

PART 9: EMERGENCY AND REMEDIATION PROCEDURE

The purpose of this part of this EMP¹ (incl. EIA²) is to anticipate the occurrence of environmental crises, which may occur due to unforeseen circumstances. Since these events can never be predicted, procedures have been prepared that must be followed in such an incident, which will assist in the mitigation, remediation and conservation of the environment and contribute to the safety of workers as well as I&AP's³.

As mentioned in the De Beers Kimberley Mines Environmental Management System Manual, titled "*De Beers, a diamond is forever: Kimberley Mines, Environmental Management System Manual*", dated April 2013, which is attached hereto in **Appendix F5**, De Beers Kimberley Mines has a Standard Procedure KM.EM.PR-12 "*Environmental Emergency Response*", dated July 2012. The procedure (attached hereto in **Appendix F3**) identifies potential environmental emergency situations and takes into consideration the consequences of abnormal working conditions and accidents that could lead to environmental impacts and addresses the response to these situations. De Beers Kimberley Mines also has a Standard Procedure M-COP-KM019 '*Emergency Preparedness and Response Procedure*' attached hereto in **Appendix F3**.

9.1 POSSIBLE ENVIRONMENTAL EMERGENCIES

According to the above-mentioned Environmental Emergency Response Procedure, dated February 2010, the following potential environmental emergency incidents at De Beers Kimberley Mines that may lead to serious pollution and / or may be detrimental to the environment, whether immediate or delayed, have been identified:

- Burst pipes.
- Leakages of hazardous or chemical substances.
- Hazardous material or chemical spillages.
- Instability of structures and side slopes of pits.
- Failure of slimes dams.
- Fires (flammable material).
- High rainfall and floods (and subsequent overflows from dams and possible contamination of the surrounding water environment).

Refer also to Table 1 of the Environmental Emergency Response Procedure, dated July 2012, attached hereto in **Appendix F3**, for the potential impacts associated with the possible environmental emergency incidents identified at De Beers Kimberley Mines. Refer also to the Standard Procedure KM-EM-PR-10 '*Environmental non-conformance, corrective and preventive action*', dated July 2012, attached hereto in **Appendix F6**, for an indication of the different classifications regarding an environmental incident, i.e. Major-, Moderate-, Minor- and Near -Hit Environmental Incidents.

¹ EMP: Environmental Management Programme.

² EIA: Environmental Impact Assessment.

³ I&AP's: Interested & Affected Parties.

9.2 COMMUNICATION OF ENVIRONMENTAL EMERGENCIES

The communication of environmental emergencies at De Beers Kimberley Mines are described in the Environmental Emergency Response Procedure, dated July 2012, as well as in the Standard Procedure KM-EM-PR-04 '*Internal and External Environmental Communication*', dated April 2012, attached hereto in **Appendix F7**.

According to the Internal and External Communication Procedure, dated February 2010, it is necessary to communicate various types of environmental information to various parties involved with mining and related activities undertaken at De Beers Kimberley Mines. This includes the reporting of an environmental incident. It is therefore Standard Procedure for the first person witnessing an emergency incident (e.g. pollution spill), to report the matter to his / her supervisor or the responsible person for the area or Security, as soon as possible. Once the emergency incident has been reported to Security, the requirements of the relevant Standard Procedure must be performed. Refer to Part 9.3.1 below for the procedure to be implemented.

According to the Internal and External Communication Procedure, dated February 2010, all environmental issues communicated via, amongst other, letters and posters will be forwarded to the Environmental Department for record purposes. This will also be captured in the Communications Register kept by the Environmental Document Controller. In addition, environmental emergency situations that could possibly affect or concern I&AP⁴s will be communicated with the relevant parties as per Public and Corporate Affairs Departments Policy.

9.3 PROCEDURES TO BE FOLLOWED IN THE EVENT OF AN ENVIRONMENTAL EMERGENCY

9.3.1 LEGISLATIVE REQUIREMENTS

According to Section 30(4) of the NEMA⁵ (1998), the responsible party must, "as soon as reasonably practicable after knowledge of the incident -

- (a) *take all reasonable measures to contain and minimise the effects of the incident, including its effects on the environment and any risks posed by the incident to the health, safety and property of persons;*
- (b) *undertake clean-up procedures;*
- (c) *remedy the effects of the incident;*
- (d) *assess the immediate and long-term effects of the incident on the environment and public health;"*

It is also required by Section 30(5) of the NEMA (1998) that the responsible party report to the Director - General, provincial head of department and municipality as much information as is available to enable an initial evaluation of the incident, within 14 days. The information required includes the following:

- (a) *the nature of the incident;*

⁴ I&AP: Interested and Affected Parties.

⁵ NEMA: National Environmental Management Act, Act 107 Of 1998.

- (b) *the substances involved in an estimation of the quantity released and their possible acute effect on persons and the environment, and data needed to assess these effects;*
- (c) *initial measures taken to minimise impacts;*
- (d) *causes of the incident, whether direct or indirect, including equipment, technology, system, or management failure; and*
- (e) *measures taken and to be taken to avoid a recurrence of such incident.”*

9.3.2 PROCEDURE(S)

The procedure to be followed in the unforeseen event of an environmental incident at De Beers Kimberley Mines is described in the Environmental Emergency Response Procedure, dated July 2012, attached hereto in **Appendix F3**, and summarised in this part of the EMP.

In general, the requirements of the relevant procedures must be performed subsequent to the reporting of an emergency incident (e.g. pollution spill) to the relevant supervisor, responsible person for the area or to Security. Such a procedure includes acting on the emergency incident as soon as possible, as well as the implementation of preventative and / or corrective measures towards such an incident.

According to the Environmental Emergency Response Procedure, dated February 2010, all employees are responsible for the following:

- Proactively managing and / or avoiding any environmental incident.
- Minimising the impact on the environment in the event of an environmental incident.
- Reporting any environmental incident to the person responsible for the affected area as soon as possible.
- Reporting the incident as per the incident or non-conformance reporting procedure.

An emergency incident (e.g. pollution spill), should be reported to the responsible person, which is responsible for the following:

- Preventing environmental incidents by adhering to the relevant procedures and code of practices.
- Implementing preliminary corrective action.
- Implementing preventative action to prevent a reoccurrence of the environmental incident.
- Forwarding the incident / accident report to the Environmental Department as per the incident of non-conformance reporting procedure.

A standard procedure has been developed which specifically describes the evacuation procedure of De Beers Kimberley mines and the evacuation of the CTP⁶. They are namely: KM-SHE-PR-28 *'Mine Evacuation (Fires/Flooding) For De Beers Mine and Kimberley Mine Water Tunnel'* dated June 2008 and KM-CTP-WP-M70 *'CTP*

⁶ CTP: Combined Treatment Plant.

Emergency Evacuation and Response Procedure, dated October 2009 (attached hereto in **Appendix F**)

As mentioned in Part 9.1, hydrocarbon and chemical spillage is one of the major potential incidents that could occur at De Beers Kimberley Mines. A Standard Procedure has therefore been developed specifically for hydrocarbon and chemical spills at the mine. The main objective of the Standard Procedure KM-EM-PR-17 '*Hydrocarbon and Chemical Spill Handling*', dated July 2012, attached hereto in **Appendix F8**, is to ensure that any hydrocarbon or chemical spills are handled in an appropriate manner. The implementation of the mentioned Standard Procedure will ensure that the anticipated impacts that will be associated with a hydrocarbon or chemical spillage will be minimised or possibly prevented.

Furthermore, a Standard Procedure KM-EM-PR-30 '*Environmental Bioremediation Procedure*' was developed for De Beers Kimberley Mines in February 2012. This procedure is attached hereto in **Appendix F4**. The purpose of the mentioned procedure is to ensure that any diesel, petrol, or oil contamination that occurs on surface areas at De Beers Kimberley Mines is bioremediated in an environmentally and legally acceptable manner. This procedure applies to all workshops, diesel and oil storage areas, and any other areas where hydrocarbon spills may occur and where bioremediation can be carried out.

The Environmental Coordinator is responsible for the development of an overall generic emergency mock drill in schedule mine-wide, as well as for audit drills for effectiveness.

Furthermore, environmental incidents must be followed-up by the Environmental Coordinator which will also be responsible to report moderate (e.g. short-term impact, i.e. can be reversed within a 5 year period) and major incidents (e.g. long-term impacts, i.e. 5 years and longer) to the Management Team. Reporting will be done by means of the behaviour based reporting form or via the electronic database incident or non-conformance form.

9.4 INVESTIGATION, MONITORING AND AUDITING SUBSEQUENT TO AN ENVIRONMENTAL CRISIS

9.4.1 EMERGENCY INCIDENT INVESTIGATION

According to the Environmental Emergency Response Procedure, dated July 2012, attached hereto in **Appendix F3**, an external report must be submitted to the National and Provincial department, as well as to the municipality in the unforeseen case of a serious event that could lead to danger to the public (e.g. death) or sustaining impact on the environment. This report must contain the following:

- Nature of the environmental incident.
- Substances quantities and effect on persons, as well as on the environment.
- Initial remedial measures to minimise impacts.
- Root cause of the incident.
- Avoidance measures.

In addition, a report compiled by the Operations Manager will be submitted to the relevant Authorities (national and provincial department, as well as to the municipality) within 14 days of the incident. The mentioned report will provide detailed information regarding the nature of the incident, the associated impact, the initial measure taken to mitigate the impacts associated with the incident, the main cause of the incident and the preventative action that was taken.

9.4.2 POST-EMERGENCY MONITORING

According to this Environmental Emergency Response Procedure, dated July 2012, the Environmental Coordinator of De Beers Kimberley Mines is responsible for evaluating the success of the remedial action taken by De Beers Kimberley Mines in response of an emergency incident. The Environmental Coordinator will subsequently report to the Technical Support Manager no later than one month of the occurrence of an emergency incident.

9.4.3 POST-EMERGENCY AUDITS

An audit of the measures implemented during the rehabilitation of the area affected by an environmental emergency will be conducted once sufficient time has passed to allow for rehabilitation to take initial effect.

In addition, the environmental aspects affected by the incident will be monitored regularly (according to specialist recommendations), and the performance of the instituted management measures will be included in the audit conducted according to a pre-determined schedule.

The findings of the audit will then be forwarded to the relevant Authorities that were notified of, and I&APs that were affected by, the incident to ensure that the rehabilitation measures are adequate, and that the incident does not reoccur.