**NARWAPAHAR MINES**

**Compliance Status of Environmental Condition with respect to Narwapahar Mine as on September 2017**

| Sl. No. | Condition | Status of Compliance |
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| i | *The waste rock dumps will be properly sloped, terraced and planted with appropriate trees/vegetation* | During initial period of mine development, waste rock was transported to surface. An area of 6.18 ha has been earmarked for waste dump site within mine lease. Out of total, only 2.14 ha area has been used for waste dumping. At present entire waste rock which is generated during mining activity is being used for void filling in underground. Therefore waste is not transferred to the waste dump site. Action has been taken for progressive reclamation of used area of the dump site in phased manner. In first two phases, the waste dump was leveled and terraced with top soil. The steep slope of the dump has been maintained less than 28 degree and proper compaction was done for better stability. Top soil of 30 cm thick has been used to cover the waste rock. Subsequently grass turfing has been done on slope for protection against soil erosion. Garland drain with settling pond of the capacity 800 $m^3$ and conveyance system has been constructed to capture the runoff water from waste dump area. The collected water is used for industrial purpose as a part of water conservation practice. Greenbelt has been developed around the area with indigenous species of plants. Plantation will continue along the periphery and on top of dump in phase manner. The treated sewage is used for reclamation of waste dump and watering of the plants. |
| ii | *The mine water will be treated for removal of radium prior to its discharge into the nearby water bodies.* | Mine water from Narwapahar mine is not discharged to environment. Mine water from various levels of the mine is collected in an underground sump and subsequently pumped to mine water pond having capacity 45140 $m^3$ at surface. The de-silted mine water is partially used within mine premises for industrial purpose and excess @ 850 $m^3$/d is pumped to Jaduguda mill for treatment / reuse. Radium concentration in mine water is monitored by Health Physics Unit of BARC at outlet of the mine pond. The monitoring results of five samples during April to August 2017 shows that radium values varies from 298 to 424 mBq/l which is within permissible limits of discharge standards (900 mBq/l). |

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| iii | *The township for the employees shall not be constructed in the forest area.* | The township for the employees has not been constructed in the forest area. |
| iv | *The provisions made in the Environmental Management Plan to protect the employees and their families from the radiological effects likely to arise due to this project shall be strictly implemented and regular monitoring of their implementation shall be done.* | Pre employment and Periodical medical examination of all employees for blood test, lung function test, x-ray, audiometric test, ECG & physical tests etc is conducted and are recorded in their respective medical files. Facilities have been developed for the above tests at Narwapahar hospital. Medical facility is provided to all employees and their dependents. Provision of referral facility to Tata Main Hospital, Jamshedpur and other reputed hospitals e.g. AIIMS, CMRI, CMC Vellore etc. is also in place. Dedicated Health Physics Unit (HPU) of BARC has been established at Narwapahar mine. HPU carry out periodical radiological surveillance. No radiological effects have been observed due to UCIL operation at Narwapahar and elsewhere. |
| V | *The various environmental parameters will be regularly monitored during the construction and operational phases of the project.* | A comprehensive regular monitoring of radiological & environmental parameters within & around the premises is done by the Health Physics Unit of BARC, Government of India and Environmental Engineering Cell of UCIL. Analysis of surface water (Gara river) samples (15 Nos.) and ground water samples (21 nos.) from adjoining area indicated that pH, $SO_4^{2}$, $Cl^{1-,}$ Hardness, U (Nat) and $^{226}$Ra values are within the prescribed limits. Soil analysis report (13 Nos.) shows that the values are within the natural variation of background of the area. Ambient air quality in terms of $PM_{10}$, $PM_{2.5}$, $SO_2$, $NO_x$, Pb and Ni parameters are within the permissible standards. |
| vi | *A periodic report regarding the implementation of various environmental control measures and the monitoring of environmental parameters will be submitted to this department every six months.* | Six monthly status of compliance is being sent to MoEF Regional Office Ranchi, MoEF New Delhi and Jharkhand state Pollution Control Board. |