

GUIDANCE FOR EXPLORATION IN SWEDEN Environment (Chapter 10)

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Henning Holmström, Tasman Metals AB

Exploration

- Usually conducted with methods that do not cause significant environmental damage (e.g. geophysics).
- Drilling, geochemical sampling (e.g. trenching) or staying for longer periods of time at the same place might affect the surroundings (environment).
- Every company should aim at minimizing any impact.



How would you react? - Act accordingly

Routines

- Environmental code and the Minerals Act
- Self-regulation or "Egenkontroll" is a requirement in Sweden.
 - Routines, check lists and documentation.
 - Authorities may audit you (environmental inspections).
- Environmental Management systems simplifies things, so does environmental policies => Not a requirement though.
- Who does what? Client? Contractor? Responsibilities.



Example - Check-list

APPENDIX 6

EXAMPLE OF ENVIRONMENTAL CONTROL - CHECK LIST

1. All hydraulic hoses and fittings are checked visually **once per day at 12** with respect to condition and leakage. If the condition is poor, the component shall be replaced and any leakage be dealt with immediately.
2. All hydraulic components such as pumps, engines, etc. are checked **once per day at 12** with respect to condition and leakage. If the condition is poor, the component shall be replaced and any leakage be dealt with immediately.
3. Check that oil basins, cans, and tanks are kept in purpose-designed containers. This check should be carried out **every day at 12** by the site manager and the principal driller.
4. Check that there are enough oil absorbers at the drilling site. This check should be carried out **whenever such equipment has been used** and supplies should be maintained as a result of the check.
5. Check **once per day at 12** that hoses and tanks that contain oil or other chemicals are not placed in such a way that they can become scuffed and start leaking. Should this still occur, these must be replaced and any spills must immediately be addressed.
6. A check of generator and compressor is carried out **once per day at 12** to ensure that there is no leakage. Any leakage must be dealt with immediately.
7. During service and oil changes, measures shall be taken to avoid spillage to the ground and into the drill hole. The replaced oil shall be deposited in a can designed for this purpose and type and the quantity shall be noted in the waste oil record that shall be available at the drilling site.
8. All machines and tanks shall be equipped with spill and drip trays. This is checked at the drilling site in connection with the establishment of the project and after each move.
9. At the drilling site, there shall be a phone list with contact persons for the client, contractor, and authorities to be contacted in the event of emission of hazardous substances. All personnel should be informed of when, how, and who to contact. This is checked at the drilling site in connection with the establishment of the project.
10. At the drilling site, there shall be a file with product information about all chemicals being used at the drilling site. This file should be updated continually if new products are added. The advices and directions available in the product information shall be followed when handling each product. This is checked at the drilling site in connection with the establishment of the project.
11. Good order shall be kept at the drilling site and waste shall be placed in containers intended for the purpose.

Appendix 6, Guidance for exploration in Sweden, SveMin 2012

Table to Appendix 6 Environmental control - Check list

MONTH	Performed inspections										REMARKS:
	Performed every day at 12			After consumption	Performed every day at 12			After oil change		At establishment & after moving	
Item:	1	2	3	4	5	6	7	8	9	10	
Day	Sign.	Sign.	Sign.	Sign.	Sign.	Sign.	Sign.	Sign.	Sign.	Sign.	
1											
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Table to Appendix 6, Guidance for exploration in Sweden, SveMin 2012

Risk analysis - Known risks

- Perform a risk analysis before you start the exploration.
- Impact from off-road driving (need a permit)
- Chemicals (e.g. lubricants), oils and fuels
- Handling of water
 - Might need a permit (surface/groundwater)
 - Land-owner's permission?
- Noise (and vibration)
- Handling of drill-cuttings
 - Sludge - Collect?
- Hot-work
 - Welding/cutting - Fires
- Drilling on ice/lakes



Waste management and remediation

- Storage, transport, handling of hazardous chemicals need routines for collection and disposal.
- Preparedness plan for clean-up (accidents)? E.g. fuel spills.
 - Who reports the incident to which authority?
 - Adresses, phone-nrs e.g. Hospital, fire-deparment, environmental department (municipality).
 - How to perform the clean-up.
 - Equipment to be used (e.g. absorption material for fuel spills)



Incidents/Accidents must be reported - A requirement

Site management and post-drilling

- Clean-up the site, storage areas, transportation routes.
- Clean up of drill-cuttings?
- Waste must be transported away.
- Casings left behind should be no more than 100 mm above the ground.
- Sealing of leaking drill-holes is recommended.



Where is the casing?



Core cutting and collection of waste-water



More reading

