



THE EFFECT OF QUARRY OPERATION ON THE AIR QUALITY IN GUNDUWAWA VILLAGE, KANO STATE, NIGERIA

ADIE, D. B.*, OTUN, J. A., OKUOFU, C. A. AND NASIRU, A.

Department of Water Resources and Environmental Engineering
Ahmadu Bello University, Zaria

ABSTRACT

Monitoring of some air quality variables (TSP, CO, CO₂, SO₂, NO₂) arising from man made disturbances which occur in quarry operations as well as the perception of the inhabitants on the impact of the location of the quarry in their environment, was carried out. The quarry is located within Gunduwawa Village in Gezawa Local Government Area of Kano State. The field work period was carried out between 5th of April to 18th of August, 2009. The results obtained showed that CO and CO₂ have a range of concentrations between 3.5 - 25 ppm and 48.7-394 ppm respectively. Whereas the CO concentrations values slightly exceeded the National Ambient Air Quality Standards (NAAQS) recommended values, the CO₂ values at all sampling points were below the maximum NAAQS. The concentrations of suspended particulate matter ranged between 0.10 and 0.68mg/m³ at the sampling points. The values obtained for the TSP, CO, CO₂, NO₂ and SO₂ especially within the quarry premises portend potential risk of upper respiratory tract infections. There were significant variations between the values observed for each of the air quality parameters during the dry and rainy seasons. The results of the structured interview conducted also showed that over 80% of the local populace living around the quarry had strong condemnation for the quarry operations. They were of the opinion that it has caused them more harm (arising from destructive environmental hazards) than good, since they have little or no benefit to show for its presence.

Keywords: Air quality, environment, quarry, respondents

***Correspondence:** donadie2005@yahoo.com

How to cite this article:

Adie, D. B., Otun, J. A., Okuofu, C. A. and Nasiru, A. (2011). The effect of quarry operation on the air quality in Gunduwawa village, Kano State, Nigeria. *Nigerian Journal of Scientific Research*, 9 &10: 53-62.