

**SIGNIFICANCE OF SURFACE AND SUBSURFACE LINEAMENTS FOR
GROUNDWATER EXPLORATION IN THE PART OF VINDHYAN FRINGE BELT
OF MIRZAPUR DISTRICT, U. P., INDIA**

R. KUMAR & G. S. YADAV

Department of Geophysics, Banaras Hindu University, Varanasi, Uttar Pradesh, India

ABSTRACT

This article is intended to describe the significance of lineaments (surface and subsurface lineament) for groundwater exploration in part of Vindhyan fringe belt of Mirzapur district, Uttar Pradesh, India. Remote sensing is vital visualization tool for identification of geological feature, such as lineaments, land use pattern, geomorphologic features etc., and also applicable for groundwater investigation. The lineaments (surface and subsurface lineament) play a crucial role in groundwater investigation in hard rock area. The surface and subsurface lineaments are extracted from the LANDSAT-TM satellite imagery and grided free air anomaly (satellite gravity data), respectively. The correlation between surface and subsurface lineaments are performed by using the rose diagram and understand the orientations of traverse lines of geophysical survey. The integrated lineament and lineament density maps are depicted the appropriate locations were selected for detailed geophysical survey and also further detailed study.

KEYWORDS: *Lineament, Remote sensing, Hard rock, Vindhyan fringe, Free air Anomaly*

Received: Sep 28, 2015; **Accepted:** Oct 06, 2015; **Published:** Nov 15, 2015; **Paper Id.:** IJEEGSDEC20153