

National Energy
Board



Office national
de l'énergie

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To: All companies under National Energy Board Jurisdiction,
Canadian Association of Geophysical Contractors, and
Canadian Petroleum Safety Council

**National Energy Board Safety Advisory
NEB SA 2005-02**

Attached is a safety advisory regarding the hazards associated with shallow gas deposits that have been encountered in the western Northwest Territories. During recent geophysical and geotechnical operations, substantial shallow gas deposits and subsequent gas flows have been encountered while drilling shot hole and bore holes. In order to mitigate the risks associated with these gas deposits, the following advisory has been issued.

If you have any questions, please contact Rick Turner (rturner@neb-one.gc.ca) at (403) 299-3868 or Alan Murray (amurray@neb-one.gc.ca) at (403) 299-3903.

Yours truly,

A handwritten signature in black ink, appearing to read 'Mantha'.

Michel L. Mantha
Secretary

Attachment

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Shallow Gas Deposits

Background:

Within the western half of the Northwest Territories, in particularly in the Mackenzie Delta, there are areas that may contain biogenic gas deposits. All necessary precautions shall be made while drilling geophysical shot holes and/or geotechnical bore holes to ensure that any released gas is not ignited. The operator is to familiarize themselves with Section 19, of the *Canada Oil and Gas Geophysical Operations Regulations*; "Drilling Shot Holes for Charges". The following precautions, as a minimum, are to be taken:

1) Shot Holes/Bore Holes

- a) There must be no open ignition sources such as generators, heat sources, or smoking.
- b) All unnecessary electrical supply is turned off.
- c) Engines are to be equipped with air intake shut-offs that can be activated by the driller.
- d) The drilling rig is positioned, with respect to the wind, so that gas encountered during drilling will not accumulate in the vicinity of the rig.
- e) Check valves are to be installed on the kelly hose.
- f) Water vents must always be left open while drilling or loading water.
- g) Water must be loaded from a source that has low potential for gas with the suction hose placed well below the bottom of the ice. This condition also applies to obtaining camp water from a frozen water body where shallow gas may be a concern.
- h) Use an alternative means of communication to report the presence of shallow gas, not the cab radio in the rig that has encountered the gas.
- i) There shall be two means of egress on drill rigs.
- j) Crews should be outfitted with fire retardant clothing.

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- k) If gas is encountered while drilling, a flowing hole report, that indicates the shot hole location, must be submitted, without delay, to a Canada Oil and Gas Operations Act Safety Officer.
- l) If gas is encountered, explosives are not be detonated in the shot hole until approval is received from a Safety Officer.

2) Ice Profiling and Ice Ramp Construction

Prior to crossing or working on any body of water, not found to be frozen to bottom, the following procedures are to be followed:

- a) Where practicable, electronic profiling should be used to determine ice thickness prior to vehicular travel.
- b) The ice is to be profiled using the same care and due diligence required while drilling shot holes/bore holes. Ice areas shall not be crossed or worked on until profiling indicates that the ice thickness is satisfactory as per an approved company Health, Safety and Environmental Manual.
- c) A record of the most recent profiles shall be available upon request by a Safety Officer.
- d) Equipment and personnel shall not travel on ice that has not been previously tested and profiled.
- e) If gas has been previous encountered or is expected in an area, the frequency of profiling must be increased, so as to identify any locations that may have ice thinning due to underlying gas cavitation.
- f) If gas is found to be venting through the ice a Safety Officer must be informed prior to any work being conducted in that area.