

**OP 017 – ENVIRONMENTAL PROTECTION MEASURES FOR SURFACE
DRILLING PROGRAMS****1. Purpose and Scope**

This operating procedure provides direction for the protection of the environment during surface drilling programs within all De Beers Canada Inc. – Exploration Division (DBCE) projects and operations.

2. Responsibilities

- Responsible person
- Drilling Companies

3. Procedures**3.1. Contractual Responsibilities**

- 3.1.1. The Responsible Person, or delegate, will ensure that all contracts for drilling contain, at a minimum, the necessary clauses, as outlined in the document Boiler Plate Clause – Drilling (RCD 006b), developed to protect the environment during surface drilling programs.
- 3.1.2. The Responsible Person, or delegate, will clearly define all environmental duties and liabilities of the contractor in the contractor's agreements or contracts.
- 3.1.3. The Responsible Person, or delegate, shall ensure that drilling company workers under contract are aware of current applicable environmental regulations and procedures, and are committed to comply with these in the course of their work. This commitment will form part of the contractual agreement signed by the drilling company.

3.2. Noise and Air Emissions

- 3.2.1. Drilling operations will endeavour to keep to a minimum any noise produced by equipment. The Responsible Person, or delegate, will ensure that this requirement is communicated to drilling operators as required, and that DBCE's procedure for Noise and Air Emissions is adhered to (OP-040).

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Page 1 of 6

**OP 017 – ENVIRONMENTAL PROTECTION MEASURES FOR SURFACE
DRILLING PROGRAMS****3.3. Access to Drill Sites**

- 3.3.1. The Responsible person, or delegate, will refer to the procedure for Road Building and Access (OP-010) where road building and access is required for surface drilling operations.
- 3.3.2. The Responsible Person, or delegate, will ensure that drill sites and water lines will be located in areas where access to them and their operation will create the least amount of disturbance. Wherever possible, the local landform and vegetation is to be utilized to visually screen drilling activities.

3.4. Waste Management

- 3.4.1. The Responsible Person, or delegate, will ensure that the drilling company provides and utilizes appropriate receptacles for debris at drill sites and that waste is removed and disposed of, in accordance with DBCE Waste Disposal Procedure (OP-022) and Recycling Procedure (OP 026), throughout the drilling operation and as a part of drill site demobilization.
- 3.4.2. The Responsible Person, or delegate, will ensure that drilling companies do not permit drilling wastes to run uncontrolled over land or ice surfaces or into watercourses. Drilling companies will recycle as much drilling mud and water as possible by using tanks and sumps, as appropriate. The Responsible Person, or delegate, will ensure that this requirement is communicated as required, and that DBCE's procedure for the Management of Processed Kimberlite (OP 023) is adhered to.
- 3.4.3. Drilling Companies will provide, when requested, a written record of all drill additives and chemicals in use by the driller to the Responsible Person. The records shall include the additive name and the details of those holes in which the additive was used.
- 3.4.4. The Drilling Contractor may provide a report of how drill cuttings and drill mud are disposed of in the final project report. The Responsible Person,

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Page 2 of 6

OP 017 – ENVIRONMENTAL PROTECTION MEASURES FOR SURFACE DRILLING PROGRAMS

or delegate, shall ensure that drill mud is disposed of appropriately, as verified in the final inspection of the drill site (See section 3.8 below)

- 3.4.5. The use of biodegradable materials is encouraged, for minimizing waste disposal requirements and possible environmental damage.

3.5. Water Management

- 3.5.1. The use and management of water at surface drilling operations shall be in accordance with the operating procedure for Use and Handling of Water (OP 028).
- 3.5.2. The Responsible Person, or delegate, will ensure that all applicable legislation is reviewed and applied for water taking (water taking permits) for drilling operations.
- 3.5.3. Water consumption will be minimized, as appropriate, by the drilling company. Water shall not be left running when water lines are not in use or when water is not required for maintenance or operation of the drill equipment. The installation and use of shut-off valves, where appropriate, is required.
- 3.5.4. When working in Nunavut, if a drill hole penetrates below the permafrost layer, the drill hole shall be permanently sealed and capped and Nunavut Water Board and INAC shall be notified.

3.6. Fuel Handling

- 3.6.1. Drilling companies will adhere to DBCE procedures for fuel handling (OP 030) when managing petroleum products on drill sites.
- 3.6.2. All uncontrolled grass and weeds (i.e. all long grass and weeds) are to be trimmed back for a minimum of 6 metres from all fuel storage areas.
- 3.6.3. Fire suppression equipment shall be kept at all petroleum product storage sites.

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Page 3 of 6

**OP 017 – ENVIRONMENTAL PROTECTION MEASURES FOR SURFACE
DRILLING PROGRAMS**

3.6.4. All storage areas are to be a minimum of 50 metres away from any body of water unless regulations state a greater distance. On occasions where fuel can't be stored 50 metres away the Responsible Person must put in place spill containment (i.e. tarp and berm).

3.6.5. Jerry cans, metal containers and other temporary storage canisters for petroleum products must be clearly labelled indicating the content of each container in accordance with the appropriate WHMIS regulations and the Hazardous Materials Safety Procedure (OP 067).

3.7. Emergency Response

3.7.1. Drilling companies will ensure that appropriate spill kits, oil-absorbent material and/or oil booms are on site and available for use in the event of a spill. The Responsible Person, or delegate, will ensure spill clean-up materials are on site during part of routine site inspections.

3.7.2. Drilling companies will either adhere to DBCE's Emergency Response Procedures (OP 036), including spill response (OP-031) or develop and implement their own specific Emergency Response Procedures in accordance with DBCE's requirements.

3.8. Drill Site Close-out

3.8.1. Drilling companies will closeout drill holes as required by applicable regional, provincial, territorial or federal legislation.

3.8.2. Where no regional/provincial or territorial legislation applies in respect to closing out drill holes, of the procedure for the following actions are required (the Drill hole Closure Checklist CL - 033 and Closure of Drill Site - CL 015):

- Drill casings will be removed, where possible
- Where casing removal is not possible, the casing shall be cut close to the ground and the hole capped.
- Holes will be backfilled with excess drill cuttings, suitable plug(s) or cap(s) with at least two metres of cuttings, cement or bentonite.

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Page 4 of 6

**OP 017 – ENVIRONMENTAL PROTECTION MEASURES FOR SURFACE
DRILLING PROGRAMS**

- 3.8.3. The Drilling Company shall ensure that any stains on ice or soil, caused by their activities are reported, handled, removed and disposed of in accordance with DBCE Waste Disposal Procedures (OP-022) and Spills Response Procedure (OP-031). The Responsible Person shall include visual inspections for ice, snow and soil staining as per section 3.8.4 below.
- 3.8.4. Prior to releasing a Drilling Company from a drill site, and/or upon the completion of each hole, the Responsible Person, or delegate, shall inspect each drill site to ensure that:
- The drill hole has been plugged where necessary;
 - Casing has been pulled or cut off at ground level;
 - The site has been properly cleaned up, including all soil, ice and snow staining having been removed, as per above.
 - Waste has been disposed of appropriately, as described above as per CL 015.
- 3.8.5. The Responsible Person has the authority to re-call a Drilling Company to a drill site to remedy any deficiencies identified in the final site inspection. The Drilling Company will adhere to the directions provided by the Responsible Person with respect to environmental clean-up actions required.

4. References

- 4.1. Noise and Air Emissions procedure (OP 040)
- 4.2. Road Building and Access procedure (OP 010)
- 4.3. Use and Handling of Water procedure (OP 028)
- 4.4. Petroleum Product Handling procedure (OP 030)
- 4.5. Emergency Response (OP 036)

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Page 5 of 6

**OP 017 – ENVIRONMENTAL PROTECTION MEASURES FOR SURFACE
DRILLING PROGRAMS**

- 4.6. Waste management procedure (OP 022)
- 4.7. Spills Response procedure (OP 031)
- 4.8. Boiler Plate Clause – Drilling (RCD 006b)
- 4.9. Hazardous Materials Safety – WHMIS (OP 067)
- 4.10. Management of Processed Kimberlite (OP 023)
- 4.11. Closure of Drill Site Checklist (CL 015)
- 4.12. Checklist for Drill Hole Closure (CL 033)

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Page 6 of 6