



A CASE STUDY

OISD/CS/2026-27/E&P/03

Date: 14.05.2026

INTRODUCTION

Title: A minor fire incident at well site.

Location: On-shore Location.

BRIEF OF INCIDENT

A minor fire incident occurred at an old onshore well. Fire team, along with the fire tender, reached the site in 15 minutes and extinguished the fire using portable Dry Chemical Powder (DCP) extinguishers, followed by application of foam through the fire tender for cooling and prevention of re-ignition. Firefighting operations were called off after ½ an hour. After extinguishment of the fire, minor gas leakage was observed from the well area.

Subsequently, soil adjacent to the leakage was removed. The leak was identified from a ¾ inch "Tee" connection and fittings from annulus of X-mass tree. The annulus valve was closed to isolate the leak. The defective component was replaced to arrest the leak.

During the post-incident inspection, the annulus was observed to have a pressure of 250 PSI, and no leakage was detected from the system.

OBSERVATIONS / SHORTCOMINGS:

1. The wellhead area 10m x 10m that is surrounded by the agriculture land which is being cultivated by farmer. The cause of fire could not be established from the interaction with onshore officials.
2. Cellar pit and Annulus valve with fittings were buried under the debris. Only downstream side of needle valve was found exposed from debris, which was the location from where gas had leaked.
3. Cement was found inside the top flange of spool (tubing side) without blind flange.
4. Observed rusting and corrosion on annulus valve and fittings which were buried under debris. Fittings were replaced after the incident.
5. Little bubble was observed from the spindle of annulus valve handle during well site visit.
6. It was observed that annulus pressure of well was 250 psi.
7. Mines Manger has carried out BOBU (Bleed off and Build up) of annulus, it was observed that on releasing annulus pressure (bleed off) for 5 minutes approximately, there was a pressure drop to 150 PSI. On further bleed off for 5 minutes

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approximately, annulus pressure came to 50 PSI. On closing the valve for 02 minutes, the build-up pressure went to 60 PSI.

8. The following is recorded in 60 years old well completion report dated June'66.
 - (i) There was a puncture in casing at about 725-meter depth.
 - (ii) Annulus pressure was observed. Considerable quantity of gas condensate and light crude started coming out along with gas (from annulus) and was disposed. The annulus pressure could not be subsided even after squeezing heavy mud and cement job several times in annulus.
9. In absence of Plug and abandonment(P&A) report, it could not be ascertained whether the well was abandoned.
10. Site restoration was not observed.

ROOT CAUSE ANALYSIS:

1. The leak was possibly due passing / failure of the 3/4" valve connected to annulus having sustained pressure.
2. Annulus pressure was present in the well- in absence of detailed repair records and corrective actions. Sustained Casing Pressure contributed to the fire.
3. The well may not have been effectively abandoned.
4. It is possible that the valve was opened by miscreants but could not close the same resulting in gas leakage.

LAPSES OBSERVED

1. As documented in well completion report (60 years ago), annulus pressure was observed multiple times during well testing. The issue was unresolved despite heavy mud circulation and cement squeeze operations.
2. Plug and abandonment report is not available.

RECOMMENDATIONS

1. If the well is assessed as non-promising, Permanent Plug and Abandonment (P&A) shall be planned and executed in accordance with OISD-STD-175.
2. All wells shall be monitored in accordance with OISD-GDN-239 (Guidelines on annular Casing Pressure Management for Onshore Wells), and appropriate preventive / corrective actions shall be implemented as required.
3. The wellhead area should be cordoned off with fencing.
4. A caution board indicating restricted access should be placed including in regional language to be provided.



Picture-1



Picture-2



Picture-3

Well site and annulus

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