

Case Study: 25	Waste Management Practices in a Cement Industry
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Resource conservation and waste management in a cement industry

I. Background Information:

The cement plant generates the following hazardous wastes while performing its operation.

- a. Waste oil sludge from DG operations.
- b. Waste mineral oil from plant equipment, used for lubrication.
- c. Waste grease from plant equipment, used for lubrication.
- d. Lead acid batteries from Mines heavy earth-moving machinery (HEMM).

II. Best Practices:

A. Waste Management :

i). The plant consumes waste oil sludge from DG operations and waste mineral oil from plant equipment, used for lubrication are consumed internally by burning inside the cement kiln. The plant team checked the impact on that particular stack when it is burning the wastes and found impact is negligible.

ii). The waste grease is being consumed internally in lime stone stockpile. This has adopted to avoid the land contamination. Also some quantity is sold to authorized dealer specified by the state pollution control board.

iii). The lead acid batteries were exchanged with authorized dealer of batteries with the permission of state pollution control board.

B. Product Development :

i). The plant has started grinding of blended cements like Pozzolona Portland cement (PPC), Pozzolona slag cement (PSC). While going for these blended cements it has taken initiative to consume hazardous waste products of fly ash from thermal plants for PPC grinding and slag from steel industries for PSC grinding.

ii). It has constructed separate silo for storing of Fly ash and it is taking the material in a closed containers (Bousers) to minimise ambient air quality. It has also developed a separate stacker for unloading of slag, which is coming through wagons.

iii). By introducing the blended cements, it has conserved the lime stone consumption per ton of cement considerably. Being Limestone as a natural source, this has improved the life of the mine. The power consumption per ton of cement also reduced by introducing the blended cement. Around 5 % of power consumption was reduced after introducing the blended cement.

C. Waste Reduction:

The management initiatives for waste reduction are

- Using additives in Captive Power Plant to minimize the sludge generation in fuel oil
- Centrifuging the lubricant oils of plant equipment to increase the life of lubricant and there by reduction in consumption of lubricants
- Usage of on line centrifuges for mine dumpers to reduce the lubricant consumption
- Conservation of high grade limestone by adding shale (low grade limestone.)
- Provision for firing used cotton waste / cloth in kiln hood