



## THE HUTTI GOLD MINES COMPANY LIMITED

(A Government of Karnataka Enterprise)

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CIN NO.: U85110KA1947SGC001321

No. HGML/MET/ENV/HUTTI/MoEF&CC/2017-18/

Date: 24/11/2018

**The Additional Principal Chief Conservator of Forest (Centre)**

Ministry of Environment Forest & Climate Change,  
Regional Office (Southern Zone), Kendriya Sadan,  
IV Floor, E & F wings, 17<sup>th</sup> Main Road,  
II Block, Koramangala,  
Bangalore - 560 034

Sir,

**Sub: Compliance for the MoEF conditions for six monthly (April 2018 to September 2018), Hutti Gold Mine of M/s. The Hutti Gold Mines Co. Ltd. Raichur (Dist), Karnataka- reg.**

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With reference to the above cited subject, please find enclosed six monthly compliance report (April 2018 to September 2018) of Hutti Gold Mines, as per the stipulated specific conditions of the Environmental Clearance (Annex-I).

Submitted for your kind perusal.

Thanking You,

Yours faithfully,

**General Manager (Co-ordination)**

**Encl:** As stated.

**Modernization and Expansion in production of gold ore from 0.951 MTPA to 0.6 MTPA and of ore processing capacity of 0.9 MTPA in Hutti Underground Gold Mine of M/s. Hutti Gold Mines Co. Ltd, near Hutti village, Tehsil Lingasugur, Dist Raichur, Karnataka**

***Environment Clearance No. J-11015/13/2003.IA.II (M) dated 17/11/2004.***

The total Mining Lease area is 528.35 Ha, of which 222.41 Ha is agricultural land and remaining 3045.94 Ha is others. There is no National Parks, Sanctuary and Tiger Reserves within 10 kms of the project site. The project does not involve displacement of people. Of the lease area of 528.35 Ha, 47.50 Ha is for infrastructure, 5.15 Ha for roads, 49.38 Ha for green belt, 61.96 Ha for tailing pond, 1.70 Ha for ETP, 66.80 Ha for various buildings, 0.37 Ha for water pipeline and 295.49 Ha of undisturbed land.

The gold ore processing capacity is 2000 TPD.

## COMPLIANCE REPORT

April 2018 to September 2018

Project: Modernization & Expansion in production of Gold ore from 0.351 MTPA to 0.6 MTPA and of ore processing capacity to 0.9 MTPA in Hutti Underground Gold Mine of M/s. Hutti Gold Mines Co. Ltd., near village Hutti, Tehsil Lingsugur, District Raichur, Karnataka.

Ref: MoEF Cl. Lr. No. J-11015/ 13 / 2003- IA.II (M), dated: 17.11.2004.

Sl. No.	Specific Conditions Stipulated	Compliance Status
1	No mining operations shall begin in 222.41 ha of the total area which is yet to be acquired.	222.41 ha of the total area have been acquired. Mining activity is presently carried out in the total mine lease area 528.35 Ha.
2	The total ore processing capacity shall not exceed 3000 TPD. The ore processing capacity in the existing ore processing plant shall be reduced from the existing capacity of 1950 TPD to 1000 TPD when the new ore processing plant based on modern technology with a capacity of 2000 TPD comes into operation.	The new ore processing plant based on modern technology (SAG and BALL Mill) with a capacity of 2000 TPD has been operation since 2010. Only 2000 TPD has been processed.
3	Annual generation of 45,000 tonnes of OB shall be used for road construction, filling up of low lying areas, building material and in tailing dam.	As it is a underground mine only consider amount of OB is generated on an average 45,000 tonnes which is being used for low lying area, Road construction, Building material and in Tailing dam, etc..
4	OB should be stacked at the two OB dumps of 25ha and 37 ha are at earmarked sites only. Maximum height of the OB dumps shall not exceed 30m.	<p>The present area occupied by these tailings is about 61.96 ha, in which the southern portion (about 25 hectares) is already built up to 28 m height and it is abounded from 2001. Afforestation is carried out on the top of the tailing dump. The slope of the dump is being covered by Geo-Textile matting in which vegetation is grown which helps in suppressing the dust being generated and also stabilized the slope in year 2015-16, the 5 Acres of a slope area has been covered with Geo-Textile Mat which is executed by Karnataka State Coir Development Board.</p> <p>The northern portion (about 25 hectares) which is currently in use (New dump) has been reached 28 m height in 3 benches with each bench having a height of 10 m.</p>

5	Catch drains and siltation ponds of appropriate size should be constructed to arrest silt and sediment flows from OB dumps. The drains should be regularly desilted and maintained properly. Garland drains and sump capacity should be designed keeping 50% safety margin over and above the peak sudden rainfall and Max discharge in the area adjoining the mine site. Sump capacity should also provide adequate retention period to allow proper settling of silt material.	Catch drains, siltation ponds and also Peripheral trench around the tailing dam has been made to arrest the seepage and silt and designed keeping 50% safety margin over and above the peak sudden rainfall and Max discharge in the area adjoining the mine site. The collected seepage water is continuously pumped back to process plant for reuse. The silt is regularly being desilted from the drains and put it back to the dump and also Sump capacity should also provide adequate retention period to allow proper settling of silt material.
6	Dimension of retaining wall at the toe of OB dumps and benches within the mine to check run-off and siltation should be based on the rainfall data.	Retaining wall has been built with peripheral benches around the tailing dump area. All around the tailing dump necessary checks have been constructed to avoid the run-off and siltation trenches has constructed right in accordance with the rainfall data.
7	Of the annual generation of 0.9 MTPA of tailings, 0.27 MTPA shall be used for backfilling and the remaining shall be dumped in the two OB dumps.	Presently 0.14 – 0.16 MTPA Tailings backfilling is under progress and remaining tailings are being dumped in new tailing dump.
8	Appropriate measures for continuous supply of fresh air into the mine and removal of noxious and other harmful gases from the underground mine shall be adopted.	The ventilation of the mine is being done by accessional boundary system. Four numbers, mechanical ventilators as exhaust fans are installed vertically on shafts to provide continuous supply of fresh air and also regularly monitored and data recorded.
9	Pumps of adequate power and capacity shall be used for dewatering mine water and for prevention of mine inundation. The excess water shall be used in recharge of ground water and suitable measures for recharge of ground water including rain water harvesting Should be taken up.	The generate mine water is very small quantity; due to Hutti is dry area. Whatever the mine water generated is pumped from the underground to the surface tank regularly and used in metallurgical process.
10	Subsidence Prediction model shall be done and subsidence closely monitored and validated using actual data.	A detailed study has been carried out on the ground stability at Hutti gold mines by National Institute of Rock Mechanics (NIRM), KGF and as per its report no instability is expected in the walls of the excavation. Further post filling of the voids is adopted. Stope size is designed based on numerical modeling as suggested by NIRM, KGF.

11	In the ore treatment process, Sodium Cyanide shall be neutralized before pumping the slurry in to the tailing dam.	Slurry is treated with the De-Toxification unit which is passed through series of tanks 5 No.s using Bleaching Powder reagent as De-Toxicant agent. The concentrate of the cyanide continuously monitored to ensure complete De-Toxification. Later the De-Toxified slurry is pumped to the tailing dam.
12	Workshop effluents shall be subject to oil and grease removal before discharge.	Oil and grease is separately collected and the same will be disposed off to the recyclers. The quantity generated is negligible. Oil and Grease recycling unit has been established near workshop before discharging into the drain which is further treated in the Common Sewage Treatment Plant (CSTP).
13	<p>Mine water discharge and/ or any waste water containing heavy metals should be properly treated to meet the prescribed standards before reuse/discharge.</p> <p>Run-off from OB dumps and other surface run-off should be analyzed for heavy metals and in case its concentration is found higher than the permissible limits, the water should be treated before discharge/reuse.</p>	<p>Analysis indicated So far, all heavy metals are found Below Detectable (BDL). Mine water discharge is completely being reused in the process plant. The accumulated surface run-off in the garland completely reprocessed in the plant.</p> <p><b>Annexure-I</b></p>
14	In-house pilot studies on the eco toxicological effects of heavy metals found in mine discharge and tailing shall be conducted before their applicability on a large scale.	The detailed study on the eco-toxicological effects of heavy metals from mine discharge water carried out by Agricultural University, Dharwad. No heavy metals found in the mine discharge/or tailings.
15	In addition to the existing plantation carried out within the lease area and in the township, plantation should be raised along the road, dump sites, etc. This includes a green belt of sufficient width all around the ML areas and by planting native plant species in consultation with local DFO/Agriculture Department. At least 2000 plant species / ha should be planted.	<p>Phase wise plantation work has already been taken up by planting native species in consultation with Forest Dept. Lingsugur. Within the colony areas and near other official buildings, fully fledged avenue plantations have already been developed by M/s HGML.</p> <p>Gap plantation has been taken up by growing Bio fuel yielding plants, in an area of 10 Acres 5,000 plantation has been carried out in the year 2016.</p>
16	A detailed hydro geological study on the impact of mining on the ground water regime of the area shall be undertaken.	A detailed study has been carried out on hydro geological impact of mining on ground water of Hutti area has been carried out and the report already submitted to the Ministry of Environment Forest.

17	Regular monitoring of ground water level and quality should be carried out by establishing a network of existing wells and constructing new piezometers. The monitoring should be done for quantity four times a year in pre-monsoon (April/May), monsoon (August), post-monsoon (November) and winter (January) seasons and for quality during May. Data thus collected should be submitted quarterly to the Ministry of Environment & Forests and the Central Ground Water Authority.	Regular and season wise monitoring of water quality and water level has been carrying out and data base has been maintained.  <b>Annexure-II</b>
18	The project authorities should meet water requirement of nearby villages, if any, in case the village wells go dry due to mine de-watering.	The drinking water is provided to the Hutti village, Medanapur village, Gurugunta village.
19	Vehicular emissions should be kept under control and regularly monitored.	Regularly maintenance of the vehicles is being carried out & emission is being kept under control and also the regularly emission text is carried out.
20	“Consent to operate” should be obtained from SPCB before further expansion.	Applied for obtaining “Consent for operation” It is under process of approval at KSPCB for 5 years. The proposal is approved The Consent Committee Meeting.
22	The proponent shall earmark a separate fund of 1% of the total project cost for eco development measure including community welfare measures in the project area. The amount shall be deposited by the company in a separate account within three months to be maintained by the KSPCB. The action plan in this regard shall be submitted to the KSPCB as well as to MOEF RO, Bangalore within three months of issue of this letter. After approval of the action plan by the KSPCB, the amount deposited shall be released in two installments to the project authorities based on progress of implementation. The KSPCB shall ensure that implementation of the action plan for eco development measures is completed within two years from its approval by KSPCB. Further, the interest accrued during this period on the amount deposited by the proponent with the KSPCB shall be ploughed back to the same eco development fund.	Since it is a post facto clearance, lot of money has already been spent for Environment Management Plan including community welfare measures.

Sl. No.	General Condition	Compliance Report
1	No change in mining technology and scope of working should be made without prior approval of the Ministry of Environment & Forests.	There is no change in mining technology and scope of the work. Application will be obtained if any changes from Ministry of Environment and Forests.
2	No change in the calendar plan including excavation, quantum of mineral (gold Ore) and waste should be made.	The activity carried out as per the approved mine plan.
3	<p>Four ambient air quality-monitoring stations should be established in the core zone as well as in the buffer zone for RPM, SPM, So<sub>2</sub>, and NO<sub>x</sub> monitoring. Location of the stations should be decided based on the meteorological data, topographical features, and environmentally and ecologically sensitive targets in consultation with the State Pollution Control Board.</p> <p>Data on ambient air quality (RPM, SPM, SO<sub>2</sub>, NO<sub>x</sub> &amp; CO) should be regularly submitted to the Ministry including its Regional office at Bangalore and the State Pollution Control Board/Central Pollution Control Board once in six months.</p>	<p>Two No's of continuous Ambient air quality monitoring stations has been estimated in consultation with KSPCB. Ambient Air Quality Monitoring Stations in Core zone &amp; Buffer zone have been established in consultation with SPCB and regular monitoring of SPM. RSPM, SO<sub>2</sub>, NO<sub>x</sub> is carried out and HGML has submitted to RPCB, Raichur monthly.</p> <p><b>Annexure-III</b></p>
4	Drills should be wet operated or with dust extractors and controlled blasting should be practiced.	Wet drilling and controlled blasting methods are being followed as studied and recommended by NIRM, KGF.
5	Fugitive dust emissions from all the sources should be controlled regularly monitored and data recorded properly. Water spraying arrangements on haul roads, wagon loading, dumpers/trucks, loading & unloading points should be provided and properly maintained.	Cyclonic arrangements have been made to arrest the fugitive dust emission and also water spraying arrangements has been made. Water sprinkling are carried out on haul roads, wagon loading, dumpers/trucks, loading & unloading points and properly maintained.
6	Adequate measures should be taken for control of noise levels below 85 dBA in the work environment. Workers engaged in blasting and drilling operations, operations of HEMM, etc should be provided with ear plugs/muffs.	An acoustic enclosure has been provided wherever noise level is high and also usage of ear plugs/ear muffs has been made compulsory. Regular maintenance of machinery with proper lubrication is being carried out in order to reduce Noise level frequent monitoring ha being carried out.

7	<p>Industrial waste water (workshop and waste water from mine) should be properly collected, treated so as to conform to the standards prescribed under GSR 422 (E) dated 19<sup>th</sup> May, 1993 and 31<sup>st</sup> December, 1993 or as amended from time to time. Oil and grease trap should be installed before discharge of workshop effluents.</p>	<p>Installation of Oil and grease trap before discharge of workshop effluents installed has been carried out. Further Waste water is being treated in Common Sewage Treatment Plant CSTP- 2.5 KLD in consultation with KSPCB.</p>
8	<p>Environmental laboratory should be established with adequate number and type of pollution monitoring and analysis equipment in consultation with the State pollution Control Board.</p>	<p>Environmental monitoring work has been out sourced to the NABL, Accredited laboratory for carrying out pollution monitoring and analysis.</p>
9	<p>Personnel working in dusty area should wear protective respiratory devices and they should also be provided with adequate training and information on safety and health aspects.</p> <p>Occupational health surveillance program of the workers should be undertaken periodically to observe any contractions due to exposure to dust and take corrective measures, if needed.</p>	<p>All workers who work in dusty areas have been provided protective respiratory devices. Water spraying is carried out in dusty atmosphere; in underground wet process of drilling is carried out and also water sprinkling is done during loading and unloading to suppress dust at source. Ore is fully wet till it is hoisted up to surface.</p> <p>Periodical Medical examination once in 5 yrs is done as per Mines Rule 1955 for all the workers, both for U/G &amp; S/F. Experts from KGF Dr. Sampat Kumar, consulted for all chest X- Rays. Expert opinion from Radiologist. 45 years and above will be periodically examined once in 3 years. Investigation as per the suggestion National Conference of safety &amp; Health.</p>
10	<p>A separate environmental management cell with suitable qualified personnel should be set-up under the control of a senior Executive, who will report directly to the Head of the Organization</p>	<p>Environmental Management Cell has been established under the chairmanship of General Manager, &amp; various departmental heads as members and Environmental Engineer as convener. Environmental Engineer has been appointed to carry out the activities of Environmental Management Cell. The cell meets regularly and reviews the policy and programmes for continual improvement to achieve the goal of EMP.</p>
11	<p>The funds earmarked for environmental protection measures should be kept in separate account and should not be diverted for other purpose. Year wise expenditure should be reported to Ministry and its Regional Office located at Bangalore.</p>	<p>Separate account is being maintained for environmental protection under the cost code 5055.</p> <p>Year wise expenditures are submitted to the Ministry of Environment and Forests.</p> <p>Expenditure 2017-18 – Rs .1.879 Crore</p>



12	<p>The Regional Office of this Ministry located at Bangalore shall monitor compliance of the stipulated conditions. The project authorities should extend full cooperation's to the officer (s) of the Regional Office by furnishing the requisite data/information/monitoring reports.</p>	<p>HGML will furnish all relevant information with respect to Environmental Quality data/information/monitoring reports to the Regional Office, MOEF Bangalore. Full co-operation will be extended as &amp; when Regulatory Authority inspects the site.</p>
13	<p>The project authorities should advertise at least in two local newspapers widely circulated around the project, one of which shall be in the vernacular language of the locality concerned within seven days of the issue of the clearance letter informing that the project has been accorded environmental clearance and a copy of the clearance letter is available with the State Pollution Control Board and may also be seen at Web Site of the Ministry of Environment &amp; Forest at <a href="http://envfor.nic.in">http://envfor.nic.in</a> and a copy of the same should be forwarded to the Regional office of this ministry located at Bangalore.</p>	<p>Advertisement has been made in two local daily widely circulated kannada newspapers like Vijay Karnataka and Raichurvani on 16-12-2004 &amp; 30-12-2004 respectively and a copy of the same has been sent to Regional Office on 31-12-2004.</p>

**Environmental Monitoring of Hutti Gold Mine**  
**Six monthly Reports for the April 2018 to Sept. 2018**

**Ambient Air Quality Monitoring Report of Hutti Gold Mine**

Sl. No.	Station	Apr-May			Jun-July			Aug-Sept		
		SPM	NO <sub>x</sub>	SO <sub>2</sub>	SPM	NO <sub>x</sub>	SO <sub>2</sub>	SPM	NO <sub>x</sub>	SO <sub>2</sub>
1	Process Plant	155.2	6.8	5.2	128	8.0	5.6	141.6	7.0	5.3
2	PWD Road	120.2	0.92	3.8	125.5	1.31	3.6	121.1	1.14	2.48
3	Crushing Plant & Ore haulage	140.6	1.2	4.5	92.8	1.6	4.4	80.5	1.2	4.22
4	Colony	126.2	0.82	2.82	72.2	0.45	3.2	72.4	1.52	5.4

All units are in  $\mu\text{g} / \text{M}^3$

**Process Emission and Flue Gas Report of Hutti Gold Mine**

Stack	Attached to	SPM $\mu\text{g} / \text{M}^3$	SO <sub>2</sub> $\mu\text{g} / \text{M}^3$	NO <sub>x</sub> $\mu\text{g} / \text{M}^3$	CO	H <sub>2</sub> S	HCN	Flow NM <sup>3</sup> / Hr
S 1	Primary Crusher	91.1	---	----	--	----	----	18031.0
S 2	Sec Crusher	106.1	--	---	----	---	----	28316.0
S3- S4	Tert. Crusher	77.8	----	----	----	----	----	20032
S5	Carbon Reactivator kiln	53	----	----	----	----	----	1645
S6 –S9	Roasting Furnace	80.2	112	----	----	-----	----	611
S10 –S13	Assay Furnace	82.1	91	----	----	-----	----	516
S22 –S23	Refractory Furnace	73.5	85	---	---	----	---	835
S24	1000x2KVA DG Set	112.2	52	----	----	----	----	15425

**Note:** All values are average of April to Sept-2018.

### Water Quality Report of Hutti Gold Mine April to Sept-2018

Sl. No.	Parameters	W1	W2	W3	W4	W5	W6	W7
1	Color & Odor	Colorless & Odorless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless	Colorless & Odourless
2	Dissolved Solids in ppm	1146	522	542	493	1812	2453	1850
3	pH	8.5	7.6	7.5	7.7	7.8	7.6	7.3
4	Temperature °C	27	25.2	26.5	26.2	25.6	25.4	26.2
5	Oil & grease	Nil	BDL	BDL	BDL	BDL	BDL	BDL
6	Total Suspended Solids ppm	153	222	136	230	84	66	61
7	Bio Chemical Oxygen Demand mg/l (5 day at 20°C)	23	13	17	12	<1	<1	<1
8	Chemical Oxygen Demand mg/l	143	54	11	51	<1	<1	<1
9	Free NH <sub>3</sub>	Nil	BDL	BDL	BDL	BDL	BDL	BDL
10	Arsenic	Nil	BDL	BDL	BDL	BDL	BDL	BDL
11	Mercury	Nil	BDL	BDL	BDL	BDL	BDL	BDL
12	Cadmium	Nil	BDL	BDL	BDL	BDL	BDL	BDL
13	Hexavalent Chromium	Nil	BDL	BDL	BDL	BDL	BDL	BDL
14	Copper	Nil	BDL	BDL	BDL	BDL	BDL	BDL
15	Lead	Nil	BDL	BDL	BDL	BDL	BDL	BDL
16	Zinc	Nil	BDL	BDL	BDL	BDL	BDL	BDL
17	Selenium	Nil	BDL	BDL	BDL	BDL	BDL	BDL
18	Nickel	Nil	BDL	BDL	BDL	BDL	BDL	BDL
19	Cyanide ppm	0.16	BDL	BDL	BDL	BDL	BDL	BDL
20	Fluoride ppm	Nil	1.0	0.2	0.90	1.06	0.7	1.1

W1- Industrial effluent

W2- under Ground Mine discharge water at surface tank near plant

W3 – Domestic effluent discharge at the location of the aeration tank

W4 – Entry point of Hutti Nallaha at the boundary of mining lease

W5 – well water from Hanuman temple, W6 – Bore well water from Hutti village

W7 – mine dumps Nallaha water

**Note:** BDL – Below Detectable Limit.

**Note:** All values are average of April to Sept-2018.

## Hutti Gold Mine

### Noise Level Measurement Report, April to Sept 2018

Station	Time	Month		
		April -May	Jun-July	Aug-Sept
<b><u>Core zone</u></b>				
Near Surface Exhaust fan	10.05Am	65.2	65.5	65.6
Near work shop	10.40 Am	62.5	62.8	65.4
Near ore Beneficiation Plant	11.10 Am	60.0	56.2	56.6
Near Colony Area	11.55 Am	50.1	50.3	49.5
<b><u>Buffer zone</u></b>				
Kota village	10.05 Am	55.2	58.4	56.7
Hutti-Hosur village	11.30 Am	50.6	50.2	55.4
Medinapur village	10.20 Am	49.2	47.5	48.2
Veerapur village	11.10 Am	52.1	55.5	55.2

**Note:** Value in decibel is dB (A)

**Note:** All values are average of April to Sept-2018.

**Soil Quality Report of Hutti Gold Mine**

**Six Monthly Report (April - Sept 2018)**

SL. No.	Location	Physical characteristics		Chemical characteristics			
		pH	Total Soluble salts	Phosphorus as P <sub>2</sub> O <sub>5</sub> in ppm	Calcium as Ca in ppm	Magnesium as Mg in ppm	Chlorides as Cl in ppm
1	Near Tailing dump area	8.0	0.008%	66	135	56	18
2	Kota village agricultural field	8.1	0.008%	92	42	44	184
3	Hutti Hosur village agricultural field	8.2	0.013%	43	411	82	196
4	Medanapur village agricultural field	8.1	0.012%	56	433	91	197
5	Veerapur village agricultural field	8.2	0.016%	92	42	73	175

**Note:** All values are average of April - Sept 2018.