APPENDIX – I

(See paragraph – 6)

REVISED FORM 1

(I) Basic Information

<table>
<tr><th>S. No.</th><th>Item</th><th>Details</th></tr>
<tr><td>1.</td><td>Name of the project/s</td><td>Proposed Expansion of Iron Ore Pelletizing plant (0.6 MTPA to 1.80 MTPA) by addition of Iron Ore Beneficiation Plant (3.0 MTPA), DRI Plant (0.6 MTPA), Pig Iron BF (0.6 MTPA), Sinter Plant (0.8 MTPA), SMS (1.2 MTPA), Rolling Mills (1.2 MTPA) & Power Plant (125 MW) along with Water Pipeline from Baitarini River to Plant site (3 Kms) at village Phuljhar, Block-Bansapal, Tehsil Telkoi, District Keonjhar, Odisha.</td></tr>
<tr><td>2.</td><td>Sl. No. in the schedule</td><td>As per the New EIA Notification dated 14.09.2006, Proposed expansion project falls in Category ‘A’- Project or Activity 3 (a).</td></tr>
<tr><td>3.</td><td>Proposed capacity / area / length/ tonnage to be handled /command area / lease area/ number of wells to be drilled</td><td>Proposed Production Capacity:
<table>
<tr><th>S. No.</th><th>Plant/Facility</th><th>Existing Capacity</th><th>Capacity Proposed</th><th>Final Capacity</th></tr>
<tr><td>1</td><td>Iron Ore Beneficiation Plant</td><td>-</td><td>3.00 MTPA</td><td>3.00 MTPA</td></tr>
<tr><td>2</td><td>Iron Ore Pellet Plant</td><td>0.6 MTPA</td><td>1.20 MTPA</td><td>1.80 MTPA</td></tr>
<tr><td>3</td><td>DRI Plant</td><td>-</td><td>0.60 MTPA</td><td>0.60 MTPA</td></tr>
<tr><td>4</td><td>Pig Iron Blast Furnace</td><td>-</td><td>0.60 MTPA</td><td>0.60 MTPA</td></tr>
<tr><td>5</td><td>Sinter Plant</td><td>-</td><td>0.80 MTPA</td><td>0.80 MTPA</td></tr>
<tr><td>6</td><td>SMS/ Arc Furnace</td><td>-</td><td>1.20 MTPA</td><td>1.20 MTPA</td></tr>
<tr><td>7</td><td>Rolling Mills</td><td>-</td><td>1.20 MTPA</td><td>1.20 MTPA</td></tr>
<tr><td>8</td><td>Captive Power Plant</td><td>-</td><td>125 MW</td><td>125 MW</td></tr>
<tr><td>9</td><td>Water Pipeline</td><td>-</td><td>3 Kms.</td><td>3 Kms.</td></tr>
</table>
Area: Plant area for the existing plant is 36.781 ha. An additional 180.473 ha of land is proposed to be acquired for the expansion project. Total Plant Area after expansion: Total plant area after expansion will be 217.254 ha.</td></tr>
</table>

S. No.	Item	Details
4.	New/Expansion/Modernization	Expansion
5.	Existing Capacity/Area	Existing Iron Ore Pelletizing Plant Capacity: 0.6 MTPA. Existing Plant Area: 36.781 ha
6.	Category of Project i.e. 'A' or 'B'	As per EIA Notification dated 14.09.2006 and amended on 01.12.09, the project falls under Category "A" project.
7.	Does it attract the general conditions? If yes, please specify.	No
8.	Does it attract the specific conditions? If yes, please specify.	No
9.	Location	
	Plot/Survey/Khasra No.	Area for the existing Iron Ore Pelletizing Plant : 36.781 ha Area for proposed expansion project : 180.473 ha Total land (Existing & Proposed) : 217.254 ha Agricultural land : 150.433 ha Forest : 21.246 ha Gochar : 6.224 ha Road : 2.570 ha Total Proposed : 180.473 ha
	Villages	Phuljhar
	Tehsil	Telkoi
	District	Keonjhar
	State	Odisha
10.	Nearest railway station/airport along with distance in kms.	Railway Station : Porjanpur (About 25 km East -Direction) Airport: Bhubaneswar(~220 km East- direction)
11.	Nearest Town, City, District Headquarters along with distance in kms.	Keonjhar (32km East - Direction) District Headquarter: Keonjhar (32 km East-Direction)
12.	Village Panchayats, Zilla Parishad, Municipal Corporation, Local body (complete postal addresses with telephone nos. to be given)	Village Panchayat: Phuljhar Zila Parishad: District Keonjhar Municipal Corporation: District Keonjhar Municipal Corporation, Keonjhar Address: Gaura Pattasahi, Keonjhar Garh PO: Keonjhar Pin: 758001
13.	Name of the applicant	M/s. Ardent Steel Ltd.

S. No.	Item	Details
14.	Registered Address	Ardent Steel Ltd. A-401, Lotus Corporate Park, Jay Coach Signal Off., Western Express Highway, Goregaon (East), Mumbai 400063
15.	Address for correspondence:	Project Proponent
	Name	T. Bose
	Designation (Owner/Partner/CEO)	Head (Corporate Affairs)
	Address	Plot No. 408, New Colony, Jamuhata, Keonjhar, Odisha
	Pin Code	758001
	E-mail	tonmoy.bose@hiragroup.com
	Telephone No.	06766-258257
	Fax No.	06766-258473
16.	Details of Alternative Sites examined, if any. Locations of these sites should be shown on toposheet.	No alternative site is considered. The proposed expansion will be done adjacent to the existing premises.
17.	Interlinked Projects	No
18.	Whether separate application of interlinked project has been submitted?	Not Applicable
19.	If yes, date of submission	Not Applicable
20.	If no, reason	Not Applicable
21.	Whether the proposal involves approval/clearance under: if yes, details of the same and their status to be given.	The proposal does not involve any approval/clearance under any act as mentioned in the condition.
22.	Whether there is any Government Order/Policy relevant/relating to the site?	No Government Order/Policy is issued relevant for the project site.
23.	Forest land involved (hectares)	Yes, Forest land : 21.246 ha
24.	Whether there is any litigation pending against the project and/or land in which the project is propose to be set up? (a) Name of the Court	No

S. No.	Item	Details
	(b) Case No. **(c) Orders/directions of the Court, if any and its relevance with the proposed project.**	

(II) Activity

1. Construction, operation or decommissioning of the Project involving actions, which will cause physical changes in the locality (topography, land use, changes in water bodies, etc.)

Sr. No.	Information/Checklist confirmation	Yes/No	Details thereof (with approximate quantities / rates, wherever possible) with source of information data
1.1	Permanent or temporary change in land use, land cover or topography including increase in intensity of land use (with respect to local land use plan)	Yes	• Total existing plant area is 36.781 ha. The complete land has acquired. Out of the total existing land, 12,141 ha i.e 35 % of land is developed as green belt. • An additional 180.473 ha of land is proposed for the expansion project. Out of which, green belt will be developed on 61.00 ha i.e about 35% of the total plant area. • Hence the total plant area shall be 217.254 ha and total green belt will be developed on 73.141 ha of land.
1.2	Clearance of existing land, vegetation and buildings?	No	The proposed site is a semi barren Govt. Land and does not have any vegetation and buildings for clearance.
1.3	Creation of new land uses?	No	The plant area is already under Industrial usage.
1.4	Pre-construction investigations e.g. bore houses, soil testing?	Yes	Soil testing will be done to check the soil consistency.
1.5	Construction works?	Yes	• There will be construction work for the project activity i.e. for plant, administrative buildings, fabrication work etc, which will be limited to plant area only.

			• **Construction will be done in such a way that it will have minimum effect on existing topography, land use, changes in water bodies etc.**
1.6	**Demolition works?**	**No**	**The site does not have any structure for demolition.**
1.7	**Temporary sites used for construction works or housing of construction workers?**	**Yes**	**Temporarily residence facilities will be provided to the construction workers.**
1.8	**Above ground buildings, structures or earthworks including linear structures, cut and fill or excavations.**	**Yes**	**Above ground structure and Building such as administrative building, plant construction etc for proposed project will be developed.**
1.9	**Underground works including mining or tunneling?**	**No**	**Not applicable**
1.10	**Reclamation works?**	**No**	**Not applicable**
1.11	**Dredging?**	**No**	**Not applicable**
1.12	**Offshore structures?**	**No**	**Not applicable**
1.13	**Production and manufacturing processes?**	**Yes**	**Process details are:** **<u>A. Iron ore Beneficiation Plant</u>** **The method of washing iron ore fines includes washing out and eliminating the gangue constituents at every stage of the Washery process. Iron ore Beneficiation will involve slurry making, scrubbing, wet screening and separation by spiral classifiers and magnetic separation, if require. The crushed ore will be transported to the proposed site for treatment in the Beneficiation plant. This is a physical process to reduce the non-ferrous impurities.** **<u>B. Pelletisation Plant:</u>** **The technique of Straight Grate Technology is being adopted for putting up a 1.20 million TPA pellet project.**

			C. DRI Plant: **The technique of Rotary Kiln Process will be adopted.** **D. Pig Iron Blast Furnace:** **The blast furnace is envisaged to operate with pellet, sinter iron ore lump, coke coal dust, fixes and additives. The hot metal produced will be charged in the furnace.** **E. Sinter Plant:** **The sinter plant complex will consist of one number of sinter machine of 80 m^2 grate area along with associated services facilities.** **F. SMS** **Steel melting shop is a department where the sponge iron, pig iron & metallic scrap are being melted in induction furnace.** **G. Rolling Mill** **Rolling products of MS / SS Alloy Steel / SS Bars / Wire Rods of different sizes from 5.5 mm onwards will be manufactured.** **H. Power Plant** **The captive power Plant of WHRB using waste gases from DRI & BF and AFBC based using coal & char will be set up with a total capacity of 125 MW.** **Detailed process is incorporated in the Pre Feasibility Report.**
1.14	**Facilities for storage of goods or materials?**	**Yes**	**Proper storage facilities for goods or materials such as HFO, LDO, raw material, iron ore Fines etc will be provided.** **The facilities for storage of building and fabricating materials for construction of plant and other buildings would be made in the plant area temporarily.**

1.15	**Facilities for treatment or disposal of solid waste or liquid effluents?**	**No**	• **Solid Waste:** ➢ **Iron Ore Beneficiation Plant** **The tailings will be treated in the tailing pond and the same will be stored for the future use i.e. supply for cement making and land leveling.** ➢ **Iron Ore Pelletizing Plant** **There is no solid waste generation in the pelletizing plant.** ➢ **DRI Plant** **Char / Dolochar will be used in Power plant** **Coal dust will be reused in Power Plant** **Iron ore fines will be reused in Pellet Plant** ➢ **Pig Iron** **Slag in cement making and sludge will be reused in sinter plant** ➢ **Sinter Plant** **Sinter fines will be reused in sinter process** ➢ **SMS** **Steel melting slag will be crushed to coarse and passed through metallic separator for separation of metallic and non-metallic contents. Metallic contents will be recycled back in SMS / Sinter process and non-metallic will be utilized for back filling or reclamation of low lying area / land filling in nearby mines.** **Cut end, rejects will be recycled in SMS** **Flue dust will be utilized in road construction and land filling in nearby mines.** ➢ **Rolling Mill** **Mill Scale will be recycled in SMS / Sinter/ Pellet Plant.**

			➢ **CPP** **Fly ash will be sold to Brick & Cement manufacturers** **Various waste materials arising out of the technological processes will be utilized in the process itself.** • **Water and Sewage:** **The plant will be designed for "Zero Effluent Discharge". There will be no effluent discharge outside the plant boundary.**
1.16	**Facilities for long term housing of operational workers?**	**No**	**Local labours will be hired from nearby villages during the operational stage.**
1.17	**New road, rail or sea traffic during construction or operation?**	**No**	• **This is an expansion project. Project already has existing roads for transportation. Same will be utilized for expansion unit.** • **New road construction is not envisaged as the site is in proximity to the already constructed roads.**
1.18	**New road, rail, air waterborne or other transport infrastructure including new or altered routes and stations, ports, airports etc?**	**No**	**This is an expansion project. The project site is well connected & has good infrastructural facilities. Porjanpur Railway station is about 25 km away from the project site. No new road, rail will be required during construction or operation phase.**
1.19	**Closure or diversion of existing transport routes or infrastructure leading to changes in traffic movements?**	**No**	**Not applicable, as no existing transport routes or infrastructures leading to changes in traffic movements pass through the project area.**
1.20	**New or diverted transmission lines or pipelines?**	**No**	**Diversion of Transmission lines or pipelines has not been proposed. The water for the proposed plant will be taken from the nearby Baitarani River. Pipeline (underground) will be laid to bring water from the intake point to the plant site.**
1.21	**Impoundment, damming, culverting, realignment or other changes to the**	**No**	**Surface water (Source: River Baitarani) shall be used for the proposed expansion project.**

	hydrology of watercourses or aquifers?		**There will be no changes in the hydrology of watercourses or aquifer is envisaged due to this. There will be no discharge outside the plant boundary. Zero effluent discharge will be maintained.**
1.22	**Stream crossings?**	**No**	**Not applicable**
1.23	**Abstraction or transfers of water from ground or surface waters?**	**Yes**	**The total Water requirement for the existing & expansion project will be 761 KL/hour, as per CREP guidelines for steel & power sectors.** **Water will be sourced from the nearby Baitarani River (3 Km. WNW direction) for the expansion project. Pipeline (underground) will be laid to bring water from the intake point to the plant site. Application for permission for drawl of water is already filed and is under process.** **Existing water requirement is met from the ground water. Permission for extraction of 500 KLD of water is already obtained from CGWA.**
1.24	**Changes in water bodies or the land surface affecting drainage or run-off?**	**No**	• **Presently no process waste water is generated from the existing iron ore pelletizing plant and domestic waste water is discharged into the sewage facilities.** • **"Zero effluent discharge" will be ensured for the proposed expansion project. The waste water generated will be recycled in the process itself. Hence, no change is envisaged.**
1.25	**Transport of personnel or materials for construction, operation or decommissioning?**	**Yes**	• **Iron Ore fines from Joda/ Barbil/Gandhamardan mines would be transported through Rail/Road based on the availability of railway wagons / trucks and economics.** • **Rest of the raw materials including**

			imported coke will be received at plant site in Trucks. • **The transportation of Finished Product to prospected customers will be by wagons / dumpers.** • **Construction labourers will be employed from nearby villages / areas as far as possible.**
1.26	**Long-term dismantling or decommissioning or restoration works?**	**No**	**No long term dismantling/ decommissioning is proposed.**
1.27	**Ongoing activity during decommissioning which could have an impact on the environment?**	**No**	**No decommissioning is involved.**
1.28	**Influx of people to an area in either temporarily or permanently?**	**Yes**	• **It is proposed to employ mostly the local people. The skilled and unskilled workers will be hired from the nearby villages.** • **The managerial staff and the expert technical staff might be hired from other places.**
1.29	**Introduction of alien species?**	**No**	**Only native species have been proposed to be planted in the plant premises, as per CPCB guidelines. Hence no alien species will be introduced.**
1.30	**Loss of native species or genetic diversity?**	**No**	**Not applicable**
1.31	**Any other actions?**	**Yes**	**Promoter shall also ensure:** • **Adequate dialogue with the local bodies/ local population to assess the amenities required in the area.** • **Strengthening of health, education and safe drinking water services in the area.** • **Provide temporary employment generation opportunities to local people in unskilled/semi-skilled categories especially during construction phase.**

2. Use of Natural resources for construction or operation of the Project (such as land, water, materials or energy, especially any resources which are non-renewable or in short supply):

S. No.	Information/ checklist confirmation	Yes/ No	Details thereof (with approximate quantities /rates, wherever possible) with source of information data
2.1	Land especially undeveloped or agricultural land (ha)	No	• The total land area for the existing Iron Ore Pelletizing plant is 36.781 ha. An additional 180.473 ha of land will be required for the proposed expansion project. • The proposed site of expansion is Government & Semi barren land area. • Out of the total 180 ha of land green belt will be developed on 61 ha of land. Green belt for the existing plant is developed on 12 ha of land
2.2	Water (expected source & competing users) unit: KLD	Yes	The total Water requirement for the existing & expansion project will be 761 KL/hour, as per CREP guidelines for steel & power sectors. Source: Existing Pellet Plant: Ground water permission granted from CGWA, New Delhi. For Expansion: Baitarani River (3 km, WNW) Status: Application for permission of drawl of water is filed and is under process. Pipeline will be laid to bring water from the intake point of river to the plant site.
2.3	Minerals (MT)	Yes	Iron Ore / Fines : 26,11,800 TPA Source:- Nearby Private / Government mines in Keonjhar, Barbil and Joda areas.
2.4	Construction material – stone, aggregates, sand / soil (expected source – MT)	Yes	Construction materials like steel, aggregates, sand and cement will be sourced through local traders and transported by road.
2.5	Forests and timber (source – MT)	No	-
2.6	Energy including electricity and fuels (source, competing users) Unit: fuel (MT), energy (MW)	Yes	Electricity : The unit will consume about 180 MW of power. The power will be consumed from the captive generation of 125 MW and the balance from State Electricity Board. Fuel Oil : Heavy Furnace Oil of 55 KL per day from local sources/Petroleum companies

			Coal : 2470 MT per day required for Gassifier of Pellet Plant, DRI Plant & AFBC Boiler will be sourced from coal linkage / open market / imports.
2.7	**Any other natural resources (use appropriate standard units)**	**No**	**-**

3. Use, storage, transport, handling or production of substances or materials, which could be harmful to human health or the environment or raise concerns about actual or perceived risks to human health.

<table>
<tr><th>S. No.</th><th>Information/ Checklist confirmation</th><th>Yes/ No</th><th>Details thereof (with approximate quantities/rates, wherever possible) with source of information data</th></tr>
<tr><td>3.1</td><td>Use of substances or materials, which are hazardous (as per MSIHC rules) to human health or the environment (flora, fauna, and water supplies).</td><td>Yes</td><td>The Use, storage, transport, handling will be done carefully by qualified and trained persons.
There will be no fuel requirement for the Iron Ore Beneficiation plant. Heavy Furnace Oil (HFO) has been envisaged as fuel for Kiln and Travel Grate in Iron Ore Pelletization Plant.
<table>
<tr><th>Name of the Fuel</th><th>Existing Requirement (0.6 MTPA)</th><th>Additional Requirement (1.2 MTPA)</th><th>Total Requirement (1.8 MTPA)</th><th>Source</th></tr>
<tr><td>Heavy Furnace Oil</td><td>18 KLD</td><td>37 KLD</td><td>55 KLD</td><td>Petroleum companies & local sources</td></tr>
</table></td></tr>
<tr><td>3.2</td><td>Changes in occurrence of disease or affect disease vectors (e.g. insect or water borne diseases)</td><td>No</td><td>There will not be any changes in occurrence of disease or affect disease vector (e.g. insect or water borne diseases) are seen.</td></tr>
<tr><td>3.3</td><td>Affect the welfare of people e.g. by changing living conditions?</td><td>Yes</td><td>The following improvement in socio economic condition of nearby villages is foreseen:
• Creating job opportunity to local people especially in unskilled category.
• Creating/improving facilities for vocational training to local youth. Support to education facilities by providing assistance to meet requirements.
• Providing safe drinking water wherever necessary.
• Providing medical assistance to local people.
• Local infrastructure development.</td></tr>
</table>

			• Social afforestation. • Extending support to games, sports and cultural activity to local community.
3.4	Vulnerable groups of people who could be affected by the project e.g. hospital patients, children, the elderly etc.,	No	No effects envisaged as the whole process of manufacturing will be done in safe Environment & close loop.
3.5	Any other causes	No	Not envisaged.

4. Production of solid wastes during construction or operation or decommissioning (MT/month)

S.N	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
4.1	Spoil, overburden or mine wastes	No	• Mine activity is not involved in the proposed project activity and hence there will be no overburden or mine waste. • But soil will be generated during the construction activities which will be stored within the project site for further used in greenbelt development, leveling of site etc.
4.2	Municipal waste (domestic and or commercial wastes)	Yes	• The source of domestic wastewater is only from the office toilets of the plant that will be completely disposed off into the soak pit via septic tanks. • During the process, water will be only used for sprinkling for cooling purpose which will be evaporated; hence no waste water generation is envisaged.
4.3	Hazardous wastes (as per Hazardous Waste Management Rules)	No	No, there will not be any kind of hazardous waste generation. The proposed fuel is HFO for the pelletizing plant which will be stored and transported as per stipulated norms.
4.4	Other industrial process wastes	Yes	Any kind of waste generation is not envisaged during the process.
4.5	Surplus product	No	Not Applicable
4.6	Sewage sludge or other sludge from effluent treatment	NO	Not Applicable

4.7	**Construction or demolition wastes**	**No**	**Construction waste generated will be miniscule and will be managed properly.**
4.8	**Redundant machinery or equipment**	**No**	**No Redundant machinery or equipment is involved.**
4.9	**Contaminated soils or other materials**	**No**	**No contaminated soils or other material are involved.**
4.10	**Agricultural waste**	**No**	**No agricultural waste will be generated.**
4.11	**Other solid waste**	**No**	**No other solid waste will be generated.**

5.0 Release of pollutants or any hazardous, toxic or noxious substances to air (Kg/hr).

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
5.1	**Emissions from combustion of fossil fuels from stationary or mobile sources**	**Yes**	**The emission of gases (PM, SO2, NO2) may be accounted due to project activities, vehicles, etc. the vehicles will undergo regular maintenance; plant will have appropriate stack height as per the guidelines of Central Pollution Control Board (CPCB). Better maintenance of equipments and proper mitigation measures will help to reduce such emissions.**
5.2	**Emissions from production processes**	**Yes**	**The emission from the Beneficiation plant will be negligible, since the fines will be eliminated in the process of crushing. Emission from the entire process will be reduced by means of proper Environmental Pollution Control measures such electrostatic precipitators or bag filters, proper stack height, adequate greenbelt development, water sprinkling etc.**
5.3	**Emissions from materials handling including storage or transport**	**Yes**	**The fugitive emission due to the transportation activities will give rise to increase in Particulate Matter level. The regular water sprinkler and proper mitigating measures will be adopted to minimize them.**
5.4	**Emissions from construction activities including plant and equipment**	**Yes**	**The fugitive emission will be only due to the transportation activities at the time of construction, which will be minimized by water sprinkling.**
5.5	**Dust or odours from handling of materials including construction materials, sewage and waste**	**NO**	**Not Applicable.**

5.6	**Emissions from incineration of waste**	**No**	**Not applicable, as incineration is not involved in this project.**
5.7	**Emissions from burning of waste in open air (e.g. slash materials, construction debris)**	**No**	**Not applicable, as there will be no burning of waste in open air.**
5.8	**Emissions from any other sources**	**No**	**There will be no other emission source involved.**

6.0 Generation of Noise and Vibration, and Emissions of Light and Heat:

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data with source of information data
6.1	**From operation of equipment e.g. engines, ventilation plant, crushers**	**Yes**	• **Marginal increase in the noise levels will be observed at the time of the constriction work for short time.** • **In some areas where due to technological process, it is not feasible to bring down the noise level within acceptable limits, Personal Protective Equipments like ear mufflers will be provided. Duration of the exposure of the personnel will be limited as per the norms.** • **Various measures to reduce noise pollution include reduction of noise, at source, provision of acoustic lagging for the equipment and suction side silencers, selection of low noise equipment will be adopted.**
6.2	**From industrial or similar processes**	**Yes**	**There will be noise generation due to the running of the machinery. Proper mitigation measures will be taken for the reduction of noise levels, such as provision of acoustic lagging for the equipment and suction side silencers, selection of low noise equipment, dense green belt development, personal protective equipment, maintenance of vehicles etc.**
6.3	**From construction or demolition**	**Yes**	**Demolition work is not involved in the proposed project activity. During construction phase the noise level may increase which will be temporary & no significant impact on environment is envisaged as proper mitigation measures will be taken to reduce the impact. No significant impact on environment is envisaged as proper mitigation measures will be taken to reduce the impact.**

6.4	From blasting or piling	No	Blasting or piling activities are not involved in this project.
6.5	From construction or operational traffic	Yes	There shall be noise due to traffic during construction but not significant.
6.6	From lighting or cooling systems	No	Significant generation of noise, vibration, emission of light & heat from lighting or cooling system is not envisaged.
6.7	From any other sources	No	There will be no additional noise generation except mentioned above.

7. Risks of contamination of land or water from releases of pollutants into the ground or into sewers, surface waters, groundwater, coastal waters or the sea:

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
7.1	From handling, storage, use or spillage of hazardous materials	No	The proposed fuel is Heavy Furnace Oil which will be stored and transported as per stipulated norms. HFO will be brought in road tankers and unloaded by means of pumps. HFO will be supplied to Kiln and Travel Grate. Necessary unloading platform, pump house, unloading header, pumps, pipelines, etc. will be provided. Also care will be taken during its use for lubrication of external part of equipment, that nothing falls on ground to contaminate soil.
7.2	From discharge of sewage or other effluents to water or the land (expected mode and place of discharge)	No	No contamination of water body/ land is anticipated.
7.3	By deposition of pollutants emitted to air into the land or into water	No	The generated wastewater will be reused in the plant process itself. Domestic waste water will be disposed off in septic tank via soak pit.
7.4	From any other sources	No	Not envisaged.
7.5	Is there a risk of long term build up of pollutants in the environment from these sources?	No	No effect is envisaged.

8. Risk of accidents during construction or operation of the Project, which could affect human health or the environment

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
8.1	From explosions, spillages, fires etc from storage, handling, use or production of hazardous substances	Yes	No risk of accident is envisaged, as there will be no other major storage/handling or hazardous substances.
8.2	From any other causes	No	-
8.3	Could the project be affected by natural disasters causing environmental damage (e.g. floods, earth-quakes, landslides, cloudburst etc)?	No	Due consideration in the design and engineering will be taken to take care of any foreseeable natural disaster.

9. Factors which should be considered (such as consequential development) which could lead to environmental effects or the potential for cumulative impacts with other existing or planned activities in the locality

S. No.	Information/Checklist confirmation	Yes/ No	Details thereof (with approximate quantities/rates, wherever possible) with source of information data
9.1	• Lead to development of supporting. localities, ancillary development or development stimulated by the project which could have impact on the environment e.g.: • Supporting infrastructure (roads, power supply, waste or waste water treatment, etc.)	Yes	Employment opportunities will increase due to the requirement of workers for the proposed project. Local will be preferred for employment. This will contribute in raising the socio-economic status and slandered of living of nearby villagers. There are about 450 people engaged in the existing iron ore pelletizing plant. Expansion project will generate an additional direct employment for about 1100 people and indirect for many more.

	• housing development • extractive industries • supply industries • other		
9.2	**Lead to after-use of the site, which could have an impact on the environment**	**No**	**Not Applicable**
9.3	**Set a precedent for later developments**	**Yes**	**A better after use scenario which is likely to increase aesthetic beauty of the area & greenery should set precedence for subsequent entrepreneur who venture such project.** **The green belt area will be increase spatially and it will give better aesthetic view of land and building.**
9.4	**Have cumulative effects due to proximity to other existing or planned projects with similar effects**	**Yes**	**The overall environmental impact will be beneficial. Installation of necessary abatement/control measures will ensure that the adverse impact on physical/biological environment is minimized to the extent possible while there will be considerable beneficial socio-economic impact as a result of development of infrastructure facilities and employment opportunities.**

(III) Environmental Sensitivity

S. No.	Areas	Name/ Identity	Aerial distance (within 15 km.) Proposed project location boundary
1.	**Areas protected under international conventions, national or local legislation for their ecological, landscape, cultural or other related value**	**No**	**--**
2.	**Areas which are important or sensitive for ecological reasons - Wetlands, watercourses or other water bodies, coastal zone, biospheres, mountains, forests**	**Yes**	**Water Bodies:** **1.Baitarani River (3 Km, WNW)** **2. Jagadala Dam (5.0 km, NE)** **Forests** **1. Nayagarh RF (5.0 km , E)** **2. Amijni PF (6.11 km, SE)** **3. Jagar PF (9.6 km , SSE)** **4. Raiguda PF (8.7 km, SSW)**

3.	**Areas used by protected, important or sensitive species of flora or fauna for breeding, nesting, foraging, resting, over wintering, migration**	**No**	**-**
4.	**Inland, coastal, marine or underground waters**	**No**	**-**
5.	**State, National boundaries**	**No**	**-**
6.	**Routes or facilities used by the public for access to recreation or other tourist, pilgrim areas**	**No**	**-**
7.	**Defense installations**	**No**	**-**
8.	**Densely populated or built-up area**	**Yes**	**Keonjhar at a distance of 32 km in East direction and Tehsil Barbil at a distance of 70 km in North-West direction from project site.**
9.	**Areas occupied by sensitive man-made land uses *(hospitals, schools, places of worship, community facilities)***	**Yes**	**There are number of hospitals, schools, places of worship around the project site in nearby villages and Tehsils.** **Phuljhar Primary Health Centre:** **Shiv Mandir: (1km, W)**
10.	**Areas containing important, high quality or scarce resources *(ground water resources, surface resources, forestry, agriculture, fisheries, tourism, minerals)***	**Yes**	**The project site is surrounded by and Iron ore mining belt and the major iron ore mines are in the North-West direction of the project site.**
11.	**Areas already subjected to pollution or environmental damage. *(those where existing legal environmental standards are exceeded)***	**No**	**-**
12.	**Areas susceptible to natural hazard which could cause the project to present environmental problems (*earthquakes, subsidence, landslides, erosion, flooding or extreme or adverse climatic conditions*)**	**No**	**The area falls in Seismic zone-II, according to IS: 1893 (2002).**

(IV) PROPOSED TERMS OF REFERENCE FOR EIA STUDIES

The TORs were issued to the company vide F. No. J-11011/112/2013-IA.II(I) dated 10th November, 2014 for the proposed expansion. The present request is for amendment of TORs.

The EIA/ EMP report for the project activity will be prepared covering all the aspects i.e. Air pollution, Noise pollution, Water pollution, Land environment and Solid waste management etc. in terms of the impacts on the environment due to the proposed activity and the Environmental Management Plan to reduce the impacts.

Proposed Expansion of Iron Ore Pelletizing plant (0.6 MTPA To 1.80 MTPA) by addition of Iron Ore Washery (3.0 MTPA), DRI Plant (0.6 MTPA), Pig Iron BF (0.6 MTPA), Sinter Plant (0.8 MTPA), SMS (1.2 MTPA), Rolling Mills (1.2 MTPA) & Power Plant (125 MW) At village Phuljhar, Block Bansapal,Tehsil : Telkoi, District Keonjhar, Odisha.	Form-1/ Appendix - I

I hereby given undertaking that the data and information given in the application and enclosures are true to the best of my knowledge and belief and I am aware that if any part of the data and information submitted is found to be false or misleading at any stage, the project will be rejected and clearance give, if any to the project will be revoked at our risk and cost.

Date: 29/01/2014
Place: Keonjhar

For, ARDENT STEEL LIMITED

Auth. Signatory

Signature of the applicant
With Name and Full Address
(Project Proponent/Authorized Signatory)

NOTE:

1. **The projects involving clearance under Coastal Regulation Zone Notification, 1991 shall submit with the application a C.R.Z map duly demarcated by one of the authorized agencies, showing the project activities, w.r.t. C.R.Z. (at the stage of TOR) and the recommendations of the State Coastal Zone Management Authority (at the stage of EC). Simultaneous action shall also be taken to obtain the requisite clearance under the provisions of the C.R.Z Notification, 1991 for the activities to be located in the CRZ.**
2. **The projects to be located within 10 km of the National Parks, Sanctuaries, Biosphere Reserves, Migratory Corridors of Wild Animals, the project proponent shall submit the map duly authenticated by Chief Wildlife Warden showing these features vis-à-vis the project location and the recommendations or comments of the Chief Wildlife Warden thereon (at the stage of EC).**
3. **All correspondence with the Ministry of Environment & Forests including submission for TOR/Environmental Clearance, subsequent clarifications, as may be required from time to time, participation in the EAC Meeting on behalf of the project proponent shall be made by the authorized signatory only. The authorized signatory should also submit a document in support of his claim of being an authorized signatory for the specific project.**

M/s. Ardent Steel Limited. 21

REVISED PRE-FEASIBILITY REPORT

1.0 EXECUTIVE SUMMARY

Ardent Steel Limited has an exisiting Iron Ore Pellet plant (0.6 MTPA) at village Phuljhar, Block-Banspal, Tehsil-Telkoi and Distt – Keonjhar (Odisha) & is now proposing for an Expansion of Iron Ore Pelletizing plant (0.6 MTPA to 1.8 MTPA) by addition of Iron Ore Beneficiation Plant (3.0 MTPA), DRI Plant (0.6 MTPA), Pig Iron Blast Furnace (0.6 MTPA), Sinter Plant (0.8 MTPA), SMS (1.2 MTPA), Rolling Mill (1.2 MTPA) & CPP (WHRB-75 MW & AFBC-50 MW) in the existing premises along with Water Pipeline from Baitarini River to Plant site (3 Kms).

Table No. 1

Existing & Proposed Capacities

S. No.	Plant/Facility	Existing Capacity	Additional Capacity Proposed	Final Capacity after Expansion
1.	Iron Ore Beneficiation Plant	-	3.00 MTPA	3.00 MTPA
2.	Iron Ore Pellet Plant	0.6 MTPA	1.20 MTPA	1.80 MTPA
3.	DRI Plant	-	0.60 MTPA	0.60 MTPA
4.	Pig Iron Blast Furnace	-	0.60 MTPA	0.60 MTPA
5.	Sinter Plant	-	0.80 MTPA	0.80 MTPA
6.	SMS/Arc Furnace	-	1.20 MTPA	1.20 MTPA
7.	Rolling Mill	-	1.20 MTPA	1.20 MTPA
8,.	Captive Power Plant	-	125 MW	125 MW
9.	Water Pipeline		3 Kms.	3 Kms.

Source: *Detailed Project Report*

The total plant area is 36.781 ha. for the existing plant. An additional 180.473 ha of land will be required for the proposed expansion project. The Capital Cost of the project is Rs 3831.37 crores of which adequate funds will be allocated towards Environmental Protection Capital cost and recurring cost of the EMP will be Rs. 230 Crores and 23 crores per annum respectively. Requirements for the project are as follows:

Table No. 2

Requirements of the Project

S.No.	Particulars	Requirements									Remarks
		Existing	Additional							Total (After expansion)	
		(Iron Ore Pelletizing Plant)	Iron Ore Pelletizing Plant	Iron Ore Benefi-ciation Plant	DRI Plant	Captive Power Plant	Pig Iron Blast Furnae	Sinter Plant	SMS/Arc Furnace	Rolling Mill	
1	Plant Area (Ha)	24.64	42.45		37.87		12.00	4.00	23.153		**217,254 (including Green Belt)**	The total area for the existing plant (36.781 ha) is already acquired and the acquisition of additional land (180.473 ha) is under process.
2	Water (KL/h)	As per CREP norms, water consumption for steel & power plants									**761 (including Gasifier & Domestic use)**	**For existing project** : Approval Status - NoC for drawal of water to meet the existing water requirement has been obtained from CGWA, renwal of which is attached vide letter No. 21-4 (70)/SER/CGWA/2008-1903 dated 20/11/2014 ; **Expansion Project:** Baitarani River: Application for permission for water withdrawal for the proposed expansion has been submitted to Resource Department, Govt. of Odisha.
3	Power (MW)	5	10	6	6	11	12	4	112	13	**180 (including Admn. & Misc.)**	**Source:** State Electricity Board
4	Man power	452	508	60	80	80	50	40	150	140	1560	Local Labour shall be preffered.

Source: Detailed Project Report

2.0 INTRODUCTION OF THE PROJECT/ BACKGROUND INFORMATION

2.1 Identification Of The Project And Project Proponent

The promoters of Ardent Steel Limited (ASL) are Godawari Power &Ispat Ltd (GPIL) and Mr Sanjay Gupta, MD Ardent Steel Limited . GPIL belongs to Hira Group of Industieswhich is one of the largest local groups of Chhattisgarh with predominant interest in power generation, sponge iron, steel making, steel rolled products, ferro alloys, coal washeries and coal and iron ore mining and cement manufacture. In 2013-14, the promoter (GPIL)'s consolidated turnover is around Rs. 2350 crores within which the turnover of Ardent Steel Ltd is about Rs. 400 crores.

GPIL is in the manufacturing process of Steel through Sponge Iron - Captive Power (Waste Heat Recovery) Route. Product add-ons like Wires, Ferro Alloys, Oxygen, Nitrogen and Fly Ash Bricks subsequently introduced.

2.2 Nature Of The Project

Ardent Steel Limited has an existing Iron Ore Pelletizing Plant of 6,00,000 TPA (0.6 MTPA) and now the company is proposing for Expansion of Iron Ore Pelletizing plant (0.6 MTPA to 1.8 MTPA) by addition of Iron Ore Beneficiation Plant (3.0 MTPA), DRI Plant (0.6 MTPA), Pig Iron Blast Furnace (0.6 MTPA), Sinter Plant (0.8 MTPA), SMS (1.2 MTPA), Rolling Mill (1.2 MTPA) & CPP (WHRB-75 MW & AFBC-50 MW) in its existing plant premises at village Phuljhar, Tehsil Banspal, District Keonjhar, Odisha along with Water Pipeline of 3 Kms. from intake point of Baitarini River to Plant site.

The renewed Consent to Operate for the existing Iron Ore Pelletizing Plant was granted by SPCB, Odisha vide Letter No. 15384/Ind-I-CON-6363 dated 22/09/2014, copy enclosed as **Annexure I.**

2.3 Need Of The Project

The Indian Steel Sector has grown to be the 5th largest steel producing country in the world. This has been achieved due to the thrust on infrastructure and housing sectors. Contributing to the development of India's industrial and economic landscape for over 150 years, steel accounts for about 7 per cent of GDP and employs about 1.5 million people directly. With continued emphasis on building infrastructure and several greenfield projects under execution, the growth story

is likely to gather momentum in the years to come. The steel industry in India has been moving from strength to strength and according to the Annual Report 2009-10 by the Ministry of Steel, India has emerged as the fifth largest producer of steel in the world and is likely to become the second largest producer of crude steel by 2015-16.

2.4 The Demand Supply Gap

- Demand – Availability of iron and steel in the country is projected by Ministry of Steel annually.
- Gaps in Availability are met mostly through imports.
- Interface with consumers by way of a Steel Consumer Council exists, which is conducted on regular basis.

Interface helps in redressing availability problems, complaints related to quality.

Thus there is a strong requirement for these sort of industries.

2.5 Employment Generation (Direct & Indirect) Due To The Project

About 452 persons are employed in the existing plant and about 1100 persons will be employed directly for the proposed expansion project. Increase in indirect employment shall also generate employment opportunities in the area.

3.0 PROJECT DESCRIPTION

3.1 Type of Project including interlinked and independent projects, if any

Not Applicable.

3.2 Location Map

Location map showing general location, specific location, and project boundary & project site layout with coordinates is shown on the next page.

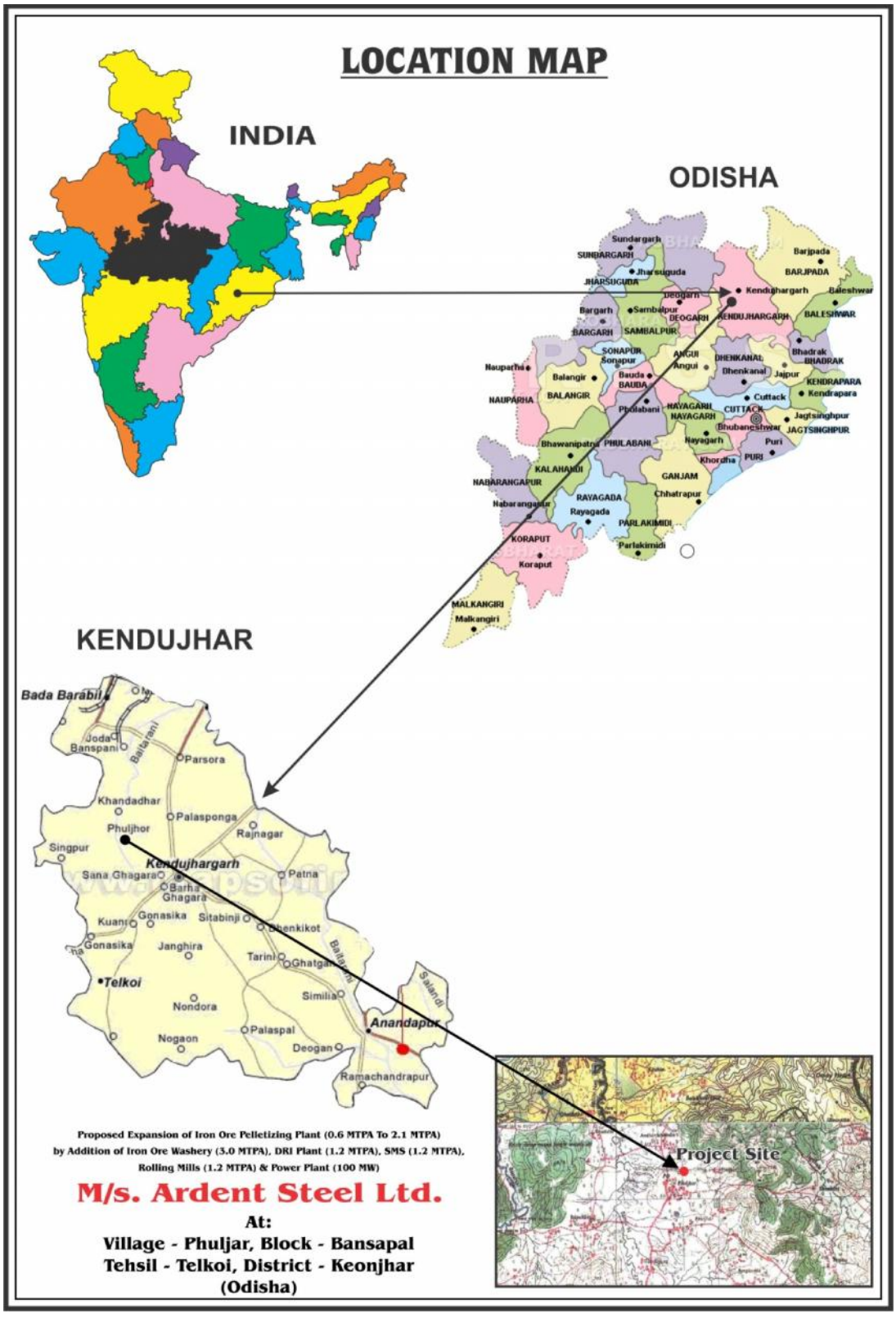


Figure:1- Location Map

3.2.1 Environmental Settings

The proposed project has been selected taking into consideration easy availability of raw materials and various environmental conditions. Other infrastructural facilities like Land, Water and Transportation & Communication etc. are also well established & available at the selected location.

Table: 3

Details of Environmental Setting

S. No.	Particulars	Details
1.	**Location**	
	Village	Phuljhar
	Block	Bansapal
	Tehsil	Telkoi
	District	Keonjhar
	State	Odisha
2.	Toposheet Number (10 km study area)	73G7,73G11, 73G10, 73G6
3.	Geographical Coordinates	Latitude: 21^0 43' 40.26"N to 21°44'10.48" N Longitude: 85^0 25' 53.78" E to 85°27'49.41"E
4	**Vicinity Details**	
	A. Nearest Densely Populated Area	Keonjhar (32 Kms.)
	B. Nearest National Highway	NH -6 (25 Kms)
	C. Nearest Railway Line	Porjanpur – About 25 Kms
	D. Nearest Airport	Bhubaneswar (250 Kms)
	E. Nearby Water Bodies	1. Ashok Jharana (nallah) (1Kms) 2. Baitrani River (3 kms, WNW) 3. Jagadala Dam (5.0 km, NE) 4. KaijorhaNala (6.9 km, WNW) 5. MaldaNadi (5.2 km, NW)
5	National Park, Reserve forest/Protected forest/ Wildlife Sanctuary/ Biosphere reserve, Wild life corridor within 10 km radius study area)	There are no National Park, Wildlife Sanctuary, Biosphere reserve, Wild life corridor within 10 km radius study area. **Reserved forests:** 1. Nayagarh RF(5.0 km, NE) **Protected Forests** 1. Amijni PF (6.11 km, SE) 2. Jagar PF (9.6 km, SSE) 3. Raiguda PF (8.7 km, SSW)
6	Archeological/ Historical, Defense establishment within 10 Km radius study area.	No Archeological/ Historical, Defense establishment falls within 10 Km radius study area.

Source:*Preliminary Site Visit Report &Toposheet*

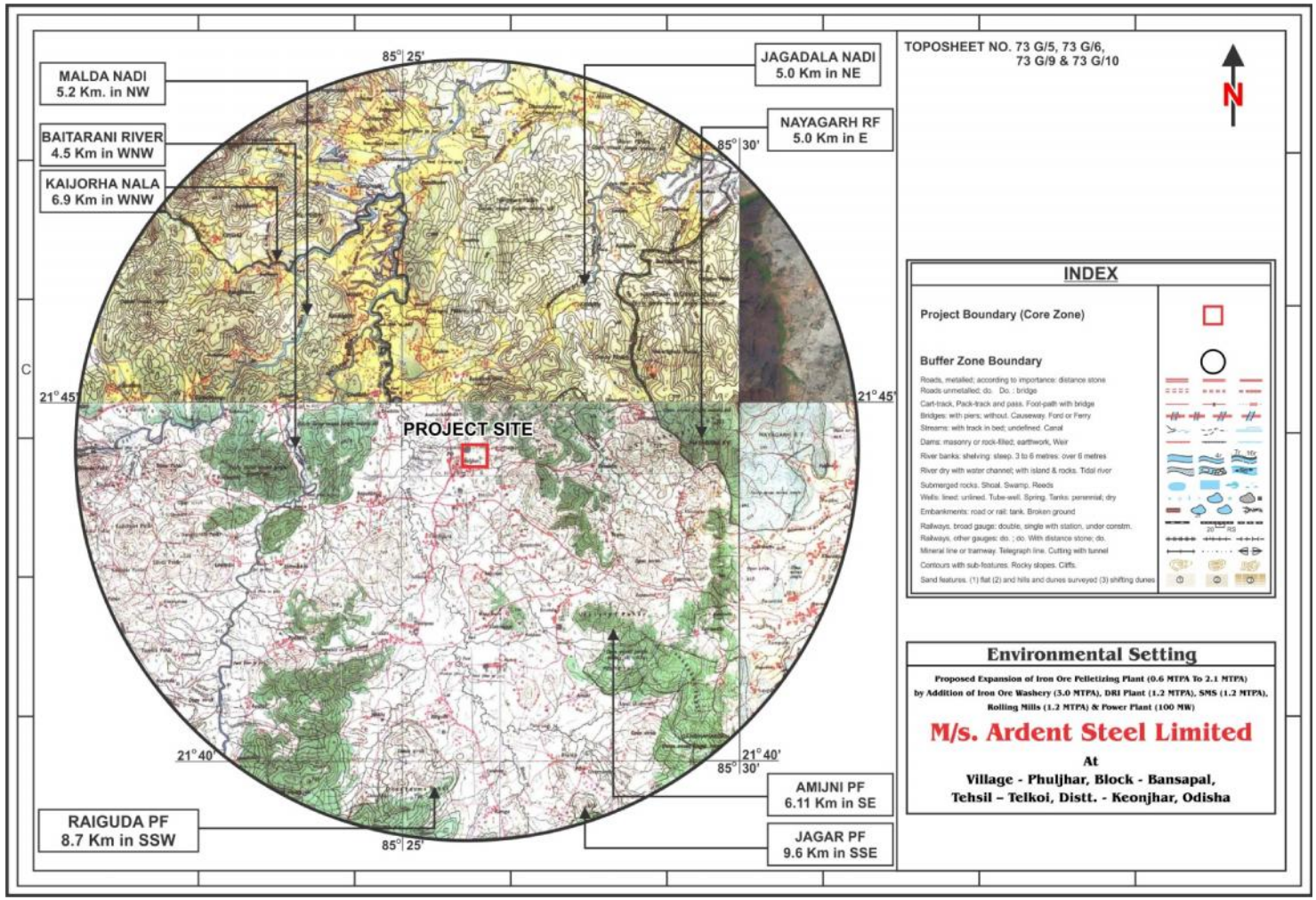


Figure 2: Google Image showing Environmental Settings of 10 km study area

3.3 Details Of Alternative Sites Considered

This is a proposed expansion project within the existing plant premises of the Iron Ore Pelletizing plant. The project site conforms to the environmental setting guidelines as per MoEF and has enough existing infrastructure facilities to be selected for the expansion project. The site has advantages of availability of raw material and other infrastructural facilities like skilled labour, power, transportation, and water required for such type of industries. Hence, no alternative site has been considered.

3.4 Land & Site Details & Availability Of Facilities

M/s. Ardent Steel Limited has an existing Iron Ore Pelletizing Plant in village Phuljhar, Tehsil : Banspal, Dist. Keonjhar, Odisha. The expansion project will come up in the existing premises. An additional about 180.00 ha of land will be required for the expansion project which is just adjacent to the existing plant area. Nearest Town is Keonjhar (32 km, East) & Barbil. Nearest Railway station is Parjanpur Railway station (About 25 km, East) and the Parjanpur railway siding is being used by the company.

a) Availability of Land

The selected land is in the Village : Phuljhar, Tehsil : Banspal, Dist. Keonjhar, Odisha The total land of about 180.00 ha has been identified for the proposed project, which is sufficient for setting up the proposed Integrated Steel Plant. The site is generally leveled. The area is not flood prone. The site terrain is generally plain requiring minimum efforts to grade them. Suitable foundation, based on soil investigation results, will be adopted.

The details of land required for the various units are shown as under :

Table 4

Unit Wise Land Requirement

Sl. No.	Name of Units	Land Requirement in Ha.
1.	Pellet Plant	42.45
2.	Iron ore Benificiation Plant	
3.	DRI Plant	37.87
4.	Captive Power Plant	
5.	Pig Iron Blast Furnace	12.00
6.	Sinter Plant	4.00
7.	Steel Melting Shop	23.153
8.	MS / SS / Alloy Steel / SS Bars / Wire Rods/ HR / CR Coil / Sheets (Rolled Products)	
9.	Green Belt	61.00
	Total	**180.473**

3.4.1 AREA STATEMENT

Total Proposed Area : 180.473 Ha

Total constructed Area : 119.473 Ha

Total Green Belt Area : 61.00 Ha

Table 5

Land Schedule

Sl. No.	Type of Land	Area (In Ha)
1	Agricultural	150.433
2	Forest	21.246
3	Gochar	6.224
4	Road	2.570
	TOTAL	**180.473**

3.5 Water Requirement

The total water requirement for the proposed expansion project will be 761 KL/hour. The requirement has been considered as per CREP guidelines for the Steel & Power sectors.

- Steel Plant capacity : 1.2 MTPA
- Water consumption : @ 5 KL/ton for long products as per CREP guidelines.
- Yearly water requirement : 60,00,000 KL
- Per day requirement : 18180 KL (based on 7900 working hours in 330 days)
- Per hour requirement : 761 KL

Water requirement will be met from River Baitarani . Permission for drawal of 500 KLD of water to meet the existing requirement is obtained from CGWA, renwal of which is attached vide letter No. 21-4(70)/SER/CGWA/2008-1903 dated 20/11/2014, copy enclosed as **Annexure II.**

For expansion project, application for permission of water withdrawl for the proposed expansion has been submitted to Water Resource Department, Govt. of Odisha.

3.6 Man Power

There are about 452 people engaged in the existing iron ore pelletizing plant. Expansion projectwill generate an additional direct employment for about 1108 people and indirect for many more.

Table 6

Manpower Requirement for Existing & Expansion Project

Sl. No.	Particulars	Total
a)	Managerial	40
b)	Supervisory	130
c)	Skilled	240
d)	Semi skilled	450
e)	Unskilled	700
	Total	**1560**

Source: Detailed Project Report

3.7 Power Generation & Consumption Balance

Unit wise power requirement is given in the table below:

Out of total power requirement of 180 MW, 125 MW power will be of captive generation and will be for in-house use and balance will be purchased from State Electricity Board.

Table 7

Unit-wise power requirement

	Power Consuming Points	**Quantity of Power in MW**
1	Iron Ore Pelletizing Plant (Existing)	5
2	Iron Ore Pelletizing Plant (Expansion)	10
3	Iron Ore Beneficiation	6
4	DRI Plant	6
5	Pig Iron Blast Furnace	12
6	Sinter Plant	4
7	Steel Melting Shop	112
8	Rolling Mill	13
9	Captive Power Plant	11
10	Coal Gasifier of Pellet Plant	0.50
11	Administrative & Auxiliary	0.50
	Total	**180**

Source: Detailed Project Report

3.8 Raw Material Balance

Quantity in MT

Description → / Inputs ↓	Iron Ore Bene-ficiation	Pellet Plant (Existing)	Pellet Plant (Expansion)	DRI Plant	Blast Furnace	Sinter Plant	SMS	Rolling Mill	Power Plant	Total
Plant Capacity (TPA) →	**30,00,000**	**6,00,000**	**12,00,000**	**6,00,000**	**6,00,000**	**8,00,000**	**12,00,000**	**12,00,000**	**50 MW (AFBC)**	
Coal		90,000 *		4,80,000					2,44,800	8,14,800
Iron Ore / Fines	30,00,000	6,30,600	12,61,200			7,20,000				26,11,800
Coke		6,000	12,000		2,40,000	56,000				3,14,000
Bentonite		4,200	8,400							12,600
Lime Stone / Dolomite		6,000	12,000	22,500		1,20,000	1,20,000			2,80,500
Pellets				9,00,000	2,40,000		1,80,000			13,20,000
Sinter					7,80,000					7,80,000
DRI							6,00,000			6,00,000
Pig Iron							6,00,000			6,00,000
Ferro Alloys							18,000			18,000
Char / Dolochar									2,16,000	2,16,000
Billets								12,00,000		12,00,000
Calcined Lime						16,000				16,000
Furnace Oil		18,000 KL								18,000KL

* Coal requirement for Gasifier of Pellet Plants

Source: Detailed Project Report

Source & transportation of major raw materials

Raw material	Probable Source & Transportation
Coal / Coking Coal	MCL / Open market (Rail / Road)
Iron Ore / Fines	Private / Govt. Mines in Keonjhar, Barbil and Joda (Road / Rail)
Coke	Imported Coke (Sea / Road)
Bentonite	Purchase from suppliers / Open market in Odisha & MP (Rail / Road)
Lime Stone / Calcined Lime	
Ferro Chrome	
Dolomite	
Furnace Oil	Local Retailers, by Road

3.9 Process Description

3.9.1 Iron Ore Beneficiation

The beneficiation plant of 3.00 MTPA is being set up for proper beneficiation of the iron ore from the local market i.e. nearby private / government mines in Keonjhar, Barbil and Joda areas. The iron ore received from the mines will be crushed to size and the crushed ore will be transported to the proposed site by road / rail for treatment in the beneficiation plant. This is a physical process to reduce the non-ferrous impurities.

The typical steps in the process are as under:

- Scrubbing, wet screening and physical separation by JIGs
- Dewatering concentrate & Reject through Screen
- Classification of fines through Hydro-Cyclone
- Wet screening (fine)
- Thickening (ultra files)
- Dewatering through filter press/Solid bowl centrifuge.

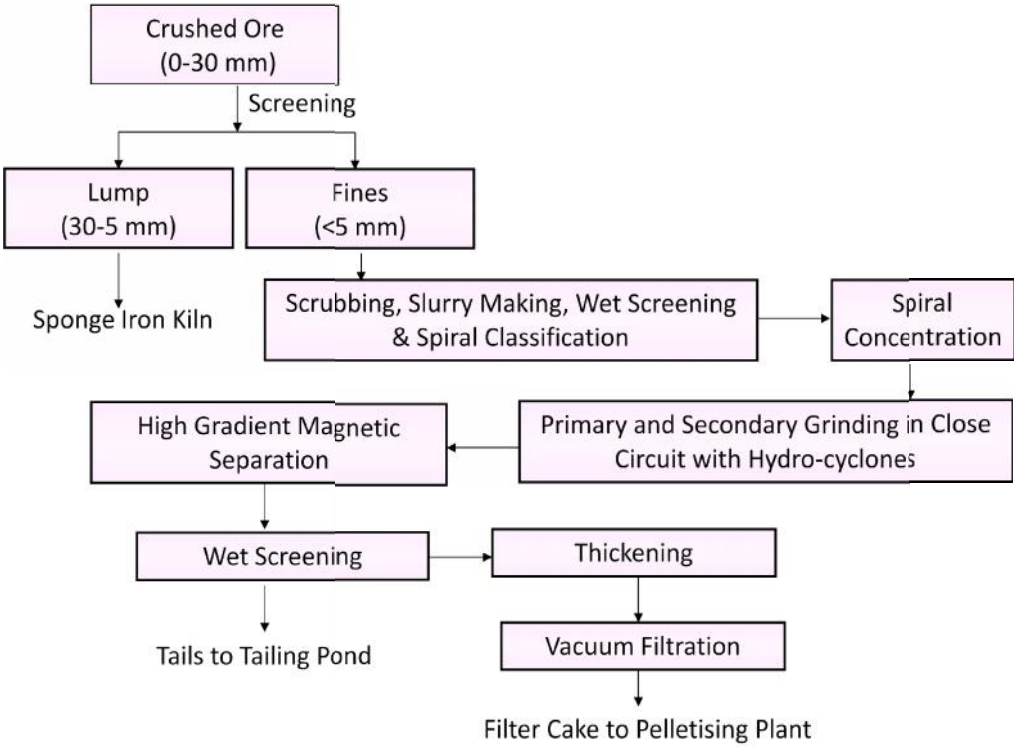


Figure 3: Process Flow of Iron Ore Beneficiation

Material Balance of Iron Ore Beneficiation Plant

	Input	Quality, TPA	Output	Quantity, TPA
1	IRON ORE	30,00,000	BENEFICIATED ORE	24,00,000
2			IRON ORE FINES	5,17,500
3			TAILINGS	82,500
	TOTAL	**30,00,000**		**30,00,000**

3.9.2 Iron Ore Pellet Plant

The company is already operating one kiln of 0.6 MTPA Iron Ore Pelletisation Plant in Keonjhar District of Odisha, for which the grate kiln technology has been adopted by the company. This was a step towards value addition to the iron ore fines available in abundance at Gandhamardhan and Barbil. These fines, which were earlier considered waste products, have now found industrial usage by pelletisation. Now the company proposes for expansion of its pellet plant to 1.80 MTPA with an addition kiln of 1.20 MTPA capacity.

The technique of straight grate technology is being adopted by M/s. ASL for putting up an additional 1.2 MTPA pellet project.

The Iron Ore Pelletization Plant will have the following major units:

1.	Iron Ore Yard
2.	Raw Material Gentry
3.	Iron Ore Grinding
4.	Proportionating
5.	Mixer
6.	Balling Disc
7.	Travel Grate
7.	Kiln
8.	Annular Cooler

In view of better efficiency of heat in kilns and clean coal technology, the company has adopted dual firing system utilizing producer gas and heavy furnace oil in the ratio of 70:30% in both the Pelletizing Plants.

Coal gasification process is one of the cleanest technologies currently available. In the process of coal gasification, water gas is produced with zero fugitive emission. The coal gasification process stands better in comparison to other fuels and there is about 50% reduction in the air emissions.

The material balance of Pellet Plant is as under:

Input			**Output**		
Item	Quantity kg/t	Ratio (%)	Item	Quantity kg/t	Ratio (%)
Iron Ore Fines(Dry)	1,051	84.21	Pellet	1,000	80.13
Bentonite	7	0.56	Return Fines	51	4.09
Lime Stone	5	0.40	Mechanical loss	31	2.48
Dolomite	5	0.40	Water steam	119	9.54
Green Ball Moisture	119	9.54	LOI	47	3.77
Coke (Dry)	10	0.80			
Return Fines (DRY)	51	4.09			
Total	**1,248**	**100%**	**Total**	**1,248**	**100%**

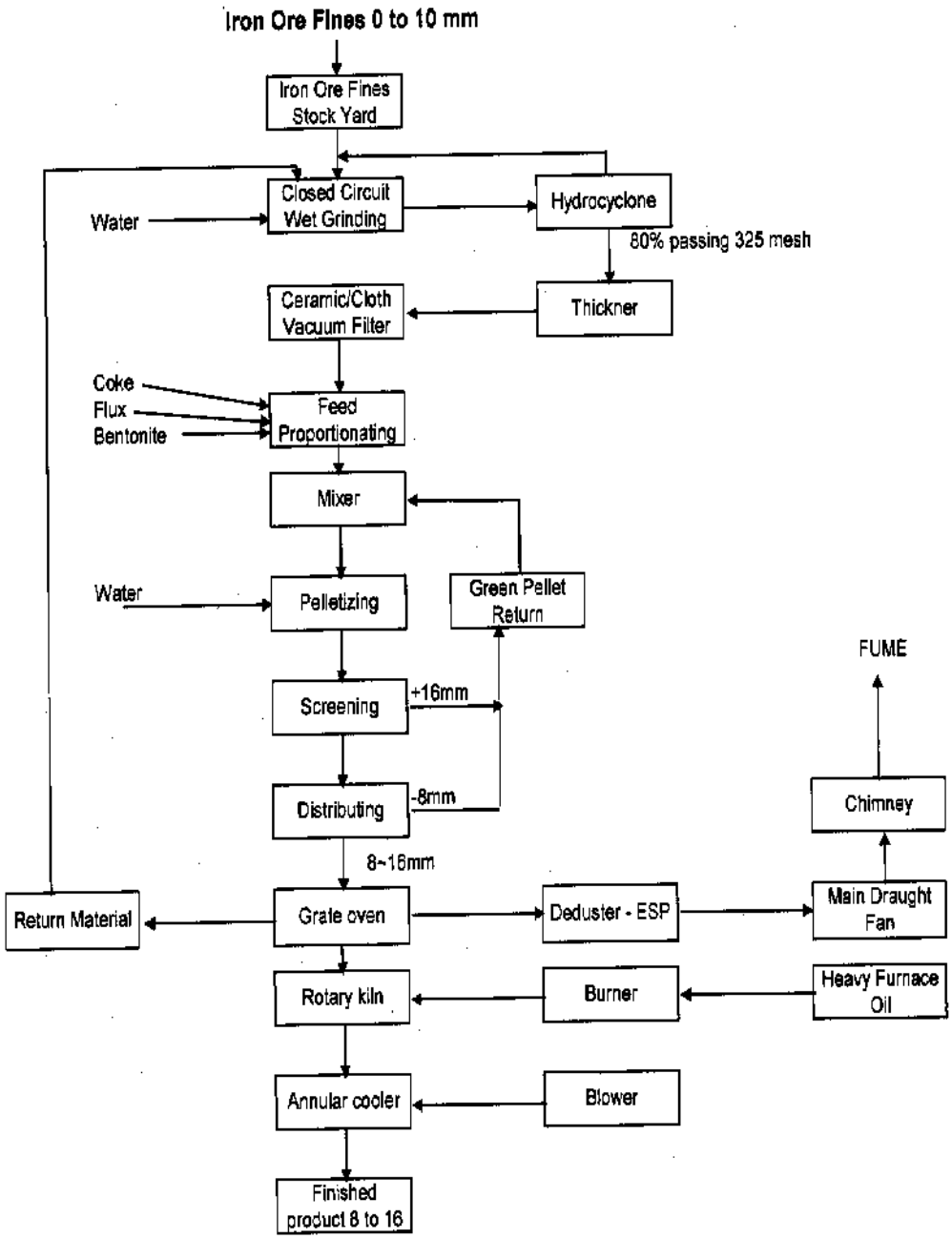


Figure 4: Process Flow of Pellet Plant

3.9.3 DRI Plant Coal Based with the technology of Rotary Kiln process

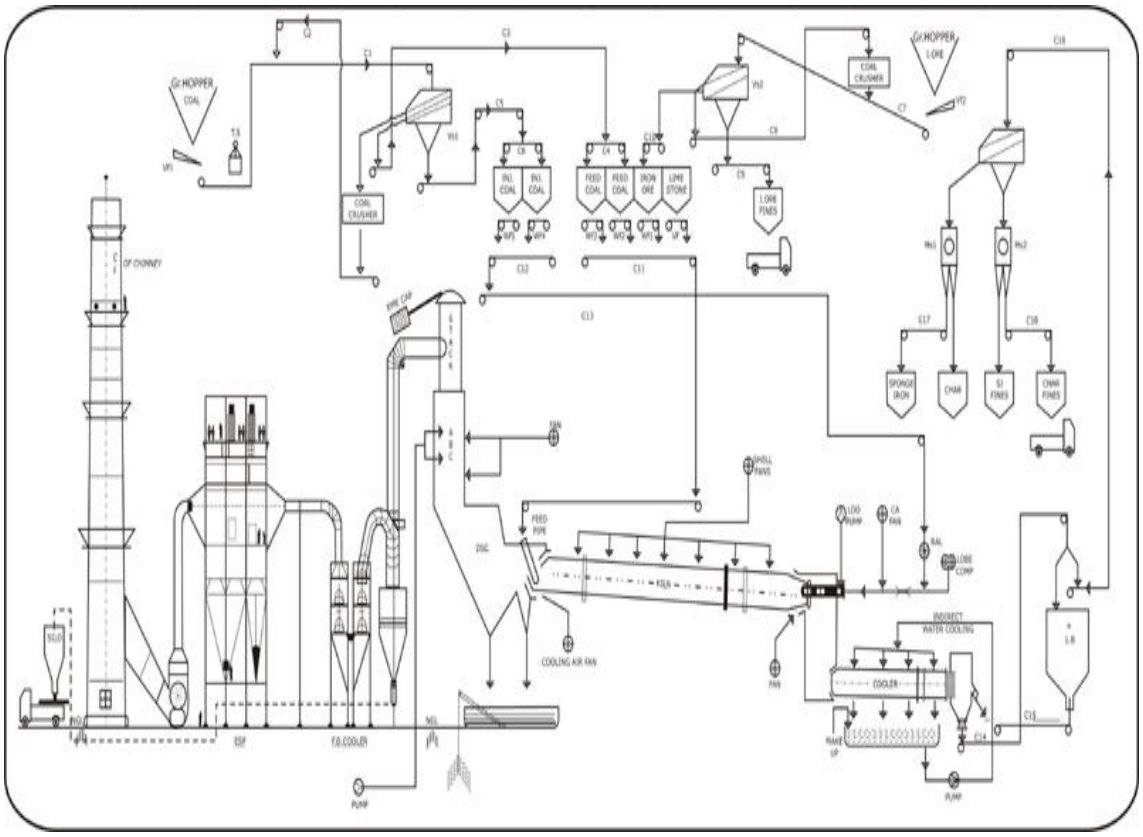
DRI process based on coal which is a simple process with a single-step furnace operation,is being preferred.

For the direct reduction of iron ore, the main furnace used is Rotary kiln. The rotary kiln is a refractory lined vessel on which several blowers are mounted. From the blowers, air pipes go through the shell and refractory, vertically and deliver the required amount of air, required for the process axially. The kiln has conical out let and inlet holds the material in the kiln. Kiln is placed in a slope from feed end side at a slope of 2 ½%. The DRI unit consists of 4 Nos. Kilns having 500 TPD capacity each.

Direct reduction, an alternative route of iron making, has been developed to overcome some of these difficulties of conventional blast furnaces. DRI is successfully manufactured in various parts of the world through either natural gas or coal-based technology. Iron ore is reduced in solid state at 800 to 1,050 °C (1,472 to 1,922 °F) either by reducing gas (H_2+CO) or coal. The specific investment and operating costs of direct reduction plants are low compared to integrated steel plants and are more suitable for many developing countries where supplies of coking coal are limited.

The direct reduction process is intrinsically more energy efficient than the blast furnace because it operates at a lower temperature, and there are several other factors which make it economical:

- Direct-reduced iron has about the same iron content as pig iron, typically 90–94% total iron (depending on the quality of the raw ore) as opposed to about 93% for molten pig iron, so it is an excellent feedstock for the electric furnaces used by mini mills, allowing them to use lower grades of scrap for the rest of the charge or to produce higher grades of steel.
- Hot-briquetted iron (HBI) is a compacted form of DRI designed for ease of shipping, handling, and storage.
- Hot Direct Reduced Iron (HDRI) is iron not cooled before discharge from the reduction furnace, immediately transported to a waiting electric arc furnace and charged thereby saving energy.
- The direct reduction process uses pelletized iron ore or natural "lump" ore. One exception is the fluidized bed process which uses (requires) sized iron ore particles. Select few ores are suitable for direct reduction.
- The direct reduction process can use natural gas contaminated with inert gases, avoiding the need to remove these gases for other use. However, any inert gas contamination of the reducing gas lowers the effect (quality) of that gas stream and the thermal efficiency of the process.



Figures 5 : Process Flow of DRI

Material Balance of DRI Plant

	Input	Quality, TPA	Output	Quantity, TPA
1	Pellet @ 1.5 T/T	9,00,000	DRI	6,00,000
2	Coal @ 0.80 T/T	4,80,000	Dust / Fines	60,000
3	Dolomite @ 0.0375 T/T	22,500	LOI	5,26,500
4			Char / Dolochar	2,16,000
	Total	**14,02,500**		**14,02,500**

3.9.4 Pig Iron Blast Furnace :

The blast furnace complex will comprise of one blast furnace of approx 750 m3 useful volume along with its auxiliaries. The blast furnace is envisaged to operate with pellet, sinter iron ore lump, coke, coal dust, fixes and additives. The hot metal produced will be charged in the furnace. The liquid slag will be granulated at slag granulation unit. The BF top gas will be cleaned in dust catcher and gas cleaning system, and distributed to the stoves, runner drying and boiler for steam generation for process and turbine requirement. Excess BF gas will be provided to the plant network.

The production capacity of the proposed blast furnace is given below.

1. Gross hot metal : 6,00,000 TPA
2. Granulated slag (dry) : 1,59,000 TPA

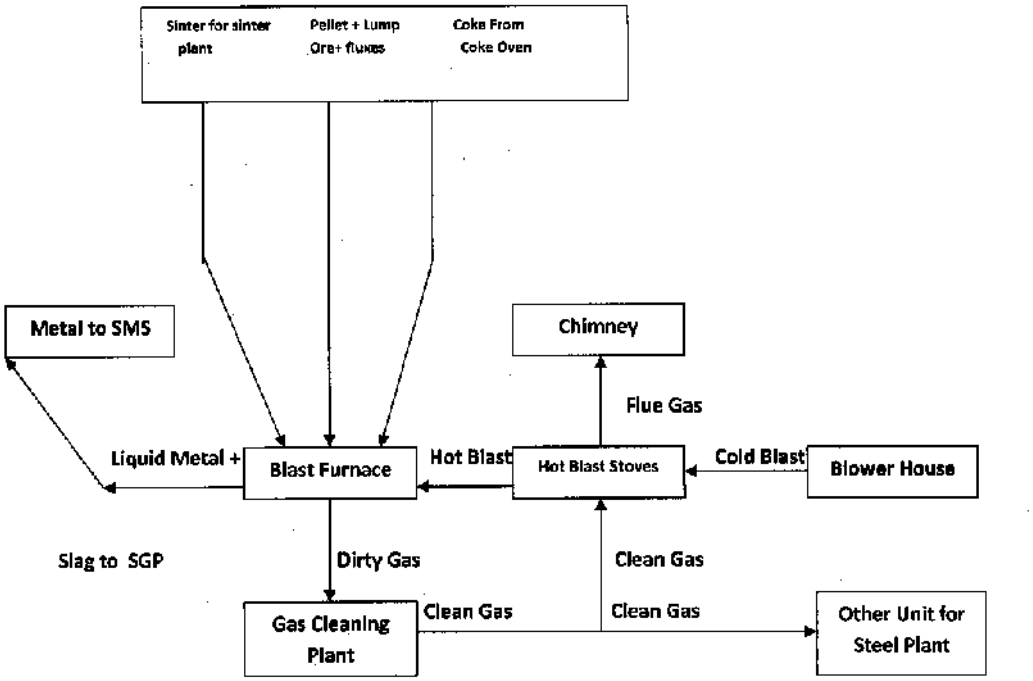


Figure 6 : Process Flow of Pig Iron Blast Furnace

Material Balance of Blast Furnace

Sl. No.	Raw material	Input TPA	Product/wastes	Output TPA
1	Iron Ore Pellet (@0.4 t/t product)	2,40,000	Hot Metal	6,00,000
2	Sinter (@ 1.3 t/t product)	7,80,000	Slag	1,59,000
3	Coke (@0.4 t/t product)	2,40,000	LOI	2,79,000
4			Sludge & Flue dust	2,22,000
	Total	**12,60,000**		**12,60,000**

3.9.5 Sinter Plant

Sintering is the agglomeration of fine-grained iron ores for blast furnace burden preparation. Manganese ores can also be sintered before smelting in the electric arc furnace. Sintering produces a feed of extremely consistent quality in terms of its:

- Chemical composition
- Grain size distribution
- Reducibility
- Sinter strength

The sinter plant complex will consist of one number of sinter machine of 80 m^2 grate area along with associated services facilities. The plant capacity has been selected as 0.80 MTPA for deep bed sintering charging about 80% sinter.

The sinter plant complex will consist of the following units

1. Storage and proportioning unit
2. Combined mixing and balling unit
3. Sintering and cooling unit
4. Waste gas dedusting unit
5. Main exhaust fan unit
6. Cold sinter screening unit
7. Plant dedusting unit

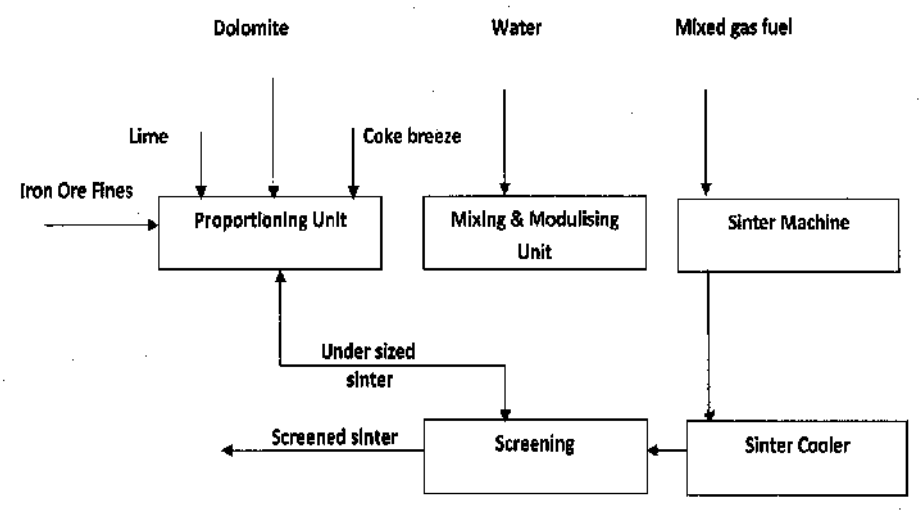


Figure 7 : Process Flow of Sinter Plant

Material Balance of Sinter Plant

	Raw Material Input	Quantity, (TPA)	Product Output	Quantity, (TPA)
1	Iron ore fines (@0.90 t/t product)	7,20,000	Gross Sinter	8,00,000
2	Limestone / Dolomite Fines (@0.15 t/t product)	1,20,000	LOI	1,08,800
3	Coke Fines (@0.07 t/t product)	56,000	Dust	15,200
4	Calcined Lime fines (@0.02 t/t product)	16,000		
5	Mill scales, flue dust, etc (@ 0.015 t/t product)	12,000		
	Total	**9,24,000**		**9,24,000**

3.9.6 Steel Melting Shop

Steel melting shop is a department where the metallic scrap and the sponge iron is being melted in induction furnace. The liquid metal thus melted is treated with alloys additions for required final product chemistry and cast in to the square shape called BILLET through continues casting machine. The company is proposing to put up1.2 million TPA SMS.

The manufacturing process can be described under following heads :

* Raw Material
* Raw Material feeding system
* Furnace
* Ladle Refining Furnace
* Continuous Casting Machine
* The hot steel Billets will pass through the mill approach roll table directly from CCM to Rolling Mill

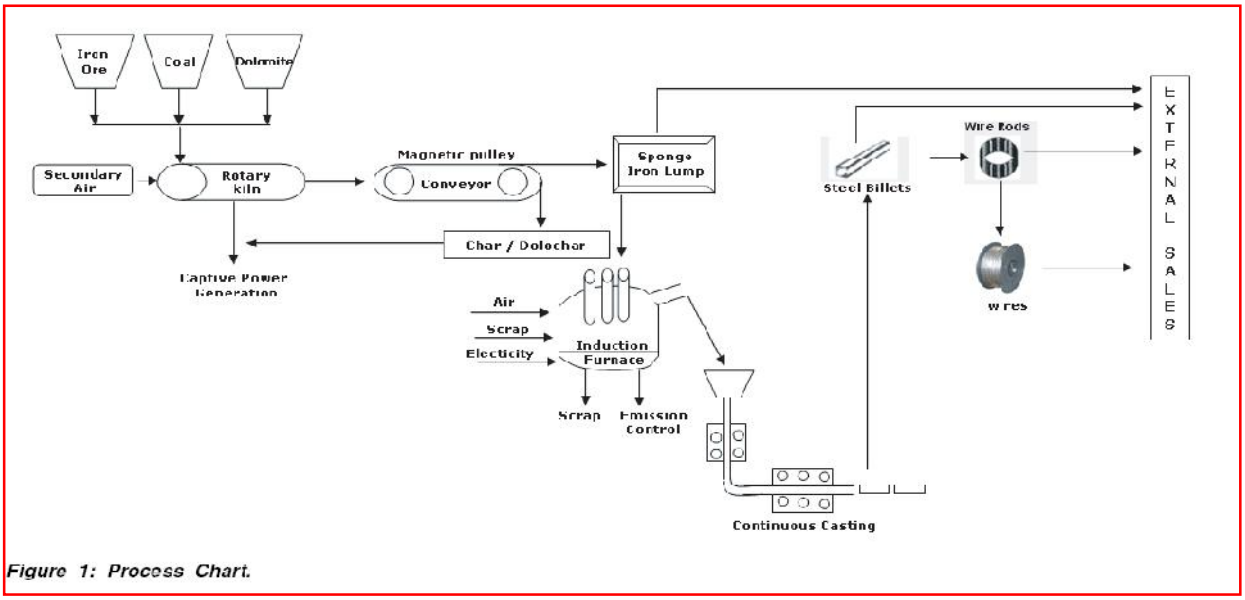


Figure 8: Process Flow of Steel Melting Shop

Material Balance of SMS

	Input	Quantity, TPA	Output	Quantity, TPA
1	DRI	6,00,000	Steel Billets	12,00,000
2	Hot Metal (B/F)	6,00,000	Slag	2,22,000
2	Pellets	1,80,000	Cut ends, rejects	84,000
4	Ferro Alloys	18,000	Flue Dust	65,400
4	Limestone / Dolomite	1,20,000	LOI	21,000
5	Return Scrap	74,400		
	Total	**15,92,400**		**15,92,400**

3.9.7 MS / SS Alloy Steel / SS Bars / Wire Rods / HR / CR Coils / Sheets

The proposed project with annual capacity of 1.2 million TPA for rolling of MS / SS Alloy Steel/ SS Bars / Wire Rods of different sizes from 5.5mm onwards in private sector contributes to the development of the steel sector in this region.

The rolling mill complex is dedicated to the latest block technology. On review of the market demand, there are only few units which have gone for the production of special, high, alloy and stainless steel.

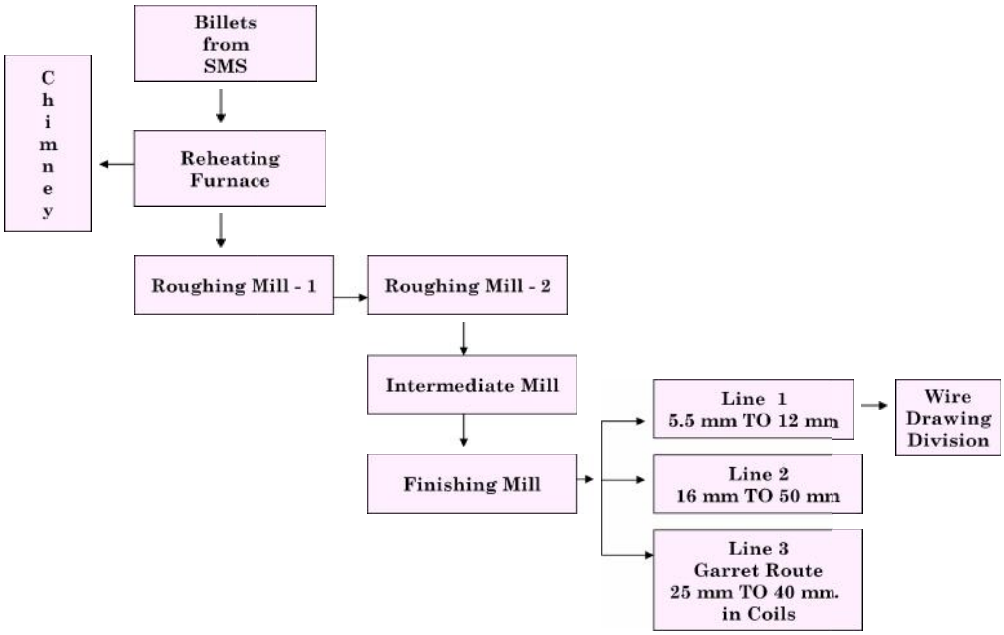


Figure 9 : Process Flow of Rolling Mill

Material Balance for Rolling Mill

Sl. No.	Input	Quantity in TPA	Output	Quantity in TPA
1	Steel Billets	12,00,000	Rolled Products	11,60,400
2			Burning Losses	12,000
3			Mill Scale	27,600
	Total	**12,00,000**		**12,00,000**

3.9.8 Captive Power Plant

The Captive Power Plant with a total capacity of 125 MW.

Power will be required for the steel plant including auxiliaries of power station, offices illumination, etc. To meet the power requirement of the steel plant, 125 MW capacity - WHRB (25 MW x 3 Nos.) & AFBC (25 MW x 2 Nos.) power plant has been proposed. The ash disposal in the form of High Concentration Slurry Disposal has been contemplated for the power plant. In coal fired power station, the heat of combustion is turned into thermal energy and then to electrical energy.

In order to utilize the waste hot gases generated from DRI plant & Blast Furnace - WHRB based and in order to utilize the coal rejects, fines and DRI char generated from the sponge iron plant - AFBC type boiler is proposed, which will have total generation capacity of 125 MW electricity.

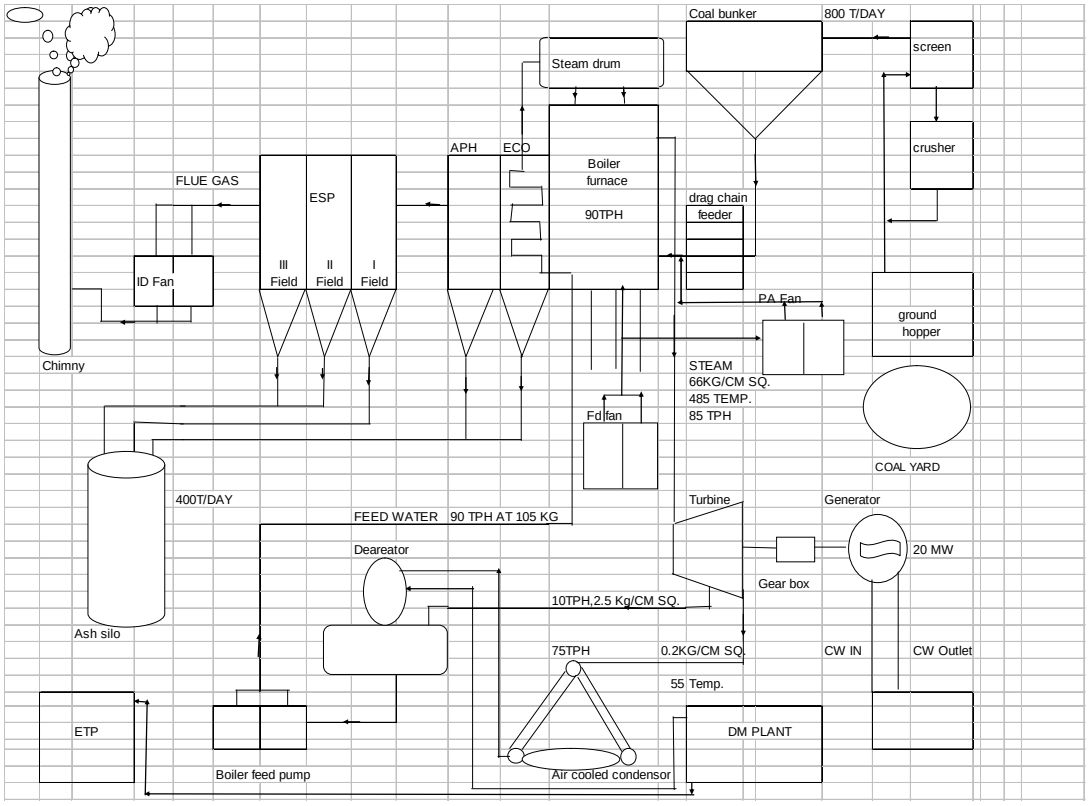


Figure 10: Process Flow of Captive Power Plant

Material Balance for Power Plant

Input	Quantity, TPA	Output	Quantity TPA
Dolochar	2,16,000	Power	50 MW
Coal	2,44,800	Fly Ash	2,49,120

4.0 SITE ANALYSIS

4.1 Connectivity

M/s. Ardent Steel Limited has an existing Iron Ore Pelletizing Plant in village Phuljhar, Tehsil :Banspal, Dist. Keonjhar, Odisha. The expansion project will come up in the existing premises. An additional 180.473 ha of land will be required for the expansion project which is just adjacent to the existing plant area. Nearest Town is Keonjhar (32 km, East) & Barbil. Nearest Railway station is Parjanpur Railway station (About 25 km, East) and the Parjanpur railway siding is being used by the company.

4.2 LAND DETAILS

The selected land is in the Village :Phuljhar, Tehsil : Banspal, Dist. Keonjhar, Odisha. Out of the proposed total land of 180.473 ha. , the proposed project will be set up in about 120 ha. The site is generally leveled. The area is not flood prone. The site terrain is generally plain requiring minimum efforts to grade them. Suitable foundation, based on soil investigation results, will be adopted.

Area statement (both existing & proposed)

Area for the existing Iron Ore Pelletizing Plant	:	36.781 ha
Area for proposed expansion project	:	180.473 ha
Total Land Area	:	217.254 Ha.
Total constructed Area	:	144.113 Ha.
Green Belt & Plantation (35% of total land area)	:	73.141 ha

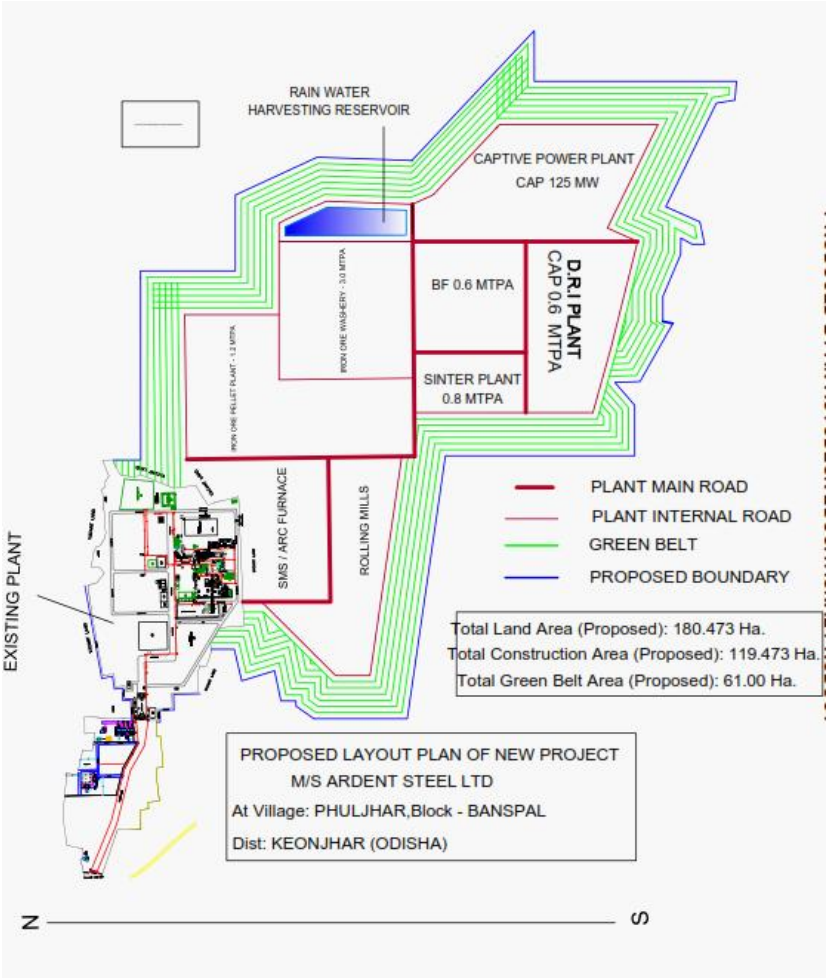


Figure 11: Revised Layout of expansion project

4.3 Existing land use pattern:

Non-agricultural land for plant site.

Protected Forests	Yes within 10 km radius study area, details in **Table 3**
National Parks	No
Wild Life Sanctuary	No
Eco Sensitive Area	No
Water Bodies	Ashokanallah(1Kms) JagadalaNadi (5.0 km NE) Baitarani River (3 km, WNW) Malda Nadi (5.2 km, NW) Kaijorha Nala (6.9 km, WNW)

5.0 CIVIL AND STRUCTURAL WORK

Civil work comprise all plant units, its auxiliaries, site leveling, roads, drainage, sewerage and all other infrastructure within the plant boundary. In general specification / details in respect of type of structures, grade of concrete, materials etc. for all major units have been assumed to be similar to standard practice of civil works.

5.1 Scope Of Major Civil Work

Scope of major civil work includes, but not limited to, the following.

RCC Stock house with charging system, plant and other miscellaneous amenity building like ECR and MCC, compressor house, etc.

5.1.1 Raw material handling system

- RCC substructures of hoppers, yard etc.
- RCC foundations for all other structures like day bins, junction houses, conveyor galleries, etc.
-

5.1.2 Other miscellaneous units

- RCC foundations for A/c and ventilation equipment, electrical equipments.
- Roads and roadside drains, culverts, etc.

5.2 Structural Work

Structural steelwork will cover all steel structures required in buildings, including crane girders, platforms, walkways, stairs, sheeting, etc., conveyor galleries, junction houses, stacks, dust catcher, pipelines and their supporting structures, and all other steel structures and sheetings required in different units envisaged for the project.

5.2.1 Concrete grade

In general following concrete grades have been assumed to be adopted.

5.3 Building Material

5.3.1 Cement

In general cement will be ordinary Portland cement conforming to IS : 269, IS 8112 & IS 12269 or Portland Pozzolana cement conforming to IS 1489.

In special cases rapid hardening portland cement, slag cement sulphate resistant cement, etc. may have to be used as per requirement.

5.3.2 Reinforcement steel for RCC

For all RCC work, generally reinforcement bars will be of high strength deformed bars conforming to IS: 1786-1985. However, for very minor structural elements like chajja, lintels, grade floor slabs, etc., MS bars conforming to IS : 432 may be used wherever considered appropriate.

All reinforcement steel will be of tested quality.

Coarse and fine aggregates will be confirming to IS 383 – Latest edition.

5.3.3 Brick masonry work

Brick will be of locally available best quality conforming to the requirements of IS : 1077 for common burnt clay building bricks.

5.3.4 Fabrication

Fabrication of structures will conform to IS:800-1984 or other relevant standards mentioned therein.

Appropriate sequence and procedure of welding will be followed during fabrication of structures so that distortions / deviations in the fabricated structures are kept to a minimum.

5.3.5 Inspection

All steel structures will be subjected to inspection for acceptance.

6.0 ENVIRONMENT MANAGEMENT

The process technology adopted for Iron Ore Beneficiation Plant, Pellet Plant, DRI, Blast Furnace, Steel Melting Shop, Rolling Mill and Power Plant are environment friendly clean technology.

6.1 Air Pollution Control Measures

Air in and over the plant area and beyond its boundaries gets polluted with gases, fumes and dust particles emanating from the processes, chimneys, transfer points of conveying and handling equipment. The air pollutants in a steel plant are mainly dust and gases like sulphur dioxide, carbon monoxide, nitrogen oxide, etc.

6.1.1 General Control Requirements during Transport of Material

The Company will take precautions to minimize visible particulate matter (dust and muck) from being deposited upon public roadways as a direct result of these operations. Precautions include removal of particulate matter from equipment before movement to paved street or prompt removal of material from paved streets by construction equipment will be removed by sweeping in a prompt matter.

The company will ensure that vehicles with an open load carrying area used for moving potentially dust-producing material will have properly fitting side and tailboards. Materials having the potential to create dust will not be loaded to a level higher than the side and tail boards, and carried in vehicles fitted with cover lids or clean tarpaulin cover in good condition. The tarpaulin will be properly extended beyond side / tail board and secured properly.

6.1.2 Control Requirement at Dumping Sites

The company will ensure to place excavated materials only on the designated storage / dumping areas inside plant premises and will place material in a manner that will minimize dust production (Orientation of stock pipes with respect to predominant wind direction). Material will be stabilized by watering or other accepted dust suppression techniques. The heights from which materials are dropped will be kept minimum (practical height to limit fugitive dust generation).

The company will stockpile building materials at designated locations by creating suitable slopes. During dry weather and windy conditions acceptable dust control methods like wind breakers by making tall boundary wall (with tin / iron / asbestos sheet), covering stockpiles with plastic sheet or tarpaulin, making asphalt roads, regular sweeping and cleaning of work areas, water sprinkling, greenery development of boundary, etc will be used to prevent any dust from bowing away and pollute the surrounding environment. The company will provide water storage tanks, pumps, pressure gauge, pipeline network with water sprinklers at strategic

points for dust suppression. Sufficient equipment spares water for dust suppression and trained personnel will be kept at the dumping site.

Spraying of water as required to suppress dust during handling of excavation soil or debris or demolition of any temporary structure will be looked after. Effective water sprays will be used during the delivery and handling of all raw sand and aggregate and other similar materials when dust is likely to be created and to dampen all stored materials during dry and windy weather. Interior areas within the sites where there is a regular movement of vehicles will have hard / stabilized surface that will be kept clear of loose surface material. If conveyors are used conveyor belts will be fitted with covers and transfer point and hopper discharge area will be enclosed to minimize dust emission. All conveyors carrying material that have the potential to create dust will be fitted with belt cleaner.

The company will restrict speed of all motorized vehicles to 15/km hr inside the work site and confine haulage and delivery vehicles to the designated roadways inside the site to minimize the fugitive dust generation.

The measures to control the air pollution will ensure the ambient air quality standards as laid down by Central Pollution Control Board (CPCB) Notification, Nov, 2009 for industrial and mixed use areas as under :

Table 8

Ambient air quality standards

SI. No.	Pollutant	Concentration,* µg/m³ 24 Hrs for industrial /rural area/residential/other area
1.	Particulate matters (Size < 10 µm)	100
2.	Particulate matters (Size < 2.5 µm)	60
3.	Sulphur dioxide	80
4.	Nitrogen dioxides	80
5.	Carbon monoxide	04

The systems proposed for the air pollution control will provide acceptable environment condition in the working area and abate air pollution in the

surrounding area of the integrated steel plant. The technological equipment and processes have been selected with the above objective. Depending upon the quality of emission from different sources, suitable air pollution control systems will be provided. The chimney heights will be as per CPCB norms to ensure Ground Level Concentration (GLC) of different pollutants within permissible limits.

Various dust collection equipment such as cyclone separators, fabric filters, ESP, etc. will be adopted to remove particulate matter from gas streams. The pollution itself will be collected through suction hoods, dust, etc. However, in order to meet the statutory GLC limits for SO_2 and NOx, suitable chimney heights will be provided for proper dispersion.

6.2 Water Pollution Control Measures

Water Reservoir will be created inside the project area during the construction stage where rainwater and surface water runoff will be collected and stored. Groundwater will be also used during the construction stage, for which permission from WRD will be obtained. The stored groundwater will be also used for various non potable requirements during the construction stage. Drainage network will be constructed to drain off all surface water from the work site into the reservoir. The drainage will be maintained removed and reinstated as required. Precautions will be taken for avoidance of damage by flooding and silt (by constructing sedimentation pits at strategic points to be identified later)

The company will collect the wastewater arising from site offices, canteens and other washing facilities in a pit and reuse it for dust suppression. Oil separator / interceptor will be provided near vehicle parking site, workshop and canteen to prevent the release of oil and grease in to drainage system. The oil and grease separators will be cleaned on regular basis.

Sewage generated from the labour colony will be treated in Sewage Treatment Plants complete with sewerage network for collection of raw sewage. The treated sewage water will be reused for gardening and horticulture purpose.

The measures envisaged for water pollution are expected to contain the water pollution within tolerance limits as specified in IS: 2490 (Part-1), IS: 3307, IS: 4764

and other related statutory norms. The pollutants present in the waste water will be reduced to acceptable levels by adoption of the following schemes in general.

- Recirculating water in the process whereby discharge volume is considerably reduced.
- Providing adequate treatment units removal of the suspended and colloidal matter.
- Neutralization of acidic water by lime.
- Removal of oil and grease from the contaminated water by means of oil traps and skimming devices.
- Treatment of fecal sewage in a sewage treatment plant and removal of sludge after biological treatment.

Air and water pollution control facilities envisaged for different plant units.

6.3 Noise Pollution Control Measures

The company will make and bring into use reasonable efforts to minimize construction noise levels. Truck loading, unloading and hauling operations so as to minimize noise impact near surrounding villages will be properly scheduled. Vehicular movement during night time will be avoided. Machinery that emits noise in one specific direction would where possible be oriented in a direction away from noise sensitive receptor. Silencers and mufflers on construction equipment, wherever required, will be properly fitted and maintained.

6.4 Solid Waste Management

The company will make inventory of all types of solid waste that are expected during the construction activity before standing the work. The transportation of construction spoil will be allowed only to designed dumpsites. Careful design, planning and good site management would minimize waste of materials such as concrete, mortars and cement grouts. Construction waste will be segregated as much as possible at site itself to increase the feasibility of recycling concrete and masonry as filling material and steel pieces as saleable scrap. Litter disposal and collection points will be established sound the construction work sites.

Domestic garbage will be generated during the construction and operating stage. The garbage will be collected in containers and segregated at source. Biodegradable

material (organic waste) will be used for composting. Recyclable material (Metal, Plastic, glass, paper, packaging material, etc) will be given to recycles.

The various waste materials arising out of the technological processes, would be reutilized to the extent possible. The solid wastes containing significant iron content (but not heavy metals, oil, lubricants, etc.) will be reused in the sinter plant. The blast furnace slag will be granulated and given for cement making. Coal ash will be utilized for cement making, brick making, low /waste land reclamation, etc. and the unutilized portion will be used to backfill nearby abandoned mines. Unutilized solid wastes will be stored in the dump yard. Soiled cotton / cloth wastes (generated during cleaning of machines and equipment) will be collected in bins burnt in the boilers of power plant. Electric wastes and used batteries will be collected and given to authorized recyclers. Domestic garbage will be collected from the township and plant in containers; biodegradable, inserts and non-biogradable materials in segregated manner. The biodegradable material will be composed and used as manure inside the premises. Recyclable materials like packaging materials, empty drums, bottles, glass, metals, paper, plastic, etc. will be given to recyclers. Non-recyclable materials will be disposed in sanitary landfill sites as per the local laws and regulations.

6.5 Various Dust Extraction And Dust Suppression Systems

Various dust extraction and dust suppression systems envisaged are in indicated below:-

Table 9

Dust extraction system

Unit	Facilities
Iron Ore Pellet Plant	ESP, Bag Filter, Chimney
Iron Ore Beneficiation Plant	Mist Water Spray System
DRI Plant	Bag Filter, ESP, Chimney
Pig Iron Blast Furnace	The BF top gas will be cleaned in dust catcher and gas cleaning system.
Sinter Plant	ESP & Bag Filters.
Steel Melting Shop	Suction Hood, Bag filter

Rolling Mill	Air Heating Recuperator, Chimney
Captive Power Plant	Dust Suppression System, Dust Collectors, ESP, Chimney

However, in order to meet the statutory ground level concentration limits for SO_2 ,NOx and other gaseous pollutants, suitable stack heights will be provided for proper dispersion. All stack will be provided with port hole and working platform so that stack monitoring can be done as per norms of statutory authority.

The collected dust from bag filters and scrubbers will be transported to near by material handling system.

6.6 Ventilation And Air Conditioning

Environment management, in a steel plant, encompasses ventilation, air-conditioning and pollution control facilities. Ventilation and air-conditioning systems are proposed to provide proper working conditions necessary for maintaining environment compatible with human hygienic requirements and to maintain conditions necessary for proper storage of materials and working of plant and equipment. The ventilation and air-conditioning systems generally include one or more items of equipment and accessories such as fans, air filters, air-conditioning units, duct work, pumps, cooling tower, air supply grills, dampers, insulation, instrumentation and controls, electrics, etc. Ventilation and air-conditioning systems will be provided with adequate measures for safety and fire fighting for fire hazardous areas and will be of flame proof/explosion proof construction.

Ventilation and air-conditioning system will be designed considering the climatic conditions prevailing in the region and systems will generally be installed in separate plant rooms independent of the served premises. The plant rooms will be provided integral with and adjacent to the served premises at proper locations on considerations of convenience of routing of ducts/pipes, availability of fresh uncontaminated air and creating least disturbance to the adjacent premises in terms of vibration and noise.

Ventilation and air-conditioning systems will be provided with adequate measures for safety and fire fighting for fire hazardous area and shall be of flame proof/explosion proof construction. Recalculating water in the process whereby

discharge volume is considerably reduced.

6.6.1 Ventilation Facilities

Buildings and shops will generally be provided natural ventilation. Mechanical ventilation will be provided for premises where adequate ventilation cannot be provided by natural means alone. Depending upon the specific requirement, the shops / buildings will be provided with either exhaust ventilation or plenum ventilation. The system design will take into account the requirements of air change as well as excess heat removal. Filters will be provided with plenum systems. By plenum ventilation, the served premises will be pressurised to 2-3 mm WC to avoid ingress of dusty air. Hot work areas will be provided with portable man-coolers for spot cooling. Man-coolers will be provided also in a few other areas where the premises are manned and have high heat radiation. The details and types of system proposed will be as shown in the following table.

Sl. No.	Location/shop	Facilities
1.	Electrical premises of all areas including switch gear rooms, cable basements of electrical sub stations, tunnels and HT/LT hydraulic rooms/Motor room	Pressurized ventilation with washed air
2.	Compressed air stations	Exhaust ventilation
3.	Battery rooms	Exhaust ventilation
4.	Pump houses	Exhaust ventilation
5.	Toilets/stores rooms	Exhaust ventilation
6.	Repair shops and other hot working spots	Portable ventilation using man coolers
7.	Transformer rooms in SMS area	Pressurized ventilation with Tube Axial fan and filter

6.6.2 Air Conditioning Facilities

Premises requiring stringent environmental conditions of temperature and humidity will be air conditioned. Room air conditioners, package air conditioners will be provided for air conditioning of these premises; the selection depends on the specific requirement of the application in terms of cooling capacity, temperature, humidity and freedom from dust. The instrument control rooms will be generally maintained at a temperature of 23 ± 2 Deg C and relative humidity

55 ± 10%. Dust concentration will not exceed 0.1 mg/m3. Office rooms / Rooms of In-charges will be provided with room air conditioners for personal comfort. The types of air conditioning system proposed are as indicated below.

Sl. No.	Location/shop	Facilities
1.	Control rooms for SMS, boiler plant, compressed air station and laboratories	Central/package type air conditioning system with 100% standby
2.	Office rooms	Window air conditioners

6.7 Fire Protection System

Fire protection system for the integrated steel and power plant comprises an elaborate network of fire brigades, water reservoir, pumps, hydrants, fire engines, sprinkler system, fire alarms, smoke and heat detectors, etc. Portable fire extinguishers of various capacities containing agents such as CO2, DCP etc and will be located at strategic points of the plant. In view of vulnerability to fire, effective preventive and design measures will be taken to minimize fire hazard. The following areas in the plant are mainly susceptible to fire.

- Capable galleries.
- Electrical switchgear/MCC room
- Coal handling areas; conveyors, transfer points, tunnels and storage yard.
- Transformers and turbine oil tank
- Liquid fuel storage tank

For containment of fire and preventing it from spreading in cable galleries, section wise fire barriers with self-closing fire resistant doors will be improved. The ventilation systems, if any, provided in cable galleries will be interlocked with the fire alarm system, so that in the event of a fire, the ventilation system will be automatically switched off. In order to avoid spreading of fire, all cable entries/openings in cable galleries, tunnels, channels, floors, barriers etc. will be sealed with non-inflamable /fire resistant sealing materials. For detection and protection of the plant against fire hazard any one or a combination of the following systems will protect susceptible.

Manual medium velocity spray system will be provided for protection of fuel oil and turbine oil storage tanks and coal conveyor galleries. Water for hydrant, spray and sprinkler systems will be supplied from the fire water pumps located in fire water pump house adjacent to Raw Water Reservoir. Adequate number of portable and mobile chemical fire extinguishers will be provided at strategic locations throughout the plant. Fire detection and alarm system will be provided to detect smoke in vulnerable areas of the plant through smoke detectors.

6.8 GREENBELT DEVELOPMENT PLANT

6.8.1 Existing Green Belt

Adequate green belt has already been developed in and around the existing plant premises. Locally available types of sufficient trees which are resistant to pollutants are and will be planted. Out of the existing 36.781 ha. of land, green belt is developed in 12.141 ha i.e 35% of the existing land area. Local species are used in green belt.

Photographs Showing Existing Green Belt

6.8.2 Proposed Green Belt

Additional 180 ha of land will be acquired for the proposed expansion project. Out of 180 ha, about 61 ha of land will be developed as green belt i.e about 34% of the total area.

Extensive green belt development will be started during the construction phase, which will continue till the operation of the plant. About 1000-1500 trees will be planted per hectare all around the plant, approach roads and township premises. Locally available types of trees which are resistant to pollutants will be planted. In addition to above, all open spaces available within the premises will be developed as nursery, park, gardens and other forms of greenery. 30-50 m wide greenbelt will be developed along the plant premises, as per land available. A nursery will be developed where 100,000 saplings will be raised every year for plantation purpose. Apart from greenbelt, extensive lawns, gardens and approach road-side plantation will be carried out at all vacant spaces inside the plant premises.

The main objective of the green belt is to provide a barrier between the source of pollution and the surrounding areas

7.0 PROJECT SCHEDULE AND COST ESTIMATES

The Capital Cost of the project is Rs 3831.37crores of which adequate funds will be allocated towards Environmental Protection.

The Project from concept stage to commissioning is being envisaged in three phases. Services of experienced consultants will be utilized for detailed planning, preparation of techno-economic feasibility report and other associated activities like discussions with financial institutions, phasing of capital expenditure etc. Considering the existing expertise of the company, the company expects to adhere to the schedule. However, the implementation primarily will depend upon the allotment of land by the State Government and statutory clearances including environmental clearances.

The main plant works will be entrusted to experienced and reputed Contractors who will be totally responsible for timely execution, quality assurance and project performance guarantees. Certain non-plant work will be executed directly by ASL.
If the environmental clearances is taken as the zero date, then the implementation schedule of installation & commissioning of the project will be as follows :

	Completion date
Company formation	Existing
Procurement of land	Acquired / under acquisition
Iron Ore Beneficiation	Within 5 years from zero date.
Iron Ore Pellet Plant	
DRI Plant	
Pig Iron Blast Furnace	
Sinter Plant	
Steel Melting Shop	
Rolling Mill	
Captive Power Plant	

8.0 CONCLUSION

The project activity and the management will support the local government bodies and provide other form of assistance for the development of public amenities in the region and will help in improving the overall status of the area by providing employment to local people. With the coming up of this project, infrastructure of the area will improve.. There shall be no effluent discharge from the plant activity, and solid waste generated shall be recycled for building materials/ road development works, Pollution Control measures shall be rightly installed for air pollution management. In addition various other Environment protection measures as per the Environment Management Plan shall be undertaken, which will mitigate the impact on the environment of the area.

CONSENT ORDER

BY REGD. POST WITH AD

STATE POLLUTION CONTROL BOARD, ODISHA

[DEPARTMENT OF FOREST & ENVIRONMENT, GOVERNMENT OF ODISHA]
Paribesh Bhawan, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar-751012
Phone-2561909, Fax: 2562822, 2560955

CONSENT ORDER

No. 15384 / IND-I-CON-6363 Dt. 22.09.14 /

CONSENT ORDER NO. 2716

Sub : **Consent for discharge of sewage and trade effluent under section 25/26 of Water (PCP) Act, 1974 and for existing / new operation of the plant under section 21 of Air (PCP) Act, 1981.**

Ref : Your application No. **ASL/Pollution/ 2014-2015, dtd.20.09.2014**

Consent to operate is hereby granted under section 25/26 of Water (Prevention & Control of Pollution) Act, 1974 and under section 21 of Air (Prevention & Control of Pollution) Act, 1981 and rules framed thereunder to

Name of the Industry **M/s. Ardent Steel Ltd., Phuljhar, Suakati, Keonjhar**

Name of the Occupier & Designation **Sri Hari Om Haritash**

Address: **Plot No. 208, New Colony, Jamuhata, Dist – Keonjhar**

This consent order is valid for the period up to **31.03.2015**

This consent order is valid for the product quantity, specified outlets, discharge quantity and quality, specified chimney/stack, emission quantity and quality of emissions as specified below. This consent is granted subject to the general and special conditions stipulated therein.

A. Details of Products Manufactured

Sl.No.	Product	Quantity
1.	*Iron Ore Pellet*	*50,000 MT/Month*
2.	*Producer Gas*	*25,800Nm^3/Hr*

B. Discharge permitted through the following outlet subject to the standard

Outlet No.	Description of outlet	Point of discharge	Quantity of discharge KLD or KL/hr	Pre-scribed Standard				
				pH	TSS (mg/L)	Oil & Grease (mg/L)	BOD (mg/L)	COD (mg/L)
1.	Out let of settling chamber Domestic effluents	Recycled back to process Discharge to soak pit	-	-	-	-	-	-
2.	-	-	-	-	-	-	-	-

C. Emission permitted through the following stack subject to the prescribed standard

Chimney Stack No.	Description of Stack	Stack height (m)	Quantity of emission	Prescribed Standard				
				PM	SO_2	NO_x		
1	The detail of stack is mentioned In special conditions under Air.	-	-	-	-	-	-	-

D. Disposal of solid waste permitted in the following manner

Sl.No.	Type of Solid waste	Quantity generated (TPD)	Quantity to be reused on site(TPD)	Quantity to be reused off site(TPD)	Quantity disposed off (TPD)	Description of disposal site.
1.	-	-	-	-	-	-

CONSENT ORDER

E. GENERAL CONDITIONS FOR ALL UNITS

1. The consent is given by the Board in consideration of the particulars given in the application. Any change or alternation or deviation made in actual practice from the particulars furnished in the application will also be the ground liable for review/variation/revocation of the consent order under section 27 of the Act of Water (Prevention & Control of Pollution) Act, 1974 and section 21 of Air (Prevention & Control of Pollution) Act, 1981 and to make such variations as deemed fit for the purpose of the Acts.

2. The industry would immediately submit revised application for consent to operate to this Board in the event of any change in the quantity and quality of raw material / and products / manufacturing process or quantity /quality of the effluent rate of emission / air pollution control equipment / system etc.

3. The applicant shall not change or alter either the quality or quantity or the rate of discharge or temperature or the route of discharge without the previous written permission of the Board.

4. The application shall comply with and carry out the directives/orders issued by the Board in this consent order and at all subsequent times without any negligence on his part. In case of non-compliance of any order/directives issued at any time and/or violation of the terms and conditions of this consent order, the applicant shall be liable for legal action as per the provisions of the Law/Act.

5. The applicant shall make an application for grant of fresh consent at least 90 days before the date of expiry of this consent order.

6. The issuance of this consent does not convey any property right in either real or personal property or any exclusive privileges nor does it authorize any injury to private property or any invasion of personal rights, nor any infringement of Central, State laws or regulation.

7. This consent does not authorize or approve the construction of any physical structure or facilities or the undertaking of any work in any natural water course.

8. The applicant shall display this consent granted to him in a prominent place for perusal of the public and inspecting officers of this Board.

9. An inspection book shall be opened and made available to Board's Officers during the visit to the factory.

10. The applicant shall furnish to the visiting officer of the Board any information regarding the construction, installation or operation of the plant or of effluent treatment system / air pollution control system / stack monitoring system any other particulars as may be pertinent to preventing and controlling pollution of Water / Air.

11. Meters must be affixed at the entrance of the water supply connection so that such meters are easily accessible for inspection and maintenance and for other purposes of the Act provided that the place where it is affixed shall in no case be at a point before which water has been taped by the consumer for utilization for any purposes whatsoever.

12. Separate meters with necessary pipe-line for assessing the quantity of water used for each of the purposes mentioned below:

    a) Industrial cooling, spraying in mine pits or boiler feed.

    b) Domestic purpose

    c) Process

13. The applicant shall display suitable caution board at the face where the effluent is entering into any water-body or any other place to be indicated by the Board, indicating therein that the area into which the effluents are being discharged is not fit for the domestic use/bathing.

14. Storm water shall not be allowed to mix with the trade and/or domestic effluent on the upstream of the terminal manholes where the flow measuring devices will be installed.

15. The applicant shall maintain good house-keeping both within the factory and the premises. All pipes, valves, sewers and drains shall be leak-proof. Floor washing shall be admitted into the effluent collection system only and shall not be allowed to find their way in storm drains or open areas.

16. The applicant shall at all times maintain in good working order and operate as efficiently as possible all treatment or control facilities or systems install or used by him to achieve with the term(s) and conditions of the consent.

17. Care should be taken to keep the anaerobic lagoons, if any, biologically active and not utilized as mere stagnation ponds. The anaerobic lagoons should be fed with the required nutrients for effective digestion. Lagoons should be constructed with sides and bottom made impervious.

18. The utilization of treated effluent on factory's own land, if any, should be completed and there should be no possibility of the effluent gaining access into any drainage channel or other water courses either directly or by overflow.

19. The effluent disposal on land, if any, should be done without creating any nuisance to the surroundings or inundation of the lands at any time.

20. If at any time the disposal of treated effluent on land becomes incomplete or unsatisfactory or create any problem or becomes a matter of dispute, the industry must adopt alternate satisfactory treatment and disposal measures.

21. The sludge from treatment units shall be dried in sludge drying beds and the drained liquid shall be taken to equalization tank.

22. The effluent treatment units and disposal measures shall become operative at the time of commencement of production.

23. The applicant shall provide port holes for sampling the emissions and access platform for carrying out stack sampling and provide electrical outlet points and other arrangements for chimneys/stacks and other sources of emissions so as to collect samples of emission by the Board or the applicant at any time in accordance with the provision of the Act or Rules made therein.

24. The applicant shall provide all facilities and render required assistance to the Board staff for collection of samples / stack monitoring / inspection.

CONSENT ORDER

25. The applicant shall not change or alter either the quality or quantity or rate of emission or install, replace or alter the air pollution control equipment or change the raw material or manufacturing process resulting in any change in quality and/or quantity of emissions, without the previous written permission of the Board.

26. No control equipments or chimney shall be altered or replaced or as the case may be erected or re-erected except with the previous approval of the Board.

27. The liquid effluent arising out of the operation of the air pollution control equipment shall be treated in the manner and to ion of standards prescribed by the Board in accordance with the provisions of Water (Prevention and Control of Pollution) Act, 1974 (as amended).

28. The stack monitoring system employed by the applicant shall be opened for inspection to this Board at any time.

29. There shall not be any fugitive or episodal discharge from the premises.

30. In case of such episodal discharge/emissions the industry shall take immediate action to bring down the emission within the limits prescribed by the Board in conditions/stop the operation of the plant. Report of such accidental discharge /emission shall be brought to the notice of the Board within 24 hours of occurrence.

31. The applicant shall keep the premises of the industrial plant and air pollution control equipments clean and make all hoods, pipes, valves, stacks/chimneys leak proof. The air pollution control equipments, location, inspection chambers, sampling port holes shall be made easily accessible at all times.

32. Any upset condition in any of the plant/plants of the factory which is likely to result in increased effluent discharge/emission of air pollutants and / or result in violation of the standards mentioned above shall be reported to the Headquarters and Regional Office of the Board by fax / speed post within 24 hours of its occurence.

33. The industry has to ensure that minimum three varieties of trees are planted at the density of not less than 1000 trees per acre. The trees may be planted along boundaries of the industries or industrial premises. This plantation is stipulated over and above the bulk plantation of trees in that area.

34. The solid waste such as sweeping, wastage packages, empty containers residues, sludge including that from air pollution control equipments collected within the premises of the industrial plants shall be disposed off scientifically to the satisfaction of the Board, so as no to cause fugitive emission, dust problems through leaching etc., of any kind.

35. All solid wastes arising in the premises shall be properly classified and disposed off to the satisfaction of the Board by :

i) Land fill in case of inert material, care being taken to ensure that the material does not give rise to leachate which may percolate into ground water or carried away with storm run-off.
ii) Controlled incineration, wherever possible in case of combustible organic material.
iii) Composting, in case of bio-degradable material.

36. Any toxic material shall be detoxicated if possible, otherwise be sealed in steel drums and buried in protected areas after obtaining approval of this Board in writing. The detoxication or sealing and burying shall be carried out in the presence of Board's authorized persons only. Letter of authorization shall be obtained for handling and disposal of hazardous wastes.

37. If due to any technological improvement or otherwise this Board is of opinion that all or any of the conditions referred to above requires variation (including the change of any control equipment either in whole or in part) this Board shall after giving the applicant an opportunity of being heard, vary all or any of such condition and thereupon the applicant shall be bound to comply with the conditions so varied.

38. The applicant, his/heirs/legal representatives or assignees shall have no claim whatsoever to the condition or renewal of this consent after the expiry period of this consent.

39. The Board reserves the right to review, impose additional conditions or condition, revoke change or alter the terms and conditions of this consent.

40. Notwithstanding anything contained in this conditional letter of consent, the Board hereby reserves to it the right and power under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 to review any and/or all the conditions imposed herein above and to make such variations as deemed fit for the purpose of the Act by the Board.

41. The conditions imposed as above shall continue to be in force until revoked under section 27(2) of the Water (Prevention & Control of Pollution) Act, 1974 and section 21 A of Air (Prevention & Control of Pollution) Act, 1981.

42. In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

43. The industry shall comply to all the conditions stipulated under Charter on Corporate Responsibility for Environmental Protection (CREP) guidelines in a time bound manner as envisaged there in. (if applicable)

44. The industry shall comply to the conditions stipulated in CTE order issued by Odisha State Pollution Control Board and conditions stipulated in Environmental Clearances issued by MoEF, Govt. of India.

45. The industry shall abide by E(P) Act, 1986 and Rules framed there-under.

46. The Board reserves the right to revoke/refuse consent to operate at any time during period for which consent is granted in case any violation is observed and to modify/ stipulate additional conditions as deemed appropriate.

CONSENT ORDER

GENERAL CONDITIONS FOR UNITS WITH INVESTMENT OF MORE THAN Rs 50 CRORES, AND 17 CATEGORIES OF HIGHLY POLLUTING INDUSTRIES (RED A).

1. The applicant shall analyse the emissions every month for the parameters indicated in TABLE .B & C as mentioned in this order and shall furnish the report thereof to the Board by the 10th of the succeeding month.

2. The applicant shall provide and maintain at his own cost three ambient air quality monitoring stations for monitoring Suspended Particulate Matter, Sulphor Dioxide, Oxides of Nitrogen, Hydro-Carbon, Carbon-Monixide and monitor the same once in a day/week/fortnight/month. The data collected shall be maintained in a register and a monthly extract be furnished to the Board.

3. The applicant shall provide and maintain at his own cost a meteorological station to collect the data on wind velocity, direction, temperature, humidity, rainfall, etc. and the daily reading shall be recorded and the extract sent to the Board once in a month.

4. The applicant shall forward the following information to the Member Secretary, State Pollution Control Board, Odisha, Bhubaneswar regularly.
   a. Report of analysis of stack monitoring, ambient air quality monitoring meteorological data as required every month.
   b. Progress on planting of trees quarterly.

5. The applicant shall install mechanical composite sampling equipment and continuous flow measuring / recording devices on the effluent drains of trade as well as domestic effluent. A record of daily discharge shall be maintained.

6. The following information shall be forwarded to the Member Secretary on or before 10th of every month.
   a. Performance / progress of the treatment plant.
   b. Monthly statement of daily discharge of domestic and/or trade effluent.

7. **Non-compliance with effluent limitations**

   a) If for any reason the applicant does not comply with or is unable to comply with any effluent limitations specified in this consent, the applicant shall immediately notify the consent issuing authority by telephone and provide the consent issuing authority with the following information in writing within 5 days of such notification.

      i) Causes of non-compliance

      i) A description of the non-compliance discharge including its impact on the receiving waters.

      ii) Anticipated time of continuance of non-compliance if expected to continue or if such condition has been corrected the duration or period of non-compliance.

      iii) Steps taken by the applicant to reduce and eliminate the non-complying discharge and

      iv) Steps to be taken by the applicant too prevent the condition of non-compliance.

   b) The applicant shall take all reasonable steps to minimize any adverse impact to natural waters resulting from non-compliance with any effluent limitation specified in this consent including such accelerated or additional monitoring as necessary to determine the nature and impact of the non-complying discharge.

   c) Nothing in this consent shall be construed to relieve the applicant from civil or criminal penalties for non-compliance whether or not such non-compliance is due to factors beyond his control, such as break-down, electric failure, accident or natural disaster.

8. The applicant shall at his own cost get the effluent samples collected both before and after treatment and get them analysed at an approval laboratory every month for the parameters indicated in Part-D and shall submit in duplicate the report thereof to the Board.

9. The addition of various treatment chemicals should be done only with mechanical dosers and proper equipment for regulation of correct dosages determined daily and for proper uniform feeding. Crude practices such as dumping of chemicals in drains or sumps or trickling of acids or alkalies arbitrarily and utilizing poles for stirring etc. should not be resorted to.

10. In the disposal of treated effluent on land for irrigation, the industry shall keep in view of the need for;

    a) Rotation of crops

    b) Change of point of application of effluent on land

    c) A portion of land kept fallow.

11. The adoption of these would avoid soil becoming sick or slate, the industry may ensure this in consultation with the Agriculture Department.

12. It is the sole responsibility of the industry to ensure that there are no complaints at any time from the royats in the surrounding areas as a result of discharge of sewage or trade effluent if any.

13. Proper housekeeping shall be maintained by a dedicated team.

14. The industry must constitute a team of responsible and technically qualified personnel who will ensure continuous operation of all pollution control devices round the clock (including night hours) and should be in a position to explain the status of operation of the pollution control measures to the inspecting officers of the Board at any point of time. The name of these persons with their contact telephone numbers shall be intimated to the concerned Regional Officer and Head Office of the Board and in case of any change in the team it shall be intimated to the Board immediately.

F. SPECIAL CONDITIONS : (AIR POLLUTION CONTROL)

1. Adequate air pollution control measures shall be taken at raw material handling, product handling and other potential dust generating points to control fugitive emission.
2. The unit shall operate air pollution control devices properly with adequate stack height at all sources of emissions so as to meet the prescribed standard for particulate matter emission as follows :

LIST OF AIR POLLUTION CONTROL EQUIPMENTS

Sl. No.	Physical Location	Equipment System description	Prescribed norm (mg/Nm^3)	Stack height (mtrs)
1.	Proportioning system	Pulse jet bag filter	100	30mt
2.	Raw material transfer point of mixer	Pulse jet bag filter	100	30mt
3.	Ball mill (cool grinding)	Pulse jet bag filter	100	30mt
4.	Ball mill (Flux and Coke grinding)	Pulse jet bag filter	100	30mt
5.	Pulverized coal injection system	Pulse jet bag filter	100	30mt
6.	Finished product transfer points and plant de-dusting system	Pulse jet bag filter	100	30mt
7.	Travelling grate and rotary kiln	ESP	100	50mt

3. The unit shall provide adequate dust suppression system at all potential dust generation points of coal handling system.
4. The unit shall adopt adequate safety measures to prevent CO emissions..
5. The ash generated shall be used as binder in pellet plant. The excess shall be dumped in an area earmarked for the same. Sprinkling arrangement shall be provided so that the ash does not become air borne during dry season.
6. Fixed type water sprinklers shall be provided at coal unloading, stock pile area, other work zone area to control fugitive emission.
7. The internal roads shall be black topped, permanent high pressure water spraying system shall be installed for regular spraying of water on roads and work zone to minimize fugitive emission.

8. The height of the stack connected to DG set shall conform to the following

   $H = h+0.2\sqrt{KVA}$

   h= Height of the building where it is installed in meter

   KVA = Capacity of DG set

   H = Height of the stack in meter above ground level.

G. SPECIAL CONDITIONS : (WATER POLLUTION CONTROL)

1. Cooling tower blow down water shall be taken to storage pond and shall be used in green pellet making / dust suppression.
2. Wastewater generated from soft water plant shall be treated in settling pit and shall be reused for dust suppression.
3. The wastewater generated in slurry form from rotary dryer, indorating furnaces transfer points, pellet screens circuit etc. shall be treated in two nos. of thickener and supernatant shall be reused. Thickener underflow shall be taken to vacuum disc filter from where filter cake shall be separate and leachate shall be collected in sump.
4. The unit shall provide garland drain around raw material and product stock yard. Run off generated from the area shall be passed through settling pit.
5. The unit shall provide a sewage treatment plant within 6 months for treatment of domestic effluent generated from the colony and plant buildings. Unit shall furnish the proposal to the Board in this regard as a compliance. The treated wastewater shall be re-used for gardening and plantation
6. There shall not be any discharge of phenolic wastewater from the catchment pit. The wastewater generated from the sealing of producer gas plant shall be recycled back to the process after separation of tar.
7. The tar generated if any shall be disposed off in a concrete pit under a cover shed.
8. The unit shall develop a thick green belt around the factory premises.
9. Rain water harvesting shall be followed by utilizing the rain water collected from the roof of the administrative buildings for recharging of ground water within the premises as per the concept and practices prescribed by CPCB.

H. SPECIAL CONDITIONS (OTHERS)

01) In case the consent fee is revised upward during this period, the industry shall pay the differential fees to the Board (for the remaining years) to keep the consent order in force. If they fail to pay the amount within the period stipulated by the Board the consent order will be revoked without prior notice.

CONSENT ORDER

02) The Board reserves the right to revoke / refuse consent to operate / to modify or stipulate additional conditions as deemed appropriate at any time during period for which consent is granted.

The occupier must comply with the conditions stipulated in section A,B,C,D,E,F, G & H to keep this consent order valid.

To

The Director,
M/s Ardent Steel Ltd.,
At/Po – Phuljhar, Via – Suakati,
Dist – Keonjhar

SR. ENV. SCIENTIST-L1 (PCP)
STATE POLLUTION CONTROL BOARD, ODISHA

Memo No._____/Dt._____/

Copy forwarded to :

i) Regional Officer, State Pollution Control Board, **Keonjhar**
ii) District Collector, **Keonjhar**
iii) DFO, **Keonjhar**
iv) DDM, Mines, **Joda, Keonjhar**
v) Cess Section (Head Office)
vi) Consent Register
vii) H.S.M. Cell, (Head Office)

SR. ENV. SCIENTIST-L1 (PCP)
STATE POLLUTION CONTROL BOARD, ODISHA

भारत सरकार
केन्द्रीय भूमि जल प्राधिकरण
जल संसाधन मंत्रालय

Government of India
Central Ground Water Authority
Ministry of Water Resources

Superintending Hydrogeologist

CGWA/IND/Proj/2014- 45 -R

Dated:- 20 NOV 2014

No.21-4(70)/SER/CGWA/2008- 1903

To,

M/s Ardent Steel Ltd.,
Plot No. 208, New Colony,
Jamuhata, Keonjhar-758001,
Odisha

Sub:- Renewal of NOC for ground water withdrawal to M/s Ardent Steel Ltd., for their existing iron ore pelletization plant located at Village Phuljhar, Block Banspal, District Keomjhar, Odisha -reg.

Refer to your application dated 28.6.2013 on the above cited subject. Based on recommendations of Regional Director, CGWB, South Eastern Region, Bhubaneswar vide his office letter No. 5-22/SER/CGWA/2013-702 dated 29.7.2014 and subsequent letter dated 22.10.2014 and further deliberations on the subject, the further renewal of NOC issued vide this office letter of even no. dated 15.9.2008, is hereby accorded to **M/s Ardent Steel Ltd., for their existing iron ore pelletization plant located at Village Phuljhar, Block Banspal, District Keomjhar, Odisha**. The renewal is however subject to the following conditions:-

1. The firm may continue to abstract **500 m^3/day** (and not exceeding 1,72,005 m^3/year) of ground water through existing three (3) borewells only. No additional ground water abstraction structures to be constructed for this purpose without prior approval of the CGWA.
2. The firm will continue to provide data of ground water extraction on regular basis, at least once in a month to the Regional Director, Central Ground Water Board, South Eastern Region, Bhubaneswar. The ground water quality to be monitored twice in a year during pre monsoon and post monsoon periods
3. **M/s Ardent Steel Ltd.,** shall, continue implementing ground water recharge measures for augmenting the ground water resources in consultation with the Regional Director, Central Ground Water Board, South Eastern Region, Bhubaneswar.

4. The firm shall continue to execute ground water regime monitoring programme in and around the project area through piezometers on regular basis in consultation with the Central Ground Water Board, South Eastern Region, Bhubaneswar.
5. The ground water monitoring data in respect of S. No. 2 & 4 to be submitted to Central Ground Water Board, South Eastern Region, Bhubaneswar on regular basis at least once in a year.
6. The firm shall ensure proper recycling and reuse of waste water after adequate treatment.
7. Action taken report in respect of S.N o. 1 to 6 may be submitted to CGWA within one year period.
8. The renewal is liable to be cancelled in case of non-compliance of any of the conditions as mentioned in S. No. 1 to 7.
9. This NOC is subject to prevailing Central/State Government rules/laws or Court orders related to construction of tubewell/ground water withdrawal/construction of recharge or conservation or conservation structures/discharge of effluents or any such matter as applicable.
10. This NOC does not absolve the applicant / proponent of his obligation / requirement to obtain other statutory and administrative clearances from other statutory and administrative authorities.
11. The NOC does not imply that other statutory / administrative clearances shall be granted to the project by the concerned authorities. Such authorities would consider the project on merits and be taking decisions independently of the NOC.
12. This renewal is valid for three years from date of issuance of this letter.

Superintending Hydrogeologist

Copy to:

1. The Member Secretary, State Pollution Control Board, Orissa, A/118, Nilakantha Nagar, Unit-VIII, Bhubaneswar, Orissa.
2. The Director, Ministry of Environment & Forests, (I.A. Division), Paryavaran Bhawan, CGO Complex, Lodhi Road, New Delhi-110003.
3. The Regional Director, Central Ground Water Board, South Eastern Region, Bhubaneswar for information and necessary action. This has reference to your letter No. 5-22/SER/CGWA/2013-702 dated 29.7.2014 and subsequent letter dated 22.10.2014.
4. The District Collector, Keonjhar District, Odisha.
5. TS to the Chairman, CGWB, NH-IV, Faridabad.
6. Guard File 2014-15.

Superintending Hydrogeologist