discriminatory in terms of PACs and ethnicity.

CONTRACTOR shall provide for COMPANY access for the purposes of monitoring the recruitment process.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

28-01	To help minimise the extent of in-migration, the Project's strategy on local recruitment will be disseminated publicly, including via media announcements at regional and national levels (as appropriate).
28-05	The Project will seek to manage employment expectations by explaining the number and type of opportunities in advance to local communities via the Community Liaison Officers.
D33-01	The Project has selected construction camp locations on the same sites as, or very near to, the major facilities.

CONTRACTOR'S Local Recruitment and Training Implementation Plan (LRTIP) shall address these issues, describing where vacancies will be advertised, how CONTRACTOR's CLOs will inform local communities about job opportunities and how CONTRACTOR will provide employment information centres.

CONTRACTOR'S LRTIP shall include recruitment procedures that are transparent, public and open to all. All workers will be treated fairly and equally, and will receive at least the minimum wage.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

28-06	Recruitment procedures will be transparent, public and non-discriminatory and open with respect to ethnicity, religion, sexuality, disability or gender.
28-07	Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post.
28-14	All workers will have contracts describing conditions of work and will have the contents explained to them.
28-15	As part of the recruitment programme community liaison teams will seek to manage any misconceptions about perceived differences in pay or conditions.
28-17	Job vacancies will be advertised in the PAC through appropriate and accessible media (consistent with employment targets).
33-02	All workers will receive at least the minimum wage as defined by Georgian national law.

CONTRACTOR shall make workforce contracts available in their native language.

CONTRACTOR shall ensure that the recruitment procedures included in the LRTIP include the following:

- Openness and transparency, and that no prospective employee is asked to make payment or any other inducement to be employed
- CONTRACTOR shall keep COMPANY up-to-date regarding its future recruitment intentions
- CONTRACTOR shall provide information to local communities on the nature and levels of employment required for the CONTRACT
- CONTRACTOR shall maintain an employment office in the local area and conduct all non-professional recruitment at the local area employment office
- CONTRACTOR shall include a generic job advertisement example in their LRTIP that shall set forth clear job descriptions stating the required skills, prior to placing the advertisements
- CONTRACTOR shall report to COMPANY on the process and outcomes of all recruitment, including the number of applications, the numbers accepted for interview and the numbers offered employment, identifying at each stage the numbers from the local area and the numbers from outside the local area
- When interviewing applicants, CONTRACTOR must ensure that questions asked of applicants are in no way discriminatory or personally intrusive
- For professional staff, CONTRACTOR shall at all times recruit the person who is most suited to the particular post, based on the applicant's abilities, qualification, experience and merit as measured against the job description and person specification
- CONTRACTOR and COMPANY shall develop local targets for unskilled labour
- CONTRACTOR shall maximise employment opportunities for people from Projectaffected communities and within 5km around the camps and facility construction sites
- CONTRACTOR shall establish a grievance procedure for managing all community complaints related to the recruitment process and will report monthly to COMPANY on the complaints received and on grievance resolution and redress.

CONTRACTOR'S CLOs shall meet with communities (jointly with COMPANY CLOs) to explain that all employment for work on the Project will use fair and transparent recruitment procedures, favouring applications from the Project-affected communities, and will explain the procedures by which local people may apply for employment. CONTRACTOR shall implement the following location-specific commitment.

17.4.3 Provision of Training

The SCPX ESIA has committed to providing various types of training.

CONTRACTOR shall undertake the following commitments:

Pipeline, camps, access roads and all facilities:

6-11	Relevant construction personnel will be trained in use of spill kits and disposal practices.
19-06	Wildlife sensitivity to disturbance will be included in workforce training.
19-07	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.
22-02	The workforce training will include advice on minimising energy consumption.
25-02	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.
27-11	Issues relating to archaeological awareness (such as ownership of finds, notification of finds and protection of archaeological sites) will be included in induction training.
28-09	When appropriate, on-the-job training will be provided to enable local employees to gain new and/or improved skills while working on the Project.
28-10	The workforce training programme will include refresher and induction training with the aim of ensuring that all recruits have the necessary understanding and knowledge levels for each job, in particular with regard to HSE issues.
28-11	Environmental and social issues will be included in workforce and visitor induction training.
28-13	Additional on-the-job informal training sessions and discussions will be provided as necessary during construction of the different SCPX component projects.
7-14	Information will be incorporated into the Site induction process and will outline the role of personnel in the management of waste and emissions from site and spill response procedures.
7-15	Site induction training will be supplemented by regular 'toolbox' talks with relevant personnel if inspections or audits highlight failings in waste management.
7-13	Relevant training will be provided to those with responsibilities for monitoring of effluent discharges and emissions at the construction camps and Facilities such as effluent sample taking and chain of custody.

Prior to commencing any site work, all CONTRACTOR personnel, including subcontractors and suppliers, should complete an HSSE induction training to ensure that the Project HS and ES expectations are met and should undertake any essential skills training to ensure competence and safe performance of duties, appropriate to the work being performed. Training should include general and task-specific training (i.e. that which is necessary for the performance of the duties to which the person is assigned).

CONTRACTOR'S LRTIP shall develop training procedures, matrices and procedure for maintaining training records.

CONTRACTOR shall analyse training requirements and initiate a training programme to demonstrate that all persons employed, including subcontractors, are suitably qualified, competent and fit. This should include:

- The HSSE induction training programme to be delivered to all personnel in the workforce, vendor representatives and site visitors
- A specification of qualifications, competency and training requirements for key personnel
- A matrix of training requirements, covering general, task–specific and HSE-related training, showing the training frequency and interval between refresher courses
- Assessment and recording of training needs
- A system for assessing new hires, e.g. previous training
- A means of confirming that the system is effective
- Timely delivery of training courses.

COMPANY may participate and/or lead in some training, as directed.

17.4.3.1 Induction training

Camp induction

The requirements for camp induction are given in Section 13.

Worksite HSSE induction

CONTRACTOR shall ensure that all CONTRACTOR and subcontractor personnel, regardless of position, receive HSSE induction training before being given access to any worksite, including training on environmental and social issues. Induction content shall be approved by COMPANY.

CONTRACTOR's HSSE training shall include information about location-specific constraints and risks as identified in the ESIA.

Where directed, CONTRACTOR personnel shall attend COMPANY environmental and social inductions. CONTRACTOR shall conduct a competency assessment after each environmental and social training course to assess its effectiveness. Competency assessment records shall be maintained by CONTRACTOR.

CONTRACTOR shall develop a pocket-sized environmental and social induction booklet, which shall be subject to review by COMPANY and issued to all personnel who attend the induction training and successfully complete the competency assessment.

17.4.3.2 Skills training

Prior to the commencement of the work, CONTRACTOR shall submit for review a detailed Training Programme which shall identify specific training requirements against each job title or occupation for environmental and social management. COMPANY will review the training plan for compliance within the first three months of CONTRACT commencement.

 CONTRACTOR's skills training programme should maximise opportunities for country nationals to gain employment in skilled and unskilled roles during the construction of the Project.

CONTRACTOR's Training Programme shall include information about risks as identified in the ESIA, including:

• Briefing drivers on the importance of ensuring adherence to the requirements of the Community Health and Safety Plan

• Toolbox talks related to site-specific activities to be delivered by CONTRACTOR (e.g. spills, waste management, etc.).

17.5 Verification and Monitoring

The monitoring and reporting activities that need to be conducted by the CONTRACTOR are specified as follows:

- COMPANY and CONTRACTOR shall develop Project-specific KPIs for employment of local and national workers and for training time and toolbox talks
- CONTRACTOR shall monitor and report on the recruitment process and numbers of local/national employees at different levels in a format agreed with COMPANY
- CONTRACTOR shall report to COMPANY on the process and outcomes of all recruitment, including the number of applications, the numbers accepted for interview and the numbers offered employment, identifying at each stage the numbers from the local area and the numbers from outside the local area.

18 PROCUREMENT AND SUPPLY PLAN

18.1 Scope

The scope of this Management Plan relates specifically to the following procurement and supply chain management issues:

- Community liaison regarding procurement
- Procurement needs and supply chain.

18.2 HGA Standards and Practice

The guidance documents referenced in Section 3.1 have been considered during the drafting of the impact assessment and Management Plans. Specific guidance is associated with a consideration of adverse impacts, which may be associated with the supply chains, where low labour cost is a factor in the competitiveness of the item supplied. In this case, projects enquire about child labour and forced labour and address such issues in the procurement and supply chain management strategy.

The specific guidance documents referred to are:

- IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007)
- WBG OP 11.0 Procurement (January 2011)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

18.3 Roles and Responsibilities

Responsibilities of COMPANY and CONTRACTOR with regard to procurement and the supply chain are as defined in Section 3.

18.4 Impact Avoidance and Mitigation

18.4.1 Community Liaison

The SCPX ESIA has committed to work with communities to explain opportunities for provision of goods and services.

CONTRACTOR shall inform local businesses of opportunities to supply both constructionrelated services as well as services to other parts of the Project such as construction camps.

18.4.2 Procurement Needs and Supply Chain

The Project will have direct service opportunities for companies at the regional, and possibly national, level.

CONTRACTOR shall maximise the purchase of goods and services from within Georgia, contingent on whether local suppliers can offer sufficient quality and reliability and can meet Project standards. The types of local contracts that are anticipated during construction and operation are shown below:

- Catering services to the office camp and construction sites
- Security services at the office camp and construction sites
- Provision of food supplies (indirectly through catering services)
- Supply of some construction equipment and materials, including timber, concrete and aggregate.

The SCPX ESIA has committed to maximise and monitor the purchase of goods and services from within Georgia, to pay for goods at the market rate and to implement measures that reduce the risk of in-migration. CONTRACTOR shall undertake the following commitments:

29-03	Taking into account relevant commercial considerations as appropriate, the project will seek to purchase goods and services from within Georgia and will monitor such purchases.
28-18	A plan will be developed and implemented that will aim to discourage and prevent the workforce from purchasing goods from informal vendors, to discourage vendors from establishing themselves at construction camp fence-lines in the hope of securing additional business.

CONTRACTOR's Supply Chain Management Implementation Plan shall address these issues and specifically identify goods and services that will be purchased locally.

CONTRACTOR shall source construction materials from local facilities wherever possible.

CONTRACTOR shall give preference to goods and services from local companies insofar as they are competitive in terms of price, delivery and quality of product. CONTRACTOR shall show a clear basis in favour of local suppliers when it comes to the acceptance or rejection of offers.

The SCPX ESIA has committed to consider environmental issues in the Project procurement process, according to the following commitments. CONTRACTOR and COMPANY shall undertake the following commitment:

1-02 Environmental considerations will be included in the Project procurement process.

CONTRACTOR shall implement the following commitment:

1-10	Where excavated material is unsuitable for padding or backfilling, padding materials
	(e.g. sand or small-grained soils/gravel materials) will be bought or sourced from
	approved borrow pits.

CONTRACTOR's Supply Chain Management Implementation Plan shall state how it will promote sustainable procurement and state the HSSE and employment factors that are to be taken into consideration when evaluating offers and procuring goods and services, including HSE inspection and audit of suppliers and their operations.

CONTRACTOR shall clearly describe in their contracts and selection processes the criteria to be considered when determining potential impacts of goods and services, for example:

- Biodegradability
- Energy and water efficiency
- Local production
- Maximum durability, repair-ability, reusability and recyclability
- Minimum packaging

- Minimum use of toxic chemicals, CFCs, ozone and other pollutants
- Use of recycled/re-used materials.

CONTRACTOR shall prohibit the workforce from purchasing goods from informal vendors who may establish themselves at the camp fence-line in the hope of securing additional business.

18.5 Verification and Monitoring

CONTRACTOR shall monitor the implementation on the measures in its Supply Chain Management Implementation Plan in accordance with the requirements of Section 20.

CONTRACTOR shall be responsible for managing and tracking its actions.

CONTRACTOR shall be responsible for documenting the management of supply chains and procurement over time and for monitoring the success of the mitigation measures implemented under its Procurement and Supply Chain Implementation Plan.

CONTRACTOR shall carry out environmental and social audit inspections of the companies that supply good and services to the Project to ensure that all suppliers and service providers operate in line with national legislation.

19 CULTURAL HERITAGE MANAGEMENT PLAN

19.1 Scope

The scope of this Management Plan relates specifically to the following cultural heritage (CH) activities:

- Baseline review and reconnaissance resulting in re-routes to avoid heritage impacts
- Investigation of sites to assist in assessment and recommendations to reduce impact
- Mitigation measures such as excavation of sites where damage is unavoidable
- Construction-phase heritage protection activities, the archaeological component of this phase of the plan addresses the "chance finds" issue
- Study and reporting including publication of the results of the work.

19.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered is listed below:

- IFC Performance Standard 8: Cultural Heritage (January 2012)
- WBG OP 4.11 Physical Cultural Resources (July 2005, updated March 2007)
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

The IFCs Environmental and Social Performance Standard 8, on Cultural Heritage aims to preserve and protect cultural heritage from Project impacts and specifies methods as follows:

- Include cultural heritage concerns in the Project assessment process and management systems
- Integrate cultural heritage impacts (including intangible CH) into the Social and Environmental Assessment
- Include direct and indirect impacts and opportunities for enhancement to cultural heritage in the Assessment
- Consult with experts, government authorities, local communities and indigenous peoples to identify cultural heritage resources
- Comply with national laws and any applicable treaties and conventions
- Design and site projects to avoid cultural heritage
- Use internationally recognised practices for the protection, field-based study and documentation of cultural heritage
- Develop and implement a Chance Finds Procedure for construction and operation
- Remove cultural heritage that cannot be avoided using the best available techniques.

19.3 Roles and Responsibilities

19.3.1 Ministry of Culture and Monument Protection (MOC)

The Ministry of Culture and Monument Protection is a Governmental organisation that oversees all CH activities, responsible for the Cultural Heritage protection and curation. The National Agency of Cultural Heritage Preservation (Agency) is an agency of the MOC responsible for approval of work and issuing excavation licences. This agency has the opportunity to carry out assurance over cultural heritage activities on the Project.

19.3.2 Company

- COMPANY engineering design: Responsible for designing the Project, supplying design parameters to the CH team and assisting in design of an optimum route selection
- COMPANY Construction Team: Responsible for construction activities, this includes implementation of mitigation designs and assisting with Chance Find Procedures
- COMPANY Environmental and Social Team (ES): Responsible for overall Project CH contract management. Included in the team are the CHA and CHMs and other environmental consultants. Also responsible for notifications to the relevant authorities
- Cultural Heritage Adviser (CHA): Promoting compliance with the Cultural Heritage Protection Programme as outlined in Management Plans, protocols, and procedures for Project activities. Managing Cultural Heritage Monitors and experts. Responsible for obtaining the excavation licence, administration of various contracts, design of mitigation programme and coordination of Project and external interests. Coordinate, schedule, CONTRACT, develop ROW and supervise CULTURAL HERITAGE CONTRACTOR's works. Support Project to provide appropriate, documented reports and/or permits that allow Project to proceed; develop comprehensive reports with possible impacts, their mitigation measures and Management Plans upon Project's request
- Cultural Heritage Monitors (CHM): Responsible for regular monitoring and implementing of all CH procedures and programmes assigned for the areas associated to the pipelines and their facilities and maintaining an up-to-date record of daily monitoring activities and any special reports prepared.
- The CHM is appointed for a range of field activities that include monitoring of ground-disturbing construction activities that could reveal previously unidentified archaeological resources (e.g. topsoil stripping, trenching, etc.); providing an initial review of the significance of chance finds and preparing daily reports of negative and positive findings resulting from the monitoring; monitoring construction activity in compliance with above-ground monuments protection procedure conformances and issuing warnings against CONTRACTOR as required for non-compliance with CONTRACT conditions; providing guidance on request regarding specific/localised routing issues; delivering toolbox talks to Project's team on specific heritage issues and assisting in the preparation of specialised instruction and guidance materials related to Project cultural heritage issues; and assisting in the preparation, placement and maintenance of appropriate warning signage and fencing to protect archaeological resources and historic monuments. Instruct CONTRACTOR in the way forward with respect to chance finds.

19.3.3 Cultural Heritage Contractor

CULTURAL HERITAGE CONTRACTOR is the organisation contracted to be responsible for:

• Directing and providing technical expertise to archaeological excavations and recording, studying and reporting of the materials discovered during the preconstruction and construction phases and provide daily reports of same

- Making recommendations via the COMPANY site supervisor and/or COMPANY Field Environmental Advisor that may assist in achieving objectives of the CHMP
- Providing instruction to other Project field personnel in recognising and acting on cultural heritage issues;

19.3.4 The Contractor

CONTRACTOR shall:

- Interface with CULTURAL HERITAGE CONTRACTOR to prevent damage and promote preservation of cultural heritage objects/sites
- Suspend activity if chance find is suspected and communicate to CULTURAL HERITAGE CONTRACTOR
- Cooperate with CULTURAL HERITAGE CONTACTOR and/or COMPANY on chance finds
- Provide site supervision including H&S, labour, tools, equipment (including mechanical excavator as required by COMPANY), facilities and attendances
- Provide and install any identified measures such as bog mats over archaeological sensitive areas, demarcation of cultural heritage sites to be avoided or other measures to assist the archaeological programme. This will be in areas to be determined by COMPANY
- Reporting of chance finds and against KPIs
- Note that any work outside the identified easement is subject to cultural heritage survey as part of the Land Management Plan.

A simplified management structure and responsibilities are illustrated in Figure 19-1.

SCP Expansion Project, Georgia Environmental and Social Impact Assessment





Figure 19-1: Flow Chart for Cultural Heritage Management

19.4 Impact Avoidance and Mitigation

19.4.1 Commitments

The following commitments have been made in the SCPX Project ESIA and shall be addressed by COMPANY, CONTRACTOR and CULTURAL HERITAGE CONTRACTOR in their Cultural Heritage Implementation Plans, as applicable.

Design commitments (implemented by the COMPANY):

D27-01	The following potential cultural heritage sites identified by surveys of SCPX Project- related sites will be excavated before Project construction begins: The stony mounds at the CSG2 site (CH54-58).
D27-02	 The CSG2 access road has been routed to avoid the majority of known cultural heritage features including: Nardevani settlement A number of small stony mounds that could potentially be archaeological features and several probable Bronze Age burial mounds.
D27-04	Portions of the CSG2 access road drainage and embankments have been specially designed to protect and preserve in place possible archaeological features.
D27-05	The CSG2 access road camp will be designed with the aim of protecting CH276. If
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	this is not practical, phase 2 archaeological evaluation will be carried out before
	construction work commences. If the results of the evaluation recommend further
	excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of
	Culture.

The road drainage and banking system has been designed to avoid CH94, CH124 and CH125 and probable Bronze Age burial mounds CH167, CH210, and CH273.

Pipeline, facilities and access roads:

COMPANY and CULTURAL HERITAGE CONTRACTOR shall implement the following commitments:

27-01	A Cultural Heritage Management Plan will be implemented that includes the five-phase strategy for the progressive assessment and mitigation of the effects of construction.
27-02	Areas of potential cultural heritage impact will be examined and any necessary excavations conducted prior to construction.
27-03	Archaeological sites identified during construction will be archaeologically recorded.
27-04	Pre-construction works to evaluate and record known archaeological sites will be agreed with the Ministry of Culture and Monument Protection
27-05	A programme of archaeological surveillance (watching brief) will be implemented during topsoil stripping of the ROW, the facility sites, construction camps and equipment lay-down areas and ancillary areas, and ROW trenching. The Company will be empowered to temporarily stop works, pending archaeological examination, if artefacts are seen.
27-06	If archaeological artefacts or structures are found, archaeological advice will be sought from relevant approved Georgian heritage institutions and the Ministry of Culture and Monument Protection and the Chance Finds Procedure followed.
27-07	The archaeologist conducting the watching brief will advise on procedures to be followed by the construction supervisor in line with the Chance Finds Procedure.
27-08	The Company will consider making minor adjustments to the route of the pipeline where this will avoid damage to a cultural heritage feature that is discovered during construction operations.
27-09	If the pipeline route cannot easily be adjusted to avoid damaging the feature, construction activities will be suspended at the site until the excavation and recording required by the authorities has been carried out.
27-10	Known archaeological sites within 50m of the pipe centreline or other construction activity will be demarcated throughout construction.

CONTRACTOR shall implement the following commitments:

27-11	Issues relating to archaeological awareness (such as ownership of finds, notification of finds and protection of archaeological sites) will be included in induction training.
27-13	Any ripping or other ground disturbance activities required during reinstatement will be planned to avoid archaeological evidence that has been preserved in-situ.
D5-045	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.
D27-05	The CSG2 access road camp will be designed with the aim of protecting CH276. If this is not practical, phase 2 archaeological evaluation will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.

CONTRACTOR, with the assistance of the COMPANY for identifying sites, will mark all heritage sites within 50m of the pipeline or CSG2 access road or other new or modified access roads prior to construction. CONTRACTOR shall install sufficient protection measures to avoid any damage to sites during construction, e.g. fencing, barriers and/or signage.

The COMPANY and CULTURAL HERITAGE CONTRACTOR will implement the following location-specific commitments (with CONTRACTOR assistance):

X10-01	There are areas of potential archaeology at KP55 (CH7), KP56 (CH8) which will be examined in a programme of phase 2 trial trenching if crossed by the SCPX ROW.
X10-02	The CSG2 Access Road alignment has been routed to avoid all known archaeological sites except CH15, CH60, CH67 and CH71 CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261, CH265 and CH275. These features will be subject to Phase 2 archaeological evaluations, and a recording and preservation programme if appropriate.
X10-03	Phase 2 archaeological evaluation of nine potential features identified in the area of CSG2 (CH54, CH55, CH56, CH58) will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.
X10-04	At CH9 (Nardevani Settlement remains), CH67 (megalithic stones), and probable burial mounds CH10, CH30, CH161-CH167, CH208, CH215, CH270, CH273, CH274 and CH276 (Access Road construction campCH10 the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction of the CSG2 Access Road begins.
X10-05	During topsoil stripping, areas of the CSG2 access road which are adjacent to visible cultural heritage features and in the vicinity of CH276 at the access road construction camp will be monitored for any sites of archaeological features. If they are identified, work will be suspended while an archaeological investigation takes place.
X10-07	All aspects of the historical road in the vicinity of the Project will be recorded prior to and during access road construction.
X10-08	At CH41 a small portion of the toe of an embankment of the road will lay across a part of the area identified as being part of the Bronze Age settlement west of Ozni. Possible cultural heritage features have been identified in this part of the site. Phase 2 work will be undertaken prior to construction to assess the features and identify the need for any necessary mitigation measures required.
X10-09	The archaeological watching brief will be maintained at CH41 during CSG2 Access road construction that will enable any elements in this area to be excavated and recorded.
X10-10	At CH16–38 the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction of the CSG2 access road begins.
X10-14	 The following potential cultural heritage sites identified by surveys of Project-related sites will be excavated before Project construction begins: Potential archaeological sites within the CSG2 Access Road footprint that cannot be avoided (CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261, CH265).

On the CSG2 access road, as a minimum cultural heritage monitoring will be undertaken during topsoil stripping of areas that are adjacent to visible cultural heritage features at CH9 (Nardevani settlement remains), CH67 (megalithic stones) and probable burial mounds CH10, CH30, CH161–CH167, CH208, CH215, CH270, CH273 and CH274.

The CONTRACTOR shall implement the following commitments:

X10-06	At CH71 and 275 where the CSG2 access road crosses the historical road, the
	existing road surface will be protected by laying a layer of geotextile membrane over
	which the road surface will be built up.

X10-11	Traffic movements will be managed during the construction of the CSG2 access road with the aim of minimising heavy vehicle movements past the monastery in Berta (CH72) and reducing light vehicle movements to necessary journeys as far as practical.
X10-12	The width of the access road construction corridor will be evaluated during detailed design with the aim of narrowing to avoid three of the mounds near Burnasheti (CH16, CH19 and CH27). If these sites cannot be avoided, they will be subject to a Phase 2 evaluation.
X10-13	Six potential features identified in the vicinity of CSG2 (CH03, 59, 62, 64, 65 and 66) will be avoided during construction work and will be demarcated with protective fencing before construction starts

19.4.2 Evaluation Overview

The phased approach to the management of CH features on the Project allow for the progressive identification of sites and any impact during the design and construction of the Project. The five phases are as follows:

Phase 1 – Review Existing Data: Areas of potential archaeological interest are identified by various desk-based activities such as scientific literature review, documentary searches for previous archaeological work and examination of aerial and satellite images. The route of the pipeline and facilities locations is examined on the ground in a rapid walkover survey to verify the route facilities and proposed access road locations.

Phase 2 – Extensive and Intensive Surveys: The route of the pipeline and facilities locations is examined on the ground to assist in the determination of potential impact and to define the parameters of the further investigation. Areas of potential lying within the pipeline construction corridor (50m) or which may be impacted by permanent or temporary facilities (such as access roads and construction camps) are examined to determine their nature and significance. This can be by various means including detailed survey, geophysical survey and trial trenching. The information is used to assist in the detailed design of the pipeline route and facilities and where possible, the route can be changed or its impact reduced to minimise the damage to cultural heritage features. Phase 2 archaeological work (trial trenching) involved subsurface investigations of two archaeological sites identified by the baseline research to be the most significant sites identified within the present route and at other Project facilities sites. Potentially significant sites have been avoided by the pipeline routes, some of which were done specifically to avoid the known archaeological sites.

Phase 3 – Pre-Construction Excavations: In areas where damage to the resource is unavoidable, archaeological deposits are recorded by "planned" excavation prior to construction activities. Phase 3 work will be carried out at those sites found by Phase II investigations to contain significant remains within the 20m Project working width. Phase 3 investigations involve the level of work known as "archaeological data recovery", in which cultural values are recovered from the sites in the form of data and artefacts. Phase 3 investigation of a site results in a scientific report accompanied by artefacts prepared for museum curation. Phase 3 work therefore mitigates impacts to such archaeological sites. An alternative mitigation measure is site avoidance by re-routing of the pipeline route. Mitigation by avoidance, however, could require investigations outside of the Project right-of-way to determine site boundaries, as Phase 2 work focuses on those site areas that lie within the construction area.

Phase 4 – Chance Finds during Construction: It is recognised that construction of a pipeline and associated permanent and temporary facilities may reveal previously unknown archaeological features. Arrangements are made for the monitoring of construction and provision of a team of archaeologists to conduct 'rescue/salvage excavations' where required. This is also known as the 'chance finds' process.

Phase 5 – Reporting: Study of material and preparation of reports on the archaeological works carried out during the Project. This phase includes the dissemination of the results of

the work both to the archaeological establishment and to the wider public via an appropriate medium.

The following sections describe Phases 3, 4 and 5 in more detail.

19.4.3 Phase 3 – Pre-Construction Excavations

Several techniques can be used to protect archaeological sites or minimise damage to them. These are typically reductions in the impact of a standard construction easement and consist of:

- Reduction in the working width, which is particularly useful in cases where there are aboveground features adjacent to the pipeline easement that can be protected from damage
- Construction of a temporary road composed of bog mats. The un-stripped topsoil
 acts as a cushion to prevent transmission of the weight of machinery directly on to
 archaeological deposits. In this instance, the width of the trench line is excavated in
 advance by an archaeological team. The technique relies upon minimising passage
 of equipment over the road and cannot be used in areas where the soil structure is
 too weak or wet, to maintain its physical structure
- Passing under the archaeological feature by horizontal directional drilling or other tunnelling techniques.

19.4.3.1 Archaeological field evaluation

This work will be carried out on potential archaeological sites as required.

In addition, this procedure will be undertaken on chance finds of archaeological sites encountered during topsoil stripping in the construction period. This will be carried out by representatives from MoC/Agency prior to full-scale excavation of the site.

An archaeological field evaluation will determine, as far as is reasonably possible, the nature of the archaeological resource within a specified area using appropriate methods and practices.

The definition of an archaeological field evaluation is 'a limited programmed of non-intrusive and/or intrusive fieldwork which determines the presence or absence of archaeological features, structures, deposits, artefacts or ecofacts within a specified area or site. If such archaeological remains are present field evaluation defines their character, extent, quality and preservation, and enables an assessment of their worth in a local, regional, national or international context as appropriate' (IFA, 1994).

The purpose of a field evaluation is to gain information about the archaeological resource within a given area or site (including presence or absence, character, extent, date, integrity, state of preservation and quality) in order to make an assessment of its merit in the appropriate context, leading to the formulation of a strategy to ensure the recording, preservation or management of the resource (IFA, 1994).

The CH team will only undertake a field evaluation once a specification has been produced (see box below) and has been agreed by the CHA.

Project Specifications

The CULTURAL HERITAGE CONTRACTOR will provide and discuss with the CHA a Project proposal before each archaeological excavation.

The specification will be presented in advance of archaeological excavations commencing to allow time for amendments to be made if required.

The specification or Project design will contain, as a minimum, the following elements

(from IFA 1994):

- Non-technical summary
- Site location (including map) and descriptions
- Context of the Project
- Geological and topographical background
- Archaeological and historical background
- General and specific aims of the fieldwork
- Reference to relevant legislation
- Recording systems and data management systems
- Field methodology
- Collection and disposal strategy for artefacts and ecofacts
 - Arrangements for immediate conservation of artefacts
- Post-fieldwork methodology
- Report preparation method
- Publication and dissemination options/proposals
- Copyright

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- Archive deposition
- Timetable
- Staffing
- Health and safety considerations
- Contingency arrangements.

The CH team will ensure that the field evaluation is not intrusive and not destructive to archaeological remains in both the design stage and in the execution of the work.

The results of the field evaluation will be presented to the CHA and to Agency in a suitable time frame so that a decision can be reached about the requirement for additional archaeological fieldwork or otherwise.

19.4.3.2 Archaeological excavation

An archaeological excavation will examine and record the archaeological resource within a specified area of the pipeline corridor using appropriate methods and practices. These will satisfy the stated aims of the Project. It will result in one or more published accounts and an ordered, accessible archive.

An archaeological excavation is defined as 'a programme of controlled, intrusive fieldwork with defined research objectives, which examine, records and interprets archaeological deposits, features and structures, and, as appropriate, retrieves artefacts, ecofacts and other remains within a specified area or site. The records made and objects gathered during fieldwork are studied and the results of that study published in detail appropriate to the Project design' (IFA, 1994).

If required, an excavation may be supplemented by non-destructive means of investigation, such as:

- Geophysical survey
- Remote sensing
- Geochemical survey
- Earthwork survey
- Field scanning (otherwise known as field walking) to observe and map artefact distributions
- Standing building survey.

All archaeological excavations will be implemented by the CULTURAL HERITAGE CONTRACTOR and conducted to Project standards.

The specification and/or Project design must be agreed with the CHA and approved by the Agency. All work must conform to the agreed specification or Project design. Any variations must be agreed to in writing by all the relevant parties.

Sufficient and appropriate resources will be used in order for the Project to be completed successfully, within the timetable, to an acceptable standard, and comply with all statutory requirements.

All staff must be suitably qualified and experienced for their Project roles.

A number of techniques are available for archaeological excavation. Several techniques may be valid, under the terms of the brief/Project outline, and the CONTRACTOR will explain the criteria for selection. The methods selected must be fit for the defined purpose. When the use of machinery is specified, this must be under the direct supervision of an archaeologist.

Full and proper records (written, graphic, electronic and photographic as appropriate) will be made for all work, using pro-forma records and sheets appropriate to the work.

The recording system used will be one that is appropriate to the requirements of the Project and will be agreed with relevant parties including the body that is to receive the archive.

Following completion of the on-site excavation a post-excavation assessment report will be produced.

19.4.3.3 Post-excavation reports

A preliminary post-excavation report submitted by the Head of Archaeological Expedition will reflect the completed work, main recommendations and findings, allowing COMPANY to plan a construction design. This preliminary report needs to be submitted within seven days after the excavation is complete.

A Comprehensive Technical Report will be produced by the CULTURAL HERITAGE CONTRACTOR within a reasonable time limit (for example six months) following completion of the on-site excavation. It will be submitted to the CHA for approval.

Post-excavation Assessment Report:

- 1. Introduction
- 1.1 Scope of the Project
- 1.2 Circumstances and dates of fieldwork and previous work
- 1.3 Comments on the organisation of the report
- 2. Original research aims
- 3. Summary of the documented history of the site(s)
- 4. Interim statement on the results of fieldwork
- 5. Summary of the site archive and work carried out for assessment:
 - 5.1 Site records: quantity, work done on records during post-excavation assessment
 - 5.2 Finds: factual summary of material and records, quantity, range, variety, preservation, work done during post-excavation assessment
- 5.3 Environmental material: factual summary of human and animal bone, shell and each type of sample, quantity, range, variety, preservation, work done on the material during post-excavation

assessment

- 5.4 Documentary records: list of relevant sources discovered, quantity, variety, intensity of study of sources during post-excavation assessment
- 6. Potential of the data
- 7. A discursive appraisal of the extent to which the site archive might enable the data to meet the research aims of the Project. Different classes of data will be discussed in an integrated fashion, subdivided according to the research aims of the Project
- 8. A statement of the potential of the data in developing new research aims to contribute to other projects and to advance methodologies
- 9. A summary of the potential of the data in terms of local, regional, national and international importance

Additional information will normally include:

- Supporting illustrations at appropriate scales
- Sufficient supporting data, tabulated or in appendices, and/or details of the contents of the Project archive, to permit the interrogation of the stated conclusions
- Index, references and disclaimers
- The post-excavation preliminary report will enable an updated Project design to be produced, following approval of the post-excavation report by the CHA.

In the event that an excavation is to be continued, and updated Project design specification will be required. This will include the following sections:

Updated Project Design Specification

- 1. Background
- 1.1 A summary of the original objectives of the Project, as expressed in the original Project design
- 1.2 A summary of the results of the Project to date
- 2. Summary statement of potential
- 2.1 Material of critical importance for interpreting the site
- 3. Aims and objectives
- 4. Post-excavation research design
- 5. Publication and presentation
- 5.1 A publication synopsis will be prepared, giving the proposed format, structure and content of the published report
- 5.2 The aspects of a site that could support a more popular treatment will be identified
- 6. Method Statement
- 7. Resources and programming
- 7.1 Staffing and equipment
- 7.2 Timetable
- 7.3 Budget

A research archive will then be produced.

19.4.3.4 Research archive specification

The research archive will contain the following:

Catalogues and other records

The research archive will be derived from the work done during the analysis phase and will comprise stratigraphical/structural, artefact, environmental, and other catalogues and all other records as well as details of the methods and selection strategies used in each case.

The **Research Archive** will contain some or all of the following elements:

- Context information
- Photographic catalogue
- Photographs
- Stratigraphic drawings
- Object catalogues and details of where objects are located
- Object drawings
- X-ray catalogue
- Conservation records
- Sample catalogue
- Human bone catalogues
- Animal bone catalogues.

Analytical reports

The report text will be derived from the above material and will form the basic text from which the final publication will be prepared, comprising:

- Site narrative: an interpretative structural and stratigraphic history of the site, illustrated by maps, plans, elevations and annexes
- Artefact reports: the full text, accompanying data and illustrations, relating to those artefacts selected for analysis
- Environmental reports: the full text, accompanying data and illustrations relating to environmental data selected for analysis (English Heritage, 1991).

Finally, a published report shall be produced. Please see Section 19.4.5 'Publication and Dissemination of Results' for guidelines and standards regarding publication.

19.4.3.5 Movable cultural and natural assets

Movable cultural and natural assets are hereafter known as artefacts and ecofacts. **Statement of intent**

The collection, documentation, conservation and research of artefacts and ecofacts will result in an ordered, stable, accessible archive, using appropriate methods and practices. This process is known as 'finds work'. Finds work will result in report(s) intended for dissemination. The methods and practices employed must satisfy the stated aims of the overall Project.

Introduction

The importance of finds work cannot be overstated, as it contributes to the formulation of conservation, preservation, collection, dispersal, presentation, education and management strategies, and also local regional, national and international research frameworks and policies.

Finds work therefore needs to be fully integrated into all stages of the archaeological process, from the earliest stage in Project planning.

Standards: Project specification and design

Finds work (which can encompass some or all of the activities of recovery, assessment of data, analysis, interpretation, publication, conservation, archiving and storage) will be identified and costed. A Project design will be written, setting out a schedule of works in sufficient detail for the work undertaken to be quantifiable, implemented and monitored.

A recovery policy for archaeological heritage material outlining aims and methods will be written for submission as part of the fieldwork Project design and specification. This will reflect the number and type of material expected, excavation methods, sampling strategies, finds retention, the nature of soil deposits and the achievement of the Project research aims.

Finds collection and discard policies, strategies and techniques will be fit for the defined purpose.

The programme of work will result in a stable archive. The specification or Project design will identify relevant data standards for records organisation and content that will be used in information-recording systems employed by the Project. These data standards will be compatible with those of all archaeological work teams involved in mitigation on the pipeline corridor.

The Project design will address assignment of ownership or archaeological material and requirements for the deposition of the archive with a recipient museum or repository.

Fieldwork

All finds and samples will be collected, processed, sorted, quantified, recorded, labelled, packed and sorted according to the Project design. In this respect, authorised personnel or experts from the MoC shall be informed regarding the excavation inventory.

Post-excavation assessment

After processing (which includes conservation, recording and marking) the finds assemblage will be assessed to give an overview of its potential to meet the research aims of the Project. This assessment will include the following steps:

- Quantification of the assemblage by material and assessment of their condition
- Statement of their provenance, including how retrieved (hand excavated, metal detected, within soil sample) and contextual integrity
- Provision of identification and date range of the assemblages
- Identification of both the extent to which the assemblages can contribute to each of the Project's stated aims and any new aims that may be addressed
- Statement of the value of the archaeological material for research and/or educational use beyond the terms of the Project will also be recorded.

Recommendations for the extent of further analysis of all or selected components of the finds assemblage will contribute to the updated Project design:

Post-excavation Project design

The updated Project design will include a task list indicating duration and cost of each task including archive preparation and deposition and the intended scope and nature of dissemination.

Publication and dissemination

Publication rights of scientists or of committees of scientists that worked or are still working, under the permission of the MoC, on the route of the pipeline, are reserved. The publication format will conform to the Project design. The final report will specify where every component of the archive is deposited, and the existence and location of unpublished documentation, if known, will be indicated.

Monitoring

Chance finds work will be included in the overall Project monitoring process.

Archives, ownership and deposition

The requirements for archive preparation and deposition will be addressed at the outset of the Project.

All movable cultural and natural assets revealed in excavations are to be transferred to the relevant Governmental organisation nominated by the MoC at the end of the excavations. According to the Protocol/Agreement, COMPANY shall provide all items (including security of the cultural asset and storage facility) needed by the CULTURAL HERITAGE CONTRACTOR during the excavation period for rescue and protection of the cultural asset.

The proposed recipient museum or other approved repository will be contacted at the Project planning stage and arrangements for the deposition of the material archive will be detailed in the specification and/or Project design (IFA, 2001).

19.4.4 Phase 4 – Chance Find Excavations

A draft chance finds reporting and response protocol is presented in this section. The plan is based on previous pipeline experience and will be subject to review and update based on needs of the Project and its general fieldwork organisation and reporting structure.

19.4.4.1 Chance finds framework

Topsoil stripping and trenching will be implemented under CH monitoring that will be conducted by the CHMs, so that archaeological features can be observed and archaeological mitigation strategies can be implemented.

The CH team will monitor topsoil stripping to plan any necessary excavation of archaeological chance finds, while topsoil stripping continues to be monitored further along the pipeline route. The function of the CH monitoring process will be as follows:

- Provide advice to define the areas where the construction activities may continue or shall be stopped
- To record archaeological features observed on and close to the existing pipeline
- To record archaeological features discovered during pipeline construction activities
- To provide advice in the form of a 'preliminary assessment' to the construction superintendent on the significance and implications of new archaeological discoveries on the pipeline route.



Figure 19-2: Cultural Heritage Chance Finds Framework

Example guidance to be followed in the event of a new archaeological discovery or 'chance find' is given in the following sections.

Archaeological discoveries of minor significance

This type of archaeological discovery would be of fairly small size, such as an isolated feature or find-spot. It is anticipated that the CH Monitor should be able to adequately record the feature unassisted in the daily reports.

The discovery will be reported to COMPANY Construction Representative in the field and CHA immediately. The construction activities can be suspended at the site while the finding will be discussed with the CHA. Arrangements should be made to demarcate the archaeological deposits from construction vehicles to prevent damage.

Archaeological discoveries of moderate significance

This type of archaeological discovery would be of small to medium size, such as a small group of features or a single burial. The CH Monitor will record the discoveries. The discovery will be reported to COMPANY Construction Representative in the field and CHA immediately. The construction activities will be suspended at the site while the finding will be discussed with the CHA. Arrangements should be made to demarcate the archaeological deposits from construction vehicles to prevent damage.

The preliminary assessment of the finding will be performed by the CH Monitor. After the joint assessment with CHA the Agency will be notified about this. The Agency will provide rapid recommendation on the mitigation measures that can be the archaeological excavations implemented by CULTURAL HERITAGE CONTRACTOR or other methods of site protection.

Archaeological discoveries of major significance

This type of archaeological discovery would have fairly major significance such as a settlement site or group of burials. The archaeological features would cover the working width of the pipeline easement such that construction vehicles and equipment would not be able to pass down the right of way without causing damage to the archaeological deposits. The excavation and recording of these deposits may take a considerable period of time and cause some disruption to construction activities, which may need to find an alternative right of way in the vicinity of the site.

Therefore, the two possible scenarios to be considered are whether the Find:

- requires the pipeline to be re-routed; or
- the find should be fully excavated

The resulting excavation and recording will be completed within a finite period of time, thus enabling back-end crews to complete the pipeline construction using the same centre line.

In order to assist in the decision-making process, further archaeological evaluation of the site may be required to assess the extent and nature of the find.

The decision will be made following consultation with the CH team, the MoC/Agency and COMPANY Construction team.

COMPANY will agree procedures for dealing with excavations arising from archaeological finds of major significance encountered during the construction period will be agreed in the Management Plan/Agreement/Protocol with the MoC/Agency.

Finds requiring notification to the civil authorities

It is common for evidence of various human activities to be uncovered during earthmoving. In the majority of cases, these can be seen to have a convincing historic or earlier, origin and represent no threat or interest to the well-being of the contemporary society. However there are several types of discoveries that are of concern and need to be reported to the civil authorities.

These can include:

- Human burials
- Munitions or unexploded ordnance (UXO)
- Animal disease burial pits.

The last two items have their own response procedures within construction Management Plans, but it is quite possible that staff on the construction team may make the initial discovery so need to be aware of the correct procedures. Part of their training will include the first actions to be taken in the event of such discoveries.

Human remains are a different case, in that historic human burials can be mistaken for recent, unmarked burial sites. In such instances, the appropriate action is to leave the site undisturbed and protected and report it to the civil authorities for their investigation. Where the CH team or CULTURAL HERITAGE CONTRACTOR is convinced of the ancient origin of such remains, it is a legal requirement to report such discoveries and the professional view of their age to the local authority.

Identified individuals and contact details

To be completed when available.

19.4.5 Phase 5 – Publication and Dissemination of Results

Following the completion of all archaeological excavations and construction activities, the COMPANY will prepare a comprehensive technical report on the results of fieldwork. This will include the dissemination of the results of the work both to the archaeological establishment and to the wider public via an appropriate medium.

19.4.5.1 Introduction

It is a generally agreed principle that the results of destructive fieldwork shall be disseminated and the Project archive shall be deposited in an accessible public archive (ACAO, 1993; English Heritage, 1991). Information that does not enter the public domain is effectively lost.

Knowledge of past work is one major input to decisions regarding the further investigation of a particular area and when planning projects of all types. The failure of such information to enter the public domain therefore damages the quality of decisions and the archaeological record, and is an absolute loss to archaeologists and to society for whose benefit resources have been spent (IFA, 1994).

Therefore, the CH team and CHA involved in archaeological mitigation strategies on the pipeline Project have a duty to disseminate the information obtained from these strategies in forms that are accessible to both to the specialist archaeological community and also the wider public.

Standards for production of specialist academic publications based on the results of fieldwork are set out below.

Additionally, the CHA will actively promote the dissemination of knowledge about archaeological discoveries on the pipeline route, particularly at a local level.

In addition to the knowledge dissemination aspect of reporting, this element of the work will also report on the effectiveness of the mitigation and management measures adopted so that lessons, if any, can be learned and applied elsewhere on the pipeline route and in other projects.

19.4.5.2 Legislative framework

This is an overview of the legislative framework under which the publication and dissemination of results procedure for the project must operate, and not a comprehensive statement of law. Other legislation may apply at national, regional and local levels.

Scientific reports about the excavations, borings and researches made on behalf of the Agency are prepared by the head of the excavation for publication.

Article 7 of the European Convention on the Protection of the Archaeological Heritage (Valetta Convention) states that "for the purpose of facilitating the study of, and dissemination of knowledge about, archaeological discoveries, each Party undertakes to take all practical measures to ensure the drafting, following archaeological operations, of a publishable scientific summary record before the necessary comprehensive publication of specialised studies."

Article 9 of the Valetta Convention states that:

"Each Party undertakes:

 to conduct educational actions with a view to rousing and developing an awareness in public opinion of the value of the archaeological heritage for understanding the past and of the threats to this heritage; to promote public access to important elements of its archaeological heritage, especially sites, and encourage the display to the public of suitable selections of archaeological objects."

Article 5 of the World Heritage Convention states that:

"Each party will undertake

- to adopt a general policy which aims to give the cultural and natural heritage a function in the life of the community; and
- to take the appropriate legal, scientific, technical, administrative and financial measures necessary for the identification, protection, conservation, presentation and rehabilitation of this heritage."

Standards and minimum requirements

The published report will contain the following information:

- The research objectives as expressed in the Project design and the updated Project design where applicable
- Circumstances and organisation of the work and the date at which it was undertaken
- Identity of the individual/organisation by which the work was undertaken
- Summary account of the results of the Project
- Summary of the contents of the Project archive, where it is housed and how it may be consulted
- The grid reference of the site of fieldwork (suitably abbreviated if publication of the exact site location is not in the general interest or if it is necessary to restrict public access).

Report writing criteria

When writing up the results of a Project consideration will be given to the following:

- The report will appropriately reflect the importance of the results of the Project, and deal adequately with the site's social, political and historical context
- The interpretation of the site will be justified by the evidence presented. Ambiguities in the database will be discussed, and where more than one interpretation is possible the alternatives will be presented
- The report will present information about what was found in a well-balanced, logical, accessible and structured way. It will be immediately intelligible to and usable by those who know nothing about the site
- The extent to which the objectives of the Project have been fulfilled will be discussed, including a critical assessment of the methodologies employed and the lessons learned in terms of the effectiveness of mitigation and management actions in protecting archaeological resources
- The report will be written clearly and concisely, and will make appropriate, consistent and economical use of other methods of data presentation, for example tables, plans or photographs
- Specialist reports and their supporting data will be carefully chosen and given their proper value. Specialist contributors must be involved in or informed of editorial decisions affecting the presentation of their work in print
- All the constituent parts will cross-refer adequately
- Attention will be drawn to areas of future study potential that it has not been possible to explore fully within the limits of the agreed Project design (English Heritage, 1991).

Once the text has been completed for publication by the CULTURAL HERITAGE CONTRACTOR it will be sent to the CHA for approval. All outputs from CULTURAL HERITAGE CONTRACTOR will be approved by the CHA prior to dissemination.

Consideration will be given to publicising the results of archaeological fieldwork on the pipeline Project through a range of media from conventional archaeological publication to, for example, display panels, exhibitions and lectures, open days and school visits, radio and television programmes, videos and popular publications and the internet (IFA, 1994).

19.4.6 Transition to Operations

During the operation phase the Project will plan work to avoid damaging cultural heritage sites as far as practical and will continue to have a Chance Finds Procedure in place. Potential impacts to cultural heritage sites will be considered in association with any upgrades, repairs, maintenance, new builds, and/or decommissioning. A specific training program and Chance Finds Procedure will be developed for the Operations phase of the Project in the future.

19.4.7 Capacity Building

Implementing the CHMP requires significant Agency and CULTURAL HERITAGE CONTRACTOR input, collaboration, effort, time, and resources. Project requirements may at times exceed the normal operating capacity of these institutions. The SCPX Project is committed to building capacity in the short term by funding personnel, and the purchase of necessary supplies and equipment, and provision of transport, security, and health and welfare facilities to execute Project work. As the Project progresses, COMPANY will consider the need for additional longer term capacity building measures. These may include technical workshops, training programs, analytical equipment, and/or facility improvements. Any capacity building measures will be agreed between Agency, CONTRACTOR, and COMPANY (as appropriate) and will be applicable to the SCPX project and future works carried out by the institutions.

19.5 Verification and Monitoring

19.5.1 Monitoring

19.5.1.1 Cultural Heritage Monitors

All ground disturbance works during construction on the pipeline corridor and other areas related to the pipeline's facilities will be monitored by Cultural Heritage Monitors (CHM) appointed by COMPANY.

This is defined as 'a formal programme of observation and investigation conducted during any operation carried out for non-archaeological reasons. This will be within a specified area or site where there is a possibility that archaeological deposits may be disturbed or destroyed'. The CHM will compile a report and ordered archive (IFA, 1994)

The purpose of the CHM is to:

- Allow, within the resources available, the preservation by record of archaeological deposits, the presence and nature of which could not be established (or established with sufficient accuracy) in advance of development
- Provide an opportunity, if needed, for the CHM to signal to all interested parties, before the destruction of the material in question, that an archaeological find has been made for which the resources allocated to the watching brief itself are not sufficient to support treatment to a satisfactory and proper standard.

The CHM is not intended to reduce the requirement for excavation or preservation of known or inferred deposits, and it is intended to guide, not replace, any requirement for contingent excavation or preservation of possible deposits.

Right-of-way preparation, the construction process prior to pipe-trench excavation, typically leads to discovery of additional archaeological resources that were not identified during the Phase 1 and 2 studies. To address this situation systematically, CHMs will be present with right-of-way clearance (i.e. clearing, topsoil stripping, grading, etc.) and trenching teams throughout the construction process. Their purpose will be to assist with the initial evaluation of archaeological chance finds, helping to distinguish archaeological finds from non-archaeological anomalies and to communicate initial data on such findings to appropriate Project personnel.

The time available to evaluate and address potential chance finds will depend on the spatial gap maintained between the progress of the clearing crews (clearing being the operation likely to make most chance finds) and the trenching crews (trenching being the operation that would most severely impact an archaeological site in the right-of-way). Consideration will be given to maintaining a wider gap between the clearing and trenching operations in archaeologically sensitive areas: those areas, based on the concentration of sites identified in Phase 1, which have the greatest potential to yield chance finds. The wider gap will allow more time to evaluate a chance find and potentially to implement mitigation by data recovery or additional re-routes. In addition, should the time gap between identification and trenching not prove adequate to design and implement measures needed to protect a particular significant chance discovery, then work around procedures would be employed to allow that extra time. This will be clarified with the contractor during the negotiations process with the representatives of Ministry of Culture or National Agency of Cultural Heritage Preservation. Archaeological works, although included in construction schedule and budget planning, will only be used when absolutely necessary.

The CHMs, who will be part of the construction team, will identify and report archaeological chance finds and communicate these finds to appropriate Project staff (including Project heritage specialists) for timely evaluation and formulation of any appropriate site-specific response that may be needed. Prior to the start of construction, the Project will develop a specific written set of monitoring and protection protocols, including notification and reporting requirements for Project team and appropriate government authorities.

CHMs will also be responsible for verifying the implementation and effectiveness of all monuments protection measures that were put in place during Phase 2 and Phase 3 monuments work, and they will call on appropriate monuments expertise to accomplish this objective.

The cultural heritage mitigation works will be monitored by the CHMs and representatives from the MoC or National Agency of Cultural Heritage Preservation if required. The CHA will coordinate the monitoring process.

Standards

The CH team will only undertake a CH intervention that is governed by a written and agreed specification prepared in advance of work commencing. The specification will be approved in advance by the CHA.

In preparing a specification, the CH team will establish the intention of the work and the extent to which archaeological considerations will be allowed to affect the development schedule of the pipeline Project.

The specification will consider the need to include appropriate contingency arrangements with respect to field procedures and thus to resources. Contingency arrangements will not be open ended but will be properly specified in their own right and reflect prior knowledge of the site, the physical context of the site and the primary objectives of the CH intervention.

Work teams will be in a position to justify in detail the eventual implementation of contingency arrangements.

The specification will be agreed by all relevant parties before work commences. All work will conform to the agreed specification. Any variations will be agreed in writing by all relevant parties.

Full and proper records (written, graphic, electronic and photographic as appropriate) will be made for all work, using pro-forma records and sheets appropriate to the work.

The recording system used will be one that appropriate to the requirements of the Project and will be agreed with relevant parties, including the body that is to receive the archive.

The recording system and data standards used during the watching brief will be compatible with those of all other work teams involved in archaeological mitigation on the pipeline corridor (IFA, 1994).

Protocol

A specific protocol for the CHMs will be developed as an integral part of the overall environmental construction monitoring programme.

Key elements of the required protocols are:

- Current archaeology and monuments list with resource coordinates and status of each resource
- CHMs able to order a STOP WORK ORDER at suspected chance find locations
- Flagging and/or fencing and signs at known and newly discovered resources
- Formal process for timely evaluation and salvage of potentially threatened resources reported through the chance finds process
- Contracted archaeological expeditions and monuments specialists for timely salvage work
- CULTURAL HERITAGE CONTRACTOR orientation programme to assure understanding guidelines and lines of communication regarding cultural issues.

19.5.2 Interface Meetings

COMPANY E&S team will be responsible for implementation of the CH protection strategy. Project regulators and the CHA will meet on a monthly basis, or as required. These meetings will include suitably qualified representatives from the concerned departments at the MoC; from the Project and may include members of other concerned institutions (for example, representatives from the regional museums etc.). These meetings may either occur in Tbilisi or be in the form of a site visit to locations where archaeological excavations are being undertaken.

CULTURAL HERITAGE CONTRACTOR will produce a weekly report on progress of excavations. This will be sent to COMPANY CHA.

After completion of the archaeological fieldwork, the CHA will coordinate publication of the results of the archaeological excavations subject to regulatory approval.

20 LAND MANAGEMENT PLAN

20.1 Scope

The Land Management Plan (LMP) identifies the environmental, social and land acquisition commitments made in relation to land take during the early civil/early works and construction phases of the Project.

The LMP outlines the required management around the identification of temporary Project usage of additional land and facilities that have not yet undergone environmental and social review (through the ESIA) or acquired through COMPANY land acquisition processes, i.e. additional land/extension of land beyond those handed over to CONTRACTOR by COMPANY. These may include but are not limited to: camps and pipe yards, excavation areas (borrow pits/quarries), spoil material disposal areas, all roads, additional ROW working width, etc.

These activities include:

- Identification of additional land needs
- Environmental and social assessment in respect of such land needs
- Identification of landowners and users and consultation therewith
- Compensation for temporary occupation to eligible landowners and users.

The key principle of this plan is that while CONTRACTOR is responsible for identifying any additional land needs, consultation with landowners and users and further compensation will be handled by COMPANY. CONTRACTOR shall note other key principles for this plan:

- CONTRACTOR shall not enter unallocated land (as per design drawings) unless in the event of an emergency
- CONTRACTOR shall identify any additional land requirements early
- CONTRACTOR shall notify COMPANY of additional land requirements at least three months before such land is actually needed for construction
- An environmental and social assessment shall be undertaken by an independent party hired by CONTRACTOR for all additional land areas
- COMPANY shall undertake consultation and compensation with regards to additional land
- Compensation in respect of additional land will be back-charged by COMPANY to CONTRACTOR
- Damages and/or compensation claims that may be handled and settled by COMPANY will be back-charged to CONTRACTOR as applicable.

This plan covers the use of temporary land or facilities during Project construction.

20.2 HGA Standards and Practices

The guidance documents referenced in Section 4 have been considered during the drafting of the impact assessment and Management Plans to develop the plan and mitigation measures in accordance with the HGA requirements (Section 3.1). Specific guidance considered for this particular section has been described below:

- International Finance Corporation Performance Standard's, Performance Standard
 1 Social and Environmental Assessment and Management Systems and
 Performance Standard (PS) 5 Land Acquisition and Involuntary Settlement
- IPLOCA: 'Onshore Pipelines The Road to Success' (2009 Draft), Section 6: 'Best Practice in Planning and Construction Techniques'. S.6 Best Practices in Planning and Construction Techniques.

The objectives and key requirements of PS 5 are the following:

- To avoid or at least minimise involuntary resettlement wherever feasible by exploring alternative project designs
- To mitigate adverse social and economic impacts from land acquisition or restrictions on affected persons' use of and access to land by (i) providing compensation for loss of assets at replacement cost and (ii) ensuring that resettlement activities are implemented with appropriate disclosure of information, consultation, and the informed participation of those affected
- To improve or, at a minimum, restore the livelihoods and standards of living of project affected persons to pre-project levels, through measures that can be land based, wage based and/or enterprise based, so as to facilitate sustainable improvements to their socio-economic status.

20.3 Roles and Responsibilities

General roles and responsibilities for land management that apply to CONTRACTOR and COMPANY are set out below.

20.3.1 Company

 Acquire all land in support of Project construction activities in accordance with the HGA in a manner and timeframe that attempts to meet the CONTRACTOR needs. COMPANY shall not be held liable for any additional land delays associated with the acquisition process.

20.3.2 Contractor

- CONTRACTOR shall develop for COMPANY approval a Land Management Contractor Implementation Plan (LMCIP), detailing implementation and organisation arrangements to ensure compliance with the requirements included within this ESMMP
- CONTRACTOR shall ensure that all relevant staff are aware of the provisions of this ESMMP, through awareness and training activities to be detailed in the Land Management CIP
- CONTRACTOR shall put in place a community grievance management system, whereby potential grievances associated to land management (among other types of grievances) will be logged and resolved; COMPANY will be informed of any grievance
- CONTRACTOR shall identify any additional land requirements and notify COMPANY at least three months in advance
- CONTRACTOR shall undertake an environmental and social (ES) assessment for all additional land areas
- CONTRACTOR shall engage an independent consultant to carry out due diligence surveys (see Sections 7.4.2) and ES assessments (Section 20.4.2.2) in accordance with the requirements of the ESMMP, survey plans and complete close-out monitoring in all Project areas with the potential to cause significant environmental impact including concrete/asphalt batching plants, construction camps and lay-down areas

 CONTRACTOR shall be responsible for damages and/or compensation claims associated with their works.

20.4 Impact Avoidance and Mitigation

CONTRACTOR shall prepare for COMPANY approval a Land Management Implementation Plan that details the specific mitigation measures that will be implemented for the planning, assessment, preparation and use of additional lands.

20.4.1 General

CONTRACTOR shall ensure that all activities are undertaken within the approved work areas through the use of site demarcations for all areas, especially sensitive areas. This may include staking of the pipeline ROW, fencing of construction site limits and/or signs. Additionally, all Project vehicles shall remain on previously agreed access and service roads. Contractor will aim to reduce time between welding and ditching to avoid excessively impeding livestock and wildlife movement.

CONTRACTOR and COMPANY shall comply with the following requirements:

2-02	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).
32-03	Parking of Project-related vehicles will be restricted to designated areas.

CONTRACTOR personnel shall be trained to understand the requirements about use of unapproved land and the need to stay strictly within site boundaries and within the working areas, using only approved access and service roads. Personnel shall also be notified of the need to inform COMPANY should additional land beyond site demarcations be needed.

20.4.2 Assessment of Additional Land

20.4.2.1 Notification

CONTRACTOR shall notify the SCPX Project Management Team formally in writing of the need for additional land, which shall constitute a management of change, with at least three months' notice prior to the start of construction and/or the use of these areas and provide sufficient justification for COMPANY approval. CONTRACTOR'S Representative shall notify COMPANY Representative in writing of the requirements. CONTRACTOR shall provide the coordinates, an aerial map and GIS shapefile of all additional land including but not limited to:

- Camps
- Pipe yards
- Access, service and bypass roads
- Spoil disposal sites
- Extraction sites (borrow pits)
- Batching plants
- Any other additional land.

All facilities shall have the coordinates taken at the outer edge perimeter ensuring the whole site is recorded, including access and bypass roads. All data shall be provided electronically in accordance with the SCPX Project electronic data requirements, as specified in the CONTRACT, to COMPANY for inclusion into the GIS system.

CONTRACTOR shall undertake an internal preliminary due diligence screening of the site(s) to ensure there are no existing environmental or social constraints on the area, such as

protected land, archaeological or cultural heritage evidence or social issues, prior to the selection of site and notification. Overall, the site selection process shall consider input factors such as engineering feasibility, access, land availability, land use, environmental constraints and other social issues. This due diligence screening shall be documented using a standardised form, the template of which shall be submitted by CONTRACTOR to COMPANY as part of the corresponding implementation plan.

COMPANY will endeavour to obtain the additional land, but cannot guarantee to make the additional land available to the CONTRACTOR and may reject CONTRACTOR's request for land if it considers there to be insufficient justification of need or significant environmental or social impact associated with the use of the proposed area. The CONTRACTOR shall not make any contacts with local residents, land owners or occupiers without the prior consent of the COMPANY.

20.4.2.2 Environmental and social assessment

CONTRACTOR shall undertake and submit for COMPANY APPROVAL, a written environmental and social assessment of the additional land that will be required which will include a description of the environmental and social baseline conditions, including contamination (such as fly-tipping, hydrocarbons), ecology, cultural heritage, erosion risk, risk of ground instability, (before, during and after development), water resources, social environment, etc. (see Section 7.4.2). The assessment shall also include a description of the planned use of the area and an assessment of the impacts and proposed mitigation measures. CONTRACTOR shall comply with the following commitments:

39-02	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.
39-03	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.

For those facilities that have potential to cause significant environmental impact, including, but not necessarily limited to concrete/asphalt batching plants, construction camps and laydown areas, the environmental and social assessment shall be prepared by an independent third party (an experienced consultant with relevant credentials).

The level of detail required within each assessment shall depend on the proposed Project activities and sensitivities of the area and shall be agreed with COMPANY, who may have to consult with the Ministry of Environment. As a minimum, the environmental and social assessment shall include:

- 1. Introduction
- 2. Environmental and social baseline description
- 3. Impacts and mitigations
- 4. Conclusion
- 5. Appendices
- 6. Permits and regulatory approvals.

The results of the environmental and social assessment/due diligence will be used to:

- Compare construction and operation stage environmental quality monitoring results
- Guide site reinstatement (see Reinstatement Plan)
- Compare post-reinstatement quality monitoring results and close the site-related risks and liabilities on the Project.

CONTRACTOR'S assessment shall incorporate the provisions included in the sections below in assessing each type of area.

Spoil disposal sites

The environmental assessment of spoil disposal sites shall consider the impacts on flora, fauna, erosion, cultural heritage and the local population in terms of water resources and/or disturbance. The assessment shall also identify the proposed reinstatement of the site in accordance with the Reinstatement Plan. Contractor shall ensure:

9-02	All potential	subsoil	disposal	sites	and	disposal	plans	will	be	subject	to	an
	environmental	and soc	ial review	prior to	o their	adoption						

CONTRACTOR shall not dispose of spoil in any locations other than that approved for land use and as per any landowner agreements made.

Extraction sites (borrow pits/quarries) operated by CONTRACTOR

CONTRACTOR shall conduct an environmental and social assessment, including baseline surveys, of the site and provide a report in writing to COMPANY for approval before any extraction commences as per the above requirements. The environmental assessment shall detail how the site shall be reinstated. CONTRACTOR is responsible for obtaining all required licences and consents. Contractor shall comply with the ESIA commitments 39-01, 39-02, and 39-03 for any additional land required for extraction sites.

Land acquisition measures shall be required as per Section 20.4.3 below. CONTRACTOR is responsible for obtaining all required licences and consents.

20.4.3 Land Acquisition/Compensation Requirements

20.4.3.1 General

The land acquisition for all land shall be undertaken by COMPANY. COMPANY will consult as needed with local authorities, land owners and land users in respect of occupation and compensation of land plots requested by CONTRACTOR for construction use.

COMPANY shall undertake fair and transparent land acquisition for any additional lands, in accordance with the procedure and the established rates in the SCPX Guide to Land Acquisition and Compensation (GLAC).

CONTRACTOR shall carry out actions to meet the commitments below:

32-01	The project will consult with local government authorities, landowners and land users, including graziers, before restricting access to land and will establish the need for temporary fencing.
39-01	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.

CONTRACTOR shall note that the commitments in 20.4.2.2 regarding surveys and environmental and social assessment and approvals are a necessary part of the overall land acquisition process.

CONTRACTOR and COMPANY shall implement the following commitment:

32-17	The Project will seek to identify whether any herders use the construction areas and
	aim to consult with them on potential restrictions during construction.

20.4.3.2 Pre-entry survey

As part of the process and prior to any entry and/or construction of the acquired land, COMPANY shall undertake a detailed inventory and inspection of the land parcel(s) and

assets. The purpose of the pre-entry survey is to conduct an inventory of land and all other immovable assets, including drainage systems and irrigation. CONTRACTOR shall witness pre-entry survey.

Documentation should extend to and beyond access and egress routes, lay-down areas and surroundings of the area of interest and shall include photographic/video evidence of preconstruction condition of land and facilities (e.g. presence of crops, infrastructure, roads, etc.).

COMPANY shall document clearly any agreements for temporary measures to be installed (e.g. during disruption to drainage/irrigation, temporary fencing, etc.) and for reinstatement made with the landowner user.

CONTRACTOR shall ensure that:

34-01	Any field boundaries that are removed will be replaced with temporary fencing, where
	feasible, to meet reasonable landowner/user requirements.

20.4.3.3 Compensation

COMPANY shall carry out land acquisition and compensation following the principles and rates described in the Guide to Land Acquisition and Compensation (GLAC). CONTRACTOR shall be liable for the payment of all compensation claims and reinstatement of damage attributable to CONTRACTOR activities unless otherwise approved by COMPANY.

CONTRACTOR shall implement the commitments below, including the provision of an alternative water supply for livestock as required, including at the CSG2 location and the PRMS location to meet the commitments below:

32-04	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.
X13-01	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders. This measure will apply particularly at CSG2 and PRMS sites where grazing livestock are important contributors to local livelihoods.
X13-02	Local communities and grazers will be consulted prior to construction regarding access to grazing lands in the vicinity of CSG2 and the CSG2 Access Road to determine suitable alternative access routes to pastures.
X15-01	Access to the church located close to CSG2 will be maintained throughout construction as long as the Project considers it safe to do so.
X15-02	If the Project affects the existing access track at the Pipeline Camp on the edge of Poladaantkari an alternative access will be provided to dwellings in the village. The Project will locate the access as close as is practical to the existing track, taking into consideration potential health and safety impacts.

Any negotiations carried out by CONTRACTOR shall be witnessed by COMPANY to ensure fairness and transparency and to capture any grievances associated with the process. Compensation shall be in accordance with the SCPX GLAC.

20.4.3.4 Reinstatement and exit survey

After work is complete in the area and CONTRACTOR is ready to demobilise, CONTRACTOR shall reinstate the land in accordance with the Reinstatement Plan in Section 7.

CONTRACTOR shall implement the following commitments:

32-05	The Company Land Acquisition Team, environmental representative and the construction contractors will carry out an exit inspection with the previous landowner/user of all land that was used during the construction period.
32-07	The Project will inform land owners/users about any reuse restrictions that apply to land used by the Project.

Following reinstatement, an exit survey shall be undertaken by CONTRACTOR, witnessed by COMPANY. The survey shall cover all pre-entry areas surveyed and additional areas or property affected by site work. Photos are to be taken of all areas covered in pre-entry above and any potential areas of concern. CONTRACTOR shall be responsible for closing out any actions on a timely basis arising from the exit survey to ensure a smooth hand-back to the land entity.

CONTRACTOR shall ensure that there are no subsequent restrictions (other than those listed in the re-use agreement between owner/user and COMPANY) on use following the return of land to users or owners.

COMPANY will implement the following commitments:

LACF 004	Former owners will be entitled to recover a usage right over the Land Purchase Corridor, henceforth owned by SCP Co. Any agricultural use of the Land Purchase Corridor will be subject to the restrictions applicable in Zones 1 and 2. SCP Co. will be able to access this land at any time for surveillance and maintenance of the pipeline and any damage that may occur in respect of such access shall be compensated to land users.		
LACF 002	The Land Purchase Corridor will be purchased by SCP Co. from its current owners and shall remain in SCP Co.'s ownership after reinstatement.		
LACF 007	All land occupied on a temporary basis will be reinstated to its previous condition.		
LACF 008	Land required permanently for AGIs will be purchased by SCP Co. using replacement value rates and its usage will not be handed back to previous owners or users after completion of construction.		
LACF 009	Land required on a temporary basis for AGIs will generally not be purchased by SCP Co. and will be leased from current owners by SCP Co. or the relevant contractor for the duration of construction and reinstatement based on lease agreements.		
LACF 011	Registered users on state land will be eligible to compensation for standing crops and any development that they can demonstrate ownership of.		
LACF 041-049	Affected people will have access to a grievance mechanism, including a first tier of internal grievance review by SCP Co., with the possibility for aggrieved individuals to resort to a second tier of independent review of the grievance.		
LACF 054	SCP Co. will organise that a completion audit be carried out by an external auditor.		
LACF 055 and 056	A detailed 'Land Acquisition and Compensation Framework' (LACF), which presents details on Project land impacts, including applicable restrictions during construction and operations phases, all principles applicable to compensation, including rates and the process that SCP Co. will follow to identify and compensate landowners and land users, the details of the grievance process, assistance intended for vulnerable people, and principles for disclosure and information.		

The Land Exit Agreement shall be signed by the landowner/user, legal entity or third party, CONTRACTOR and COMPANY as per the HGA.

20.4.4 Permits and Approvals

CONTRACTOR shall ensure that all required permits, approvals and land-entry agreements (the latter provided by COMPANY) are in place prior to the use of any land or facility. CONTRACTOR shall ensure that the site is demarcated in accordance with the agreements.

20.4.5 Grievance Management System

Grievances arising from the acquisition and use of additional lands shall be handled in accordance with the Community Liaison Management Plan, which includes requirements for grievance management, including the need for CONTRACTOR to keep a community complaints register.

All grievances related to land management will be thoroughly investigated by COMPANY and CONTRACTOR together. Land management compensation claims are the responsibility of CONTRACTOR.

Any damage caused by CONTRACTOR outside agreed working area boundaries, including crop damage, will be compensated by CONTRACTOR in accordance with rates as set out in the SCPX Guide to Land Acquisition and Compensation.

20.4.6 Verification and Monitoring

20.4.6.1 Contractor monitoring

CONTRACTOR shall develop a formal monitoring programme as part of its ESMS to assess the implementation of the requirements of this plan to include as a minimum: regular site inspections, including inspection to ensure work is contained within Project boundaries; focused audits on specific topics or key locations; the identification of corrective actions; an action tracking system; and assurance over action close out as per CONTRACTOR'S ESMS.

Environmental and social performance shall be compared against the KPIs in Section 21.3.

20.4.6.2 Company verification

CONTRACTOR is contractually bound to implement the requirements within this plan and other CONTRACT documentation, and COMPANY shall verify compliance through a number of mechanisms including undertaking their own inspections, audits and monitoring programmes in accordance with its ESMS, including the ESMS Non-Conformance Procedure.

Where deficiencies or opportunities for improvement are found, COMPANY will endeavour to notify CONTRACTOR in writing. Such written notification shall contain specific details concerning any non-compliance. CONTRACTOR shall, upon being advised of its non-compliance, immediately take all corrective action required to comply. Such corrective action, unless provided elsewhere in the CONTRACT, shall be taken at CONTRACTOR's expense. If CONTRACTOR fails to take such corrective action promptly, COMPANY may direct CONTRACTOR to suspend all or part of the work until satisfactory corrective action is undertaken. Costs incurred by CONTRACTOR as a result of such suspension shall be for CONTRACTOR'S account and any resultant CONTRACTOR performance delays shall not be deemed excusable hereunder. Not receiving written notification of non-compliance from COMPANY does not reduce the responsibility of CONTRACTOR to identify and correct any non-compliance.

21 MONITORING

CONTRACTOR's environmental and social Implementation Plans shall propose programmes, protocols and procedures to monitor the success of the environmental and social mitigation measures as well as gather environmental data on KPIs and environmental monitoring requirements specified in Appendix D.

CONTRACTOR shall develop their own templates for COMPANY approval or, when directed, use COMPANY-approved reporting templates. All monitoring results, environmental and social assessment results, baseline survey results and other environmental and social monitoring data shall be stored within the CONTRACTOR's document control system, made available at COMPANY request and handed over to the COMPANY on completion of the Project to allow COMPANY to transition this information to the Operations Management System. CONTRACTOR, ECOLOGICAL MANAGEMENT CONTRACTOR and CULTURAL HERITAGE CONTRACTOR shall each develop a transition plan detailing types of information, information storage media.

21.1 Environmental Monitoring

CONTRACTOR shall initiate environmental monitoring at the start of construction activities and schedule regular site-specific monitoring events based upon the construction activities occurring in an area (e.g. water quality monitoring will be performed when river crossings are being constructed). Monitoring will continue throughout the construction activity to gauge the effectiveness of the mitigation measures that are implemented. CONTRACTOR shall maintain an emissions and discharge register identifying all stationary sources of emissions and discharges (e.g. air, noise, and wastewater).

CONTRACTOR shall engage an independent monitoring consultant to implement all environmental monitoring and analysis activities. CONTRACTOR shall ensure that environmental monitoring personnel are trained in appropriate techniques (including use, calibration and maintenance of field monitoring equipment; sample collection, labelling and transport; tracking movements) and in interpretation of monitoring results, record keeping and reporting procedures.

CONTRACTOR shall ensure that environmental monitoring programmes use appropriate methods and equipment (e.g. sampling method statements specifying containers and sample storage; automatic data recorders for instantaneous water quality, air and noise; measuring devices for weight and volume; photography and geographic information system units). CONTRACTOR's Implementation Plans shall follow prescribed monitoring and reporting programmes.

CONTRACTOR shall subcontract independent, analytical laboratories to analyse samples. The CONTRACTOR shall use a quality assurance programme to verify the performance of each laboratory so used. CONTRACTOR shall submit proposed laboratories for COMPANY approval.

21.2 Social Monitoring

CONTRACTOR'S Community Liaison Officers and COMPANY'S Community Liaison Officers shall maintain dialogue with PACs during the construction phase of the Project. CONTRACTOR'S Community Liaison Officers shall submit daily reports on their activities to the Social Manager.

CONTRACTOR shall operate a Grievance Procedure under its Implementation Plan for Community Liaison. CONTRACTOR's Community Liaison Officers and COMPANY's

Community Liaison Officers shall investigate jointly complaints registered under the Complaints Procedure. CONTRACTOR shall submit a report to COMPANY after any social 'incident' (including complaints from communities and neighbours) that identifies the root causes and makes recommendations for mitigation and improvement.

CONTRACTOR shall submit each month to COMPANY a social report that gives details of:

- The status of all non-conformances with the social Management Plans
- The nature and status of any complaints received
- Community health and safety concerns
- Social conflicts and unrest
- Key performance indicators as specified in each plan.

21.3 Reporting

CONTRACTOR shall submit each month to COMPANY an environmental and social report that shall include, but not be limited to, the following details:

- Highlights
- The status of all non-conformances with the ESMMP
- Summary of all E&S related incidents and Stop Work incidents
- Summary of all E&S Regulatory and Legal Issues
- Updated register of all sampling and analysis of discharge and emissions
- Updated register of all waste volumes generated and disposed
- Qualitative summary against each Management Plan
- Quantitative report against KPIs as specified in each Plan
- The nature and status of any complaints received
- Summary of community feedback and Project goodwill gestures
- Issues for Resolution.

21.4 Key Performance Indicators

COMPANY has specified a series of environmental and social KPIs that address the mitigation of impacts and implementation of the plans presented in Sections 6–18. For the construction phase, the majority of these KPIs relate to mitigation activities so it falls to CONTRACTOR to monitor them and report data on them. COMPANY is responsible for ensuring that these KPIs are measured and reported by CONTRACTOR.

CONTRACTOR shall measure performance against the environmental and social KPIs on a monthly basis, and report them to COMPANY's in-country management in a monthly Environmental Performance Report, the content of which shall be agreed by COMPANY. CONTRACTOR is also required to ensure that these KPIs are communicated to all relevant parties prior to the start of construction.

CONTRACTOR shall refer to Appendix D for details of KPIs and environmental monitoring that are required in these updates and reports. If KPI performance does not demonstrate that COMPANY's commitments are being met, the issues involved will be recorded in CONTRACTOR's action tracking system, CONTRACTOR and COMPANY shall agree ways of improving performance and CONTRACTOR shall take action to implement the agreed actions.

COMPANY shall carry out independent monitoring, sampling and analysis to verify the CONTRACTOR's results.

22 VERIFICATION INSPECTIONS AND AUDITS

In order to provide assurance that the provisions of this ESMMP and its supporting Management Plans are being implemented effectively:

- a) CONTRACTOR shall propose in its Implementation Plans a programme of periodic documented inspections and audits
- b) CONTRACTOR shall record the findings of any non-conformances from the periodic inspections and audits in an action tracking system (ATS), shall agree with COMPANY the means by which it shall rectify the non-conformances. Updates on the ATS and progress in implementing the corrective actions shall be reported monthly to COMPANY
- c) COMPANY shall implement its own inspection and audit schedule of CONTRACTOR activity to verify that CONTRACTOR is implementing environmental mitigation measures that satisfy the commitments stated in the Management Plans.

22.1 CONTRACTOR's Inspections and Audits

CONTRACTOR shall carry out walk-around inspections of all construction activities and sites and walk-through inspections of villages in the vicinity of a work site to visually assess the evidence that mitigation measures set down in each environmental or social Management Plan have been implemented, using a pro forma developed by CONTRACTOR to record observations. The inspections may also include talking to personnel and community members, to determine whether commitments that cannot be assessed by visual inspection have been implemented. The pro-forma(s) shall include, but not be limited to:

- Erosion control
- Ecology: flora and fauna protection
- Interruption of river water flow
- Wastewater treatment and discharge
- Housekeeping
- Waste management
- Energy efficiency
- Vehicle and equipment maintenance
- Noise and dust
- Aggregate extraction and transport
- Water extraction
- Fuel saving
- Oil, chemical and lubricant storage
- Spill response equipment
- Enforcement of the Code of Conduct
- Records of complaints
- Traffic movements and speeds
- The condition of roads, buildings adjacent to access roads and paths
- Signage and community safety
- Transparency of employment process
- Adequacy of training
- Use of locally procured materials.

Before carrying out an inspection or audit, CONTRACTOR's Environmental Inspector (or Community Liaison Officer in the case of a social inspection) shall review the previous inspection report for relevant sites and CONTRACTOR's ATS for any outstanding items or actions that have not been closed out. The Inspector shall note on the inspection pro-forma observations confirming the effectiveness of the corrective actions that have been implemented.

CONTRACTOR shall develop a formal audit programme as part of its ESMS and develop audit pro formas.

CONTRACTOR shall note all non-conformances as per the Non-conformance Procedures and within their ATS. CONTRACTOR's Environmental Manager (or Social Manager in the case of a social finding) shall propose appropriate corrective actions and agree them with COMPANY at the weekly/monthly coordination meetings.

22.2 Monitoring Non-Compliance Notification

In addition, CONTRACTOR shall notify COMPANY of each and every monitoring result that is not in compliance with the project environmental standards (Appendix B) WITHIN twenty-four (24) HOURS of CONTRACTOR receiving the result(s). WITHIN forty-eight (48) HOURS of receipt of a monitoring result indicative of non-compliance, CONTRACTOR shall provide a written report (in English) to COMPANY containing, as a minimum, the following data:

- Confirmation of non-compliant monitoring result (including monitoring location, date and time of monitoring, monitoring result, date and time of CONTRACTOR's receipt of monitoring result, and applicable Project standard)
- Action taken in response to non-compliant monitoring result (for instance cessation of non-compliant discharge)
- Additional treatment (actual or proposed) of non-compliant discharge
- Additional monitoring (actual or proposed) to confirm return to compliance
- Confirmation of close out of non-compliant conditions or timetable for close out (timetable to include further monitoring and reporting to COMPANY).

22.3 Action Tracking System

CONTRACTOR's Environmental Manager shall maintain an ATS that records:

- Monitoring results that do not conform to the commitments stated in the Management Plans
- Inspection and audit findings that do not conform to the commitments stated in the Management Plans.

CONTRACTOR shall also develop ATS for hazardous material releases (i.e. spill logs) and a grievance log in formats to be agreed with COMPANY.

CONTRACTOR's Environmental Manager and Social Manager shall discuss each item on the ATS with COMPANY's representative at regular environmental and social meetings and agree appropriate corrective action, or track progress towards implementing the agreed corrective action, until they have been closed out and inspected.

22.4 COMPANY Verification Audits

COMPANY shall schedule a programme of verification audits to gather tangible evidence demonstrating whether CONTRACTOR is complying with their Implementation Plans and Procedures, including any relevant method statements and mitigation measures that appear likely to achieve the level of performance recognised in the commitments set out in the Management Plans effectively and that the Project's environmental and social impacts have been minimised. It will also provide a mechanism for implementing new measures to avoid and mitigate the Project's environmental and social impact and facilitate continual improvement.

The formal verification audits will be periodic (e.g. quarterly), and when it is practical to do so, COMPANY will provide CONTRACTOR with written notice of planned audits to ensure that all appropriate staff, documentation and monitoring records are available.

COMPANY shall appoint an audit team leader and an audit team to conduct the following activities:

- Develop an audit protocol covering the environmental or social issues to be audited to be used as an 'aide memoir' for the auditors, taking account of the findings of previous audits and corrective actions that have been implemented by CONTRACTOR
- Convene an audit opening meeting
- Review documents, observe work practices and the condition of sites and equipment, and carry out interviews as necessary
- Compile audit findings and recommendations
- Hold an audit close-out meeting with site managers to agree the methods by which CONTRACTOR shall close out each observed non-conformance
- Raise appropriate non compliance reports and have CONTRACTOR's ATS updated accordingly
- Issue the audit report.

Over time, COMPANY's programme of verification audits will examine a complete range of the Project activities and the whole of CONTRACTOR's environmental and social management system, including but not limited to:

- Environmental and social management documentation (e.g. review of environmental policy, adequacy of CONTRACTOR's Implementation plans, environmental KPIs, employment contracts training documentation, method statements)
- Implementation of mitigation measures (e.g. observation of ROW and site clearance, translocation of species, trenching, pipe lay and backfill, minimising natural resource use, river crossing construction, hydrotesting, biorestoration, process equipment installation, equipment commissioning, inspecting vehicles and power generators, and their maintenance records)
- Conformance with CONTRACTOR's Implementation Plans and identify the need for corrective actions, and to check that previous corrective actions have been implemented effectively
- Implementation of CONTRACTOR's environmental quality control procedures (e.g. review of CONTRACTOR's inspection reports and corrective action register)
- Implementation of fair and transparent employment practices
- Checks on the accuracy and sufficiency of the reporting of performance data
- Inspecting existing and new aggregate quarries and borrow pits as they are brought into service for the Project to verify that the selected site meets

COMPANY's environmental requirements in terms of sustainability and that the site operators use safe working practices, have the requisite permits and provide their personnel with adequate HSE training and equipment.

COMPANY shall document each audit carried out by compiling a written report that includes all identified non-conformances and recommendations. Where good practices are observed these will also be recorded.

APPENDIX A – COMPANY HSSE POLICY

Azerbaijan Developments Health, Safety, Security & Environmental Policy

BP has a clear commitment to no accidents, no harm to people and no damage to the environment. In line with these goals the leadership of Azerbaijan Developments is fully committed to the protection of the natural environment and to the health, safety and security (HSSE) of its staff and the communities in which it operates.

These goals are fundamental to Azerbaijan Developments ultimate objective of delivering inherently safer, healthier and environmentally sound facilities to Operations.

To achieve these stated commitments, goals and objectives Az Developments we will:

- Comply with the AzSPU Health, Safety, Security and Environmental Policy
- Drive for continuous improvement through concept development, detailed design, procurement, construction, commissioning, installation and handover to Operations.
- Apply an Inherently Safer Design and Continuous Risk Reduction strategy to all project development concepts.
- In line with BP Group expectations, identify process safety risks at each stage of design development and ensure
 appropriate safety performance standards are defined to control residual risks. These performance standards will be
 maintained through procurement, construction, and installation and will be confirmed during commissioning and start-up.
- Execute our projects under the principle that safety is good business. No activity is so important that we can accept compromises to our HSSE policies and procedures.
- Ensure that our contractors and ourselves have rigorous, project specific, HSSE Policies, Management Systems and HSSE Plans in place. Ensure that the content and implications of these documents and philosophies are communicated and explained to the workforce.
- Demonstrate strong and visible leadership at all times. Leaders are engaged and take ownership at the work sites. They
 monitor the work as it is being executed, make themselves available to the workforce, listen to their concerns and take
 actions where necessary.
- Set realistic, measurable, strategic objectives that drive us to continuously improve our performance.
- Implement a rigorous process of risk assessment and risk management that includes Risk Assess It, Talk It, Check It (RTC).
- Train management and supervision in the principles of Effective Safety Leadership (ESL), Safety Observations and Conversations (SOC) and Behavioural Observation Safety System (BOSS).
- Ensure that programmes in place to train and assess the competencies of the BP and contractor workforce.
- Ensure that each site or delivery team implements a Control of Work (CoW) procedure that is aligned with the Azerbaijan Developments Control of Work Policy.
- Identify the root causes (system causes) of the incidents that occur during our projects and implement corrective measures to prevent reoccurences.
- Ensure that our contractors implement Food Safety and Occupational Health and Hygiene Programmes
- Audit against BP Group, Segment Essentials and the requirements of the Project HSSE Management Systems and Plans.
- Publish the commitments as outlined in project specific Environmental and Social Impact Assessments (ESIA) and have plans in place to meet these commitments.
- · Recognise those who positively contribute to improve our HSSE performance.
- Ensure that every person in the project offices and sites understands that it is their obligation to stop unsafe work and to take time out for safety. We will support the individuals who do stop unsafe work and take time out for safety.

Band Lubuck

Bruce Luberski Vice-President, Azerbaijan Developments January 2010

APPENDIX B – PROJECT ENVIRONMENTAL STANDARDS

1. GENERAL

1.1 Purpose

The purpose of this document is to define the SCPX Project Quantitative Environmental Standards.

These standards shall apply for the duration of SCPX Project, which covers construction, commissioning and operation activities. When the Project is complete the within the operations phase the Project will integrate into the Georgia Export Pipelines ESMS, which currently covers all three existing pipelines, including SCP.

These environmental standards have been derived based on the requirements of the SCP Pipeline Host Government Agreement (HGA), which requires that the SCPX Project be carried out in accordance with:

- 1. Standards and practices generally observed by the international community with respect to natural gas pipeline projects comparable to the Project
- 2. World Bank environmental standards and practices
- 3. Standards that shall be no less stringent than those applicable in the United Kingdom.

1.2 References

Document Title		
WHO Air Quality Guidelines, Global Update 2005		
WHO Air Quality Guidelines for Europe, 2nd Edition, 2000		
UK Air Quality Standards Regulations 2007		
EU Ambient Air Quality Directive, 2008/50/EC		
IFC General EHS Guidelines, 2008		
WHO Guidelines for Community Noise (1999)		
BS 5228-1; 2009: Code of practice for noise and vibration control on construction and open sites – Part 1: Noise		
BS 5228-1; 2009: Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration		
EU Urban Wastewater Treatment Directive (91/271/EEC)		
UK Urban Waste Water Treatment Regulations (1995)		
IFC EHS Sector Guidelines: Onshore Oil and Gas Development, 2007		
EU Freshwater Fish Directive (2006/44/EC)		
Model Procedures for the Management of Contaminated Land (CR11) (DEFRA and the Environment Agency, 2004)		
Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Environment		

1.3 Abbreviations and Definitions

1.3.1 Definitions

Abbreviation/ Acronym	Description
BOD	Biochemical oxygen demand
CO	Carbon monoxide
COD	Chemical oxygen demand
EU	European Union
IFC	International Finance Corporation
NO ₂	Nitrogen dioxide
PM	Particulate matter
SO ₂	Sulphur dioxide
WHO	World Health Organization
Zn	Zinc

1.4 Project Air Emissions Standards

Combustion equipment used within construction, and yet to be defined, shall meet the relevant standards within IFC General EHS Guidelines (2007).

1.5 Project Ambient Air Quality Standards

Parameter	Proposed SCPX Project Standard	Source of SCPX Standard
NO ₂	40μg/m³ annual average (human health) 30μg/m³ annual average (ecosystems)¹ 200μg/m³ hourly average	WHO WB ³ /UK UK ² WHO ⁴ /WB
Benzene	5 μg/m³ annual average	UK ²
CO	100,000μg/m ³ for 15 minutes 60,000μg/m ³ for 30 minutes 30,000μg/m ³ for 1 hour 10,000μg/m ³ maximum daily 8-hour average	WHO4 WHO4 WHO4 WHO4 WHO4/UK2
PM ₁₀	20μg/m ³ annual average 50μg/m ³ 24hr average (not to be exceeded more than 3 days a year, 99th percentile)	WHO/WB ³ WHO/WB ³
PM _{2.5}	10μg/m ³ annual average 25μg/m ³ 24hr average	WHO/WB ³ WHO/WB ³

Table A1: Project Ambient Air Quality Standards

Note: Where existing ambient air quality levels are identified as exceeding the above standards prior to project start-up (perhaps caused by non-project emissions sources) then the project may not be able to meet these standards due to factors outside of the project's control. In these circumstances the project will consider the ambient air quality levels and, taking into account the non-project factors affecting air quality, will take reasonably practicable steps to reduce the project's contribution to air emissions.

¹ The air quality objectives for ecosystems should apply more than 20km from an area with a population of more than 250,000 and more than 5km away from industrial sources, motorways and built-up areas of more than 5000 people.

² UK Air Quality Standards Regulations 2010, UK Air Quality Strategy and UK Environment Agency H1 Environmental Risk Assessment Guidance, Annex F, Air Emissions
³ WHO, Air Quality Guidelines Global Update, 2005; IFC General EHS Guidelines (2007) ⁴ WHO Air Quality Guidelines for Europe, 2nd Edition, 2000

Ambient air quality standards shall be achieved in the surrounding environment at point's representative of population exposure. These include residential buildings, schools, and hospitals

1.5 **Project Ambient Noise Standards**

1.5.1 Permanent Noise Sources

Table A2: Project Ambient Noise Standards (Permanent Noise)

Noise Limit ¹ (applies at receptors)	dB(L _{Aeq})
Free–field rating level (L _{Ar,Tr}) ²	50
Daytime (07:00–23:00)	
Free-field rating level (L _{Ar,Tr}) ^{2,3}	42
Night time (23:00–07:00)	
Façade of bedrooms (L _{Amax, fast}) at night (23:00–07:00)	60
Free–field rating level ($L_{Ar,Tr}$) will not exceed background by greater than 3dB where background already exceeds the absolute limits	

¹ These limits do not apply to emergency or unforeseen events

² L_{Ar,Tr} = free field rating level, site noise only plus tonal correction

³ The UK guidance specifies this as a façade level of 45 dB(A), to maintain consistent units this has been adjusted to free field

Reference: IFC 'General EHS Guidelines', 2007: Environmental, 1.7; UK; IPPC H3 (Part 1 and 2) Horizontal Guidance Note (2002 and 2004).

Semi-permanent noise sources

The standards above (Table A2) apply to permanent project facilities and not construction activities. The project has voluntarily taken the decision to aim to achieve these standards at the construction camps which, although temporary facilities, may generate noise continuously for the duration of their use. For example, power generation equipment may run continuously for the duration of the camp operation. The above noise standards shall apply at sensitive receptors in the vicinity of the construction camps. These standards do not apply to any other construction activities.

1.5.2 Temporary Noise Sources

During construction, noise emissions shall be assessed in accordance with BS 5228-1 (2009), E3.3. Example Method 2: 5 dB(A) change. As stated by this method, the following noise standards shall apply to construction noise activities of duration of one month or longer.

Noise levels generated by construction shall not increase the pre-construction ambient noise by 5dB or more, subject to lower cut-off values of 65 dB, 55 dB and 45 dB LAeq, Period, from construction noise alone, for the daytime, evening and night-time periods, respectively.

For short-duration (less than one month) noise activities at construction sites, , the above standards shall be met where possible, despite not being strictly applicable. However, in the event that noise levels are predicted to exceed these levels a risk assessment shall be carried out to understand the predicted noise levels, the duration that the levels will be exceeded and potential mitigation measures that have been applied to help ensure the noise is as low as practicable.

1.6 Project Vibration Standards

Vibration has the potential to cause disturbance to humans and damage to buildings. The Project shall adhere to the principles of British Standard 5228-2009 Part 2 for Vibration control and shall seek to control vibration to levels that remain tolerable to humans and are not likely to cause damage to buildings in line with the guideline values below.

Standard	Receptor	Vibration limits mms-1 (ppv)					
British Standard 5228, 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	Humans in buildings	 1.0 mms⁻¹ It is likely that vibration of this level in residential environments will cause complaint, but can be tolerated if prior warning and explanation has been given to residents. 10 mms⁻¹ Vibration is likely to be intolerable for any more than a very brief exposure to this level. 					
British Standard 5228, 2009 Code of practice for noise and vibration control on construction and open sites – Part 2: Vibration	Unreinforced or light framed structures Residential or light commercial type buildings	Limits above which cosmetic damage to buildings could be caused: 15mms ⁻¹ at 4Hz increasing to 20mms ⁻¹ at 15Hz increasing to 50mms ⁻¹ at 40Hz and above					
Refer to British Standards identified for further information							

Table A3: Project Vibration Standards

Note: Where existing background vibration levels are identified as exceeding the above standards prior to project start-up (perhaps caused by non-project sources) then the project may not be able to meet these standards due to factors outside of the project's control. In these circumstances the project will consider the vibration levels and, taking into account the non-project factors affecting vibration, will take reasonably practicable steps to reduce the project's contribution to vibration.

1.7 Wastewater Discharges

1.7.1 Project Standards for the Discharge of Sanitary Discharges

These standards apply at the point of discharge of treated sanitary discharges to a surface water.

Parameter	Project Standard
pH	6-9
Biological oxygen demand (BOD) (5) (mg/l)	25
Chemical oxygen demand (COD) (mg/l)	125
Total nitrogen (mg/l)	10*
Total phosphorous (mg/l)	2*
Oil and grease (mg/l)	10

Parameter	Project Standard
Total suspended solids (TSS) (mg/l)	35
Coliform bacteria	
(Most probable number)/100 ml	400
Temperature	No increase greater than 3°C of ambient
	temperature at the edge of a scientifically
	established mixing zone

*Phosphorous and Nitrogen standards to be applied based on the results of a risk assessment to identify if the receiving environment is vulnerable to eutrophication and critical levels could be exceeded.

Reference: IFC 'General EHS Guidelines', 2007: Environmental, Section 1.3; Reference: EU Urban Wastewater Treatment Directive (1991) and UK Urban Waste Water Treatment Regulations (1995)

1.7.2 Project Standards for the Discharge of Industrial Wastewater

Industrial wastewater refers to all process, industrial, hydrotest and stormwater (as defined in Section 11). These standards apply at the point of discharge of industrial wastewater to surface water.

Parameter	Proposed SCPX Standard
рН	6-9
BOD (5) (mg/l)	25
COD (mg/l)	125
Oil and grease: (mg/l)	10
Total hydrocarbon content (mg/l)	10
Phenols (mg/l)	0.5
Total suspended solids (TSS) (mg/l)	35
Sulphides (mg/l)	1
Chlorides (mg/l)	600 mg/l (average), 1200 mg/L (maximum) or change the salinity by no more than 5%
Temperature	Levels should be as low as practical and reflect the quality of the receiving waters
	Change the temperature of the receiving water by no more than 1°C,
	Upper temperature limit for a discharge is 40°C
Heavy metals (total) (mg/l)	5

Table A5 Project Standards for Discharge of Industrial Wastewater

Reference: IFC Environmental, Health, and Safety Guidelines for Onshore Oil and Gas Development (April 2007); UK Refining Sector Guidance Note EPR 1.02

1.7.3 Discharge to Land

Soakaways shall only be used for treated sanitary, stormwater or potentially hydrotest water discharges. Potential impacts on soil, groundwater and surface water shall be evaluated in all situations where effluent is discharged to land. For soakaways, the standards in Tables A4 and A5 shall apply where the effluent reaches the water. Ensuring the discharge has no more than a minor impact to water resources will require a two-phased investigation:

- In the first instance the capacity of the ground to physically accommodate the water flows will be investigated. Trial pits will be excavated and percolation tests will be undertaken of the surface strata at the site to establish their characteristics (porous versus fissured) in terms of capacity to accommodate the waste flows
- Secondly, a risk assessment will be undertaken to establish potential impacts to the nearest groundwater resource. The approach using analytical solutions similar to those recommended by UK Environment Agency (as in 1.8) shall be used.

1.7.4 Project Ambient Surface Water Quality Standards

Ambient water quality standards will be applied to surface waters which receive routine discharges, i.e. treated sewage effluent, controlled wastewater discharges (from construction camps, stormwater drainage systems) and hydrotest water (refer to Appendix D for the monitoring programme).

Parameter	Unit	EQS Salmonid Waters	EQS Cyprinid Waters	
pH*		6-9	6-9	
BOD (5)	mg/l	≤ 3	≤ 6	
Total hydrocarbon content		Petroleum products must not be present in water in such quantities that they: - form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes - impart a detectable "hydrocarbon" taste to fish - produce harmful effects in fish		
Phenols		Not present in concentrations t	hat adversely affect fish flavour	
Total suspended solids (TSS)*	mg/l	≤ 25	≤ 25	
Nitrites (mg/I NO ₂)	mg/l	≤ 0.01	≤ 0.03	
Dissolved Cu Assuming water hardness of 100mg/l CaCO ₃	mg/l	≤ 0.04	≤ 0.04	
Zn mg/l (assuming water hardness of 100mg/l CaCO ₃)	mg/l	≤ 0.3	≤ 1.0	
Dissolved oxygen (mg/IO ₂)	mg/l	50% of the time \ge 9, 100% of the time \ge 7	50% of the time ≥ 8 , 100% of the time ≥ 5	
Non-ionised ammonia mg/I NH ₃	mg/l	≤ 0.005	≤ 0.005	
Total ammonium (mg/l NH4)	mg/l	≤ 0.04	≤ 0.2	
Total residual chlorine (mg/l HOCl)	mg/l	≤ 0.005	≤ 0.005	

Table A6: Project Ambient Water Quality Standards

*Derogations from this standard are possible if, for example, exceptional weather or natural enrichment occurs. Note: Where existing water quality levels are identified as exceeding the above standards prior to project startup (perhaps caused by non-project emissions sources) then the project may not be able to meet these standards owing to factors outside of the project's control. In these circumstances the project will consider the water quality levels and, taking into account the non-project factors affecting water quality, will take reasonably practicable steps to reduce the project's contribution to water emissions. The project will continue to comply with the above discharge standards in Tables A4 and A5

Reference: EU Freshwater Fish Directive (2006/44/EC) Salmonid Waters - waters which support or become capable of supporting fish belonging to species such as salmon, trout, grayling or whitefish. Cyprinid waters: waters that support or become capable of supporting fish belonging to the cyprinids or other species such as pike, perch and eel. Standards will be applied as applicable (depending on the range of species supported by a surface watercourse).

1.8 Project Clean-Up Standards

The project will apply a risk assessment approach to contaminated land management evaluate the potential impact of soil, surface water or groundwater contamination on local receptors. This will follow the methodology from the UK Environment Agency's approach as defined in:

- Model Procedures for the Management of Contaminated Land (CR11) (Environment Agency, 2004)
- 'Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination' (Environment Agency, 2006).

This is based on the source–pathway–receptor principle, which seeks to establish the linkages between the pollutants and the receptor and whether harm to health or the environment is likely to occur. This approach does not specify defined clean-up standards as these depend on the land/water use and the presence of pathways to potential receptors.

This method follows a tiered approach to risk assessment, where the need for further, more detailed analysis is determined in the first tier. During subsequent risk assessment tiers the data requirements and the sophistication of the analysis increase, as does the confidence in the predicted impact.

If the risk assessment demonstrates that risk to health or the environment exists a remediation plan will be developed. This may include the development of remedial targets that can be based on information from a variety of sources which make include WHO guidelines, EU or UK standards and guidelines or other national standards and guidelines as appropriate.

APPENDIX C – GEORGIAN PERMIT REQUIREMENTS RELEVANT TO ENVIRONMENTAL AND SOCIAL MANAGEMENT

Permit Required Activity	Permit Title	Issuing Authority	Application Requirements	Project Phase	Responsibility
Construction activities	Construction Permit	Ministry of Economy and Sustainable Development	Geological conclusions; Cultural heritage clearance; Conclusion of local independent expertise on final design; ESIA approval; Final design; Rights to land	Pre- construction	COMPANY
Construction activities	ESIA approval	Ministry of Environment Protection (MoE)	Baseline study approval; Public disclosure; Finalisation of ESIA by addressing public comments	Pre- construction	COMPANY
Construction activities	Cultural heritage clearance	National Agency of Cultural Heritage	Desktop study; Archaeological survey; Monuments survey; archaeological excavations if required; Cultural heritage impact report	Pre- construction	COMPANY
Construction activities	Visual geological- engineering conclusion	National Environmental Agency	Maps of construction sites	Pre- construction	COMPANY
Construction activities	Conclusion on mineral deposits	National Environmental Agency	Maps of construction sites	Pre- construction	COMPANY
Construction activities	istruction vities local independent expertise on final design;		Pre- construction	COMPANY	
Tree felling in state forest lands for ROW & permanent facilities	Forest Use Agreement	Ministry of Energy & Natural Resources	Pre-entry survey by applicant and local forestry, detailed forest inventory report by applicant	Construction	COMPANY
Tree felling in state forest lands for temporary facilities	Forest Use Agreement	Ministry of Energy & Natural Resources	Pre-entry survey by applicant and local forestry, detailed forest inventory report by applicant	Construction	Construction Contractor
Construction material extraction from borrow pits	Mineral Extraction Licence	Ministry of Energy & Natural Resources	Extraction Project and payment for minerals without auction per fair market price	Construction	Construction Contractor
Underground water abstraction	Mineral Extraction Licence	Ministry of Energy & Natural	Extraction Project and payment for minerals without auction per fair market price	Construction	Construction Contractor

Permit Required Activity	Permit Title	Issuing Authority	Application Requirements	Project Phase	Responsibility
		Resources			
Water abstraction from river, lake	Surface Water Abstraction Approval	MoE	Surface water abstraction Project	Construction	Construction Contractor
Treated sewerage, hydro-test water etc. discharge into river, lake	Approval of Liquid Discharge into Surface Water Body	MoE	Technical inventory report and Project of discharge limits.	Construction	Construction Contractor
Exhaust from stationary sources	Air Emission Limit Approval	MoE	Technical inventory report and Project of emission limits.	Construction	Construction Contractor
Emergency response measures for gas leak or emission	Emergency Response Plan Approval	GOGC, Ministry of Energy & Natural Resources	Emergency Response Plan	Operations	COMPANY
Use of two- way radios, radio stations etc.	Allocation of radio frequencies	Georgian National Commission of Communications	Equipment specifications and coverage locations	Pre- construction/ Construction	Construction Contractor
Construction or upgrade of access roads	Approval of construction or upgrade activities	Ministry of Infrastructure and local municipalities	Construction or upgrade Project	Pre- construction/ Construction	Construction Contractor
Transportation of oversized and overweight cargo	Transportation Permit	Ministry of Internal Affairs (MoIA)	Contract with Security Police for escort service, consent from Georgia Railway Ltd for railway crossings, potential routes and list of transport and equipment	Pre- construction/ Construction	Construction Contractor
Spoil disposal	Spoil disposal approval	MoE	Site and spoil descriptions	Construction	Construction Contractor
Import of goods	Customs clearance	Ministry of Finance	Certificate of origin and specifications	All	Construction Contractor
Import of explosives	Permit to import explosives	MolA	Certificate of origin and specifications, purpose, duration	Construction	Construction Contractor
Use of explosives	Permit to use explosives	MoEc	Specifications, storage and transportation details, scope of work	Construction	Construction Contractor
Import of radioactive materials	Permit to import radioactive materials	Emergency Department of MoIA/MoE	Certificate of origin and specifications, purpose, duration	Construction	Construction Contractor
Use of radioactive materials	Permit to use radioactive materials	MoE	Specifications, storage and transportation details, scope of work	Construction	Construction Contractor

APPENDIX D – ENVIRONMENTAL AND SOCIAL REPORTING AND MONITORING REQUIREMENTS

Table D1: SCPX Environmental and Social Reporting Requirements

	Measure	Туре	Target	Comment	Responsible Party
M1	Conformance with CONTRACTOR audit schedule as agreed with the COMPANY, i.e.	KPI	100%		CONTRACTOR
	percentage of audits completed versus planned				
M2	Cumulative number of NCRs open	KPI	0		CONTRACTOR
R1	Number of non-conformances with the specified erosion performance class	KPI	0		CONTRACTOR
R2	Percentage of ROW sections (section to be defined by the COMPANY) not obtaining	Measure			CONTRACTOR
	≥ 20% revegetation cover after six-monthly monitoring period				
R3	Number of non-conformances related to topsoil and sub-soil management	KPI	0		CONTRACTOR
E1	Percentage survival of translocated plants	KPI	85%		ECOLOGICAL
					MANAGEMENT
					CONTRACTOR
W1	Proportion of waste segregated for re-use and recycling as a percentage of total waste	Measure			CONTRACTOR
W2	Volume of waste reused vs. recycled vs. landfilled	KPI	40%	To be agreed between COMPANY and CONTRACTOR	CONTRACTOR
W3	Number of non-conformances related to waste storage and segregation	KPI	0		CONTRACTOR
W4	Number of non-conformances related to waste management plan	KPI	0		CONTRACTOR
P1	Number of oil/diesel spills (unplanned)	Measure	0		CONTRACTOR
P2	Number of oil/diesel spills to surface water (unplanned)	KPI	0		CONTRACTOR
P3	Monitoring programme (actual vs. planned completion)	KPI	100%		CONTRACTOR
P4	Proportion of emissions and discharge monitoring results in accordance with the Project environmental and social standards	KPI	95%		CONTRACTOR
C5	The kWh of electric power used, and the source (e.g. grid, local generator)	Measure	N/A		CONTRACTOR
C6	The litres of fuel consumed to run vehicles and equipment	Measure	N/A		CONTRACTOR
11	Roads upgraded (km)	Measure			CONTRACTOR
12	\$ value of Good will projects (excluding I1)	Measure			CONTRACTOR
G1	Number of complaints received (overall broken down into complaint categories, e.g. noise,	Measure	N/A		CONTRACTOR
	dust, damage to roads, river crossings, buildings, water supply and power supply, etc.)				
G2	Speed of response to complaints (percentage of complaints responded to within days)	KPI	100%		CONTRACTOR
G3	Speed of complaint resolution (percentage of complaints resolved in less than 30 days)	KPI	100%		CONTRACTOR
G4	Days lost due to community disturbance (number of days)	KPI	0		CONTRACTOR
S1	The number of community members harmed by Project vehicles or by incidents (for example	KPI	0		CONTRACTOR
	incidents involving property, livestock, crops, infrastructure, etc.)				

	Measure	Туре	Target	Comment	Responsible Party
S2	Health and safety awareness meetings held with community raising (actual vs. planned)	Measure	%		CONTRACTOR
Re1	Employment of local labour as percentages of total labour against agreed targets	KPI	As agreed	To be agreed between COMPANY and CONTRACTOR	CONTRACTOR
Re2	E&S training delivered in accordance with planned training activities	KPI	95%		CONTRACTOR
Pr1	Value of materials and services purchased in country	Measure			CONTRACTOR
L1	Number of claims/grievances for encroachment or use on unapproved land	KPI	0		CONTRACTOR
CH1	Number of NCRs related to damage to sites or artefacts from ground disturbance	KPI	0		CONTRACTOR
CH2	Number of chance finds reported	Measure	N/A		CONTRACTOR

Table D2: SCPX Environmental Monitoring Requirements

Topic/Identifier	Responsible Party	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
Water							
1	CONTRACTOR	Discharges of effluent from sewage treatment plant(s) (sanitary)	After final treatment, prior to any mixing or co- mingling with other effluent streams	Weekly	pH BOD (5) (mg/l) COD (mg/l) Total nitrogen (mg/l) Total phosphorous (mg/l) Oil and grease (mg/l) Total suspended solids (TSS) (mg/l) Coliform bacteria (MPN/100ml) Temperature Visual monitoring of grease trap	Recognised methodologies available in COMPANY- approved laboratories in Georgia and Azerbaijan	Operational monitoring of STP may be undertaken using field equipment.
2	CONTRACTOR	Oily water separators	After final treatment, prior to any mixing or co- mingling with other effluent streams	Monthly	PH BOD (5) (mg/l) COD (mg/l) Total hydrocarbon content (mg/l) Phenols (mg/l) TSS (mg/l) Sulphides (mg/l) Chlorides (mg/l) Temperature Heavy metals (total) (mg/l) (includes Ag, As, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn)	Recognised methodologies available in COMPANY- approved laboratories in Georgia and Azerbaijan	To meet IFC guidelines and discharge of 10mg/l oil and grease

Topic/Identifier	Responsible Party	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
3	CONTRACTOR COMPANY (CSG2 access road only)	Ambient water quality: surface waters subject to discharges of treated sewage effluent, controlled wastewater discharges (from construction camps, stormwater drainage systems)	100m upstream and 100m downstream of discharge locations	Monthly for continuous discharges; at least once prior to any discharge; and for non- continuous discharges at least once during the discharge and no less than one sample per month	pH BOD (5) (mg/l) Total hydrocarbon content (mg/l) Phenols (mg/l) TSS (mg/l) Nitrites (mg/l NO ₂) Dissolved Cu (mg/l) Zn (mg/l) Dissolved oxygen (mg/lO ₂) Non-ionised ammonia (mg/l NH ₃) Total ammonium (mg/l NH ₄) Total residual chlorine (mg/l)	Recognised methodologies available in COMPANY- approved laboratories in Georgia and Azerbaijan	Petroleum products must not be present in water in such quantities that they form a visible film on the surface of the water or form coatings on the beds of watercourses and lakes.
4	CONTRACTOR	Hydrostatic test water	At end of pipe/treatment (specific details of locations to be proposed by contractor with each hydrotest pack). Discharge subject to the review and approval by COMPANY ALSO: At least 100m upstream 100m downstream and various other	Prior to and during discharge; specific details of frequency, location to be proposed by contractor with each hydrotest pack. Discharge subject to the review and approval by COMPANY	pH BOD (5) (mg/l) COD (mg/l) Total hydrocarbon content (mg/l) Phenols (mg/l) TSS (mg/l) Sulphides (mg/l) Chlorides (mg/l) Chlorides (mg/l) Temperature, Fe (mg/l), Heavy metals (total) (mg/l) (includes Ag, As, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn)	Recognised methodologies available in COMPANY- approved laboratories in Georgia and Azerbaijan	Field analysis shall also include temperature, pH, DO, TSS/turbidity (for indication), oil and grease, colour, odour, visible oil and grease and conductivity

Topic/Identifier	Responsible Partv	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
			distances, if required, downstream of discharge locations for ambient standards.				
5	CONTRACTOR	Concrete batching plant wastewater - if discharged	At Project- developed and operated concrete batching plants	Monthly	pH TSS (mg/l) Heavy metals (total) (mg/l) (includes Ag, As, Cd, Cr, Cu, Pb, Hg, Ni, V, Zn)* Oil and grease		
6	CONTRACTOR	Abstraction wells	The abstraction borehole, when completed, will be test pumped and environmental parameters will be monitored	Test pump before abstraction occurs Contamination monitoring prior to abstraction and every six months during operation of well	Test pump to determine recharge rate and sustainable abstraction volumes Contamination: pH, conductivity, DO, turbidity, TSS, total coliform and <i>E. coli</i> , BOD5, COD, TPH (speciated); PAHs, heavy metals, VOCs		Commitment 15-04, X6-01
7	CONTRACTOR	Discharges with excess of sediments (trench water, hydrotest water, run-off from open sites)	At discharge point and 200m downstream	During discharge	Sediment content: turbidity	Visual and field testing	
Air							
1	CONTRACTOR	Effectiveness of dust suppression	Work areas, access roads	Visually daily	Visual ID of dusty conditions	Visual	
2	CONTRACTOR	Effectiveness of	Work areas,	Visual	Visual ID of black	Visual	

Topic/Identifier	Responsible Party	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
		vehicle and equipment maintenance programme	access roads		emissions Valid Project-issued technical certificate		
3	CONTRACTOR	Stack emissions from camp generators	Construction Camps	At start-up and thereafter quarterly	 Nitrogen oxides (NO_x) Carbon monoxide (CO) Sulphur dioxide (SO₂) Particulate matter (PM) Methane (CH₄) Carbon dioxide (CO₂) 	Emissions calculated using emissions rates, agreed with COMPANY	No stack emissions standards however, if generator has rated MWth input capacity >3MWth, CONTRACTOR shall carry out stack emissions testing to demonstrate conformance with the applicable standards in IFC EHS Guidelines, General, 2007 Table 1.1.2 - Small Combustion Facilities Emissions Guidelines.
4	COMPANY	Ambient air quality monitoring	Construction camps (boundary fence and nearest receptors up and down prevailing wind direction)	Pre-construction and during construction	Quarterly	Diffusion tube methodology following ISO/BS Standards, at COMPANY approved laboratory	
Noise							
1	CONTRACTOR	Camp/pipe yard/batching plant (Temporary/ Permanent facilities)	Construction camp Batching plant	Prior to facility start up; monthly during facility operation; during any abnormal operations; on receipt of complaints	dB(A); L _{Amax, fast} (day- and night-time monitoring) to allow comparison against Project environmental standards	Actual noise measurements in accordance with BS 7445-2; Calibrated meters in accordance with BS EN 61672-1; BS EN 61260; BS 60942	

Topic/Identifier	Responsible Party	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
2	CONTRACTOR	Construction/ commission noise related to activities	Work areas; facility construction sites; ROW Tunnelling activities	At least once during the activity if longer than one month; on receipt of complaints	dB(A); L _{Amax, fast} (day- and night-time monitoring) to allow comparison against Project environmental standards	Actual noise measurements in accordance with BS 7445-2:1991; Calibrated meters in accordance with BS EN 61672-1; BS EN 61260; BS 60942.	
Vibration							
1	CONTRACTOR	Construction vibration	Representative locations, including villages of Kuschi and Berta (including the monastery complex) on the CSG2 access road and at the church in the vicinity of the CSG2 site	At least once during the activity at representative locations and sufficient to predict vibration levels based on different vehicle/activity types	mms ⁻¹ (ppv)	In accordance with guidance in BS 5228-2 (2009)	
Erosion and Sedin	nentation Control		0002 010				
1	CONTRACTOR	Erosion detection and treatment	Areas cleared and graded	Weekly, and before predictable major storms, after heavy rain and storms	Areas of possible erosion	To be proposed by CONTRACTOR, subject to review and approval by COMPANY	
2	CONTRACTOR	River sedimentation	All river crossings	Weekly	Visual monitoring of suspended sedimentation	Visual: evidence of plumes	Contractor shall ensure that sedimentation control works at river crossings are effective and that sediment is not visible in the river water

Topic/Identifier	Responsible Party	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
Soil 1	CONTRACTOR	Oil/chemical spills	At oil spill locations	As required per incident	 (1) Reported number/cases of spills/leakages (2) Number of times spill kits (oil absorbers, grab packs and granules) put to use (3) Analysis of soil for contaminants: heavy metals, TPH, VOC, SVOC (other as relevant depending on type of spill) 	Model Procedures for the Management of Contaminated Land (CR11) (DEFRA and the Environment Agency, 2004) Remedial Targets Methodology: Hydrogeological Risk Assessment for Land Contamination (Environment Agency, 2006)	
Pollution Preventio	All Contractors	Integrity of fuel/ chemical containment systems	Fuel and chemical storage areas Work areas	Monthly	Visual	Visual inspection for: (a) holes or overflow from primary containment (b) breaches in secondary containment c)no secondary containment	
1	CONTRACTOR	Topsoil preservation	Topsoil storage areas	Monthly	Visual observation of: (1) Stockpile area segregated from site (2) Height of stockpile (2 - 3m)	Visual	

Topic/Identifier	Responsible Party	Activity/Issue	Location	Frequency	Parameters/Units	Monitoring Methodology	Comments
					(3) Slope of stockpile (<45 degrees slope)		
					Aerobic conditions will be monitored if topsoil stored for more than six months. Manual aeration will be undertaken if anaerobic conditions develop.	To be proposed by CONTRACTOR and approved by COMPANY	
2	CONTRACTOR	Subsoil reinstatement	ROW and temporary areas	Once during reinstatement activity; at least every 100m	Percentage of compaction relative to undisturbed areas	Cone penetrometer	
Waste							
1	CONTRACTOR	Waste storage; segregation; handling and transport	ROW; facility construction sites; temporary areas; construction camp WSA CWAA; Waste disposal locations; Waste Processing Centres	Weekly inspections; monthly waste audits	Segregation practices; waste documentation including tracking notes; round trip transport; WSA management; training. Contractor performance	Visual	
Employment							
1	CONTRACTOR	Recruitment procedures; local content	N/A	Monthly	Local content figures; employment records; interviews with employees	N/A	

APPENDIX E – PRE-CONSTRUCTION SURVEYS

Table E1: SCPX Pre-construction surveys

SCPX Issue	SCPX Ref.	Specific Locations (and KP)	Primary Topic	SCPX COMMITMENT (MITIGATION MEASURE)
A24	24-05	- -	Air Quality	Community Liaison Officers will identify any beekeepers whose hives are within 300m of the pipeline and facility construction, camp and pipe storage areas or access routes before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route for the season.
A23	22-03	-	Air Quality	Ambient air quality monitoring will be carried out prior to construction to establish a baseline on the boundary fence and at receptors in the vicinity of CSG1, CSG2 and PRMS.
A4	4-15	-	Soil & Ground Conditions	A soil survey will be undertaken (based on a representative sample) prior to construction to measure the depth of the topsoil layer along the pipeline route and will be used to determine the depth of topsoil stripping.
A6	6-22	-	Soil & Ground Conditions	The Company will carry out a due diligence exercise to identify and manage the risk of anthrax.
A19	19-07	-	Community Health & Safety	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.
A30	30-08	-	Community Health & Safety	Community Liaison Officers (CLOs) appointed by the Contractor will participate in, or deliver safety awareness training to, local children and their parents and/or their teachers.
A30	30-23	-	Community Health & Safety	The ROW of the SCPX pipeline and any additional temporary workspaces will be surveyed and set out (i.e. marked out and, where necessary, fenced off). The contractor will be required to keep within the designated footprint.
A31	31-02	-	Community Health & Safety	Risk assessments will be carried out to identify sensitive receptors such as hospitals and clinics along Project access routes. The Project will ensure that access to and from these facilities is not restricted by Project activities or an alternative access is in place and has been agreed with the hospital or clinic staff.
A27	27-02	-	Cultural Heritage	Areas of potential cultural heritage impact will be examined and any necessary excavations conducted prior to construction.
A27	27-04	-	Cultural Heritage	Pre-construction works to evaluate and record known archaeological sites will be agreed with the Ministry of Culture and Monument Protection.
A27	D27-01	CSG2 access roads	Cultural Heritage	The following potential cultural heritage sites identified by surveys of SCPX Project-related sites will be excavated before Project construction begins: The stony mounds at the CSG2 site (CH54-58).
A27	D27-02	CSG2 access roads	Cultural Heritage	 The CSG2 access road has been routed to avoid the majority of known cultural heritage features including: Nardevani Settlement A number of small stony mounds that could potentially be archaeological features and several probable Bronze Age burial mounds.

SCPX Issue	SCPX Ref.	Specific Locations	Primary Topic	SCPX COMMITMENT (MITIGATION MEASURE)
		(and KP)		
A27	X10-01	Pipeline KP55–56		There are areas of potential archaeology at KP55 (CH7) and KP56 (CH8), which will be examined in a programme of Phase 2 trial trenching if crossed by the SCPX ROW.
A27	D27-04	CGS2 access road	Cultural Heritage	Portions of the CSG2 Access Road drainage and embankments have been specially designed to protect and preserve in place possible archaeological features.
A27	D27-05	CGS2 access road	Cultural Heritage	The CSG2 access road camp will be designed with the aim of protecting CH276. If this is not practical, phase 2 archaeological evaluation will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.
A27	X10-02	CGS2 access road	Cultural Heritage	The access road alignment has been routed to avoid all known archaeological sites except CH71, CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261, CH265 and CH275. These features will be subject to Phase 2 archaeological evaluations, and a recording and preservation programme if appropriate.
A27	X10-03	CSG2	Cultural Heritage	Phase 2 archaeological evaluation of nine potential features identified in the area of CSG2 (CH54, CH55, CH56, CH58) will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.
A27	X10-04	CGS2 access road	Cultural Heritage	At CH9 (Nardevani Settlement remains), CH67 (megalithic stones), and probable burial mounds CH10, CH30, CH161-CH167, CH208, CH215, CH270, CH273, CH274 and CH276 (Access Road construction camp) the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction begins.
A27	X10-07	CGS2 access road	Cultural Heritage	All aspects of the historical road in the vicinity of the Project will be recorded prior to and during access road construction.
A27	X10-08	CGS2 access road	Cultural Heritage	At CH41 a small portion of the toe of an embankment of the road will lay across a part of the area identified as being part of the Bronze Age settlement west of Ozni. Possible cultural heritage features have been identified in this part of the site. Phase 2 work will be undertaken prior to construction to assess the features and identify the need for any necessary mitigation measures required.
A27	X10-14	CGS2 access road	Cultural Heritage	 The following potential cultural heritage sites identified by surveys of Project-related sites will be excavated before Project construction begins: Potential archaeological sites within the CSG2 Access Road footprint that cannot be avoided (CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261, CH265).
A17	17-08	-	Ecology	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific.
A17	17-14		Landscape	A record will be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features along the pipeline ROW before construction to inform the reinstatement work.
A17	D5-045	-	Ecology	Existing third party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees which are to be retained) will be marked.

SCPX Issue	SCPX Ref.	Specific Locations (and KP)	Primary Topic	SCPX COMMITMENT (MITIGATION MEASURE)
A17	X7-06	Algeti Crossing	Ecology	To facilitate the re-establishment of smooth-leaved elm populations by the Algeti river, seeds will be collected from mature tree specimens in nearby habitat and saplings will be produced from the collected seeds at a recognised nursery.
A19	18-05		Ecology	The Contractor shall inspect and wash, all plant and equipment prior to shipping to the country of use with the aim of ensuring, as far as practical, is free from soil and plant material
A19	X7-12	KP2-12	Ecology	Pre-construction ecological surveys will be carried out at dusk/night in June/July to record details of bats at KP2–12. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.
A19	X7-13	KP53–54	Ecology	Pre-construction ecological surveys will be carried out at dusk/night in June/July to record details of bats at KP53–54. Trees indentified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.
A19	X7-14	CSG2	Ecology	Ornithological surveys will be carried out at CSG2 and at wetland areas along the CSG2 access road in the breeding season (May- June) and in the migration season (September) before and during construction work to identify bird species using the area and the effect of construction.
A19	X7-18	CSG2	Ecology	Marsh orchids within the temporary and permanent footprint at CSG2 will be surveyed, identified and translocated prior to construction. A proportion of the plants will be moved to similar habitat in unaffected areas.
A28	28-07	-	Economy, Employment, Skills & Livelihoods	Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post.
A28	28-08	-	Economy, Employment, Skills & Livelihoods	Community Liaison Officers will monitor that PACs are given priority in recruitment and that recruitment is non-discriminatory in terms of PACs and ethnicity.
A29	29-03	-	Economy, Employment, Skills & Livelihoods	Taking into account relevant commercial considerations as appropriate, the project will seek to purchase goods and services from within Georgia and will monitor such purchases.
A33	33-03	-	Economy, Employment, Skills & Livelihoods	The Community liaison teams will maintain regular liaison with local communities before, during and after construction.
A33	33-04	-	Economy, Employment, Skills & Livelihoods	An employee Code of Conduct will be in place and issued to all recruits and camp residents during the employee induction process.
A1	1-05	-	Geology & Geomorphology	Environmental audits will be undertaken at any proposed third party borrow pits and/or spoil disposal pits before they are used. Periodic audits will be undertaken thereafter and as considered appropriate by the Company.

SCPX Issue	SCPX Ref.	Specific Locations (and KP)	Primary Topic	SCPX COMMITMENT (MITIGATION MEASURE)
A15	15-01	-	Groundwater	All necessary permits/consents to drill and abstract groundwater will be obtained before water is abstracted for construction or domestic use. Groundwater will not be used for pipeline hydrotesting.
A15	15-04	-	Groundwater	The abstraction borehole, when completed, will be test pumped and a sustainable yield will be determined together with aquifer characteristics such as hydraulic conductivity and radius of influence.
A15	X6-02	CSG1, CSG2 & PRMS	Groundwater	The facilities will be supplied with water either from existing abstraction wells or new wells, and subject to a sustainability assessment.
A35	35-01	-	Infrastructure & Services	Contractor will prepare a Method Statement that includes measures to protect the integrity of the third party services and is acceptable to the service operator.
A35	35-03	-	Infrastructure & Services	Any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works.
A35	35-05	-	Infrastructure & Services	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.
A32	32-01	-	Land Ownership & Use	The Project will consult with local government authorities, landowners and users, including graziers, before restricting access to land and will establish the need for temporary fencing.
A32	32-04	-	Land Ownership & Use	The Project will provide a substitute for watering holes, used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.
A32	32-07	-	Land Ownership & Use	The Project will inform land owners/users about any reuse restrictions that apply to land used by the Project.
A33	33-19	-	Land Ownership & Use	Land users and local communities will be consulted to determine their requirements for access across the ROW
A39	39-01	-	Land Ownership & Use	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.
A39	39-02	-	Land Ownership & Use	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk and water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.
A39	39-03	-	Land Ownership & Use	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.
A32	X13-01	CSG2 and PRMS	Land Ownership & Use	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders. This measure will apply particularly at CSG2 and PRMS sites where grazing livestock are important contributors to local livelihoods.
A32	X13-02	CSG2	Land Ownership & Use	Local communities and grazers will be consulted prior to construction regarding access to grazing lands in the vicinity of CSG2 and the CSG2 Access Road to determine suitable alternative access routes to pastures.

SCPX Issue	SCPX Ref.	Specific Locations (and KP)	Primary Topic	SCPX COMMITMENT (MITIGATION MEASURE)
A25	25-13	-	Noise	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.
A25	25-14	-	Noise	A survey will be undertaken to record the external condition of buildings in close proximity to the ROW or access roads prior to construction; this will provide baseline evidence in the event of claims for damage.
A25	X9-03	Pipeline Camp	Noise	Site layout will be designed, where practical and feasible, to locate noisy plant in areas further away from houses at the pipeline camp where a risk assessment shows that there may be significant noise impacts on sensitive receptors.
A4	4-12	-	Soil & Ground Conditions	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.
A6	6-01	-	Soil & Ground Conditions	A baseline survey of visible contamination, has been carried out and will be repeated before construction begins to include camp and pipe storage areas.
A6	6-02	-	Soil & Ground Conditions	All known areas of surface contamination (within the project footprint) will be cleared before construction begins.
A9	9-02	-	Soil & Ground Conditions	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.
A7	X3-03	Mtkvari crossing	Soil & Ground Conditions	The existing micro-tunnelling shaft on the east bank of the Mtkvari is full of waste material that has not been classified. The waste will be dug out, assessed and managed in accordance with the Pollution Prevention Plan and Waste Management Plan.
A11	11-01	-	Surface Water	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.
A11	11-03	-	Surface Water	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.
A15	15-03	-	Surface Water	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users.
A15	X5-05	CGS2 access road	Surface Water	Water quality and flow rate testing will be undertaken upstream and downstream of crossings on the access road to CSG2 prior to, during and after construction.
A32	32-17		Land Ownership and Use	The Project will seek to identify whether any herders use the construction areas and aim to consult with them on potential restrictions during construction
A37	37-17	-	Traffic & Transport	The Project will undertake a road condition survey before construction begins in areas as defined by the Project.

APPENDIX F – TIME CONSTRAINED ECOLOGICAL COMMITMENTS

The preliminary seasonal sensitivity table has been prepared on the basis of the results of the ecological surveys undertaken as part of the ESIA process. The tables provide an indication of the constraints and required actions that will govern the construction of the SCPX Pipeline; for the purposes of the table the following categories of response have been defined:

Actions or activities that cannot be completed at this time
Suboptimal period for actions or activities that need to be completed at this time
Optimal period for actions or activities that need to be completed at this time

In each instance the response is qualified or expanded by the accompanying mitigation. The responses, constraints and measures indicated in the table are requirements that seek to mitigate the specific sensitivities associated with ecological seasonality.

In many cases, pre-construction ecological surveys will be required prior to the finalisation of the contractors work method statements and programmes. The surveys will be designed to improve understanding of the ecological resources and dynamics within, and in the vicinity of, the pipeline Right of Way (ROW) and to provide the basis for determining an appropriate course of action. In some cases, the surveys will establish the need to schedule construction activities outside key sensitive periods, in others, a range of options may be available, from narrowing of the ROW to the clearance of vegetation outside of the breeding season of species. There may also be instances in which the surveys indicate that seasonal sensitive activities are not occurring within the ROW; under such circumstances no further action would be required in respect to this specific issue.

It should be noted that the pre-construction surveys are, in themselves, constrained by seasonal considerations. Botanical surveys, for example, are generally most effective if undertaken during spring or early summer, when the flowering of plants facilitates species identification. Each of the proposed survey programmes and scopes will be reviewed by COMPANY prior to the onset of the surveys.

In managing the ecological implications of the SCPX Project a number of key principles need to be accommodated.

Firstly, the country-specific ecology of individual species (including breeding seasons, hibernation patterns, etc) may not be fully understood and has not been the subject of significant ecological research. The management of this uncertainty will represent a key challenge during the pre-construction and construction stages of the Project.

Secondly, the ecological surveys undertaken as part of the ESIA process have been designed to develop an understanding of the species and habitats that are encountered along the pipeline route and to develop a strategy for mitigating potential impacts to key resources. At key locations, more detailed pre-construction surveys will supplement the high level surveys undertaken during the ESIA. As such, the findings of the pre-construction surveys will inform a range of decisions that will need to be taken during the early phases of

the construction programme roll out. It is critical, therefore, that appropriate expertise is mobilised in undertaking the surveys and developing effective and practicable mitigation.

Thirdly, as ecological considerations are a key influence upon the construction of the pipeline, it is anticipated that ongoing ecological advice will be required during the construction phase, particularly within ecologically sensitive sections of the route. The Contractor will be required to ensure that the available advice informs on-site decision-making and issue resolution and to demonstrate that appropriate response have been pursued to mitigate impacts to ecological resources. The mechanisms by which ecological issues are integrated into the day-to-day management of the construction process shall be clearly defined within the Contractor's Ecological Implementation Plan, which will be subject to audit and monitoring.

Finally, a precautionary approach shall underpin the management of ecological issues during the construction period. This requires that all parties to the Project seek to manage uncertainty in a manner that provides contingent flexibility in accommodating any new data that might emerge during the construction phase.

Table F1: Time constrained Ecological Commitments

Commitment	Project	Location	Summary of Commitment ⁵	Month											
Number	Component			J	F	Μ	Α	M	J	J	Α	S	0	N	D
Planning and Site	Preparation														
D5-045	ALL	Specific locations identified during ESIA	Mark out existing third-party services and sensitive receptors that need to be avoided during construction												
18-05	ALL	All sites	Vehicles will be inspected and washed of soil before being shipped to Georgia												
Year before Const	truction														
17-18	Pipeline	Pipeline Camp	Pre-construction ecological survey												
X7-12 & X7-13	Pipeline	KP 2-12 and KP 54-55	Bat roost surveys												
X7-14	Facilities and Access Road	CSG2 and at wetland areas along the CSG2 access road	Ornithological surveys												
Immediate Pre-con	nstruction														
X7-18	Facilities	CSG2	Survey for Marsh Orchid and relocate												
Construction															
X7-30	Pipeline	Algeti River Crossing	Avoid construction of river crossings during fish spawning season												
Re-instatement an	d Operations														
X7-06	Pipeline	Algeti crossing where trees are removed	Collect Smooth leaf elm seeds for reinstatement												

⁵ This text paraphrases the commitment text. Only the commitment text is legally binding and it should always be consulted before proceeding.

Appendix E - South Caucasus Pipeline Expansion Project, Georgia - ESIA Commitments Register

Note: This Commitments Register sets out all the specific mitigation measures that the project currently proposes to adopt in relation to potential impacts identified in the ESIA. It is the exclusive and authoritative record of the mitigation measures proposed. The Commitments Register is intended to be read in conjunction with the full text of this ESIA document which provides important context and background, as well as describing the impacts which the listed measures aim to mitigate or manage, and the residual impact which may remain.

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A1	1.01	Construction		Geology & Geomorphology	Aggregates will only be sourced from licensed sources as approved by MoENR.	Resource Management Plan		10.2.4
A28	1.02	Construction		Economy, Employment, Skills & Livelihoods	Environmental considerations will be included in the project procurement process.	Procurement and Supply Plan		10.14.1
A1	1.03	Construction		Geology & Geomorphology	The project will give preference to using existing borrow pits where reasonably practical.	Resource Management Plan		10.2.4
A1	1.05	Pre- construction		Geology & Geomorphology	Environmental audits will be undertaken at any proposed third-party borrow pits and/or spoil disposal pits before they are used. Periodic audits will be undertaken thereafter and as considered appropriate by the Company.	Resource Management Plan		10.2.4
A1	1.06	Construction		Geology & Geomorphology	Use of borrow pits will be managed in a manner that seeks to ensure that no illegal extraction (including by a third party) takes place.	Resource Management Plan		10.2.4
A1	1.07	Construction		Geology & Geomorphology	All excavated materials will be screened and reused to the extent deemed feasible by Company to minimise the need for new aggregates.	Resource Management Plan		10.2.4
A1	1.08	Construction		Landscape	When camps and lay-down areas are taken out of service, the existing aggregate will be used, as approved by the Company, to landscape areas of the site before topsoil is spread; where this is not possible, the aggregate will be returned to borrow pits/Company approved disposal areas.	Reinstatement Plan		10.2.4, 10.4.4, 5.7.3

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A1	1.09	Construction		Geology & Geomorphology	All temporary borrow pits will be reinstated (unless instructed otherwise by regulatory authorities).	Reinstatement Plan		10.2.4
A1	1.10	Construction	Mtkvari Crossing	Geology & Geomorphology	Where excavated material is unsuitable for padding or backfilling, padding materials (e.g. sand or small-grained soils/gravel materials) will be bought or sourced from approved borrow pits.	Procurement and Supply Plan		10.2.4, 5.4.9
A1	1.11	Construction		Geology & Geomorphology	Where benching is required, surplus subsoil will be stored on the ROW or, if disposal is necessary, it will be transported to an approved disposal site and/or approved borrow pits.	Reinstatement Plan		10.2.4, 10.7.4, 5.4.7
A1	1.12	Construction		Soil & Ground Conditions	Care will be taken to ensure that the trench spoil is spread beneath the topsoil and is not left on the surface.	Reinstatement Plan		10.2.4, 10.3.4, 10.4.4, 10.7.4
A2	1.13	Construction		Soil & Ground Conditions	The construction contractor will have a documented and operational ESMS aligned with the requirements of ISO 14001 Environmental Management Systems.			1.3.4, 10.1.3, Appendix D 1.3
A1	1.14	Construction		Geology & Geomorphology	Excavated subsoil will be screened and reused for padding, wherever practicable.	Waste Management Plan		10.2.4
A2	2.01	Construction		Soil & Ground Conditions	Load-bearing materials, such as bog mats and geotextile membranes, will be used to support heavy loads in areas of soft ground (including wetland areas) unless deemed impractical by the Company.	Reinstatement Plan		5.4.7, 10.3.4, 10.13.4
A2	2.02	Construction		Soil & Ground Conditions	Vehicle movements will be restricted to defined access routes and demarcated working areas (unless in the event of an emergency).	Pollution Prevention Plan		10.3.4, 10.7.4, 10.8.4, 10.13.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A2	2.03	Construction		Soil & Ground Conditions	Driving along the ROW will not be permitted in excessively wet conditions unless otherwise approved by the Company.	Reinstatement Plan		10.3.4, 10.13.4
A2	2.04	Construction		Soil & Ground Conditions	Temporary drainage will be provided where necessary (as determined by the Company) to prevent ponding or waterlogging of the working area.	Reinstatement Plan		10.3.4, 10.13.4
A2	2.05	Construction		Soil & Ground Conditions	Backfill will be adequately (but not excessively) compacted to prevent future settlement.	Reinstatement Plan		10.3.4, 10.6.4, 10.13.4
A2	2.07	Construction		Soil & Ground Conditions	After backfilling, the subsoil beneath the running track will be ripped prior to reinstatement of agricultural land.	Reinstatement Plan		10.3.4, 10.13.4
A4	3.01	Construction		Soil & Ground Conditions	Topsoil removed from the facilities (and any excess subsoil) will be stored in designated areas within the site area for potential use in the landscape works.	landscape management plan		10.3.4, 10.4.4
A3	3.03	Construction		Soil & Ground Conditions	Erosion control measures will be implemented to achieve erosion Class 3 or better.	Reinstatement Plan		10.3.4, 10.7.4, 10.13.4
A3	3.05	Construction		Soil & Ground Conditions	Temporary dewatering or trench stabilisation will be undertaken where required to minimise slumping of trench walls.	Reinstatement Plan		10.3.4, 10.7.4
A3	3.07	Construction		Soil & Ground Conditions	Trench breakers will be installed where downhill flow within the backfilled trench may lead to erosion.	Reinstatement Plan		10.3.4, 10.6.4, 10.7.4
A3	3.08	Construction		Soil & Ground Conditions	Soil loss will be monitored and corrective actions taken if it exceeds erosion class 3, in accordance with the Reinstatement Plan.	Reinstatement Plan		10.3.4, 10.7.4, 10.13.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A2	3.09	Construction		Soil & Ground Conditions	Local people will be actively discouraged from using the ROW as an access road (through use of signage, public education, leaflets etc.).	Reinstatement Plan		10.3.4, 10.7.4, 10.12.4, 10.13.4
A4	3.11	Construction		Soil & Ground Conditions	Once the topsoil has been replaced it will be stone picked to remove any large stones that are not in keeping with the surrounding soil texture.	Reinstatement Plan		10.3.4.
A17	3.14	Construction & Operational		Ecology	A monitoring plan will be developed to determine the success of re- vegetation and bio-restoration activities, including the appropriateness of species composition.	Ecological Management Plan	Operations management system	10.7.4, 10.4.4
A2	3.15	Construction		Soil & Ground Conditions	Upon completion of subsoil and topsoil reinstatement, the contractor and Company personnel will inspect disturbed areas jointly for signs of erosion, slope stability, relief, topographic diversity, acceptable surface water drainage capacity and function, and compaction. Remedial measures will be implemented, if necessary, at locations where reinstatement does not meet the Project criteria.	Reinstatement plan		10.3.4, 10.7.4, 10.13.5, 10.13.4, 5.7.3
A3	3.17	Construction		Soil & Ground Conditions	The rate of discharge of water will be controlled to reduce the risk of soil erosion.	Pollution Prevention Plan		10.3.4, 10.5.4
A8	3.19	Construction		Landscape	Field boundaries will be reinstated to pre-existing condition on completion of construction.	Reinstatement Plan		10.4.4, 10.14.4
A3	3.21	Construction		Surface water	Measures to minimise scour and reduce sediment load will be implemented at locations where hydrotest water or other pumped water (including trenchwater) is discharged to surface watercourses or to land (e.g. controlled rate of discharge and deployment of geotextile mats or other physical erosion prevention measures).	Pollution Prevention Plan		10.5.4, 10.5.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A7	3.23	Construction		Surface Water	At watercourses, bank and bed material will be stored separately, away from the active channels and will not be placed where flow or drainage will be obstructed.	Reinstatement plan		10.5.4, 10.7.4, 5.4.10
A10	3.24	Construction		Surface Water	At locations where trenchwater or hydrotest water or other pumped water discharges causes scour or soil erosion, eroded areas will be reinstated.	Pollution Prevention Plan		10.5.4
A3	3.26	Construction & Operational		Soil & Ground Conditions	Surface water drainage from operational areas including access roads and temporary facilities will be designed to minimise soil erosion in accordance with sustainable urban drainage systems (SUDS) principles.	Reinstatement Plan	Operations management system	10.3.4, 10.7.4
A3	3.28	Construction		Soil & Ground Conditions	Temporary erosion control measures will be developed and implemented after initial land disturbance and if construction activity on the working areas is suspended over the winter before reinstatement has been completed.	Reinstatement Plan		10.3.4, 10.7.4
A10	3.30	Construction		Surface Water	When discharge velocities have the potential to create erosion, energy dissipaters will be used to establish sheet flow. Trenches will be dewatered in such a manner that no heavily silt-laden water flows into any wetland or water body.	Reinstatement Plan		10.5.4, 5.4.9
A3	3.34	Design		Community Health & Safety	If water accumulates in the open trench (either from rainfall or because of a high water table), it will be pumped out before the pipe is lowered into the trench. All trench water will be discharged safely with the aim of minimising erosion.	Community Safety Plan		10.12.4, 5.4.9
A3	4.02	Construction		Soil & Ground Conditions	Stored subsoil and topsoil will be segregated in a manner that avoids mixing.	Reinstatement Plan		10.3.4, 10.13.4, 5.4.7
A2	4.03	Construction		Soil & Ground Conditions	Topsoil will be stored outside the running track used by construction plant, equipment and vehicles.	Reinstatement Plan		10.3.4, 10.13.4, 5.4.7

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A4	4.04	Construction		Soil & Ground Conditions	If topsoil is stored for more than six months, the stacks will be monitored for anaerobic conditions and manual aeration will be undertaken if they develop.	Reinstatement Plan		10.3.4, 10.13.4, 5.4.7
A4	4.05	Construction		Soil & Ground Conditions	Topsoil stacks along the ROW will be free draining and stored in accordance with the Project Reinstatement Specification.	Reinstatement Plan		10.3.4, 5.4.7
A2	4.06	Construction		Soil & Ground Conditions	Soil storage areas will be protected from vehicle movements to avoid soil compaction.	Reinstatement Plan		10.3.4, 5.4.7, 10.13.4
A3	4.07	Construction		Soil & Ground Conditions	Where the Project considers that ground is sufficiently steep (generally greater than 25%), topsoil stockpiles will be protected with silt fence to help reduce washout and loss of topsoil during heavy rains.	Reinstatement Plan		10.3.4, 10.7.4, 5.3.3
A2	4.08	Construction		Soil & Ground Conditions	The topsoil and subsoil stack surface will be compacted sufficiently with the aim of preventing erosion, without leading to the development of anaerobic conditions.	Reinstatement Plan		10.3.4, 10.7.4, 5.3.3
A4	4.09	Construction		Soil & Ground Conditions	Reinstatement will be undertaken as early as practicable and in accordance with the Reinstatement Specification.	Reinstatement Plan		10.3.4, 5.3.3, 10.4.4, 10.7.4, 10.13.4
A3	4.12	Pre- construction		Soil & Ground Conditions	The construction contractor(s) will produce method statements incorporating plans for erosion control, sediment control and reinstatement before work begins at river crossings.	Reinstatement Plan		10.3.4, 10.7.4, 10.13.4, 5.7.3
A2	4.13	Construction		Soil & Ground Conditions	Topsoil stacks will be regularly inspected for compaction and erosion; corrective measures will be implemented if compaction or erosion is identified.	Reinstatement Plan		10.3.4, 10.7.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A7	4.14	Construction & Operational		Soil & Ground Conditions	In the case of an unplanned event, any damage will be reinstated and compensated where appropriate.	Reinstatement Plan		10.3.4
A7	4.15	Pre- construction		Soil & Ground Conditions	A soil survey will be undertaken (based on a representative sample) prior to construction to measure the depth of the topsoil layer along the pipeline route and will be used to determine the depth of topsoil stripping.	Reinstatement Plan		10.3.4, 10.13.4
A3	4.18	Construction		Soil & Ground Conditions	In sensitive areas of thin topsoil (as defined by Company) additional precautions will be taken with the aim of preserving the topsoil for subsequent replacement where deemed feasible by the Company.	Reinstatement Plan		10.3.4
A4	4.22	Pre- construction		Soil & Ground Conditions	A soil survey of camp sites and pipe storage areas will be undertaken.			10.3.4, 10.13.4
A6	6.01	Pre- construction		Soil & Ground Conditions	A baseline survey of visible contamination has been carried out and will be repeated before construction begins to include camp and pipe storage areas.	Pollution Prevention Plan		10.3.4
A6	6.02	Pre- construction		Soil & Ground Conditions	All known areas of surface contamination (within the Project footprint) will be cleared before construction begins.	Pollution Prevention Plan		10.3.4
A7	6.03	Construction		Soil & Ground Conditions	The storage of hazardous materials will be restricted to designated impermeable hazardous materials storage areas located at least 50m from any surface watercourse or seasonal water channel.	Pollution Prevention Plan		10.3.4, 10.5.4, 10.6.4, 10.12.4
A7	6.04	Construction		Soil & Ground Conditions	Requirements for the establishment of hazardous materials storage areas (e.g. bunding, impermeable surfaces, secure drainage, limited access, labelling) will be identified in the Contractor's Pollution Prevention Implementation Plan.	Pollution Prevention Plan		10.3.4, 10.5.4, 10.6.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A7	6.05	Construction		Soil & Ground Conditions	A refuelling procedure will be developed by the Contractor, which will include a restriction on refuelling within 50m of any watercourse. Any deviation will be subject to approval by the Company.	Pollution Prevention Plan		10.3.4, 10.5.4, 10.6.4
A7	6.06	Construction		Soil & Ground Conditions	The Contractor's Implementation Plan will detail requirements for record keeping and on-site maintenance of material safety data sheets (MSDS).	Pollution Prevention Plan		10.3.4, 10.5.4
A7	6.07	Construction		Soil & Ground Conditions	Materials that can potentially react with each other will be segregated during storage.	Pollution Prevention Plan		10.3.4, 10.5.4
A7	6.08	Construction		Soil & Ground Conditions	Procedures will be established to determine acceptability of material storage and to promote the minimisation of storage volumes.	Pollution Prevention Plan		10.3.4, 10.5.4
A6	6.09	Construction		Soil & Ground Conditions	Relevant personnel will be trained in safe use and handling of hazardous materials.	Pollution Prevention Plan		10.3.4, 10.5.4, 10.6.4
A7	6.10	Construction		Soil & Ground Conditions	Spill response equipment (absorbents etc.) will be available in hazardous materials storage areas.	Pollution Prevention Plan		10.3.4, 10.5.4
A6	6.11	Construction		Soil & Ground Conditions	Relevant construction personnel will be trained in use of spill kits and disposal practices.	Pollution Prevention Plan	Local Employment and Training Plan	10.3.4, 10.5.4, 10.6.4
A7	6.12	Construction		Soil & Ground Conditions	A trained rapid response team will be mobilised in the event of spillage of hazardous materials.	Pollution Prevention Plan		10.3.4, 10.5.4, 10.12.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A7	6.13	Construction		Soil & Ground Conditions	The need for remedial work in any specific area will be determined on the basis of the observed contaminants, sampling and analysis to determine their concentrations and the risks that they may pose to local receptors (social and environmental) in accordance with Project Standards.	Pollution Prevention Plan		10.3.4
A7	6.14	Construction		Soil & Ground Conditions	In each area of identified contamination, a site-specific remedial action plan will be developed. The plan will include a summary of the environmental risks posed by the contamination and the procedures that are to be adopted to mitigate those risks.	Pollution Prevention Plan		10.3.4
A7	6.16	Construction		Soil & Ground Conditions	The preferred options for the treatment of contaminated soil will be based on the risks posed by the material. In keeping with the aim of minimising the transportation of hazardous materials and minimising waste generation, preference will be given to in situ and low technology remedial approaches.	Pollution Prevention Plan		10.3.4
A7	6.18	Construction		Soil & Ground Conditions	Any contaminated material storage areas will be provided with containment measures (for example bunds, ditches, impermeable base membranes, covers) to help minimise run-off and airborne losses.	Pollution Prevention Plan		10.3.4
A7	6.20	Construction		Soil & Ground Conditions	Vehicles delivering fuel or hazardous liquids will carry appropriate spill kits to allow an initial response to any spill to be deployed.	Pollution Prevention Plan		10.3.4, 10.5.4, 10.12.4
A7	6.21	Construction		Soil & Ground Conditions	All mobile plant (excluding vehicles) will be integrally bunded or will be equipped with a bund or drip tray that will be regularly inspected and emptied to prevent rainwater accumulating.	Pollution Prevention Plan		10.3.4
SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
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A7	6.22	Pre- Construction		Soil & Ground Conditions	The Company will carry out a due diligence exercise to identify and manage the risk of anthrax.	Pollution Prevention Plan		10.3.4, 10.12.4
A7	6.24	Construction		Soil & Ground Conditions	Disposal of the drilling mud will be subject to an environmental risk assessment.	Waste Management Plan		10.3.4, 10.5.4
A7	6.25	Construction		Soil & Ground Conditions	If any animal burial pits are identified during construction, works will cease in this location until the affected area has been subject to sampling by qualified personnel to determine if there is a risk of anthrax.	Pollution Prevention Plan		10.3.4, 10.12.4
A7	6.26	Construction		Surface water	Drilling and tunnelling mud will be stored in impermeable lined bunded areas or tanks.	Pollution Prevention Plan		10.5.3
A7	7.01	Construction		Soil & Ground Conditions	Controlled or uncontrolled burning of waste will not be allowed (with the exception of Company approved incinerators).	Waste Management Plan		10.3.4, 10.5.4, 10.8.4,
A7	7.02	Construction		Soil & Ground Conditions	Non-hazardous waste will be disposed of at a Company and Government-approved landfill site.	Waste Management Plan		10.3.4
A7	7.03	Construction		Soil & Ground Conditions	A secure hazardous waste accumulation area that meets Project requirements will be used for temporary storage at Project sites prior to transfer to an approved final hazardous storage or disposal facility.	Waste Management Plan		10.3.4
A7	7.04	Construction		Soil & Ground Conditions	Waste management practices will be subject to regular monitoring and auditing.	Waste Management Plan		10.3.4, 10.5.4, 10.12.4
A6	7.05	Construction		Soil & Ground Conditions	Contaminated soil will be segregated from uncontaminated materials and stored at least 50m away from any surface water or seasonal surface water bed.	Pollution Prevention Plan		10.3.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A7	7.08	Construction		Soil & Ground Conditions	Waste will be segregated to facilitate recycling and re-use.	Waste Management Plan		10.3.4
A7	7.10	Construction & Operational		Soil & Ground Conditions	Diesel storage tanks at construction camps and CSG2 will be located in suitably sized bunded areas that are designed to be impervious to water and fuel. The bund volume will be designed to no less than 110% of the tank volume. Loading and off-loading connections will be located over secondary containment.	Pollution Prevention Plan	Operations management system	10.5.4, 5.8.2
A7	7.11	Construction & Operational		Soil & Ground Conditions	Hazardous chemicals will be securely stored on site in special containers in a designated storage area.	Pollution Prevention Plan		10.3.4, 10.5.3, 5.8.2
A7	7.12	Construction & Operational		Soil & Ground Conditions	Regular inspections and maintenance will be carried out: of secondary containment areas at camps and Facilities and emission control techniques at Facilities, to confirm that they are functioning effectively.	Pollution Prevention Plan	Operations management system	5.8.1, 10.3.4, 10.5.4
A7	7.13	Construction & Operational		Surface water	Relevant training will be provided to those with responsibilities for monitoring of effluent discharges and emissions at the construction camps and Facilities such as effluent sample taking and chain of custody.	Local Recruitment and Training Plan	Operations management system	10.3.4, 10.5.4, 10.6.4
A7	7.14	Construction & Operational		Soil & Ground Conditions	Information will be incorporated into the Site induction process and will outline the role of personnel in the management of waste and emissions from site and spill response procedures.	Pollution Prevention Plan	Operations management system	10.5.4
A7	7.15	Construction & Operational		Soil & Ground Conditions	Site induction training will be supplemented by regular 'toolbox' talks with relevant personnel if inspections or audits highlight failings in waste management.	Pollution Prevention Plan	Operations management system	10.5.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A8	8.03	Construction & Operational		Landscape	The Company will carry out annual maintenance operations to help maintain the integrity of the landscape planting.	Landscape Management Plan	Operations management system	10.4.4
A8	8.04	Construction		Landscape	Lights will be shrouded or directed with the aim of reducing off-site light spill at the construction sites, camp and pipe storage areas.	Pollution Prevention Plan		10.4.4
A8	9.01	Construction		Landscape	Re-contouring should be sympathetic and in keeping with the surrounding landscape, and as approved by the Company, where this is not precluded by risk to integrity of the pipeline or erosion considerations.	Reinstatement Plan		10.3.4, 10.4.4, 5.8.3
A1	9.02	Pre- construction		Soil & Ground Conditions	All potential subsoil disposal sites and disposal plans will be subject to an environmental and social review prior to their adoption.	Reinstatement Plan		10.3.4, 10.7.4
A9	9.03	Construction		Surface Water	Muds used will be water based.	Pollution Prevention Plan		10.5.4, 10.6.4
A9	9.04	Construction		Soil & Ground Conditions	No side-casting of excess spoil outside the working area will be permitted.	Reinstatement Plan		10.4.4
A7	10.01	Construction		Surface water	Concrete batching plant (if required) will be sited at least 50m away from sensitive receptors such as watercourses; wash pits to be lined with an impermeable liner.	Pollution Prevention Plan		10.5.4
A10	10.02	Construction		Surface Water	The direct discharge of trenchwater to watercourses will be avoided, except where approved by the Company.	Pollution Prevention Plan		10.5.4, 5.4.11

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A10	10.03	Construction		Surface Water	The locations for discharge of hydrotest water and where possible trench water, will be identified in the Contractor's Pollution Prevention Implementation Plan.	Pollution Prevention Plan		10.5.4, 5.4.11
A10	10.04	Construction		Surface Water	If discharge of trenchwater to a watercourse is unavoidable, discharge will be through a filtering medium.	Pollution Prevention Plan		10.5.4, 5.4.11
A10	10.06	Construction		Surface Water	Before hydrotesting, the Contractor will prepare, and submit for Company approval, a hydrotest plan.	Pollution Prevention Plan		10.5.4
A10	10.08	Construction		Surface Water	A risk assessment will be undertaken before any chemical additives are used in hydrotest water.	Pollution Prevention Plan		10.5.4, 5.7.2
A10	10.09	Construction		Surface Water	Hydrotest water will be re-used between sections, where practical, to minimise the volume required.	Resource Management Plan		10.5.4, 10.7.4, 5.7.2
A10	10.10	Construction		Surface Water	Water (including hydrotest water) will be tested before discharge and treated to meet the Project Environmental Standards.	Pollution Prevention Plan		10.5.4
A10	10.11	Construction		Surface Water	The hydrotest water will be treated using diffusers to entrain oxygen in a break tank, and filtration will be used to minimise suspended solids, prior to discharge. Flow rate will be controlled to reduce the risk of soil erosion and disturbance to river bed sediment.	Pollution Prevention Plan		10.5.4, 10.7.4
A10	10.12	Construction		Surface Water	Sediment control fencing, drainage channels and trench barriers will be installed where appropriate.	Reinstatement Plan		10.5.4, 10.7.4, 5.4.9

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A10	10.14	Construction		Surface Water	Watercourse banks disturbed by Project crossings will be restored to near original condition, which will be assessed individually for each watercourse and defined in the Contractor's Reinstatement Implementation Plan. Any deviations (e.g. because hard reinforcement is required for erosion control) shall be subject to Company approval.	Reinstatement Plan		10.5.4, 10.7.4, 10.15.4, 5.4.11
A10	10.15	Construction		Surface Water	Sediment reduction measures will be implemented including but not limited to discharge of pumped water via break tanks or sediment mats.	Pollution Prevention Plan		10.5.4
A10	10.16	Construction		Surface Water	Daily visual monitoring of turbidity will be undertaken at river crossings while works are being undertaken at that river. This will be supplemented as necessary by probe monitoring	Pollution Prevention Plan		10.5.4, 10.7.4
A10	10.18	Construction		Surface Water	Only essential construction vehicles (as approved by the Company) will be allowed to enter rivers or streams and only with prior examination of the vehicles for fuel/lubricant leaks. Generally, the construction traffic will cross watercourses via a flume/culvert (piped bridge), which will be sized so as not to restrict the flow in the watercourse and allow fish and other aquatic organisms to pass through.	Pollution Prevention Plan		10.5.4
A10	10.19	Construction		Surface Water	Protection measures will be put in place to prevent any water used for dust suppression from causing silt problems for nearby wetlands or watercourses.	Pollution Prevention Plan		10.5.4, 10.7.4
A10	10.21	Construction		Surface Water	The direct discharge of hydrotest water to watercourses and soakaways will be subject to the results of the chemical risk assessment. The use of evaporation basins will be considered subject to the availability of land and an environmental and social assessment.	Pollution Prevention Plan		10.5.4

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A10	10.22	Construction & Operational		Surface Water	Washing of Project plant and vehicles in watercourses will not be undertaken.	Pollution Prevention Plan	Operations management system	10.5.4
A11	11.01	Pre- construction		Surface Water	Construction of the surface water crossings will seek to ensure minimal impacts from interrupting river flow by identifying downstream users and determining their river water supply needs.	Resource Management Plan		10.5.4, 10.15.4
A11	11.02	Construction		Surface Water	Construction design of river and stream crossings will seek to ensure minimal interruption to flow by using measures such as pumping, channel diversions and fluming.	Resource Management Plan		10.5.4, 10.15.4
A11	11.03	Pre- construction		Surface Water	If temporary damming is required, a pre-construction engineering, social and environmental review will be undertaken with the aim of planning the work to minimise the duration of the flow interruption and determining the need for pump around to maintain flows.	Resource Management Plan		10.5.4, 10.15.4
A11	11.04	Construction		Surface Water	Any temporary dams in watercourses to be removed as soon as pipe installation and reinstatement at that crossing is complete.	Reinstatement Plan		10.5.4
A17	11.05	Construction		Surface Water	Watercourse crossing methods will be developed with the aim of minimising the mobilisation of sediments.	Pollution Prevention Plan		10.5.4
A13	13.01	Construction		Surface Water	The Construction Contractor will monitor weather forecasts and avoid creating temporary dams in watercourses if flooding is likely.	Infrastructure and Services Management Plan		10.5.4, 10.13.4
A13	13.02	Construction		Surface Water	Gaps will be left in soil stacks at strategic locations to allow water through.	Reinstatement Plan		10.5.4, 10.13.4

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A13	13.03	Construction		Surface Water	Any flood defence banks breached by the pipeline will be replaced during reinstatement.	Reinstatement Plan		10.5.4, 10.13.4
A7	14.02	Construction		Surface Water	Domestic sewage from camps and pioneer camps will be stored and transported to water treatment works or treated through a dedicated site sewage water treatment plant.	Pollution Prevention Plan		10.6.4, 10.5.4
A7	14.03	Construction		Groundwater	In areas of wetland and areas where the groundwater supplies wells for irrigation or potable use, the storage and use of hazardous materials will be carefully controlled.	Pollution Prevention Plan		10.6.4, 10.12.4
A14	14.04	Construction		Groundwater	Waste water will be reduced by efficient use of raw water and the implementation of water management schemes that require water to be reused, whenever practicable, prior to treatment and disposal.	Resource Management Plan		10.5.4
A7	14.06	Construction		Surface Water	All wastewater discharges will be in compliance with the Project Environmental Standards.	Pollution Prevention Plan		10.5.4
A7	14.08	Construction		Surface water	Periodic analysis will be undertaken of controlled stormwater, sanitary and industrial discharges and any receiving surface water upstream and downstream of the discharge point.	Pollution Prevention Plan		10.5.4, 10.6.4
A7	14.09	Construction & Operational		Surface water	The applicable discharge permits will be obtained for any new planned liquid discharges, prior to the discharge commencing.	Pollution Prevention Plan	Operations Management System	5.5.5, 10.5.4, 10.6.4
A23	14.10	Construction & Operational		Air Quality	The applicable air emissions permits will be obtained for combustion equipment, prior to the emission commencing.	Pollution Prevention Plan	Operations Management System	5.6.6, 10.8.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A15	15.01	Pre- construction		Infrastructure & Services	All necessary permits/consents to drill and abstract groundwater will be obtained before water is abstracted for construction, or domestic use. Groundwater will not be used for pipeline hydrotesting.	Resource Management Plan		10.15.4
A15	15.02	Construction & Operational		Infrastructure & Services	All new and existing water abstractions for use by the Project will be subject to an environmental and social assessment to assess potential impacts; decisions on the acceptability of the source and appropriate abstraction rates will be based on the results of the review, in accordance with the abstraction permit.	Resource Management Plan	Operations management system	10.6.4,10.5. 4
A15	15.03	Pre- construction		Surface Water	River flow will be assessed before and during abstraction; abstraction rates will be set taking into account information that the Contractor is able to acquire about downstream users.	Resource Management Plan		10.5.4, 10.7.4
A15	15.04	Pre- construction		Groundwater	The abstraction borehole, when completed, will be test pumped and a sustainable yield will be determined together with aquifer characteristics such as hydraulic conductivity and radius of influence.	Resource Management Plan		10.6.4
A15	15.05	Construction		Groundwater	Water features such as abstractions (boreholes, wells, springs) or environmental features (wetlands, springs, streams or surface water features in continuity with groundwater) will be identified within the likely radius of influence of the abstraction point.	Resource Management Plan		10.6.4
A15	15.07	Construction		Groundwater	Water conservation initiatives will be undertaken at construction camps.	Resource Management Plan		10.6.4

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A15	15.09	Construction		Groundwater	If groundwater is extracted for Project use, from either new or existing boreholes at temporary facilities, the water quality and sustainability will be monitored periodically to confirm that the supply meets Project standards and does not impact adversely on other known users.	Resource Management Plan		10.6.4
A13	16.01	Construction		Surface Water	The land drainage system will be reinstated to achieve pre-existing functionality.	Landscape Management Plan	Reinstatemen t Management Plan	10.5.4
A17	17.05	Construction		Landscape	Temporary works areas will be reinstated to near original condition (as compared to pre-construction survey reports or adjacent areas).	Reinstatement Plan		10.4.4, 10.13.5, 5.6.2
A17	17.07	Construction & Operational		Ecology	The Project will seek to achieve an increasing trend in vegetation re- growth and species diversity (specifically species composition) in reinstated areas with reference to nearby areas undisturbed by Project activities, as recorded by the percent similarity and commonality indices.	Reinstatement Plan	Operations management system	10.4.4, 10.7.4
A17	17.08	Pre- construction		Ecology	Compensation planting will be based on the number of trees to be removed. A re-planting ratio will be developed which will be species and region specific.	Ecological Management Plan		10.7.4
A17	17.10	Construction & Operational		Ecology	The re-establishment of vegetation will be monitored following reinstatement until it has reached Project near- and long-term re-vegetation targets.	Ecological Management Plan	Operations management system	10.7.4, 10.4.4
A17	17.11	Construction & Operational		Ecology	Corrective measures will be implemented if establishment of vegetation is not successful or if, following survey and data analysis, the species composition is considered by a Project ecologist to be unsuitable for the area.	Ecological Management Plan	Operations management system	10.7.4

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A17	17.14	Pre- Construction		Landscape	A record will be made of the condition of access roads, construction camps, laydown areas and rail offloading areas and any special features along the pipeline ROW before construction to inform the reinstatement work.	Reinstatement Plan		5.4.7,10.7.4
A17	17.15	Construction		Ecology	An inventory will be made of all trees felled during the Project construction phase, including Red Data Book species, in accordance with the requirements of national legislation.	Ecological Management Plan		10.7.4
A17	17.18	Construction		Ecology	A pre-construction survey between April and July inclusive will be undertaken at the pipeline camp location, of the plants and animals present on site to identify any need for site-specific mitigation measures.	Ecological Management Plan		10.7.4
A18	18.01	Construction		Ecology	No species that are considered likely to out-compete the indigenous plant species will be used in seed mixes.	Ecological Management Plan		10.7.4
A18	18.02	Construction		Ecology	No invasive species will be used in seed mixes for erosion control or biorestoration.	Reinstatement Plan		10.7.4
A18	18.05	Construction		Ecology	The Contractor shall inspect and wash, all plant and equipment prior to shipping to the country of use with the aim of ensuring, as far as practicable, it is free from soil and plant material.	Ecological Management Plan		10.7.4
A19	19.03	Construction		Ecology	If Testudo graeca (spur-thighed tortoise) is found within the work site, individuals will be moved a safe distance (50m+) from the works by the Project ecologist. Any eggs or hatchlings will be placed in a box of sand and transferred by the Project ecologist to suitable nearby habitat where a nest will be created.	Ecological Management Plan		10.7.4

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A19	19.04	Construction		Ecology	Welded pipe sections will be capped to prevent entry.	Ecological Management Plan		10.7.4, 10.12.4
A19	19.05	Construction		Ecology	No hunting, fishing or unauthorised gathering of products (including plants and cultural heritage artefacts) by the workforce will be permitted within the Project footprint.	Construction Camp Management Plan		10.7.4, 10.14.4
A19	19.06	Construction		Ecology	Wildlife sensitivity to disturbance will be included in workforce training.	Local Recruitment and Training Plan		10.7.4, 10.14.4
A19	19.07	Pre- construction		Community Health & Safety	All drivers will undergo safety and environmental and social awareness training; driving performance will be assessed and monitored with additional training provided if necessary.	Local Recruitment and Training Plan		10.7.4, 10.12.4
A7	19.08	Construction		Community Health & Safety	Construction contractors will be required to manage the storage and disposal of food and organic wastes to avoid attracting vermin.	Waste Management Plan		10.7.4, 10.12.4
A19	19.10	Construction		Ecology	The Company will prepare Site Specific Ecological Management Plans for priority areas. Contractor will incorporate the requirements of these plans into site-specific method statements.	Ecological Management Plan		10.7.4
A20	20.01	Construction		Ecology	Gaps will be left in soil stacks at strategic locations to allow passage of animals and people where the Project considers it safe to do so.	Ecological Management Plan		10.7.4
A20	20.03	Construction		Community Health & Safety	Warning barriers and/or signs will be erected where the pipeline or CSG2 access road route crosses locations identified with local communities as being heavily used by people, including herders.	Community Safety Plan		10.12.4, 10.13.8

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A21	21.01	Construction		Community Health & Safety	The length of the continuous open trench (including trench with pipe installed but not backfilled and with a void space greater than 1m) will not exceed 10km per spread and the maximum length of the open trench will not exceed 15km per spread.	Community Safety Plan		10.7.4, 10.12.4, 5.4.9
A21	21.02	Construction		Ecology	Each section of open pipeline trench will have sloped ends or other mechanisms to aid egress from the trench.	Ecological Management Plan		10.7.4
A19	21.04	Construction		Ecology	The trench will be checked regularly for wildlife (particularly in sensitive locations) e.g. where tortoises are found (KP29-31 and KP54-55) and where the four-lined snake may be present (KP0-12).	Ecological Management Plan		10.7.4
A22	22.01	Construction		Air Quality	Energy efficiency in the camps will be monitored against key performance indicators (KPIs) and measures will be identified and implemented with the aim of continual improvement.	Resource Management Plan		10.8.4
A22	22.02	Construction		Air Quality	The workforce training will include advice on minimising energy consumption.	Local Recruitment and Training Plan		10.8.4, 10.14.4
A23	22.03	Pre- construction		Air Quality	Ambient air quality monitoring will be carried out prior to construction to establish a baseline on the boundary fence and at receptors in the vicinity of CSG1, CSG2 and PRMS.	Pollution Prevention Plan		10.8.4
A23	23.02	Construction		Air Quality	Equipment and vehicles will be regularly maintained in accordance with the manufacturer's recommendations to maximise fuel efficiency and help minimise emissions.	Resource Management Plan		10.8.4, 10.9.4
A23	23.03	Construction		Air Quality	Preferentially, the project will use fuel that has low sulphur content of 0.1%, where practical and available within Georgia.	Pollution Prevention Plan		10.8.4

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A24	23.05	Construction		Air Quality	Dust generation and concentrations in the air will be visually monitored during construction where activities are near communities. If dust is visible, additional mitigation measures, such as the imposition of tighter speed limits, will be implemented with the aim of avoiding causing disturbance to residents or land users.	Pollution Prevention Plan		10.8.4, 10.12.4, 10.13.4
A24	23.06	Construction		Air Quality	Vehicles carrying fine materials will be sheeted to help prevent dust blow and spillages.	Pollution Prevention Plan		10.8.4, 10.12.4, 10.13.4
A24	24.01	Construction		Air Quality	Contractor will be required to have an adequate supply of bowsers and to regularly damp down the ROW, access roads and village roads used by construction traffic during dry conditions.	Pollution Prevention Plan		10.8.4, 10.13.4
A24	24.02	Construction		Air Quality	A strict Project speed limit of 30km/hr will be enforced for project vehicles using unmade tracks and the ROW.	Pollution Prevention Plan		10.8.4, 10.9.4, 10.12.4, 10.13.4
A24	24.05	Pre- construction		Air Quality	Community Liaison Officers will identify any beekeepers whose hives are within 300m of the pipeline and facility construction, camp and pipe storage areas or access routes before the start of the honey production season. These beekeepers will be asked to move their hives (both mobile hives and stationary hives) a suitable distance (at least 300 metres) from the route for the season.	Community Liaison Plan		10.8.4, 10.14.4
A24	24.06	Construction		Economy, Employment, Skills & Livelihoods	The Company will develop and implement a policy for the compensation of beekeepers adversely affected by Project impacts.	Community Liaison Plan		10.8.4, 10.14.4
A24	24.07	Construction		Air Quality	Treated waste water will be used for damping down road surfaces to mitigate dust generation.	Pollution Prevention Plan		10.5.4

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A25	25.01	Construction		Noise	During construction work will generally be undertaken in daylight hours (excluding specified operations). Where people live in close proximity to the works, or there is a high potential for disturbance (e.g. blasting), a location-specific risk assessment will be undertaken for activities undertaken between 7pm and 7am.	Pollution Prevention Plan		10.9.4
A25	25.02	Construction & Operational		Noise	Driver training will include advice on behaviours to reduce the potential for disturbance, including use of horn, loud radios with windows open, switching engines off when not in use, strictly observing speed limits and not accelerating or braking aggressively.	Local Recruitment and Training Plan	Operations management system	10.9.4
A25	25.03	Construction		Noise	Project induction training will include instructions about minimising noise disturbance.	Pollution Prevention Plan		10.9.4
A25	25.04	Construction		Noise	Local residents will be forewarned of planned activities that are considered by the project to be noisy (e.g. blasting, pile driving and release of test pressure).	Pollution Prevention Plan		10.9.4
A25	25.05	Construction		Noise	Noise will be monitored periodically against the Project Environmental Standards.	Pollution Prevention Plan		10.9.4
A25	25.07	Construction		Noise	Camp rules will be developed and implemented and will include restrictions on noisy activities (e.g. inappropriate use of personal radios) to help avoid causing disturbance.	Construction Camp Management Plan		10.9.4
A25	25.08	Construction		Noise	The project will avoid vehicle reversing where practical, and will preferentially use white noise type reversing alarms.	Pollution Prevention Plan		10.9.4

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A25	25.09	Construction		Noise	During construction of the pipeline and facilities and operation of the construction camp and pipe storage areas where the works are less than 400m from residential buildings for longer than one month, periodic noise monitoring readings of 10 minutes duration (in accordance with the Project procedure) will be measured at the building facade at the start of the potentially noisy activities. If the noise exceeds Project Standards, measures will be implemented to aim to reduce noise levels (e.g. hoardings).	Pollution Prevention Plan		10.7.4, 10.9.4
A25	25.10	Construction		Noise	During construction of CSG1, CSG2 and the PRMS, the local community will be informed of when and where noisy activities (e.g. blasting, piling) will occur.	Community Liaison Plan		10.9.4
A25	25.11	Construction		Noise	During commissioning and testing, noise emissions from equipment will be minimised through use of acoustic insulation as deemed appropriate by the Project.	Pollution Prevention Plan		10.7.4, 10.9.4
A25	25.13	Pre- construction		Noise	Vibration sensitive locations will be determined by the Contractor and listed in their Pollution Prevention Implementation Plan, together with details for monitoring vibration before and during movement of heavy equipment. Further actions will depend on the outcome of vibration monitoring.	Pollution Prevention Plan		10.9.4
A26	25.14	Pre- construction		Vibration	A survey will be undertaken to record the external condition of buildings in close proximity to the ROW or access roads prior to construction; this will provide baseline evidence in the event of claims for damage.	Pollution Prevention Plan		10.9.4
A26	25.15	Construction		Vibration	The validity of any damage claims will be assessed; repairs will be undertaken or appropriate compensation paid if damage is associated with construction vehicle movements.	Pollution Prevention Plan		10.9.4

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A26	25.16	Construction		Vibration	Correct tyre pressures will be monitored and maintained.	Pollution Prevention Plan		10.9.4
A27	27.01	Construction		Cultural Heritage	A Cultural Heritage Management Plan will be implemented that includes the five-phase strategy for the progressive assessment and mitigation of the effects of construction.	Cultural Heritage Management Plan		10.10.4
A27	27.02	Pre- construction		Cultural Heritage	Areas of potential cultural heritage impact will be examined and any necessary excavations conducted prior to construction.	Cultural Heritage Management Plan		10.10.4
A27	27.03	Construction		Cultural Heritage	Archaeological sites identified during construction will be archaeologically recorded.	Cultural Heritage Management Plan		10.10.4
A27	27.04	Pre- construction		Cultural Heritage	Pre-construction works to evaluate and record known archaeological sites will be agreed with the Ministry of Culture and Monument Protection.	Cultural Heritage Management Plan		10.10.4
A27	27.05	Construction		Cultural Heritage	A programme of archaeological surveillance (watching brief) will be implemented during topsoil stripping of the ROW, the facility sites, construction camps and equipment lay-down areas and ancillary areas, and ROW trenching. The Company will be empowered to temporarily stop works, pending archaeological examination, if artefacts are seen.	Cultural Heritage Management Plan		10.10.4, 5.4.7
A27	27.06	Construction		Cultural Heritage	If archaeological artefacts or structures are found, archaeological advice will be sought from relevant approved Georgian heritage institutions and the Ministry of Culture and Monument Protection and the Chance Finds Procedure followed.	Cultural Heritage Management Plan		10.10.4

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A27	27.07	Construction		Cultural Heritage	The archaeologist conducting the watching brief will advise on procedures to be followed by the construction supervisor in line with the Chance Finds Procedure.	Cultural Heritage Management Plan		10.10.4
A27	27.08	Construction		Cultural Heritage	The Company will consider making minor adjustments to the route of the pipeline where this will avoid damage to a cultural heritage feature that is discovered during construction operations.	Cultural Heritage Management Plan		10.10.4
A27	27.09	Construction		Cultural Heritage	If the pipeline route cannot easily be adjusted to avoid damaging the feature, construction activities will be suspended at the site until the excavation and recording required by the authorities has been carried out.	Cultural Heritage Management Plan		10.10.4
A27	27.10	Construction		Cultural Heritage	Known archaeological sites within 50m of the pipe centreline or other construction activity will be demarcated throughout construction.	Cultural Heritage Management Plan		10.10.4
A27	27.11	Construction		Cultural Heritage	Issues relating to archaeological awareness (such as ownership of finds, notification of finds and protection of archaeological sites) will be included in induction training.	Local Recruitment and Training Plan		10.14.4
A27	27.13	Construction		Cultural Heritage	Any ripping or other ground disturbance activities required during reinstatement will be planned to avoid archaeological evidence that has been preserved in-situ.	Cultural Heritage Management Plan		10.14.4
A28	28.01	Construction		Economy, Employment, Skills & Livelihoods	To help minimise the extent of in-migration, the Project's strategy on local recruitment will be disseminated publicly, including via media announcements at regional and national levels (as appropriate).	Local Recruitment and Training Plan		10.11.4

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A28	28.02	Construction		Economy, Employment, Skills & Livelihoods	Unskilled labour will be preferentially recruited from the Project affected communities.	Local Recruitment and Training Plan		10.11.4, 10.14.4
A28	28.03	Construction		Economy, Employment, Skills & Livelihoods	Applications for employment will only be considered if submitted via the official application procedure.	Local Recruitment and Training Plan		10.11.4, 10.14.4
A28	28.04	Construction		Economy, Employment, Skills & Livelihoods	Targets for local recruitment from PACs will be agreed with the Contractor.	Local Recruitment and Training Plan		10.14.4
A28	28.05	Construction		Economy, Employment, Skills & Livelihoods	The Project will seek to manage employment expectations by explaining the number and type of opportunities in advance to local communities via the Community Liaison Officers.	Local Recruitment and Training Plan		10.14.4
A28	28.06	Construction		Economy, Employment, Skills & Livelihoods	Recruitment procedures will be transparent, public and non- discriminatory and open with respect to ethnicity, religion, sexuality, disability or gender.	Local Recruitment and Training Plan		10.14.4
A28	28.07	Pre- construction		Economy, Employment, Skills & Livelihoods	Clear job descriptions will be provided in advance of recruitment and will explain the skills required for each post.	Local Recruitment and Training Plan		10.14.4
A28	28.08	Pre- construction		Economy, Employment, Skills & Livelihoods	Community Liaison Officers will monitor that PACs are given priority in recruitment and that recruitment is non-discriminatory in terms of PACs and ethnicity.	Local Recruitment and Training Plan		10.14.4

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A28	28.09	Construction		Economy, Employment, Skills & Livelihoods	When appropriate, on-the-job training will be provided to enable local employees to gain new and/or improved skills while working on the Project.	Local Recruitment and Training Plan		10.14.4
A28	28.10	Construction		Economy, Employment, Skills & Livelihoods	The workforce training programme will include refresher and induction training with the aim of ensuring that all recruits have the necessary understanding and knowledge levels for each job, in particular with regard to HSE issues.	Local Recruitment and Training Plan		10.14.4
A28	28.11	Construction		Economy, Employment, Skills & Livelihoods	Environmental and social issues will be included in workforce and visitor induction training.	Local Recruitment and Training Plan		10.14.4, 10.7.4
A28	28.12	Construction		Economy, Employment, Skills & Livelihoods	Particular emphasis will be paid to health and safety and community relations, with additional technical toolbox talks given on specific issues.	Community Liaison Plan		10.14.4
A28	28.13	Construction		Economy, Employment, Skills & Livelihoods	Additional on-the-job informal training sessions and discussions will be provided as necessary during construction of the different SCPX component projects.	Local Recruitment and Training Plan		10.14.4
A28	28.14	Construction		Economy, Employment, Skills & Livelihoods	All workers will have contracts describing conditions of work and will have the contents explained to them.	Local Recruitment and Training Plan		10.14.4
A33	28.15	Construction		Economy, Employment, Skills & Livelihoods	As part of the recruitment programme community liaison teams will seek to manage any misconceptions about perceived differences in pay or conditions.	Local Recruitment and Training Plan		10.14.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A28	28.17	Construction		Economy, Employment, Skills & Livelihoods	Job vacancies will be advertised in the PAC through appropriate and accessible media (consistent with employment targets).	Local Recruitment and Training Plan		10.11, 10.12.4
A28	28.18	Construction		Economy, Employment, Skills & Livelihoods	A plan will be developed and implemented that will aim to discourage and prevent the workforce from purchasing goods from informal vendors to discourage vendors from establishing themselves at construction camp fence-lines in the hope of securing additional business.	Procurement and Supply Plan		10.14.4
A28	28.20	Construction		Economy, Employment, Skills & Livelihoods	The Contractor will advise workers about risks of neglecting their land during recruitment process.	Local Recruitment and Training Plan		10.14.4
A28	28.21	Construction		Economy, Employment, Skills & Livelihoods	The Contractor will prepare a retrenchment plan, with the aim of reducing the impacts of cessation of employment contracts.	Local Recruitment and Training Plan		10.14.4
A28	28.22	Construction		Economy, Employment, Skills & Livelihoods	The Contractor will explain the temporary nature of jobs during the recruitment process and explain to workers the need to prepare for losing jobs and to manage their income wisely while employed.	Local Recruitment and Training Plan		10.14.4
A28	28.23	Construction		Economy, Employment, Skills & Livelihoods	The Project will give priority to people from the construction camp PACs for employment opportunities within the camp (e.g. cook, housekeeper etc.) where suitably qualified.	Local Recruitment and Training Plan		10.14.4
A29	29.03	Pre- construction		Economy, Employment, Skills & Livelihoods	Taking into account relevant commercial considerations as appropriate, the project will seek to purchase goods and services from within Georgia and will monitor such purchases.	Procurement and Supply Plan		10.14.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A30	30.02	Construction		Community Health & Safety	At sensitive locations where Project construction traffic will be using local roads, and particularly where schools and markets are close to the road, awareness of safety issues will be raised through village meetings and classroom lessons.	Community Safety Plan		10.12.4
A30	30.04	Construction		Community Health & Safety	Protective barriers will be erected at excavations at a road or river crossing, close to a community or that are flooded temporarily in accordance with the Community HS&S Plan; warning barriers will be deployed around areas of lesser risk to members of the public.	Community Safety Plan		10.12.4, 5.4.9
A30	30.06	Construction		Community Health & Safety	Bridges will be provided across open trenches and welded pipes at locations where there is a demonstrable need for people to cross, if it is reasonable for them to do so and can be accommodated safely, taking into account works being undertaken in that area at the time.	Community Safety Plan		10.12.4, 10.13.8
A30	30.08	Pre- construction		Community Health & Safety	Community Liaison Officers (CLOs) appointed by the Contractor will participate in, or deliver safety awareness training to, local children and their parents and/or their teachers.	Community Safety Plan		10.12.4
A30	30.09	Construction		Community Health & Safety	Water will be pumped from flooded excavations (e.g. with centrifugal pumps or well-points as appropriate) where a risk assessment concludes that they present a safety risk.	Community Safety Plan		10.12.4
A30	30.10	Construction		Community Health & Safety	The project will implement the Voluntary Principles on Security and Human Rights.	Community Safety Plan		10.12.4
A30	30.12	Construction		Community Health & Safety	During construction (and operations), due diligence will be applied to selection of security providers, rules of engagement will be devised, and training provided to all personnel. Performance will be monitored and audited periodically.	Community Safety Plan	Operations Management System	10.12.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A30	30.15	Construction		Community Health & Safety	Random drug and alcohol testing of the workforce will be conducted, recorded and audited regularly.	Community Safety Plan		10.12.4
A30	30.17	Construction		Community Health & Safety	Warning posts and bunting will be erected to mark overhead cables and temporary crossing points.	Community Safety Plan		10.12.4, 5.4.7
A30	30.18	Construction		Community Health & Safety	Construction traffic warning signs will be positioned at road crossings and other appropriate locations as determined by the Project, for example along access routes before they are used by construction traffic.	Community Safety Plan		10.12.4
A30	30.21	Construction		Traffic & Transport	Where traffic is diverted around crossings, traffic control or careful selection of the exit from the working areas will be provided with the aim of ensuring vehicles join the road in a safe manner.	Community Safety Plan		10.12.4, 10.16.4
A30	30.22	Construction		Community Health & Safety	The selection of any further access roads (in addition to those used during BTC/SCP construction) to Project working areas will aim to avoid sensitive receptors such as centres of communities, hospitals, clinics and schools as far as practicable.	Community Safety Plan		10.12.4
A30	30.23	Pre- construction		Community Health & Safety	The ROW of the SCPX pipeline and any additional temporary workspaces will be surveyed and set out (i.e. marked out and, where necessary, fenced off). The contractor will be required to keep within the designated footprint.	Community Safety Plan		5.4.7, 10.12.4
A30	30.24	Construction		Community Health & Safety	The contractor will be expected to use the designated access roads and to apply for Company consent to use any new or existing roads not designated for Project use.	Community Safety Plan		10.12.4

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A30	31.02	Pre- construction		Community Health & Safety	Risk assessments will be carried out to identify sensitive receptors such as hospitals and clinics along Project access routes. The project will ensure that access to and from these facilities is not restricted by Project activities or an alternative access is in place and has been agreed with the hospital or clinic staff.	Community Safety Plan		10.12.4
A30	31.03	Construction		Community Health & Safety	SCPX-related drivers will be briefed so they understand the importance of ensuring free access and egress of ambulances to the hospital and all traffic to clinics.	Community Safety Plan		10.12.4
A31	31.04	Construction		Community Health & Safety	The Project will apply a risk assessment approach to contaminated land management to evaluate the potential impact of soil, surface water or groundwater contamination on local receptors.	Pollution Prevention Plan		10.12.4, 10.5.4
A31	31.05	Construction		Community Health & Safety	A risk assessment will be undertaken when considering waste water discharge options and locations.	Community Safety Plan		10.12.4, 10.6.4
A31	31.06	Construction		Community Health & Safety	Medical waste will be disposed of via a licensed medical contractor or a Company approved incinerator.	Waste Management Plan		10.12.4
A31	31.10	Construction		Community Health & Safety	A non-communicable disease (NCD) awareness programme will be implemented.	Community Safety Plan		10.12.4
A31	31.11	Construction		Community Health & Safety	Pre-job fitness for task assessments will be implemented and will be repeated at regular intervals based on the employee risk profile.	Community Safety Plan		10.12.4
A31	31.12	Construction		Community Health & Safety	Project will prohibit the workforce from participating in illegal activities including use of illegal drugs.	Community Safety Plan		10.12.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A31	31.13	Construction		Community Health & Safety	Worker education and awareness programmes will be conducted and materials regarding the health hazards of smoking, alcohol and substance abuse will be provided.	Community Safety Plan		10.12.4
A31	31.14	Construction		Community Health & Safety	A worker education and awareness programme regarding the risks and prevention measures associated with STIs including HIV/AIDS and other communicable diseases (e.g. TB) will be implemented.	Community Safety Plan		10.12.4
A31	31.15	Construction		Community Health & Safety	The project will make information on communicable diseases and STIs available to communities close to the camps.	Community Safety Plan		10.12.4
A31	31.16	Construction		Community Health & Safety	Temporary Project housing structures will be constructed and maintained according to internationally accepted design specifications for space occupancy per person.	Community Safety Plan		10.12.4
A31	31.17	Construction		Community Health & Safety	The Contractor will operate a personnel health programme which will aim to prevent illness and disease occurring, and will include immunisations as required.	Community Safety Plan		10.12.4
A31	31.18	Construction		Community Health & Safety	A workplace TB control programme will be implemented.	Community Safety Plan		10.12.4
A31	31.19	Construction		Community Health & Safety	A food sanitation programme will be developed and implemented within all Project catering facilities based on internationally recognised standards.	Community Safety Plan		10.12.4
A31	31.20	Construction		Community Health & Safety	Food-borne illness investigation procedure will be implemented and workers will be educated regarding the prevention of food related illnesses (e.g. hygiene practices).	Community Safety Plan		10.12.4
A31	31.21	Construction		Community Health & Safety	Food service operations, practices and facilities will be regularly inspected and findings and resolved non-compliance issues will be documented immediately.	Community Safety Plan		10.12.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A31	31.22	Construction		Community Health & Safety	Measures for preventing zoonotic disease transmission will be implemented.	Community Safety Plan		10.12.4
A31	31.23	Construction		Community Health & Safety	A vector-related disease (VRD) prevention programme will be implemented.	Community Safety Plan		10.12.4
A32	32.01	Pre- construction		Land Ownership & Use	The project will consult with local government authorities, landowners and land users, including graziers, before restricting access to land and will establish the need for temporary fencing.	Land Management Plan		10.13.6, 10.14.4
A35	32.03	Construction		Land Ownership & Use	Parking of Project-related vehicles will be restricted to designated areas.	Land Management Plan		10.13.5
A32	32.04	Pre- construction		Land Ownership & Use	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders.	Land Management Plan		10.13.7, 10.14.4
A35	32.05	Construction		Land Ownership & Use	The Company Land Acquisition Team, environmental representative and the construction contractors will carry out an exit inspection with the previous land owner/user of all land that was used during the construction period.	Land Management Plan		10.13.5, 10.14.4
A32	32.07	Pre- construction		Land Ownership & Use	The Project will inform land owners/users about any reuse restrictions that apply to land used by the Project.	Community liaison plan	Land Management Plan	10.13.4
A30	32.08	Construction		Community Health & Safety	Gaps will be left in pipe strings where safe to do so and necessary to allow people, wildlife and livestock to cross the ROW.	Community Safety Plan		10.12.4, 5.4.8

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A30	32.09	Construction		Community Health & Safety	The pipe will not normally be strung on the ROW more than 15km in advance of pipeline welding.	Community Safety Plan		10.12.4
A32	32.17	Construction		Land Ownership & Use	The Project will seek to identify whether any herders use the construction areas and aim to consult with them on potential restrictions during construction.	Land Management Plan		10.13.8
A33	33.01	Construction		Community Health & Safety	The Contractor will be required to develop and implement a Grievance Procedure to provide opportunity for local residents to raise concerns.	Community Liaison Plan		10.12.4,10. 14.4
A33	33.02	Construction		Community Relations	All workers will receive at least the minimum wage as defined by Georgian national law.	Local Recruitment and Training Plan		10.14.4
A33	33.03	Pre- construction		Community Relations	The Community liaison teams will maintain regular liaison with local communities before, during and after construction.	Community Liaison Plan		10.14.4
A33	33.04	Pre- construction		Community Relations	An employee Code of Conduct will be prepared and issued to all recruits and camp residents during the employee induction process.	Construction Camp Management Plan		10.14.4
A33	33.06	Construction		Community Relations	The Employee Code of Conduct will prohibit the workforce from participating in illegal activities, including use of illegal drugs, bribery and corruption or requesting or receiving gifts from communities.	Construction Camp Management Plan		10.14.4
A33	33.08	Construction		Community Relations	A Company policy limiting alcohol consumption in construction camps will be applied.	Construction Camp Management Plan		10.14.4

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A33	33.09	Construction		Community Relations	Workforce training will include a briefing on camp rules and awareness of local issues and sensitivities.	Construction Camp Management Plan		10.14.4
A33	33.10	Construction		Community Relations	No unauthorised access to, or use of, camp facilities will be allowed.	Construction Camp Management Plan		10.14.4
A33	33.11	Construction		Community Relations	A range of recreational facilities will be provided within the camps to reduce the need for finding recreation in the local community.	Construction Camp Management Plan		10.14.4
A33	33.13	Construction		Community Relations	Mechanisms shall be put in place that allow individuals to express grievances about project-related activities and employees. As part of such mechanisms a grievance register will be used to document all third party grievances, corrective actions and outcomes.	Community Liaison Plan		10.12.4, 10.13.4, 10.14.4
A33	33.14	Construction		Community Relations	To avoid disturbance of particular local events such as funeral ceremonies by construction traffic, the Community Liaison Officers will encourage local community authorities to provide advance warning of funerals (and other similar events) so that the Contractor can avoid the movement of heavy vehicles, equipment and pipe through settlements at these times.	Community Safety Plan	Community Liaison Plan	10.12.4
A33	33.15	Construction		Community Relations	The Project will review measures to mitigate community health and safety impacts regularly, and consult PAC leaders every six months, informing them on the status of implementation and results, and discussing any changes needed to the 'Pollution Prevention Plan' or the 'Community Health, Safety and Security Plan' in advance of proposed changes.	Community Safety Plan		10.12.4

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A33	33.16	Construction		Community Relations	Information will be disclosed to PAC leaders regarding potential community health and safety impacts and mitigations, at a sufficient level of detail to help these stakeholders to fully understand current and expected risks, and, as necessary, additional measures to be implemented.	Community Liaison Plan	Community Safety Plan	10.12.4
A25	33.18	Construction & Operational		Noise	Community Liaison Officers may assist in raising community awareness about emissions-related issues and ensuring emissions-related complaints are followed up and responses provided.	Community Liaison Plan	Operations management system	10.9.4
A32	33.19	Pre- construction		Land Ownership & Use	Land users and local communities will be consulted to determine their requirements for access across the ROW.	Community liaison plan		10.12.4, 10.13.8
A34	34.01	Construction		Land Ownership & Use	Any field boundaries that are removed will be replaced with temporary fencing to meet reasonable landowner/user requirements.	Land Management Plan		10.14.4
A35	35.01	Pre- construction		Infrastructure & Services	Contractor will prepare a Method Statement that includes measures to protect the integrity of the third-party services and is acceptable to the service operator.	Infrastructure and Services Management Plan		10.15.4
A35	35.02	Construction		Infrastructure & Services	Any damage to third-party services to be repaired promptly in consultation with, or by the service operator.	Infrastructure and Services Management Plan		10.15.4
A35	35.03	Pre- construction		Infrastructure & Services	Any planned diversion of services will be communicated to local authorities and affected communities at least 72 hours in advance of the works.	Infrastructure and Services Management Plan		10.15.4
A35	35.04	Construction		Infrastructure & Services	In the event of a disruption to services the Contractor will work with the service owner to effect repair in reasonable time.	Infrastructure and Services Management Plan		10.15.4

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A35	35.05	Pre- construction		Infrastructure & Services	Surveys of irrigation and drainage systems will be undertaken before construction to determine their location and condition.	Infrastructure and Services Management Plan		10.15.4
A35	35.06	Construction		Infrastructure & Services	The Contractor will aim to maintain the integrity and viability of functional irrigation and drainage systems throughout construction, for example, by using measures such as pumping, channel diversions and fluming. Any deviations shall be subject to approval by the Company.	Infrastructure and Services Management Plan		10.15.4
A35	35.07	Construction		Infrastructure & Services	Affected landowners and occupiers will be consulted to determine their views on the requirement for temporary measures if irrigation systems are to be disrupted.	Infrastructure and Services Management Plan		10.15.4
A35	35.08	Construction		Infrastructure & Services	Any disrupted irrigation or drainage system will be reinstated on completion of construction to a standard at least equal to their original condition.	Infrastructure and Services Management Plan		5.7.3, 10.14.4, 10.15.4, 10.4.4
A35	35.09	Construction		Infrastructure & Services	Pre-entry agreements including reinstatement requirements will be agreed prior to work affecting third party assets.	Infrastructure and Services Management Plan		10.13.5, 10.15.4
A36	36.03	Construction		Infrastructure & Services	If impacts to third party land or crops is caused by Project activity, for example due to interruption of irrigation or drainage, the Project's procedure for land and crop damage will be applied.	Infrastructure and Services Management Plan		10.13.5
A38	37.01	Construction		Traffic & Transport	Advance warning (at least 72 hours) of any road/track closures will be provided to local communities.	Infrastructure and Services Management Plan		10.16.4

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A38	37.02	Construction		Traffic & Transport	A bypass/alternative routes will be provided at locations where road closure is unavoidable.	Infrastructure and Services Management Plan		10.16.4
A37	37.03	Construction		Traffic & Transport	Temporary traffic control (e.g. flagmen) and signs will be provided where necessary to improve safety and provide directions.	Community Safety Plan		10.12.4, 10.16.4
A37	37.04	Construction		Community Health & Safety	Temporary traffic control measures will be employed at road crossings and junctions (flagmen, temporary traffic lights) where a safety risk assessment has identified traffic control measures will reduce the risk of traffic accidents.	Infrastructure and Services Management Plan		10.16.4, 10.12.4
A37	37.05	Construction		Traffic & Transport	The authorities will be notified when oversize heavy loads need to be transported and the loads will be escorted by the Project.	Infrastructure and Services Management Plan		10.12.4, 10.16.4
A37	37.06	Construction		Traffic & Transport	At locations where schools are very close to a road used by SCPX traffic, the construction contractor will plan works to minimise the delivery of heavy loads at times when children are likely to be walking to and from school.	Infrastructure and Services Management Plan		10.16.4, 10.12.4
A37	37.07	Construction		Traffic & Transport	Following construction, the Contractor will repair roads to at least their pre-construction condition.	Infrastructure and Services Management Plan		10.16.4
A37	37.08	Construction		Traffic & Transport	Surface of frequently used access roads will be subject to regular inspections and repair, with the aim of ensuring they are maintained in a good condition particularly where fragile buildings are close to roads (subject to site-specific survey).	Infrastructure and Services Management Plan		10.16.4
A37	37.09	Construction		Traffic & Transport	All contractors and subcontractors will adhere to BP driving rules.	Community Safety Plan		10.16.4

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A37	37.10	Construction & Operation		Traffic & Transport	Night-time driving will be by exception only, as approved by the Company, to minimise driving risk and disturbance to communities.	Community Safety Plan	Operations Management System	10.12.4, 10.16.4
A37	37.11	Construction		Traffic & Transport	The Project will aim to provide buses to transport non-camp resident workers to the construction sites.	Community Safety Plan		10.16.4
A37	37.14	Construction		Traffic & Transport	Where it is necessary to maintain traffic flow, the crossing will be made in two stages, and only one half of the road width will be used at a time. Steel plates will be laid to maintain one lane of through traffic.	Infrastructure and Services Management Plan		10.16.4
A37	37.17	Pre- construction		Traffic & Transport	The Project will undertake a road condition survey before construction begins in areas as defined by Project.	Community Safety Plan		10.16.4, 5.4.5
A37	37.18	Construction		Traffic & Transport	The Project will use the existing access roads established for construction of the BTC and SCP pipelines to access the pipeline ROW as far as practical.	Infrastructure and Services Management Plan		10.16.4, 5.4.5
A37	37.20	Construction		Traffic & Transport	Prior to selection all access routes will be subject to a multidisciplinary assessment.	Infrastructure and Services Management Plan		10.15.4
A32	39.01	Pre- construction		Land Ownership & Use	The relevant authorities will be consulted if the need for any additional land take is identified and the relevant permits and consents will be obtained.	Land Management Plan		10.1.6, 10.13.5
A32	39.02	Pre- construction		Land Ownership & Use	Site assessments (taking into consideration ecology, cultural heritage, social, erosion risk, water resources) will be undertaken if the need for additional land is identified following submission of the ESIA.	Land Management Plan		5.2.2, 10.1.6, 10.13.5

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A32	39.03	Pre- construction		Land Ownership & Use	An environmental and social assessment report will be prepared by the Project if any additional land outside that described in the ESIA is to be used, the scale of which will depend on the proposed activities and sensitivities of the area.	Land Management Plan		5.2.2, 10.1.6, 10.13.5
A32	39.04	Construction		Land Ownership & Use	Management of change procedures will include environmental and social assessment before any changes that may have detrimental effects on environmental or social receptors are adopted.	Land Management Plan		10.1.6, 10.13.5
A30	D11.02	Design		Community Health & Safety	There will be increased depth of cover at crossings: road crossings will generally be installed with 2.0m cover; rail crossings have at least 3.0m cover and unpaved roads will have at least 1.5m cover	Community Safety Plan		12.6.1, 5.3.1
A30	D11.03	Design		-	Concrete slabs will be installed at open-cut road crossings to protect SCPX from future road construction activities and excavations along roads or the verges.	Community Safety Plan		12.6.1, 5.3.1
A30	D11.04	Design		Community Health & Safety	A general minimum separation distance of 20m is applied between SCPX and SCP/BTC. At crossings, additional control of work measures will be applied.	Community Safety Plan		12.6.1 5.4.5
A30	D11.05	Design		Community Health & Safety	At the block valve location (KP28) the separation distance between 56" SCPX pipeline and the 42" SCP pipeline will be no less than 28m.	Community Safety Plan		12.2.3, 12.6.1, 5.4.5
A30	D12.01	Design	KP39-41	Community Health & Safety	A design factor of 0.5 has been allowed, and heavy wall pipe will be used in KP39–41 where a number of dwellings are less than 200m from the pipeline.	Community Safety Plan		12.2.1, 12.6.1, 5.3.1,
A30	D12.02	Design	Rustavi	Community Health & Safety	A design factor of 0.5 has been allowed and heavy wall pipe will be used within KP22- KP43 around Rustavi to allow for future development and population expansion.	Community Safety Plan		12.2.1, 12.6.1, 5.3.1,

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A23	D12.03	Design		Community Health & Safety	A leak detection system is provided on the pipeline. Following detection of a leak, the block valves on either side of the leak will be remotely closed so that the volume of release will be limited by the distance between the two block valves.	Operations Management System		12.6.1,
A30	D12.05	Design		Community Health & Safety	Piping systems at the facilities are designed to ASME B31-3 'Code for Pressure Piping'. Pipeline systems at the facilities are designed to ASME B31-8.			12.6.1
A23	D12.06	Design	Algeti and Mtkvari	Community Health & Safety	Each major river crossing (i.e. the Mtkvari and the Algeti) will have a site-specific design which will be set to account for the maximum flow rates (1:200 year storm event), sediment movement patterns, anticipated changes to the river bed contour and the predicted extent of lateral erosion.			12.2.1, 12.6.1
A23	D12.07	Design		Community Health & Safety	A zone around the cold vent will be fenced to exclude the public from areas where thermal radiation levels are considered likely to harm them in the event that the vented gas ignites.			5.4.11, 12.3.2, 12.6.1
A1	D13.01	Design	CSG1	Geology & Geomorphology	The Project will review the flood protection philosophy at CSG1 with the aim of reducing the volume of imported material.			10.2.4, 5.6.1
A14	D14.01	Design		Groundwater	The facilities will be designed with treatment units for black and grey water. Treated water from the sewage treatment units will be discharged to ground in a controlled manner via a soakaway or to surface water in accordance with the Project Standards.	Operations Management System		10.5.4, 5.5.5, 10.6.4
A17	D17.01	Design		Ecology	Construction of CSG2 facility and lay-down areas will avoid building on the larger area of wetland at the site.	Ecological Management Plan		10.3.4, 10.7.4, 5.5.1

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A17	D17.02	Design	CSG2 Access Road	Ecology	The CSG2 access road route has been selected to follow existing roads and tracks and to avoid plantations, wetlands and cultural heritage sites as far as practicable.	Ecological Management Plan		10.4.4
A17	D17.04	Design	Mtkvari Crossing (Around KP30)	Surface Water	The Mtkvari River crossing will be constructed by micro-tunnelling or horizontal directional drilling under the river.			10.5.4, 10.7.4
A17	D17.08	Pre- construction		Ecology	During detailed design, the CSG2 access route has been adjusted to avoid the majority of the wetland area near Kushi and to route the permanent and temporary footprint away from the area of active corncrake habitat between Kushi and Berta villages.	Ecological Management Plan		5.5.2, 10.7.4, 10.3.4
A17	D17.09	Design	CSG1, CSG2 & PRMS	Ecology	The inert surface area of the vent exclusion zone at the facilities (CSG1, CSG2 and PRMS) will be reduced to that required for safety purposes, thereby reducing the amount of habitat removed.	Ecological Management Plan		10.7.3
A23	D23.01	Design		Air Quality	Seal gas that leaks from the compressors will be recovered during normal compressor operation (i.e. excluding start-up and shutdown) and returned to the process system.			10.8.4, 5.5.1
A27	D27.01	Pre- construction	CSG2 Access Roads	Cultural Heritage	The following potential cultural heritage sites identified by surveys of SCPX Project-related sites will be excavated before Project construction begins: The stony mounds at the CSG2 site (CH54-58).	Cultural Heritage Management Plan		10.10.4, 5.5.2

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A27	D27.02	Pre- construction	CSG2 Access Roads	Cultural Heritage	 The CSG2 access road has been routed to avoid the majority of known cultural heritage features including: Nardevani settlement The A number of small stony mounds that could potentially be archaeological features and several probable Bronze Age burial mounds. 	Cultural Heritage Management Plan		10.10.4, 5.5.2
A27	D27.04	Pre- construction	CSG2 Access Roads	Cultural Heritage	Portions of the CSG2 Access Road drainage and embankments have been specially designed to protect and preserve in place possible archaeological features.	Cultural Heritage Management Plan		5.5.2, 10.10.4
A27	D27.05	Pre- construction	CSG2 Access Roads	Cultural Heritage	The CSG2 access road camp will be designed with the aim of protecting CH276. If this is not practical, phase 2 archaeological evaluation will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.	Cultural Heritage Management Plan		10.10.4
A6	D3.04	Design	At KP30	Soil & Ground Conditions	The selected pipeline route has avoided areas of soil contamination, such as the known anthrax-contaminated areas close to the Mtkvari crossing.	Pollution Prevention Plan		10.3.4, 5.4.11
A36	D30.01	Construction		Community Health & Safety	Where it is considered that there is a higher risk of the pipeline being damaged or interfered with, or where other services are crossed and at track and road crossings, the pipeline will be covered by concrete slabs at open cut crossings.	Community Safety Plan		5.3.1, 10.15.4, 12.6.1
A32	D32.01	Operation		Land Ownership & Use	The Project will aim to maintain the existing level of access to unaffected land parcels adjacent to the CSG2 access road by providing junctions/crossing points connected to the main existing tracks.	Operations Management System		5.5.3, 10.13.8

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A28	D33.01	Design		Economy, Employment, Skills & Livelihoods	The Project has selected construction camp locations on the same sites as, or very near to, the major facilities.	Local Recruitment and Training Plan		10.11.4, 5.6
A36	D36.01	Design		Surface Water	Drains will be installed on the uphill side of the CSG2 access road, pass through culverts under the road and discharge via holding ponds or other energy reduction techniques in to local streams.	Pollution Prevention Plan		10.5.4, 5.5.1
A29	D5.001	Design		Soil & Ground Conditions	The SCPX pipeline will be protected from corrosion by an impressed current cathodic protection system.			5.3.1,12.6
A5	D5.006	Design		Geology & Geomorphology	The section of the pipeline trench that crosses the Rustavi fault will be excavated in a trapezoidal shape, double lined with geotextile membrane and filled with non-cohesive, graded aggregate.			5.4.11, 12.2.5
A11	D5.009	Design	KP 12	Surface Water	The large irrigation channel, drainage ditch and road at KP12 will form part of a single trenchless crossing.	Pollution Prevention Plan		10.7.4, 5.4.11
A30	D5.010	Design		Community Health & Safety	Where the SCPX pipeline crosses buried services or pipelines, trenchless or open cut crossing methods will be adopted. A typical vertical separation between the SCPX pipeline and the existing service or pipeline will be 1500mm where trenchless techniques are used, and 900mm where open cut techniques are used.	Community Safety Plan		12.6.1
A30	D5.011	Design		Community Health & Safety	Construction of crossings of the existing BTC and SCP pipelines will be controlled under the existing pipeline operations permit to work system and the activity will be subject to a specific risk assessment undertaken by both the construction contractor and BTC and SCP operations team.	Community Safety Plan		12.6.1
SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
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A23	D5.019	Design	CSG1 and CSG2	Air Quality	The compressor stations will have four gas compressors mechanically driven by dry low emission (DLE) gas turbines.	Pollution Prevention Plan		10.8.4, 5.5.1
A8	D5.021	Design	CSG1 and CSG2	Landscape	CSG1 will also have a high-pressure vent stack 80m high for emergency and maintenance depressurisation of the process equipment.			10.4.4, 5.5.1
A8	D5.024	Design	CSG1 and CSG2	Landscape	CSG2 will have a high-pressure vent stack 40m high for emergency and maintenance depressurisation of the process equipment.			10.4.4, 5.5.1
A8	D5.027	Design	PRMS	Landscape	The PRMS will also have a high-pressure vent stack 40m high for emergency and maintenance depressurisation of the process equipment.			10.4.4
A7	D5.028	Design	CSG1 and CSG2	Soil & Ground Conditions	In accordance with the SCPX Waste Management Plan, solid wastes generated by construction activities will be collected in waste storage areas (WSA) located at the camps.	Waste Management Plan		10.3.4, 10.5.4, 5.6.1
A7	D5.029	Design		Groundwater	All wastes from the SCPX Project will be managed with the aim of minimising (a) impacts to the natural environment and (b) health hazards to personnel. Where appropriate, waste materials will be reused or recycled, with disposal to landfill as a last resort. In this case, inert and non-hazardous waste will be disposed of to the licensed BP operated landfill site near Rustavi.	Waste Management Plan		10.3.4, 10.5.4, 10.6.4, 5.6.2
A7	D5.030	Design		Groundwater	Hazardous waste will be forwarded to a waste disposal contractor licensed to receive and treat hazardous waste.	Waste Management Plan		5.6.2, 10.3.4, 10.6.4
A7	D5.032	Design	CSG2	Surface Water	The design of the waste water system at CSG2 is still being developed, although the options currently being assessed include a rotating disc (BioDisc®) water treatment plant (or similar) with discharge of treated effluent into surface water or alternatively via a soakaway.	Operations Management System		10.6.4, 5.6.2

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A30	D5.034	Design		Geology & Geomorphology	An increased wall thickness with a design factor of 0.6 will be applied at major road, railway and river crossings and where the pipeline passes seismic faults to meet the requirements of API RP 1102.	Pollution Prevention Plan		12.2.1, 12.6.1, 5.3.1
A37	D5.036	Design		Traffic & Transport	The line pipe will be transported by rail to off-loading points. The rail offloading point will be located close to the pipe storage area to reduce the number of HGV movements.	Infrastructure and Services Management Plan		10.16.4, 5.3.3
A25	D5.038	Design		Noise	At CSG2 the buildings housing the gas turbine and compressor units will typically be fabricated with 150mm-thick sandwich panels to control noise transmission.			10.9.4, 5.5.1
A25	D5.039	Design		Noise	At CSG1 buildings housing the gas turbine and compressor units will utilise high-performance acoustic louvres to allow for natural ventilation and retain a high-performance acoustic design for the cladding.			10.9.4, 5.5.1
A25	D5.040	Design		Noise	High-performance silencers for each of the compression and power generation gas turbine exhaust stacks will reduce noise power levels from 115 dB(A) to 100 dB(A).			10.9.4, 5.5.1
A25	D5.041	Design		Noise	Silencers will also be included in the combustion and ventilation air inlet system to control noise power level emissions.			10.9.4, 5.5.1
A25	D5.042	Design		Noise	High-performance acoustic insulation will be installed on the compressed gas pipework and the design for compressor after-cooler fans will also achieve reduced noise power level emission.			10.9.4, 5.5.1
A17	D5.045	Pre- construction		Ecology	Existing third-party services and sensitive receptors that need to be avoided during construction (e.g. cultural heritage sites, or specific trees that are to be retained) will be marked.	Ecological Management Plan	Cultural Heritage & Infrastructure and Services	5.4.7, 10.7.4

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A17	D5.046	Pre- construction		Ecology	The location of the PRMS construction camp will be selected based on a multidisciplinary evaluation of the potential options considering H&S, social, technical and environmental criteria. This evaluation will consider the results of pre-construction ecological surveys which will be undertaken at the potential locations in Spring.			5.6.1, 10.7.4
A17	D5.054	Design	Algeti Crossing (Around KP54.5)	Ecology	Where the ROW passes through riparian woodland by the Algeti River crossing, the SCPX ROW will be a reduced working width, and topsoil will be removed from the ROW to a storage area.	Ecological Management Plan		10.7.4, 5.4.7
A37	D5.055	Design		Traffic & Transport	Line pipe shall be transported by trucks from the pipe yards to the ROW along approved access routes and then along the ROW to the required location.			10.16.4, 5.4.8
A3	D5.065	Design		Soil & Ground Conditions	In sloping terrain (usually 10 degrees and over), trench breakers (e.g. bags filled with soil/cement mix) will be installed across the width of the trench at suitable intervals up to the graded ground level.	Reinstatement Plan		10.3.4, 5.4.10
A5	D5.066	Design		Soil & Ground Conditions	Any surplus subsoil from trench excavations will normally be spread within the working width and within zones that exhibit similar subsoil types. The spreading work will be carried out in a manner that avoids the mixing of soil types to the greatest extent possible.	Reinstatement Plan		10.3.4, 10.4.4, 5.4.10
A11	D5.078	Design		Surface Water	If water is sourced from rivers (or channels), no more than 10% of the water flow will be extracted at any time.	Ecological Management Plan		10.5.4, 10.7.4, 5.7.2

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A12	D5.079	Design		Surface Water	Before extracting water the Project will consider the presence of any IUCN/Georgian Red List fish species particularly during fish spawning season (which normally occurs within the period May to June) and the mitigations such as 10mm fish screens will be determined by a site assessment and approval by the Company.	Ecological Management Plan		10.7.4, 5.7.2
A5	D5.086	Design		Soil & Ground Conditions	To facilitate natural re-vegetation of the ROW, the separately stockpiled topsoil and vegetation debris will be spread over the surface of the ROW following completion of grading, as appropriate.	Reinstatement Plan		10.3.4
A8	D5.093	Design		Landscape	Before construction personnel and equipment are demobilised, temporary buildings and equipment, tools and any excess material brought on site or generated during the construction and commissioning programme will be removed.	Reinstatement Plan		10.4.4, 5.7.3
A23	D5.094	Design		Air Quality	The stand-by generators at the facilities will run on diesel and largely will only be used in an emergency when gas turbine powered generators have to be shut down.	Pollution Prevention Plan		5.8.3, 10.8.4
A8	D5.096	Design		Landscape	The block valve, PRMS and the CSG1 have been collocated to minimise the requirement for additional development on greenfield sites.			10.4.4, 5.2.2
A23	D5.097	Design		Air Quality	The turbines will be sized appropriately to aim to operate within their low-NOx operating range for as much of the year as reasonably practical when considering ambient temperature variation and variation in pipeline throughput.			10.8.4, 5.5.1

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A22	D5.098	Design		Air Quality	A connection to the Georgian national electricity grid will be installed at CSG1. The grid will initially be used as a back-up power supply and the project intends to gather reliability information on the electrical connection with the aim of moving to using the electricity grid as the primary source of site power (i.e. for heating and lighting etc.) in the future, provided there is no impact on the pipeline operation.			5.5.1, 10.8.4
A22	D5.099	Design		Air Quality	A connection to the Georgian national electricity grid will be installed at the PRMS. The grid will initially be used as a back-up power supply and the project intends to gather reliability information on the electrical connection with the aim of moving to using the electricity grid as the primary source of site power (i.e. heating and lighting etc.) in the future, provided there is no impact on the pipeline operation.			5.5.4, 10.8.4
A30	D5.100	Design		Community Health & Safety	Local vents will be installed that will release the compressor seal gas to the atmosphere at a safe location if the seal gas recovery system fails.			5.5.1, 12.6.1
A32	D5.104	Design		Land Ownership & Use	The CSG2 early works camp will be selected based on multidisciplinary evaluation including H&S, environmental and social, and technical criteria, with preference given to the use of brownfield locations where practicable.			5.6.1, 10.12.4
A7	D5.106	Design		Surface Water	The camps will discharge domestic wastewater treated by a sewage treatment package designed to meet the Project standards and permit requirements.	Pollution Prevention Plan		5.6.2, 10.3.4, 10.5.4, 10.6.4
A7	D6.01	Design	CSG1 and PRMS	Surface Water	Waste water systems will be integrated with the existing facilities at CSG1 and PRMS.			10.5.4, 5.6.2
A7	D6.03	Design	CSG2	Surface Water	A hydrology study will be undertaken during the detailed design of the CSG2 site and access road to determine catchment areas, flow rates and water quality in the stream crossings and wetland areas.			10.5.4, 5.6.2

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A7	D6.04	Design	Facilities	Surface Water	Additional tertiary treatment shall be investigated at CSG2, including reed beds, to identify a solution suitable for the climatic conditions.			10.5.4, 5.8.2
A8	D8.02	Design		Landscape	Sensitive material and colour finishes will be used for the external facades of buildings.			10.4.4, 5.8.2
A8	D8.03	Design		Landscape	The project will use sensitive lighting design to minimise light pollution and sky glow, including directional, task-specific, low level, hooded, photo-sensitive lighting at CSG1, CSG2 and PRMS.			10.4.4, 5.8.2
A4	DE.01	Decommissio ning		Soil & Ground Conditions	At Area 72, the section of SCP pipeline under the road will be cut either side of the crossing, injected with suitable grouting and capped to prevent collapse.	Operations Management System		5.9.1, 10.3.4
A7	DE.02	Decommissio ning		Surface Water	The glycol and water mix drained from the Area 72 water bath heater during decommissioning will be disposed of in accordance with the Project waste management plan.	Operations Management System		5.9.1, 10.3.4
A39	DE.03	Decommissio ning		Soil & Ground Conditions	An environmental risk assessment will be undertaken prior to decommissioning of Area 72 to identify the potential environmental risks, including to soil and groundwater. The mitigations developed will be incorporated into the Decommissioning plan.	Operations Management System		5.9.1, 10.3.4
A7	DE.04	Decommissio ning		Soil & Ground Conditions	Scrap metal removed from Area 72 will be sent to recycling facilities where available.	Operations Management System		5.9.1, 10.3.4

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A39	DE.05	Operational		Community Health & Safety	Within 30 days of termination of the Host Government Agreement a plan must be prepared describing how abandonment will be achieved. This Abandonment Plan will be subject to approval by the Government. An ESIA will be prepared prior to implementation of the Abandonment Plan to assess and minimise potential environmental and social impacts arising from the abandonment operations. This abandonment ESIA will be submitted to the Government.	Operations Management System		5.8.2, 10.3.4
A39	DE.06	Operational		Community Health & Safety	Upon completion of the abandonment operations an assessment of contaminated land will be prepared recording the final contamination status of the location of the Project facilities. This assessment will be subject to governmental approval.	Operations Management System		5.8.2,10.3.4
A7	OP02	Operational		Surface Water	At CSG2 rainwater from the diesel storage tank bund will be manually drained and routed to the storm water drainage system via an oily water separator.	Operations Management System		10.5.4, 5.5.5, 5.8.2
A7	OP03	Operational		Surface Water	After visual inspection and sampling of water (if required, to determine it meets the Project Standards) the oily water separator water will be discharged directly in to the environment.	Operations Management System		10.5.4, 5.8.2
A7	OP04	Operational		Surface Water	Surface run-off from un-contained catchment areas within the facility site areas (e.g. roadways and other surfaced areas) will flow into the storm water drainage which will be discharged off-site via a weir, to surface or ground.	Operations Management System		10.5.4, 5.5.5, 5.8.2
A7	OP05	Operational		Surface Water	At the facilities, fixed, external equipment containing oil and the water bath heaters will be bunded locally and bunds will be manually discharged to the storm water drainage system if clean. Any visible contamination will be recovered prior to discharge or the oily water will be removed for treatment at an oily water separator.	Operations Management System		10.5.4, 5.5.5

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A23	OP10	Operational		Air Quality	Stack emission monitoring of NOx and CO emissions will be undertaken for major point source emissions (compressor drive turbines, power generation turbines and engines and water bath heaters) and emissions of PM and SO2 will be determined using accepted calculation methodologies.	Operations Management System		10.8.4
A23	OP11	Operational		Air Quality	Where stack emission monitoring shows values which are consistently within the project environmental standards the frequency and scope of monitoring will be reviewed and revised if required.	Operations Management System		10.8.4
A23	OP12	Operational		Air Quality	An atmospheric emissions inventory will be prepared and updated annually. The inventory will detail all relevant emission sources including direct and indirect emissions based on monitoring results and estimates based on fuel consumption or other process inputs as required.	Operations Management System		10.8.4
A30	OP121	Operational		Community Health & Safety	When the 56"-diameter pipeline is operating, regular patrols of the pipeline by ROW horse patrols, vehicular patrols (using existing access tracks) and security patrols will lessen the risk of third-party interference.	Operations Management System		12.5, 12.6.2, 10.3.2, 5.8.4
A30	OP123	Operational		Community Health & Safety	The pipeline and facilities will be regularly inspected and maintained.	Operations management system		12.6.2, 5.8.2
A30	OP124	Operational		Community Health & Safety	The pipeline and facilities will be operated within the intended design conditions.	Operations Management System		12.6.2, 5.8.2
A30	OP125	Operational		Community Health & Safety	The relevant authorities will be informed in the case of planned or actual third-party development within the relevant pipeline and facility protection zones.	Operations Management System		12.6.2, 5.8.2, 10.9.4

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A30	OP127	Operational		Community Health & Safety	CSG1 and CSG2 will have local emergency shut down (ESD) and safety systems.	Operations Management System		12.6.2, 5.8.2,
A30	OP128	Operational		Community Health & Safety	The existing SCP pipeline has a Government-approved emergency response plan (ERP), which will be updated to integrate the SCPX pipeline and the new facilities before they become operational.	Operations Management System		12.6.3, 5.8.2
A30	OP129	Operational		Community Health & Safety	In accordance with Appendix 4 Clause 3.6 of the HGA, the revised ERP will be submitted to GOGC (representing the Georgian Government).	Operations Management System		12.6.3, 5.8.2
A24	OP13	Operational		Air Quality	Dust generated by operational activities is considered a disturbance issue and will be monitored through visual inspection.	Operations Management System		10.8.4
A30	OP130	Operation		Community Health & Safety	All personnel are required to understand their roles and responsibilities described in the ERP and undertake training and instruction necessary to ensure that they are competent to carry out their roles and responsibilities. Regular drills, musters and training are detailed in the annual emergency response exercise programme that will be updated to include SCPX-specific training and emergency drills.	Community Safety Plan	Operations Management System	12.6.3, 5.8.2
A30	OP131	Operational		Community Health & Safety	ROW patrols will monitor river crossing to provide assurance of the integrity of any river protection works and river banks. This will include a visual inspection for river bank erosion or changes to channel morphology.	Operations Management System		10,5.4, 10.7.4, 12.5.2, 5.8.2
A30	OP132	Operational		Community Health & Safety	In-line inspection pigging operations will be carried out on a regular basis to provide information on the line integrity.	Operations Management System		12.6.2, 5.8.2,
A30	OP133	Operational		Community Health & Safety	The project will maintain liaison with all land owners along the pipeline route, and with authorities and utilities companies to track proposals for third party buildings activities that could affect the pipeline	Operations Management System		12.5.2, 5.8.2,

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A30	OP136	Operational		Community Health & Safety	Monitoring of areas of geotechnical instability and erosion potential will be continued during operations.	Operations Management System		12.5.2, 10.12.4, 10.7.4
A25	OP137	Operational	CSG1, CSG2 & PRMS	Noise	Maintenance venting of large inventories of gas at CSG1, CSG2 and the PRMS, with a flow rate likely to generate an LAmax noise level which would exceed the Project Standards, will not be undertaken between 23:00 and 07:00.	Operations Management System		10.9.4
A25	OP138	Operational	CSG1, CSG2 & PRMS	Noise	Local communities will be notified in advance of any maintenance work at CSG1, CSG2, PRMS expected to generate any exceptionally high noise levels.	Operations Management System		10.9.4
A27	OP139	Operational		Cultural Heritage	Activities involving topsoil stripping and excavation during operation, which are undertaken outside of areas previously disturbed during project construction, will be subject to a cultural heritage assessment to determine appropriate mitigation measures before the work begins.	Operations Management System		10.10.4
A25	OP14	Operational	Facilities	Noise	Noise monitoring will be carried out every 6 months at the sensitive receptors around CSG1, CSG2 and the PRMS to verify the modelling results and demonstrate that the Project Standards are met. When it has been established that the project standards are being met, the frequency of monitoring will be reviewed and reduced.	Operations Management System		10.9.4
A30	OP140	Operation		Community Health & Safety	Local residents will be advised of activities that could threaten the integrity of the pipeline, such as the extraction of aggregate.	Operations Management System		12.6.2
A8	OP141	Operation		Landscape	The existing programme of landscape monitoring on the BTC/SCP Facilities will be extended to include the SCPX ROW, Facilities and temporary sites.	Operations Management System		10.4.4

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A30	OP143	Operation		Community Health & Safety	An expert assessment of burial depths, set back measurements and pipeline protection works will be carried out at major river crossings annually (depending on the river characteristics and crossing technique) and after flood events exceeding a 1:100-year return period.	Operations Management System		12.6.2, 10.6.4, 10.7.4
A30	OP144	Operation		Community Health & Safety	Depending on river crossing monitoring results, additional maintenance measures, as deemed necessary by the Project, such as civil protection works which are necessary to maintain adequate depth of cover and set back, will be implemented.	Operations Management System		12.6.2
A22	OP147	Operation		Air Quality	An operations phase energy efficiency procedure will be implemented to monitor energy efficiency at the Facilities with the aim of identifying opportunities for improvement.	Operations Management System		10.8.4
A25	OP148	Construction & Operational		Noise	During early operations, 10-minute readings will be taken at the nearest noise sensitive receptors to CSG1, CSG2 and the PRMS to confirm that the site will meet the appropriate Project Environmental Standards.	Pollution Prevention Plan	Operations management system	10.9.4
A25	OP15	Operational		Noise	The project will monitor the occurrence of noise complaints to determine whether there is a specific link with noisy activity and determine whether further action is required.	Operations Management System		10.9.4
A23	OP16	Operational		Air Quality	All major combustion plant will operate on natural gas where possible.	Operations Management System		10.8.4
A23	OP17	Operational		Air Quality	Preventative maintenance programme to minimise fugitive emissions and maintain performance of emission abatement technology will be implemented.	Operations Management System		10.8.4

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A23	OP18	Operational		Air Quality	Ongoing training programme for facility personnel will be implemented to include environmental compliance and reporting.	Operations Management System		10.1.3, 10.8.4
A23	OP19	Operational		Air Quality	Should there be any significant changes to the operations of SCPX such as increased throughput, environmental policies and standards shall be considered as an integral part of any engineering assessment. This will be achieved through the Management of Change system.	Operations Management System		10.1.3, 10.8.4
A30	OP20	Operational		Community Health & Safety	The entire pipeline will be walked or ridden periodically to provide assurance that no unauthorised activities are taking place that could damage or otherwise affect the integrity of the pipeline. Sensitive sections will be patrolled with the highest frequency.	Community Safety Plan	Operations Management System	12.6.2, 5.8.2
A23	OP21	Operational		Air Quality	An air quality monitoring programme encompassing ambient air quality and stack emissions monitoring will be developed and implemented in relation to the Project Environmental Standards. Where monitoring results demonstrate consistent compliance with the Project Standards, the frequency and scope of monitoring will be reviewed and revised if appropriate to include less frequent, boundary fence monitoring.	Operations Management System		10.8.4
A24	OP23	Operational		Air Quality	All off-site dust disturbance complaints will be logged, reported, investigated and actioned as appropriate.	Operations Management System		10.8.4
A30	OP25	Construction		Community Health & Safety	Operations will liaise with the government authorities to establish guidelines regarding patrol behaviour with respect to access to/transit through agricultural lands and the reporting of any damage.	Operations Management System		10.13.5

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A36	OP40	Construction & Operational		Surface Water	Water quality testing will be undertaken annually downstream of the CSG2 access road crossing for a period of five years post construction or until there are no demonstrable changes, whichever is the sooner.	Pollution Prevention Plan	Operations Management System	10.5.4
A36	OP41	Construction & Operational		Surface Water	A monitoring programme will be developed for sanitary and industrial discharges, which will be monitored at the point of discharge to confirm compliance with the Project Standards. Monitoring will be carried out monthly for the first year of operation, after which the frequency and suite of determinants will be reviewed and revised dependent on the on the first year's results.	Pollution Prevention Plan	Operations Management System	10.5.4, 10.6.4
A7	OP42	Operational	Facilities	Groundwater	Monitoring and maintenance of the water treatment facilities will be integrated with the existing SCP Georgia emission management procedures.	Operations Management System		5.8.2, 10.5.4
A7	OP43	Operational		Surface Water	An ambient surface water monitoring programme will be developed during operations for waters that receive discharges from the facilities. Monitoring will be carried out monthly for the first year of operation upstream and downstream of the discharge point, after which the frequency and suite of determinants will be reviewed and revised dependent on the first year's results.	Operations Management System		10.5.4
A23	OP46	Operational		Air Quality	In addition to the site induction, more detailed emissions management training will be provided for managers and technicians who will be involved in site operations.	Operations Management System		10.5.4, 10.8.4
A15	OP47	Operational		Groundwater	Groundwater quality monitoring will be carried out post-construction and prior to operation of the facilities and subsequent to any unplanned events which are assessed as having the potential to impact groundwater quality.	Operations Management System		10.6.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A25	OP48	Operational		Noise	Free-field (i.e. 3.5 metres away from the façade of the building) noise measurements at identified receptors near the Facilities will be undertaken by a trained, competent person using a calibrated sound level meter in accordance with the international standard ISO 1996 Description and Measurement of Environmental Noise.	Operations Management System		10.9.4
A25	OP50	Operational		Noise	A preventative maintenance programme will be implemented that is designed to ensure that all plant and equipment operate in accordance to with Project Standards.	Operations Management System		10.9.5
A17	OP51	Operational		Ecology	Follow-up monitoring to record survival of planted or re-planted trees for off-setting purposes will be undertaken until sustainable growth is achieved.	Operations Management System		10.7.3,10.7. 4
A17	OP52	Operational		Ecology	The Project will carry out annual maintenance operations until any new tree planting for off-setting purposes has established.	Operations Management System		10.7.3,10.7. 4
A17	OP61	Operational		Ecology	When patrolling the pipeline, the Project will use horse patrols wherever practicable, minimising vehicular access except where necessary for maintenance purposes.	Operations Management System		10.3.4, 10.7.4
A27	X10.01	Construction	KP53-55	Cultural Heritage	There are areas of potential archaeology at KP55 (CH7) and KP56 (CH8), which will be examined in a programme of Phase 2 trial trenching if crossed by the SCPX ROW.	Cultural Heritage Management Plan		10.10.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A27	X10.02	Pre- construction	CSG2 Access Road	Cultural Heritage	The CSG2 access road alignment has been routed to avoid all known archaeological sites except CH71, CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261 and CH265. These features will be subject to Phase 2 archaeological evaluations, and a recording and preservation programme if appropriate.	Cultural Heritage Management Plan		10.10.4
A27	X10.03	Pre- construction	CSG2	Cultural Heritage	Phase 2 archaeological evaluation of nine potential features identified in the area of CSG2 (CH54, CH55, CH56, CH58) will be carried out before construction work commences. If the results of the evaluation recommend further excavation work, a scope for Phase 3 excavation will be agreed with the Ministry of Culture.	Cultural Heritage Management Plan		10.10.4
A27	X10.04	Pre- construction	CSG2 Access Road	Cultural Heritage	At CH9 (Nardevani Settlement remains), CH67 (megalithic stones), and probable burial mounds CH10, CH30, CH161-CH167, CH208, CH215, CH270, CH273, CH274 and CH276 (Access Road construction camp) the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction begins.	Cultural Heritage Management Plan		10.10.4
A27	X10.05	Construction	CSG2 Access Road	Cultural Heritage	During topsoil stripping, areas of the CSG2 access road which are adjacent to visible cultural heritage features and in the vicinity of CH276 at the access road construction camp will be monitored for any sites of archaeological features. If they are identified, work will be suspended while an archaeological investigation takes place.	Cultural Heritage Management Plan		10.10.4
A27	X10.06	Construction	CSG2 Access Road	Cultural Heritage	At CH71 and CH275 where the CSG2 access road crosses the historical road, the existing road surface will be protected by laying a layer of geotextile membrane over which the road surface will be built up.	Cultural Heritage Management Plan		10.10.4
A27	X10.07	Pre- construction	CSG2 Access Road	Cultural Heritage	All aspects of the historical road in the vicinity of the Project will be recorded prior to and during access road construction.	Cultural Heritage Management Plan		10.10.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A27	X10.08	Pre- construction	CSG2 Access Road	Cultural Heritage	At CH41 a small portion of the toe of an embankment of the road will lay across a part of the area identified as being part of the Bronze Age settlement west of Ozni. Possible cultural heritage features have been identified in this part of the site. Phase 2 work will be undertaken prior to construction to assess the features and identify the need for any necessary mitigation measures required.	Cultural Heritage Management Plan		10.10.4
A27	X10.09	Construction	CSG2 Access Road	Cultural Heritage	The archaeological watching brief will be maintained at CH41 during CSG2 access road construction that will enable any elements in this area to be excavated and recorded.	Cultural Heritage Management Plan		10.10.4
A27	X10.10	Construction	CSG2 Access Road	Cultural Heritage	At CH16–38 the boundary of the sites will be marked out by the Cultural Heritage Monitor before construction of the CSG2 access road begins.	Cultural Heritage Management Plan		10.10.5
A27	X10.11	Construction	CSG2 Access Road	Cultural Heritage	Traffic movements will be managed during the construction of the CSG2 access road with the aim of minimising heavy vehicle movements past the monastery in Berta (CH72) and reducing light vehicle movements to necessary journeys as far as practical.	Cultural Heritage Management Plan		10.10.4
A27	X10.12	Construction	CSG2 Access Road	Cultural Heritage	The width of the access road construction corridor will be evaluated during detailed design with the aim of narrowing to avoid three of the mounds near Burnasheti (CH16, CH19 and CH27). If these sites cannot be avoided, they will be subject to a Phase 2 evaluation.	Cultural Heritage Management Plan		10.10.4
A27	X10.13	Construction	CSG2	Cultural Heritage	Six potential features identified in the vicinity of CSG2 (CH03, 59, 62, 64, 65 and 66) will be avoided during construction work and will be demarcated with protective fencing before construction starts.	Cultural Heritage Management Plan		10.10.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A27	X10.14	Pre- construction		Cultural Heritage	The following potential cultural heritage sites identified by surveys of Project-related sites will be excavated before Project construction begins:• Potential archaeological sites within the CSG2 Access Road footprint that cannot be avoided (CH97, CH127, CH157, CH219, CH228, CH246, CH256-CH259, CH261, CH265).	Cultural Heritage Management Plan		10.14.4
A32	X13.01	Pre- construction	CSG2 and PRMS	Land Ownership & Use	The Project will provide a substitute for watering holes used by livestock that cannot be used due to Project-related actions. The substitute will be of a type, and in a location, to be agreed with representatives of the livestock owners and herders. This measure will apply particularly at CSG2 and PRMS sites where grazing livestock are important contributors to local livelihoods.	Land Management Plan		10.13.8
A32	X13.02	Pre- construction	CSG2	Land Ownership & Use	Local communities and grazers will be consulted prior to construction regarding access to grazing lands in the vicinity of CSG2 and the CSG2 Access Road to determine suitable alternative access routes to pastures.	Community Liaison Plan		10.13.8
A33	X15.01	Construction	GSG2	Land Ownership & Use	Access to the church located close to CSG2 will be maintained throughout construction as long as the Project considers it safe to do so.	Community Liaison Plan		10.13.8, 10.15.4
A38	X15.02	Construction	GSG2	Land Ownership & Use	If the Project affects the existing access track at the Pipeline Camp on the edge of Poladaantkari an alternative access will be provided to dwellings in the village. The Project will locate the access as close as is practical to the existing track, taking into consideration potential health and safety impacts.	Community Liaison Plan		10.15.4
A5	X3.01	Construction	CGS2 access road	Landscape	Topsoil from the access road will be stored in allocated areas along the access road and used preferentially for reinstatement of road banks. Surplus topsoil from the CSG2 access road construction will be spread at agreed locations or on municipal land.	Landscape Management Plan		10.3.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A7	X3.02	Construction	CSG2 access road	Soil & Ground Conditions	The CSG2 access road embankments will be reinstated with an appropriate seed mix.	Ecological Management Plan		10.3.4, 10.4.4
A7	X3.03	Pre- construction	Mtkvari crossing	Soil & Ground Conditions	The existing micro-tunnelling shaft on the east bank of the Mtkvari is full of waste material that has not been classified. The waste will be dug out, assessed and managed in accordance with the Pollution Prevention Plan and Waste Management Plan.	Waste Management Plan		10.3.4, 5.4.11
A8	X4.02	Construction	CSG1	Landscape	At CSG1, locally occurring native trees and shrubs will be planted along field boundaries to the north and east to screen PSG1 and CSG1 facilities from Jandari Road providing sufficient land is available.	Landscape Management Plan		10.4.4
A8	X4.03	Construction	CSG2	Landscape	At CSG2, the excess subsoil will be used to create bunding north of the facility.	Landscape Management Plan		10.4.4
A8	X4.05	Construction	CSG2	Landscape	Planting of coniferous trees on a bund north of the CSG2 facility will screen the facility from Rekha.	Landscape Management Plan		10.4.4
A9	X4.06	Construction	CSG2	Landscape	Where the CSG2 access road has been cut into the hillsides, some of the excess subsoil and topsoil will be used to blend the road into the landscape if slope stability and drainage allow. The remainder of the material will be removed from site to reinstate borrow pits or disposed of to an agreed location.	Landscape Management Plan		10.4.4
A17	X4.07	Construction	CSG2 Access Roads	Ecology	Where the CSG2 access road is routed through pine plantations, felled trees will be preferentially left within the existing plantation to rot and provide habitat for fungal and invertebrate species, pending agreement with the landowner.	Ecological Management Plan		10.7.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A8	X4.08	Construction	PRMS	Landscape	At the PRMS, topsoil from the facility will be used to create bunding east and south of the facility.	Landscape Management Plan		10.4.4
A8	X4.09	Construction	PRMS	Landscape	Once the landforming at the PRMS has been completed the land will be reinstated for grazing use.	Landscape Management Plan		10.4.4
A8	X4.12	Operational	CSG1, CSG2 & PRMS	Landscape	At CSG1, CSG2 and the PRMS, the Project will maintain the unobtrusive colour scheme.	Landscape Management Plan	Operations management system	10.4.4
A12	X5.01	Construction	Algeti and Mtkvari	Surface Water	Water flow in the Mtkvari and Algeti Rivers will be assessed before and during abstraction of hydrotest water.	Resource Management Plan		10.5.4
A11	X5.02	Construction	Mtkvari crossing	Surface Water	The Mtkvari River at KP30 will be non-open-cut (micro-tunnel or HDD) and use existing/abandoned launch pit on east bank if practicable.	Pollution Prevention Plan		10.5.4
A31	X5.03	Construction	RVX	Surface Water	The contractor will prepare a plan to respond to an outbreak of mud including clean up and remediation for outbreak on land and liaison with downstream users in the event of outbreak in the water.	Pollution Prevention Plan		10.5.4
A11	X5.04	Construction	Algeti Crossing	Surface Water	At the Algeti River, the crossing trench will be backfilled with the excavated material and, where existent, the watercourse's armour will be reinstated as soon as possible following pipeline installation.	Pollution Prevention Plan		10.5.4, 5.4.11
A12	X5.05	Pre- construction	CSG2 Access Road	Surface Water	Water quality and flow rate testing will be undertaken upstream and downstream of crossings on the access road to CSG2 prior to, during and after construction.	Resource Management Plan		10.5.4
A21	X5.06	Construction	KP00-11	Surface Water	Water flow will be maintained at Irrigation channels that will be open-cut at KP00–11.	Pollution Prevention Plan		10.5.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A16	X5.07	Construction		Surface Water	At the slopes east of the Mtkvari between KP27 and KP29, header drains or dewatering should be considered where large quantities of water are likely to enter the ROW.	Pollution Prevention Plan		10.5.4, 5.4.11
A16	X5.08	Construction		Surface Water	Where the CSG2 access road crosses hill slopes and springs, header drains or dewatering should be considered where large quantities of water are likely to enter working areas.	Pollution Prevention Plan		10.5.4, 5.4.11
A15	X6.01	Construction	CSG1 and PRMS	Groundwater	At CSG1 and the PRMS, where existing boreholes will be used, the water will be sampled and analysed to monitor contamination.	Pollution Prevention Plan		10.6.4
A15	X6.02	Pre- construction	CSG1 and PRMS and CSG2	Groundwater	The facilities will be supplied with water from either existing abstraction wells or new wells, and subject to a sustainability assessment.	Resource Management Plan		10.6.4
A15	X6.03	Construction	CSG2	Groundwater	Groundwater quality at CSG2 will be monitored during construction using the installed monitoring wells.	Resource Management Plan		10.6.4
A6	X6.04	Construction		Soil & Ground Conditions	The fencing at the known anthrax pit at KP30 will be maintained during construction to help protect the area from disturbance and workers will be made aware of the risks posed by this area and the need to avoid disturbance.	Pollution Prevention Plan		10.3.4
A17	X7.01	Construction	KP0-0.5 Wetlands	Ecology	A method statement will be produced and agreed prior to construction of the pipeline through the wetland at KP0–0.5 with the aim of reducing damage to the wetland during construction by use of bogmats or an alternative as approved by the Company.	Ecological Management Plan		10.7.4
A17	X7.02	Construction	Algeti RVX	Ecology	Where trees are removed on the banks of the Algeti River, compensation planting will be undertaken to off-set the essential removal of trees.	Ecological Management Plan		10.7.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A17	X7.03	Construction		Ecology	If Georgian Red List tree species cannot be avoided by coppicing on the banks of the Mtkvari River, compensation planting will be undertaken to off-set the essential removal of trees.	Ecological Management Plan		10.7.4
A17	X7.06	Pre- construction	Algeti RVX	Ecology	To facilitate the re-establishment of smooth-leaved elm populations by the Algeti River, seeds will be collected from mature tree specimens in nearby habitat and saplings will be produced from the collected seeds at a recognised nursery.	Ecological Management Plan		10.7.4
A17	X7.07	Construction	Algeti RVX	Ecology	After construction has been completed, seed-grown plants of 50cm or more in height will be planted in areas of the Algeti riparian woodland where populations of smooth-leaved elm occurred prior to clearance (subject to planting restriction zones), suitable protection will be provided to protect them from grazing.	Ecological Management Plan		10.7.4
A3	X7.08	Construction	KP27 - KP29	Ecology	The ROW slopes at KP27 and KP29 that have a high erosion risk will be reseeded using hay and an appropriate seed mix.	Ecological Management Plan		10.3.4
A17	X7.09	Construction	Mtkvari crossing	Ecology	At the Mtkvari crossing, the scrub will be cut back and coppiced to accommodate the guide cable for the micro-tunnel machine. Plant roots will remain undisturbed, as far as practical.	Ecological Management Plan		10.7.4
A17	X7.10	Construction	CSG2	Ecology	At CSG2, tree planting to screen the visual impact will avoid planting on the seasonal wetland areas.	Landscape Management Plan		10.7.4
A19	X7.11	Construction	Algeti Crossing	Ecology	The Algeti River crossing will be constructed outside of the fish- spawning season which is May–June.	Ecological Management Plan		10.7.4

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A19	X7.12	Pre- construction	KP2-12	Ecology	Pre-construction ecological surveys will be carried out at dusk/night in June–July to record details of bats at KP2–12. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.	Ecological Management Plan		10.7.4
A19	X7.13	Pre- construction	KP54-55	Ecology	Pre-construction ecological surveys will be carried out at dusk/night in June/July to record details of bats at KP54–55. Trees identified as bat roosts will be marked for avoidance. Where removal is unavoidable, the bats will be prevented from re-entering their roosts by blocking roost entry points at night, prior to construction.	Ecological Management Plan		10.7.4
A19	X7.14	Pre- construction	CSG2	Ecology	Ornithological surveys will be carried out at CSG2 and at wetland areas along the CSG2 access road in the breeding season (May–June) and in the migration season (September) before and during construction work to identify bird species using the area and the effect of construction.	Ecological Management Plan		10.7.4
A19	X7.15	Construction	KP12	Ecology	The irrigation channel at KP12 will be crossed using a trenchless method thus avoiding disturbance to flora and fauna.	Ecological Management Plan		10.7.4
A19	X7.16	Construction	CSG2	Ecology	At CSG2 the large wetland area to the east of the facility area will be fenced with protective barriers to protect it from construction activities while allowing access for livestock.	Ecological Management Plan		10.7.4
A19	X7.17	Construction	Algeti Crossing	Ecology	At the Algeti River crossing, individuals of the smooth-leaved elm shall be marked prior to construction and shall be avoided where deemed practicable by the Company during the setting out of the ROW.	Ecological Management Plan		10.7.4
A19	X7.18	Construction	CSG2	Ecology	Marsh orchids within the temporary and permanent footprint at CSG2 will be surveyed, identified and translocated prior to construction. A proportion of the plants will be moved to similar habitat in unaffected areas.	Ecological Management Plan		10.7.4

SCPX Issue	SCPX Ref.	Schedule	Specific Locations (and KP)	Primary Topic	SCPX Commitment (Mitigation Measure)	Management Plan	Additional Plan(s)	ESIA Section Reference
A24	X8.01	Construction	KP3, KP24, KP40, KP45, KP1.8, KP27.5, KP42.5	Air Quality	Particular attention will be paid to the implementation of dust suppression measures where the ROW passes close to the Military Camp (KP3), residences in Akhali Samgori (KP24), residences at Krtsanisi (KP40), the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5).	Pollution Prevention Plan		10.8.4
A24	X8.02	Construction	CSG2 Access Road	Air Quality	Particular attention will be paid to the implementation of dust suppression measures where the CSG2 access road passes close to Nardevani and Berta/Oliangi.	Pollution Prevention Plan		10.8.4
A25	X9.01	Construction	KP3, KP24, KP40, KP45, KP1.8, KP27.5, KP42.5	Noise	At the Military Camp (KP3), residences in Akhali Samgori (KP24), residences in Rustavi (KP32), and residences at Krtsanisi (KP40) which are in the vicinity of construction, the dachas and school at Kumisi (KP45) and other buildings (KP1.8, KP27.5, KP28.5, KP42.5), if construction continues for longer than one month, periodic noise monitoring readings of 10 minutes (in accordance with the Project procedure) will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).	Pollution Prevention Plan		10.9.4
A25	X9.02	Construction	CSG2 Access Road	Noise	Where the CSG2 access road passes close to Nardevani and Berta/Oliangi, if construction continues for longer than one month, 10- minute noise monitoring readings will be measured at the commencement of the potentially noisy activities and if the noise exceeds Project Standards, appropriate measures will be implemented (e.g. hoardings).	Pollution Prevention Plan		10.9.4
A25	X9.03	Construction	Pipeline Camp	Noise	Site layout will be designed, where practical and feasible, to locate noisy plant in areas further away from houses at the pipeline camp where a risk assessment shows that there may be significant noise impacts on sensitive receptors.	Pollution Prevention Plan		10.9.4