highways england

INFORMATION

Safety Alert

High Pressure Gas Main Strike

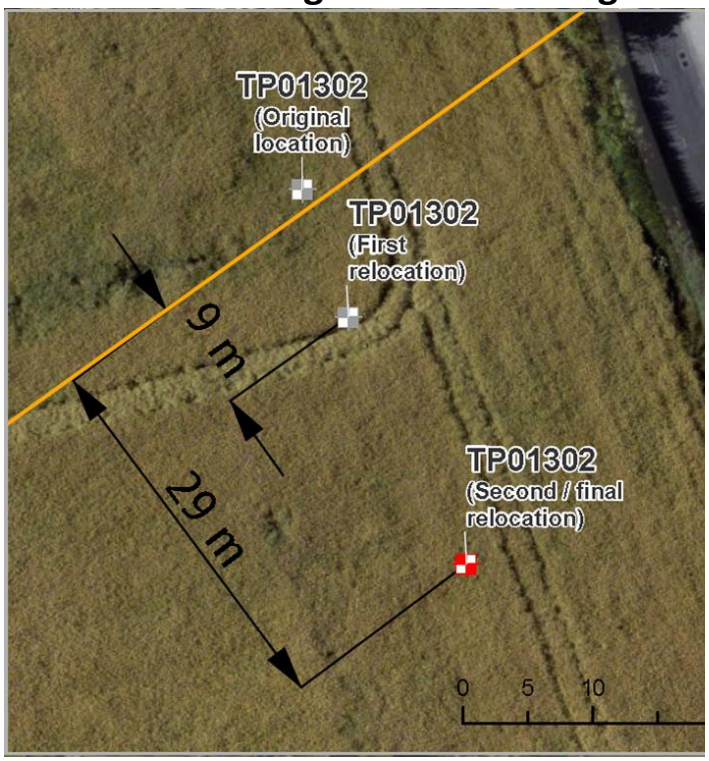
4 March 2021

The following pages of this safety alert were issued by Highways England's supply chain partner:

Aecom working on Lower Thames Crossing

Safety Alert

High Pressure Gas Main Strike
Failure to Manage Data led to High Potential Near Miss



Incident Overview

On the morning of the 2nd November a mechanically excavated trial pit was programmed to commence at TP01302.

Following the issue of the design to Perfect Circle (AECOM JV), it was identified within AECOM's GIS system as directly over a high-pressure gas main, which was a clear failure of the CDM 2015 design process.

Managing the risks passed on to AECOM by the design, the trial pit was relocated 9m away from the high-pressure gas main and surveys of the area were instructed on the 1st May 2020. These surveys returned additional risks and a second and final relocation was selected 29m away from the gas main and surveyed. Survey was completed on the 20th October 2020, this time demonstrating a risk free area of works.

On the morning of the 2nd November a permit to dig and work authorisation pack was prepared for TP01302 with the co-ordinates detailing the position of the third and final location.

The sub-contractor was issued with the works authorisation pack and the trial pitting team travelled to the area to set up the works location.

The sub-contractor set out the location of TP01302 using a digital GPS devise, however the data within this device had not been updated since May 2020 and as a result TP01302 was set out in its original location, directly over the high-pressure gas main. The engineer also failed to check the information within the work authorisation pack which stated the location had been moved twice and contained a single set of co-ordinates to the correct location.

Following procedure, the area around the works area is required to be checked for signs of furniture which could suggest the presence of services and a CAT & Genny scan of the works area undertaken. Both requirements were not completed to a suitable standard, missing the opportunity to identify a high-pressure gas marker board 10m away or the 500mm cast iron service below the position.

The engineer then completed a Point of Work Risk Assessment (POWRA) and the Permit detailing that the area had been checked, scanned and set out in line with the permit requirements and works were authorised to proceed based on this declaration.

At 3m the excavator operator felt unusual resistance as a 50mm scrape of the excavation was being undertaken. On inspection, the high-pressure gas pipe was identified. All works were immediately stopped and the emergency plan followed calling to site the service provider.

Accident Underlaying Cause

While the root cause of this incident is a failure of the non-AECOM design team to eliminate the risk through design. The poor management of data within digital devices was a significant underlying cause.

Lessons Learnt

When using digitally stored setting out data within GPS devices;

1. Ensure that the change management system seeks conformation of changes and updates to digital data sources and storage.
2. Storage of setting out data within digital devices should be kept to an absolute minimum, with data being inputted to the devise within 24hrs of its use.
3. Prior to any setting out being undertaken from stored data within a GPS device, the coordinates within the device are to be checked against those within the permit to work / work authorisation pack.
4. A photo should be taken of the GPS device screen displaying the location coordinates, matching those on the permit and attached to the permit prior to final permit approval to instruct breaking ground.
5. The numbering convention for relocated trial pits and boreholes should ensure that when any proposed or commenced location is moved, it is issued with a new trial pit / borehole number.

Safe Behaviour = Safe Performance

Contact your SHE Manager with questions or comments on this Safety Alert / Bulletin