

DustCount 8899 – Example Application

Overview

The DustCount 8899 combines the advantages of real-time dust monitoring with the ability to do the standard method all in a compact, lightweight package.

The application is using the DustCount 8899 to test worker exposure during a silica dust pouring operation. The operation stores its silica dust in a storage bin on the roof of the building and gravity feeds it into bags to be used in the manufacturing process.



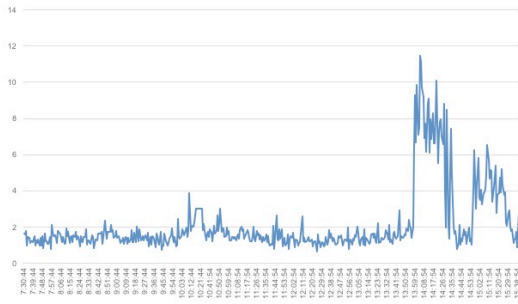
The pouring area is contained with an enclosure and is kept at negative pressure by the building air conditioning system. Workers wear protective respirators while performing the pouring process. This test is to test conditions inside the enclosure and to check for leakage outside the enclosure where no protective equipment is worn.

The unit is prepped by zero calibration of the device, then installing the sample collection cassette and setting up the test via the PC using the Bluetooth enabled Graphic User Interface.

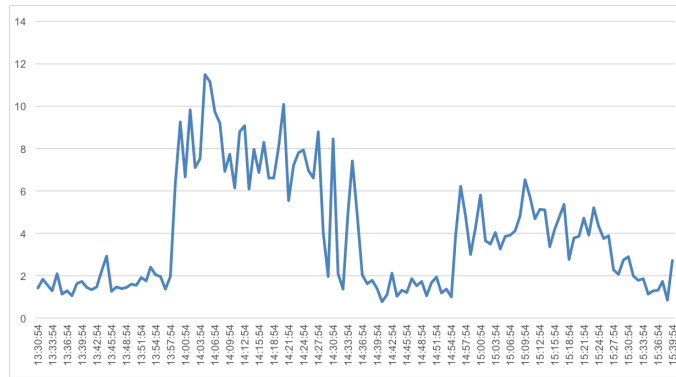
Results

The Real-time readings from the DustCount are correlated with the events in the pouring room. 2 pouring events occurred during the day at the end of the day.

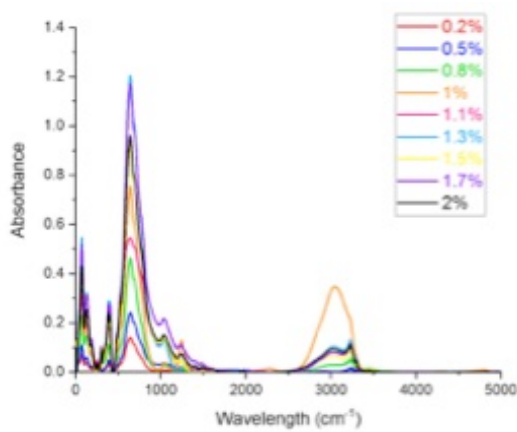
Ambient dust level is reasonably low thanks to the negative pressure and the containment system. On the right, we can zero in on the events under investigation and review the dust decay curves. This helps set up Sop's to ensure that dust isn't released into the un protected area by opening the doors on the containment area too soon. It also saves time if, for example, the existing SoP called for the doors to remain closed for an hour after a pour and the delay curve shows 35 minutes required.



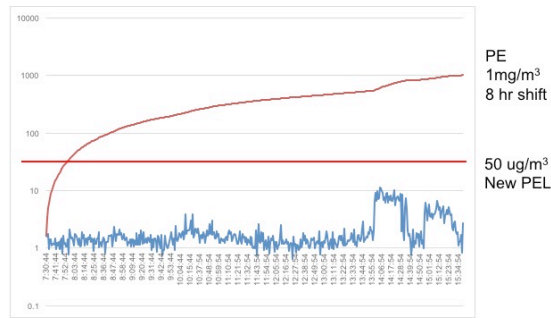
Full day monitor graph



zoom in on 2 events



FTIR Sample Analysis



Cumulative vs New PEL for Silica

Filter Analysis shows 76% crystalline Silica and real time analysis shows a high base level of dust concentration leading to high cumulative results very early in the shift. Respirator protection is essential.

Conclusions

The ability to provide real-time data and correlate this with known events and to graphically represent this gives the Industrial Hygienist the data and information to allow them to thoroughly analyze situation, pinpoint problem areas, and provide valuable insight and direction for the operation to protect the workers and prevent the operation being offside with the regulator.

Hygienists report that having data gives them the credibility they need to get a “seat at the table” in executive discussion and decisions.

Customers also report better training results as the graphics are a powerful way to illustrate the danger of certain areas to human health.