BEST PRACTICE

LOCATION: ARTICLE YEAR: 2010

ACTIVITY: Production and Processing COMPANY: CEMEX UK

SUB ACTIVITY: Aggregate processing COMPANY LOCATION: Manor Pit Quarry

BEST PRACTICE No: BP733 **COMPANY TEL:** 07771 885844

TITLE

Excess water removal system for field conveyors

ARTICLE

Description

A new field conveyor system was installed within Manor Pit Quarry to access newly acquired reserves. The design specification did not include covers. However, the long conveyor run collects large amounts of water during periods of heavy rain or snow. Whilst the conveyor is operating continuously this is not an issue, but when the conveyor has been stationary, for example first thing in the morning or after a lunch break, the following problem arises: On starting the conveyor, the water travels along the conveyor to be deposited in the under-road tunnel, flooding it. It is deposited here because the 5m drop in height provides a large impact force as the water hits the lower conveyor, allowing it to spread beyond the natural curve of the belt.

A primitive de-watering system was tried but it discharged water onto the operator and relied upon the operator maintaining excessive pressure on a moving belt, placing them at risk of a manual handling injury.

To solve this problem, a fixed de-watering system shaped to the belt profile was designed and installed at one of the normal de-watering points. It is simple in design being counterbalanced enabling it to be manoeuvred into position with little force from the operator (one finger will bring it into position from either side of the belt). Once down, it is locked into place with a bolt. The operator is then free to de-isolate, activate the system and start the belts in a controlled manner away from the mechanism and discharge water.

The de-watering points have been carefully chosen so that water can be diverted easily into the drainage system around the dig. This reduces the potential for both an environmental discharge of solids and erosion by the water causing a slip, trip, and fall hazard adjacent to the conveyor.

Benefits

The new system provides the following benefits:

- 1.Reduced risk of manual handling injury
- 2.Reduced risk of muscle strain or impact injury due to caught equipment *snatching* the operator

3.It can be easily used by operators and incorporated into existing safe systems
4.It allows the disposal of water to be controlled, avoiding plant and working environment defects which either create a hazard or require remedial work.
ARTICLE IMAGES