Inspector Findings:

Principal factors for the initiation of the accident.

* There were some discrepancies between the gas concentrations recorded by telemetric sensors and the hand-held gas detector measurements. These discrepancies were not investigated by the mine and were not reported. In other words, although the hand-held detector records written on the papers were all compliant with the legal thresholds, there were some telemetric sensor measurements exceeding the limits (below the allowable Oxygen concentration). There were no records of investigations and assessments on that issue.
* The temperature measurements were done by only one sensor which is located on the main exhaust location of the mine. The temperature and humidity values were not monitored adequately.
* The sealed (mined out) areas inside the mine were not monitored adequately. The periodical control methods to monitor the gases behind the seals were missing.
* According to the records of telemetric gas monitoring devices, it was common in the mine to keep working even if the legal gas thresholds were exceeded. (Legal threshold values are 50 ppm for the CO, 19% for Oxygen, 2% for methane)

Other (Contributory) factors:

* Belt conveyors were not flame-retardant/flame-resistant/self-extinguishing
* Fire sensing and extinguishing devices were missing
* Emergency response plan didn’t include a fire scenario inside the mine
* The emergency drills were not conducted by making the workers really walk from their working areas to the surface
* There were “serial ventilation” in some parts. In other words, the return air of a panel enters another panel after being diluted by some fresh air.
* Some of the CO masks were outdated, but revalidated by the management after a visual check.
* Some of the workers did not complete the safety induction training.
* There were some equipments in the mine which are not ATEX certified. (ex-proof certification)
* In some of the panels, mining method used was not compliant with what they notified in their annual project report.
* No detailed report was available that shows how much blasting agent and explosive used in which shift and working area.
* The emergency alarm and emergency communication system weren’t able to notify each person in the mine at the same time.