

#### **REPORT**

## Biodiversity Management Plan (BMP)

Rehabilitation of Urengoy-Pomary-Uzhgorod Gas Pipeline

Submitted to:

**JSC UKRTRANSGAZ** 

Submitted by:

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#### 1.0 INTRODUCTION

The Project consists of the replacement of four sections of the Ukrainian part of the Urengoy-Pomary-Uzhgorod (UPU) pipeline, in order to reduce the risk of loss of containment incidents and to enable the UPU to regain its original design pressure. The sections interested by the pipeline replacement are:

- Romny-Grebinky section (26.7 km length);
- Grebinky-Soviivka section (31.51 km length);
- Bar-Gusiatyn section (33.68 km length);
- Gusiatyn-Bogorodchany section (27.1 km length).

The works will also include the modernisation of two compressors units at Romny compressor station.

The UPU Pipeline transports natural gas from the Russian Urengoy region to the European Union over a total length of some 4,500km of which 1,139km is across Ukrainian territory. The Ukrainian pipeline extends from the border with Russia in the east, near the gas metering station Sudzha close to the town of Sumy, to Uzhgorod close to the border with Slovakia in the west. This can currently transport around 28Gm<sup>3</sup> of gas annually.

The European Bank for Reconstruction and Development (EBRD) has been requested to provide a sovereign loan to Ukraine, to be on-lent to Ukrtransgaz, the operator of the Urengoy – Pomary - Uzhgorod pipeline, for urgent repairs. A similar sovereign loan will be provided by the European Investment Bank (EIB) on a parallel basis and further support from a World Bank led EC funded Project Implementation Unit contracted.

A "Rapid Biodiversity Impact Assessment Report (RBIA)" was prepared according to EBRD Performance Requirements (PRs) (2014) by Su Yapi and submitted to the Banks.

The present document contains the Biodiversity Management Plan (BMP) for the construction and operation phases of the UPU Pipeline Project. The BMP is developed based on the consolidated mitigation and monitoring measures identified in the RBIA.

#### 2.0 PURPOSE AND SCOPE OF THE PLAN

The overall objectives of the Biodiversity Management Plan (BMP) is to identify the mitigation and monitoring measures for biodiversity in compliance with EBRD PRs in order to:

- adopt a mitigation hierarchy to anticipate and avoid, or where avoidance is not possible, minimize and restore impacts to biodiversity;
- develop and strictly implement policies, plans and procedures to integrate biodiversity management within the framework of Ukrtransgaz environmental and social management plans/procedures for the lifecycle of the project;
- establish a monitoring program to assess the effects of residual impacts on biodiversity;
- report the results of the periodic audits and provide for corrective actions, if necessary, in order to reach the plan objectives.

The BMP also identifies roles and responsibilities, training and reporting requirements and audit activities. The requirements set out in the present document apply to all Ukrtransgaz activities throughout the lifecycle of the Project.



### 3.0 ROLES AND RESPONSIBILITIES

Principal roles and responsibilities for the implementation of the BMP are outlined in the table below.

Table 1: Key Roles and Responsibilities

able 1: Key Roles ar Role	Responsibilities
	managing the BMP and related Plans final approval;
	verifying the BMP and related Plans are regularly updated;
Ukrtransgaz Management	ensuring contractors have sufficient and qualified resources to implement the plans;
	auditing the implementation of BMP and related Plans.
	ensuring sufficient and qualified resources are allocated on an ongoing basis to achieve effective implementation of actions, measures and monitoring activities. This will include the selection of a biodiversity advisor, if required, for specific tasks such as (but not limited to) the preparation and implementation of Restoration Plan and Biodiversity Offset Plan;
Contractors Management	<ul> <li>designating specific personnel on site or at the administrative level, clearly define their roles and responsibilities within the environmental and social management system;</li> </ul>
	taking appropriate actions to address Non-Conformities, based on audit reports, performance monitoring reports and on HSE Manager proposed approach and actions;
	communicate the results of the monitoring reports, Non-Conformities and Plans updates to Ukrtransgaz Management.
	<ul> <li>ensuring that the BMP is up to date and appropriate and ensuring that it is implemented effectively;</li> </ul>
	<ul> <li>ensuring that action/measures and monitoring activities are carried out timely and adequately according to the BMP requirements;</li> </ul>
	proposing to Management, if necessary, amendments and/or updates to the BMP and issuing plan revisions;
Contractors HSE	programming inspections and audit activities to ensure the correct implementation of the BMP;
Manager	addressing Non-Conformities through the definition of Preventive/ Corrective actions;
	bringing major Non-Conformities immediately to the attention of the Ukrtransgaz Management;
	collecting, organizing and reviewing monitoring data and monitoring reports from the specialized contractor(s) and providing summary results of such reports to Ukrtransgaz Management, to stakeholders and to the Lenders.
	<ul> <li>coordinate and supervise all site activities pertaining to the implementation of the BMP;</li> </ul>
Contractors Environmental Engineer	keep track of monitoring results and other reporting mechanisms and ensure corrective measures are implemented;
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	<ul> <li>stop the work in case of significant incidents or violations of the measures described in the BMP;</li> <li>prepare "Non-Conformity Report" in case monitoring measures reveal that the relative Key Performance Indicator (KPI) are not met.</li> </ul>
Contractors Environmental Technician	<ul> <li>implement specific management and monitoring measures.</li> <li>inspect the sites and report on the implementation of the mitigation and monitoring measures by the Contractors.</li> <li>report to the Environmental Engineer cases of incidents or violations of the measures described in the BMP.</li> </ul>
Biodiversity Advisor	<ul> <li>effective execution of the specific tasks assigned in conformity the Plans and with contractual arrangements;</li> <li>provide relevant monitoring data and monitoring reports to Ukrtransgaz and Contractor Management as indicated in the Plan;</li> <li>may propose changes and integrations to the mitigation and monitoring activities proposed in the Plans, the proposed changes shall be evaluated and approved by Ukrtransgaz and Contractor Management.</li> </ul>

#### 4.0 MITIGATION MEASURES AND MANAGEMENT CONTROLS

This section presents the mitigation measures and management methods that the BMP aims to implement.

The concept of "mitigation hierarchy" (avoidance, minimization, rehabilitation/restoration, offset) is applied for the selection of the measures to limit as far as possible negative impacts to biodiversity during construction and operation activities.

The mitigation measures identified are presented in **Table 2**. For each mitigation measure the following details are given:

- Project phase;
- ID: unique identification code of the mitigation measure;
- component: object of the mitigation;
- description of the mitigation measure;
- frequency/timing of the measure;
- means of verification;
- resources: responsible for implementing the measure.

The findings of the monitoring studies will help in determining if the existing mitigations are sufficient to minimize the impacts or if additional mitigation measures should be implemented according to EBRD PR6 (2014). This process is intended as an adaptive management system, so the mitigation and management approach will be adapted based on any new findings which could arise from the monitoring program. If necessary, additional mitigation measures shall be developed.



**Table 2: Mitigation Measures and Management Controls** 

Phase	ID.	Component	gement Controls  Description	Frequency/ Timing	Means of verification	Resources
Construction	MM-01	Habitat	Avoid: habitat loss and habitat fragmentation  Existing facilities and disturbed areas (e.g., current pipelines, access roads, degraded areas, agricultural areas) will be used to the extent possible to minimize the amount of natural habitat loss and fragmentation.  The length and number of access roads will limited to those strictly necessary.  Within forested areas the construction corridor will be limited to 20 m (instead of 32 m) in order to avoid additional clearing of natural vegetation.	Prior to the beginning of construction	Natural habitat loss Alternative assessment at local level	Contractors internal resources
Construction	MM-02	Habitat	Minimization: habitat loss and habitat fragmentation  Natural habitats adjacent to Project sites will be protected from unintentional disturbance during construction by a clear demarcation of the clearing area and the construction site.  A temporary demarcation could be provided by highly visible wooden sticks (50 cm high) planted into the ground, while a more continue and sturdy fencing could be provided in areas particular sensitivity such as Dacha Galilei Forest Reserve, wetlands or riparian habitats.	Demarcation in place prior to vegetation clearing  Maintained during the entire construction phase	Visible delimitation of the areas Evidence of violation	Contractors internal resources
Construction	MM-03	Habitat	Minimization: habitat loss and habitat fragmentation  Vehicle movement will be restricted to the existing roads that connect the Project site with the surrounding areas. Off road driving will be prohibited in order to avoid any unnecessary disturbance of surrounding habitats.	During the entire construction and operation phase	Driving signs Evidence of violation	Contractors internal resources
Construction	MM-04	Habitat	Minimization: increased exposure to atmospheric pollutants  Dust management control measures will be implemented by the contractor.  In dry periods dirt roads and soil stock piles should be sprayed with water in order to reduce dust.	As needed, during dry periods	Record of dust suppression measures Absence of dust deposition on nearby vegetation	Contractors internal resources



Construction	MM-08	Terrestrial Flora and Fauna	<b>Minimization</b> : behavioural changes due to noise and vibration  Maintain noise-reduction devices (e.g., mufflers) in good working order on vehicles and construction equipment.	During the construction phase	Construction schedule	Contractors internal resources
			In particular Contractor's workers will be informed regarding the importance of Dacha Galilei Forest Reserve and its protection measures, including the appropriate regulatory requirements.  Pets will not be allowed on site to minimise disturbance on wildlife.			
Construction	MM-07	Terrestrial Flora and Fauna	including Biodiversity issues.  General aspects of environmental management will be included in induction training to be provided to all employees. Workers will be trained regarding the occurrence of important flora/ fauna species and habitats in the area and the importance of their protection, including the appropriate behaviour in case wildlife or nests are encountered.	beginning of work	Training register or certificate for all employee and contractors	Contractors internal resources
			Minimization: reduction/degradation of habitat suitable to selected terrestrial flora and fauna species  Ukrtransgaz employees and Contractors working at the Project site will be provided with general induction, site specific induction and a broad range of health, safety and environmental awareness training,			
Construction	MM-06	Habitat	Minimization: spreading of invasive alien species  If invasive species are observed, an appropriate eradication program will be developed and implemented.  The spread of invasive alien species will be minimize by keeping vehicles and equipment clean.	As needed	Evidence of eradication program, if required	Contractors internal resources
Construction	MM-05	Habitat	Minimization: exposure to contaminants  Refuel and maintenance of vehicle and equipment will be performed exclusively in designated areas that includes concrete floor and/or a berms to limit the spread of any spill.  Drip pans will be used during refueling and maintenance in absence of a concreate floor to contain accidental releases and under fuel pump and valve mechanisms. Spill kit will also be available at every working site	During construction phase	Presence/ absence and use of appropriate fueling areas, drip pans and spill kits	Contractors internal resources



			Construction activities close to sensitive nesting sites, such as wetlands and riparian habitats, will be planned outside the peak breeding periods (April– July) as far as it is practical.			
			No construction activity must be conducted within the Dacha Galilei forest area during the pick breeding periods (from April to July).			
Construction	MM-09	Terrestrial Flora and Fauna	Minimization: increased mortality for wildlife due to site preparation  Before the beginning of site preparation in areas characterized by natural vegetation (vegetation clearing) an expert wildlife ecologist will perform a pre-construction surveys in the areas to be cleared (no more than 7 days before). The survey will focus on fauna species with limited mobility that cannot move ahead of construction. If any of these species are observed they will be collected by the ecologist and translocated to undisturbed but similar sites within the LSA.  The vegetation clearing activities shall be planned outside the peak breeding periods (April– July) as far as it is practical.	Prior to the beginning of vegetation clearing	Reporting of the activity and main findings Schedule of the activities	Contractors internal resources Biodiversity Advisor
			No vegetation clearing will be conducted within the Dacha Galilei forest area during the peak breeding periods (from April to July) or during the night.  No blasting is allowed for construction works in Dacha Galilei.			
Construction	MM-10	Terrestrial Flora and Fauna	Minimization: increased mortality for wildlife due to vehicular traffic  The speed of the vehicles on site should be limited and the use of construction vehicles at night should be avoided in order to minimize the risk of traffic collisions with fauna.  Feeding of wildlife will be prohibited on-site and organic waste will be carefully managed and disposed in order to avoid attraction of wildlife. If fauna species are encountered employees and contractors will wait until it moves on by itself or they will ask the assistance of the Environmental technician for its safe removal and relocation in a suitable environment.	During the construction phase	Record of wildlife observations and management	Contractors internal resources
Construction	MM-11	Freshwater Flora and Fauna	Minimization: water abstraction and discharge	During the construction phase	Records of water abstraction and discharge	Contractors internal resources



			In order to mitigate the disturbance on freshwater fauna abstraction and discharge activities from and into ponds will be avoided during bird nesting period and during fish spawning periods (April to July).  In addition, the water discharged in beams planned for the Section 2 will be avoided in spring during flood periods. To prevent soil erosion caused by water discharge to the beam, a tray or pipe must be used to prevent water discharge on the slopes of the beam. The pipe should reach the water surface on the bottom of the beam.  Hydrotesting pumps will not be located within the Dacha Galilei Forest Reserve area or in its close vicinity.  Maps showing planned abstraction and discharge locations and relative exclusion periods are given in Appendix F of the "Rapid Water Resources Impact Assessment" (RWIA).			
Construction	MM-12	Freshwater Flora and Fauna	Minimization: water crossing  The open cut water crossings will be performed during the dry season. Fish spawning periods (April to mid-June) will be avoided.  Site-specific crossing designs for open-cut watercourse crossings will be prepared by the construction contractors to specify the depth of installation and set back distance, based on a hydrological assessment (during preconstruction surveys of contractors) of the rivers. In this way, impact significance assessment may result in low rather than major.  Maps showing water crossing locations and relative exclusion periods are given in Appendix F of the "Rapid Water Resources Impact Assessment" (RWIA).	During the construction phase	Construction schedule for water crossings	Contractors internal resources
Construction	MM-13	Habitat / Terrestrial Flora and Fauna	Rehabilitation/Restoration: habitat loss and habitat fragmentation  Topsoil present under the facility footprint shall be stripped before construction activities. Topsoil will be used for restoration after construction.  Topsoil is defined here as the top, fertile layer of material on the land surface that is capable of supporting plant growth. It contains the seed bank and is therefore an essential component of the revegetation program. Maintenance of topsoil quality, particularly its structure and the integrity of its seed bank, is vital to both biorestoration work and erosion control.	At the beginning of construction	Reporting of the activity Presence of stockpiles	Contractors internal resources



			needs to be stored in temporary stockpiles to minimize the surface area occupied. The topsoil also should not be positioned adjacent to ditches, water courses, future excavations and other construction activities.  The subsoil will be excavated from the pipe trench and then subsoil shall be returned to the excavated area.  On return of the subsoil to the trench the subsoil shall be compacted to a similar compaction to that in the adjacent undisturbed area. The depth of subsoil after settlement shall not be above the level of the surrounding ground. After the subsoil has been returned and the land levelled, the topsoil shall be rendered to a loose and workable condition to a depth of 350 – 400 mm and contoured in keeping with the adjacent undisturbed ground.  Only topsoil shall be segregated and re-spread over the surface. Topsoil shall not be used for bedding material in the trench, and topsoil from unstripped/undisturbed areas shall not be used to cover adjacent disturbances. Topsoil shall not be handled during excessively wet conditions or at times when the ground or topsoil is frozen.  Rehabilitation/Restoration: habitat loss and habitat fragmentation			
Construction/ Operation	MM-14	Habitat / Terrestrial Flora and Fauna / Freshwater Flora and Fauna	A Restoration Plan will be developed prior construction and implemented while the construction is ongoing.  The goal of the Plan is to produce stable vegetative cover and recreate part of the habitat lost during construction, therefore species characteristics of the natural vegetation succession need to be used. Seeding and planting of grass shrubs and tree species typical of the local vegetation should be used to ensure optimal ground cover.  The restoration of these habitats is also expected to minimize erosion, dust and spreading of invasive alien species.	Restoration Plan in place before the beginning of construction phase	Presence of a Restoration Plan	Contractors internal resources Biodiversity Advisor
			The plan shall reflect the variety and distribution pattern of the pre- construction vegetation present in a particular site. Different restoration activities shall be described for the different vegetation types and located along the pipeline sections.			



			Site specific reclamation plans need to be drawn for each water			
			crossing or river crossing typology considering the waterbody type, original bank morphology and vegetation.			
			Environmental engineering techniques needed to create stable slope and minimise the risk of erosion will be described and mapped.			
			The Plan will include also a schedule of restoration measures and adaptive management system.			
			Offsets: habitat loss and habitat fragmentation			
			According to the results of the RBIA, a limited net loss of PBFs is expected after considering avoidance, mitigation and reclamation measure. This loss correspond to G1.1 "Riparian and gallery woodland, with dominant alder, birch, poplar or willow" habitat in Section 2 and of G1.A1 "Oak - ash - hornbeam woodland on eutrophic and mesotrophic soils" in Section 4, corresponding to the Dacha Galilei Forest Reserve.			
		MM-15 Priority biodiversity features (PBFs)	A Biodiversity Offset Plan will be elaborated in order to ensure No Net Loss of the PBFs identified. The Plan will identify the offset measures and locations and will quantify the expected gain of the two PBFs deriving from those actions.			
Construction/			The elaboration and implementation of the Plan also includes the engagement of all Stakeholders in order to ensure the feasibility and the long term sustainability of the measures.	Biodiversity Offset Plan in place before the end of the construction phase  Biodiversity Offset Presence of an Biodiversity Offset Plan	Contractors	
Operation	MM-15		Considering the PBFs involved, the following offset measures are suggested.			Biodiversity Advisor
			<ul> <li>Strengthen policy and management capacity within the Dacha Galilei Forest Reserve to achieve wider conservation goals, including e.g. connectivity of protected areas, favourable conservation status of species threatened or protected, and of ecological functionality.</li> </ul>	priase		
			<ul> <li>Arrest ongoing degradation of biodiversity caused by sources other than the Project in order to protect the habitat ecological functionality, e.g. through rehabilitation of degraded forest areas, invasive species management, livestock management, and sustainable use of the habitats.</li> </ul>			
			<ul> <li>Create new G1.1 and G1.A1 habitats by afforestation of areas with appropriate tree and shrub species. The long them management of these areas need to be guarantee.</li> </ul>			



#### 5.0 MONITORING ACTIVITIES

This section presents the monitoring activities to be carried out in order to verify the effectiveness of the mitigation measures planned for the construction and operation phases.

The monitoring activities identified are presented in **Table 3**. For each monitoring activity the following details are given:

- Project phase;
- ID: unique identification code of the monitoring activity;
- topic/ aspect: object of the monitoring;
- description of the monitoring activity;
- frequency/timing of the monitoring;
- Key Performance Indicator (KPI): measurable value that demonstrates the effectiveness of proposed mitigation measures;
- resources: responsible parties for implementing the measure.

The findings of the monitoring studies will help in determining if the existing mitigations are sufficient to minimize the impacts or if additional mitigation measures should be implemented according to EBRD PR6 (2014). This process is intended as an adaptive management system, so that the mitigation and management approach will be adapted based on any new findings which could arise from the monitoring program. If necessary, additional monitoring measures will be developed.



**Table 3: Monitoring activities** 

Phase	ID.	Topic/ Aspect	Description	Frequency /Timing	KPI	Resources
Construction	MO-01	Habitat monitoring	Natural habitats adjacent to construction sites shall be regularly monitored for the presence of avoidable and unintentional disturbance including:  • habitat loss and habitat fragmentation due to footprint creep, off-road driving, erosion phenomena, presence of stagnant water etc.  • increased exposure to atmospheric pollutants due to airborne dust (e.g. signs of dust deposition on vegetation);  • exposure to contaminants due to accidental spills, waste management and disposal etc.  A monitoring register will be filled in and photographic documentation will be collected to document any issue detected and corrective actions put in place.	During Constriction formal monitoring shall occur monthly  Any incidental observation made during normal construction activities shall also be registered  Results are presented and discussed in the Annual biodiversity Report	Absence of stress or disturbance signs	Contractors internal resources Biodiversity Advisor
Construction	MO-02	Terrestrial Flora Monitoring	The presence of invasive flora species in the site shall be monitored regularly. Areas monitored will include areas recently disturbed such as soil and topsoil stockpiles, access road sides, reclamation sites, etc.	Every three months (unless particular issues are recorded during previous monitoring)  Results are presented and discussed in the Annual biodiversity Report	Absence of invasive species	Contractors internal resources Biodiversity Advisor
Construction	MO-03	Terrestrial Fauna Monitoring	Accidents involving wildlife or the observation of live animal or carcasses within and around the mining area shall be registered and monitored.  Additional mitigation measure to avoid wildlife accidents and encounters will be taken if needed based on the first monitoring results.	An accident and observation are registered during the entire construction phase Results are presented and discussed in the Annual biodiversity Report	Absence of accidents involving fauna species  Absence of exceptional or frequent fauna encounters	Contractors internal resources Biodiversity Advisor
Construction	MO-04	Topsoil Monitoring	Topsoil stripping and stockpiling operations shall be monitored and documented.	Monitoring of stripping shall be performed during stripping operations	Absence of stress or	Contractors internal resources



Phase	ID.	Topic/ Aspect	Description	Frequency /Timing	КРІ	Resources
			Topsoil stockpiles shall be monitored for signs of erosion or waterlogging. A monitoring register will be filled in and photographic documentation will be collected to document any issue detected and measures put in place.	Monitoring of topsoil stockpiles shall occur monthly (unless particular issues are recorded during previous monitoring)  Results are presented and discussed in the Annual biodiversity Report	disturbance signs	Biodiversity Advisor
Construction / Operation	MO-05	Rehabilitation /Restoration	A Restoration and Closure Plan will be developed during construction and implemented starting from operation.  The Plan will include also a schedule of restoration monitoring activities with schedules and clear and quantifiable KPIs need to be identified according to the targeted vegetation to be restored (e.g. species, vegetation cover, survival and grow of saplings).	Preparation of the Plan before the end of the construction phase  Monitoring activities shall continue yearly for at list five years or until all KPIs are reached  Results are presented and discussed in the Annual biodiversity Report	Presence and implementation of a Restoration and Closure Plan	Contractors internal resources Biodiversity Advisor



#### 6.0 REPORTING

### 6.1 Biodiversity Non-Conformity Reports

In case monitoring measures reveal that the relative Key Performance Indicator (KPI) are not met a "Non conformity report" will be prepared by the Environmental Engineer, communicated to the HSE Manager who will decide if support from a Specialized Contractor is needed in order to address the issue within 15 days from the monitoring.

The "Non conformity report" will clearly describe the issue observed and give all the relevant available information including:

- ID: unique identification code of the monitoring activity;
- topic/ aspect monitored;
- date of the monitoring;
- location of the observation (with geographic coordinates if available);
- name and role of the observer;
- description of the non-conformity compared to the KPI;
- photographic documentation (if available);
- suggested corrective actions.

Ukrtransgaz HSE Manager will review the report and assess, also with the assistance Specialized Contractor, the need of implementing additional corrective action and/or eventual modifications to the BMP mitigation measures and monitoring activities.

### 6.2 Annual Biodiversity Reports

Evidences and results of mitigation measures and monitoring activities shall be included in an Annual Biodiversity Report to be prepared by Ukrtransgaz with the eventual support of the Biodiversity Advisor. These report shall include the following minimum information/data:

- mitigation measures
  - list of the mitigation measures implemented, including the ID code, aim and description;
  - period of the measure application (start date and end date);
  - achievement (or not) of the target/acceptance criteria for key the performance indicators.
- monitoring activities:
  - location of the monitoring stations (geographical coordinates and elevation);
  - timing of the data collection (start date and end date);
  - description of the methodology applied and of the equipment used;
  - results of the observation conducted;
  - any anomalies that could have affected partially or totally the KPI results;
  - quality assurance and quality control procedures applied to ensure consistency and reliability of the results.



the KPI results and their compliance with the target/acceptance criteria;

The mitigation measures report will be prepared by Ukrtransgaz with the support of the specialized contractor(s) on a yearly basis.

#### 7.0 AUDIT AND REVIEW

The correct implementation of this Management Plan is verified through internal inspection and auditing activities carried out according to Ukrtransgaz "Internal audit" requirements.

Evidences and results of the inspection and audit activities are included in the audit reports and in the "Non-Conformity and Preventive/Corrective actions" records. Ukrtransgaz Management reviews results of inspections and audits and the progress of the Preventive/Corrective actions and takes additional appropriate actions if necessary.

Audit report shall give evidences of the actions, measures and related results from site inspection and auditing activities. Audit report shall also identify the corrective actions to be used in subsequent monitoring events.

Revision of the BMP is the responsibility of the Ukrtransgaz HSE Manager, who is in charge of this Plan. During steady state operations, the BMP will be reviewed on an annual basis and any necessary revisions will be made to reflect the changing circumstances, operational needs or monitoring results.



# Signature Page

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