

Safety Bulletin 2005-01

July 20, 2005

Sweet Well Blowout

A shallow well blowout and fire occurred while drilling surface hole at a lease site in 113-04 W6M in northwest Alberta.

When the rig reached a depth of 45 metres (m), an unconsolidated gravel seam was encountered that contained a charged sweet natural gas pocket. Gas entered the wellbore, resulting in an uncontrolled flow of gas to surface. A spark ignited the escaping gas, which completely involved the rig. The rig had not set surface casing or conductor casing, which would allow utilizing a diverter system. While preparations were being made to bring the well under control, the gas flow diminished and the well stopped flowing on its own.

Post-incident investigations by the operator and the Alberta Energy and Utilities Board (EUB) identified the following

- An extremely porous and permeable sweet gas zone was encountered during drilling at 45 m.
- There was prior evidence of shallow gas in the area.
- Without surface casing, conductor casing, or a diverter system, the rig had no means to control the flow.

Recommendations

In order to prevent the recurrence of a similar incident, the EUB recommends that companies engaged in drilling operations should consider the following:

- Operators review their internal policies and procedures on drilling program design to research offset well information to determine shallow gas zones and the need of conductor casing and a diverter BOP. This research should include surface casing vent flows (SCVFs), gas migration, kicks, and blows.
- Operators exercise due diligence to use all equipment necessary to maintain well control at all times throughout the entire drilling process.

EUB staff will investigate the need to further define the geological risk area and review the need for regulatory change to accepted drilling practices.

Contact

For more information about this issue, contact the Well Operations Group in Calgary at (403) 297-8995. For on-site inspections of energy facilities, communicating with residents and landowners, and oil and gas incidents and emergencies, contact the EUB Field Centre near you (to call toll free, first dial 310-000):

Bonnyville	(780) 826-5352	Midnapore	(403) 297-8303
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