



OFFICE OF THE DISTRICT MAGISTRATE & COLLECTOR, JHARSUGUDA

No. _____/G&M Dated : _____

To
The Director,
Forest and Environment Department, Govt. of Odisha
Bhubaneswar

Sub: Submission of final report of the District Level Committee on status of implementation of action plan for abatement of pollution in critically polluted area - Reg.

Sir,

With reference to the above cited subject, please find enclosed herewith the final report of the District Level Committee on status of implementation of action plan for abatement of pollution in critically polluted area for your kind perusal.

Encl.: As above

Yours faithfully,

sd/-
Collector, Jharsuguda

Memo No. 3757/G&M

Dt. 26.04.2018

Copy forwarded to the Member Secretary, State Pollution Control Board, Bhubaneswar for kind information and necessary action. This is with reference to his letter No.6185, dtd.02.05.2017.

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Collector, Jharsuguda

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Report of the District Level Committee on Status of Implementation of Action Plan for Abatement of Pollution in Critically Polluted Area

As per the mandates of the MoEF&CC, Govt. of India for the implementation of action plan prepared by State Pollution Control Board, Odisha and Central Pollution Control Board for the abatement of pollution in the Ib Valley – Jharsuguda Critically Polluted Area, Forest & Env. Dept constituted a separate District Level Committee for Ib Vallley, Jharsuguda vide Government Notification No.1926, dtd.19.10.2016. As per the notification, Collector & District Magistrate, Jharsuguda has nominated two prominent senior citizens of Jharsuguda as member of the District Level Committee.

Following are the members of District Level Committee for Jharsuguda Area:

1. Collector & District Magistrate, Jharsuguda : Chairman
2. Prof. D.R.Naik, Former Vice-Chancellor, Sambalpur University & Honorary Wildlife Warden, Jharsuguda : Member
3. Sri Balgobind Mishra, President, Senior Citizen Association, Jharsuguda : Member
4. General Manager, DIC, Jharsuguda : Member
5. Deputy Director, Mines, Sambalpur : Member
6. Regional Officer, SPCB, Jharsuguda : Member-Convener

This District Level Committee has been formed to follow-up the implementation of the Action Plan as envisaged in the final report “Action Plan for abatement of Pollution in critically polluted industrial clusters of Ib Valley-Jharsuguda areas” for the industries and mines in Jharsuguda areas.

Inspection Schedule:

All industries, mines and municipalities were informed by the Regional Officer, State Pollution Control Board, Odisha, Jharsuguda vide memo No.1161. dtd.05.09.2017 that District Level Committee would visit and inspect their industries/mines/municipalities area to review the implementation status of Action Plan for abatement of pollution in critically polluted area. Industries/mines/municipalities were inspected as per following schedule:

Sl. No.	Date of Inspection	Name of the Industry/Mine/Municipality visited
1.	11.09.2017	1. M/s. Bhagawati Steels Pvt. Ltd., Industrial Growth Centre, Badmal, Jharsuguda 2. M/s. L N Metallics, Sripura, Jharsuguda 3. M/s. SMC Power Generation Ltd, Hirma, Jharsuguda 4. M/s. Vedanta Ltd., Bhurkhamunda, Jharsuguda
2.	13.09.2017	1. M/s. IB Thermal Power Station (OPGC), Banharpali, Jharsuguda 2. M/s. Ind Barath Energy (Utkal) Ltd., Sahajbahal, Jharsuguda

		3. Lakhanpur OCP of M/s. MCL, Lakhanpur Area 4. Belpahar OCP of M/s. MCL, Lakhanpur Area 5. Lilari OCP of M/s. MCL, Lakhanpur Area 6. Belpahar Municipality
3.	22.11.2017	1. Mines of Orient Area of M/s. MCL, Jharsuguda 2. Lajkura OCP of M/s. MCL, Ib Valley Area, Jharsuguda 3. Samaleswari OCP of M/s. MCL, Ib Valley Area, Jharsuguda 4. Brajrajnagar Municipality 5. Jharsuguda Municipality

Observations on implementation of Action Plan by Industries/Mines/Municipality:

1. M/s. Bhagawati Steels Pvt. Ltd., Industrial Growth Centre, Badmal, Jharsuguda

Sl. No.	Action plan	Compliance Status
1.	All steel plants and sponge iron plants to develop collection and treatment facility for runoff from char dumps and coal stock piles during monsoon.	Garland drain has been provided around the solid waste dump area but it was filled with silt. However, industry has not yet constructed settling pond.
2.	Use of SMS slag and ferro alloys slag for haul road construction in the plant premises and surrounding areas	Unit has no SMS unit.
3.	The DRI industries having AFBC Boilers is to utilize 30% of dolo-char as a supplementary fuel in AFBC Boilers.	Unit has not installed any AFBC unit. However, char generated from the unit is being sold to the units having AFBC/CBFC boilers for power generation.
4.	The dead dumps shall be biologically reclaimed and rehabilitated in such a manner so as to make it gainfully utilized for other purpose. (new action point)	Old dead solid waste dump of about 1.5 Ac. has already been covered with earth soil and the area has been partially vegetated. Industry was asked to rehabilitate the entire 1.5 Ac. area biologically by 31.03.2018.
5.	Treatment and utilization of phenol and cyanide bearing effluent from recovery type coke-ovens/ coal gasification plants.(new action point)	Unit has no coke-oven or any coal gasification plant.

2. M/s. L N Metallics, Sripura, Jharsuguda

Sl. No.	Action plan	Compliance Status
1.	All steel plants and sponge iron plants to develop collection and treatment	Most of the exhausted solid waste dump area (about 6.0 Ac) is covered with soil and plantation has been done to prevent any contaminated surface run-off generation. Unit

	facility for runoff from char dumps and coal stock piles during monsoon.	has provided a common settling/guard pond near eastern most side of the plant. Run off from solid waste dump area, raw material storage area and other areas come to this pond. Cleaning and repairing of garland drain provided around solid waste dump areawas under progress. Construction of one additional settling pond near active dump site and boundary wall along active dump site was under progress during visit.
2.	Use of SMS slag and ferro alloys slag for haul road construction in the plant premises and surrounding areas	Unit has no SMS unit.
3.	The DRI industries having AFBC Boilers is to utilize 30% of dolo-char as a supplementary fuel in AFBC Boilers.	Unit has not installed any AFBC unit. However, char generated from the unit is being sold to the units having AFBC/CBFC boilers for power generation.
4.	The dead dumps shall be biologically reclaimed and rehabilitated in such a manner so as to make it gainfully utilized for other purpose. (new action point)	Old dead solid waste dump(about 6.0 Ac) has already been covered with earth soil and the area has been utilized for tree plantation. However, gap plantation needs to be done over dump.
5.	Treatment and utilization of phenol and cyanide bearing effluent from recovery type coke-ovens/ coal gasification plants.(new action point)	Unit has no coke-oven or any coal gasification plant.

3. M/s. SMC Power Generation Ltd, Hirma, Jharsuguda

Sl. No.	Action plan	Compliance Status
1.	All steel plants and sponge iron plants to develop collection and treatment facility for runoff from char dumps and coal stock piles during monsoon.	Garland drain has been provided along southern and western side of dump site, there is an existing drain along eastern side, all these drains are connected to a settling pond located in the SW side of dump area. A pump is installed at this pond to pump the excess water to the reservoirs which is further reused in the plant. Drain along eastern side was observed to be submerged in water. Water accumulation observed below toe of dump area in eastern and NE side which needs to be routed to the settling pond.

		Industry has provided common rainwater harvesting pond of capacity 40,000 m ³ over an area of 2.3 acre in between reservoir 1 & 2 for the collection of surface runoff from the work zone areas and raw material including coal stock areas during monsoon.
2.	Use of SMS slag and ferro alloys slag for haul road construction in the plant premises and surrounding areas.	Industry has no ferro alloy unit. SMS slag is being crushed in the in-house metal recovery unit which comprises of crusher, screen and magnet for recovery of magnetic material. The Magnetic portion is used in SMS. The non-magnetic slag is either being used for road making or low lying area filling. In the year 2015-16, industry had given 23663.34MT of SMS Non-magnetic slag to the surrounding areas for road making free of cost.
3.	The DRI industries having AFBC Boilers is to utilize 30% of dolo-char as a supplementary fuel in AFBC Boilers.	The industry has installed AFBC Boilers of capacity 1x 80 TPH (17MW) in which char along with coal is used as fuel. 100 % of dolo char generated in the DRI unit is used in AFBC boiler. Unit has separate storage area near rolling mill for dolo char stacking.
4.	The dead dumps shall be biologically reclaimed and rehabilitated in such a manner so as to make it gainfully utilized for other purpose. (new action point)	Out of 27 acres of land for solid waste disposal inside the factory premises, 13 acres of land has already been exhausted. 6 Ac. of the exhausted area has been biologically reclaimed however rest of the area (7 Ac.) has not been biologically reclaimed. Slope of the exhausted part of the dump area is also needs to be biologically reclaimed and stabilized.
5.	Treatment and utilization of phenol and cyanide bearing effluent from recovery type coke-ovens/ coal gasification plants.(new action point)	Unit has no coke-oven unit. Coal gasification unit installed earlier has been dismantled after installation of arrangement for transferring Hot billets directly from CCM to the rolling mills.

4. M/s. Vedanta Ltd. (2400MW TPP), Bhurkhamunda, Jharsuguda

Sl. No.	Action plan	Compliance Status
1.	All TPPs to install/ upgrade ESP and or BF wherever technically feasible to meet the emission standard of 50 mg/Nm ³ with one spare field.	Industry has installed hybrid ESP of capacity 3269790 Nm ³ /hr having 4 Passes, each pass is having 4 fields, first 02 fields are of ESP followed by 2 bag housecompartment at each unit of TPP to meet the emission standard of 50 mg/Nm ³ .
2.	All lean slurry disposal system to be converted to (High Concentration Slurry Disposal)	Industry has adopted (High Concentration Slurry Disposal) HCSD system for the disposal of ash into the ash ponds.

	HCSO or mine void filling subject to technical feasibility	
3.	All the TPPs of 100 MW or more shall achieve Zero Liquid Discharge except during monsoon. (new action point)	Unit has installed ETP of 600m ³ /day capacity for the treatment of wastewater generated from CHP, DM plant, road washing, CT blow down, boiler blow down, service water and AHP. Industry has been asked to install an additional ETP of adequate capacity at 2400MW thermal power plant.
4.	Installation of in-house Fly Brick Plants and other fly ash based product plants for demonstration purpose and popularization of fly ash utilization .(new action point)	Unit has not installed any in-house Fly Ash Brick Plant and other fly ash based product plant. However, industry is supplying fly ash to 92 Nos. of fly ash bricks manufacturing unit and nearby cement plants. Within 100Km of radius, fly ash is being supplied free of cost and transportation cost beared by the industry. Industry has proposed to install in-house fly ash brick manufacturing plant by February 2018 .

5. M/s. Vedanta Ltd. (Smelter & CPP), Bhurkhamunda, Jharsuguda

Sl. No.	Action plan	Compliance Status
Thermal Power Plant		
1.	All TPPs to install/ upgrade ESP and or BF wherever technically feasible to meet the emission standard of 50 mg/Nm ³ with one spare field.	Industry has installed hybrid ESP of capacity 9,00,900 Nm ³ /hr having 2 Passes, each pass is having 5 fields, first 03 fields are of ESP followed by 2 bag house at each unit of CPP to meet the emission standard of 50 mg/Nm ³ .
2.	All lean slurry disposal system to be converted to (High Concentration Slurry Disposal) HCSO or mine void filling subject to technical feasibility	Industry has adopted (High Concentration Slurry Disposal) HCSO system for the disposal of ash into the ash ponds.
3.	All the TPPs of 100 MW or more shall achieve Zero Liquid Discharge except during monsoon. (new action point)	Additional ETP of 600m ³ /hr capacity along with existing ETP of 80m ³ /hr capacity have been provided for the treatment of wastewater generated from CT blow down, boiler blow down, DM Plant, surface runoff from CHP area and floor wash. No wastewater was being discharged outside the plant premises during inspection.
4.	Installation of in-house Fly Brick Plants and other fly ash based product plants for demonstration purpose and popularization of fly ash	Unit has not installed any in-house Fly Brick Plant and other fly ash based product plant. However, industry is supplying fly ash to 92 Nos. of fly ash bricks manufacturing unit and nearby cement plants. Within 100Km of radius, fly ash is being supplied free of cost

	utilization .(new action point)	and transportation cost beared by the industry. Industry has proposed to install in-house fly ash brick manufacturing plant by February 2018 .
Aluminium Plant		
1.	Implementation of findings of comprehensive wastewater audit including runoff management for the smelter plant.	It was learnt that water audit and runoff water management report has been submitted to the Board by industry. Technical presentation has also been given to the Board and final report will be submitted after incorporation of suggestion from the Board. Management plan is being implemented by the unit.
2.	Utilisation of carbonaceous portion of spent pot lines by Cement Kilns/ Authorized reprocesses	At present Spent Pot Line (SPL) is stored in covered shed inside plant premises. Carbonaceous portion of spent pot lines has been given to the authorized re-processors like M/s. Green Energy, Sambalpur and M/s. Subhra Chemicals, Cuttack for trial run. Discussion with M/s. OCL is under process for co-processing of spent pot lines in cement plant.
3.	The Aluminium Smelter either by itself or in combination with its CPP shall, achieve Zero Liquid Discharge except during monsoon months .(new action point)	Industry has installed ETP consisting three (03) modules of 100m ³ /hr capacity each at Plant-1 and ETP of capacity 400m ³ /hr at Plant-2 for the treatment of wastewater generated from smelter (pot room), rectifier, cast house and carbon area. No wastewater was being discharged to outside the plant premises during inspection.
4.	Co-incineration of Spent pot linings (SPLs) in CPPs of Aluminium Smelters subject to technical feasibility.(new action point)	No such study has been conducted at Vedanta Ltd. However, study has been conducted for co-processing of SPL in power plant by other aluminium industries and trial run conducted by those units and report submitted to the CPCB for process approval. As this a similar type of study the outcome of the trials conducted and the SOP/guidelines by CPCB will be followed by the industry.
5.	Study of Recycle/ recovery/ Reuse and waste minimization potential of hazardous waste in aluminum smelter.(new action point)	Industry is following sustainability framework based on IFC (International Financial Corporation) guidelines driven from corporate which emphasizes waste hierarchy of elimination, reduce, recycle, reuse then disposal and many wastes like bath material, coke dust, butt, floor sweeping dust, etc. are being attempted for recycling. At present about 60T of aluminium dross is being reused monthly as covering material in the pots. For alternate use of two major wastes SPL and Aluminium Dross, collaborative research project has been taken up. The final reports of the same project have been received, process approval and commercialization is under process.

6. M/s. IB Thermal Power Station (OPGC), Banharpali, Jharsuguda

Sl. No.	Action plan	Compliance Status
1.	All TPPs to install/ upgrade ESP and or BF wherever technically feasible to meet the emission standard of 50 mg/Nm ³ with one spare field.	ESPs of both units (2x210 MW) have been upgraded to meet the emission standard of 50 mg/Nm ³ .
2.	All lean slurry disposal system to be converted to (High Concentration Slurry Disposal) HCSD or mine void filling subject to technical feasibility	Lean Slurry Disposal System is being practiced by the unit for disposal of ash to the ash pond. It was learnt that since the year 1999, 100 % of ash water is being recycled & reused for fresh ash slurry making. It is learnt that conversion to HCSD is not found technically feasible by the unit. However, unit has been putting its best effort to get allotment of nearest mine void from M/s. Mahanadi Coalfields Ltd. Soon after its allotment, action will be taken for disposal/utilization in the said mine void.
3.	All the TPPs of 100 MW or more shall achieve Zero Liquid Discharge except during monsoon. (new action point)	It was learnt that at present unit is recycling almost 98% of the total effluents generated. Out of the balance 2%, 1% effluent discharged (back wash from gravity sand filter, surplus generation from boiler, turbine and WTP) to the Hirakud Reservoir. Unit has recently completed the construction of a concrete pit of 200m ³ capacity for the collection and reuse of remaining 1% effluent generated from CT drift and over flow from the cooling tower. A pump has also been installed at the pit for pumping collected water to the cooling tower basin. Unit has proposed to complete the recycling system for the treated industrial effluent to achieve zero discharge after installation of proposed ETP in phase-2 (Unit-3 & 4, which are under construction stage) by 31 st March 2018.
4.	Installation of in-house Fly Brick Plants and other fly ash based product plants for demonstration purpose and popularization of fly ash utilization. (new action point)	Brick plant of capacity 6000 Nos. of brick per day was installed & commissioned in FY 2002-2003. The capacity of the same has been enhanced to 15000 bricks per day in FY 2016-17. It was learnt that Fly ash bricks' use benefits had been campaigned and demonstrated in locality through street play and other awareness campaign.

7. M/s. Ind Barath Energy (Utkal) Ltd., Sahajbahal, Jharsuguda

Sl. No.	Action plan	Compliance Status
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1.	All TPPs to install/ upgrade ESP and or BF wherever technically feasible to meet the emission standard of 50 mg/Nm ³ with one spare field.	The industry has installed Electrostatic Precipitators of capacity 603.3 m ³ /sec having four (04) passes and seven (07) fields at unit-1. meet the emission standard of 50 mg/Nm ³ . Since the plant was not in operation on the day of inspection, stack monitoring was not conducted.
2.	All lean slurry disposal system to be converted to (High Concentration Slurry Disposal) HCSD or mine void filling subject to technical feasibility	Industry has proposed HCSD (High Concentration Slurry Disposal) system for ash disposal at the permanent ash pond of land measuring to 135 Ac. at Rampela Mouza. At present, this Permanent ash pond has not yet been constructed.
3.	All the TPPs of 100 MW or more shall achieve Zero Liquid Discharge except during monsoon. (new action point)	Industry has installed ETP comprises of O&G trap, clarifier (63m ³) and Belt press. Waste water generated from the different sources such as clari-flocculator sludge, filter back wash, DM plant regeneration waste, oil & grease during handling, boiler blow down, cooling tower blow down, service waste water from boiler/TG area, waste water from CHP, surface runoff from coal stock yard etc. will be 194 m ³ /day which will be treated in ETP unit. Treated water from ETP will be reused in the ash conditioning process. There will be Zero Liquid Discharge from the plant except during monsoon
4.	Installation of in-house Fly Brick Plants and other fly ash based product plants for demonstration purpose and popularization of fly ash utilization .(new action point)	Industry has not yet constructed any in-house Fly Brick Plants or other fly ash based product plants inside the plant premises.

8. Opencast Projects of M/s. Mahanadi Coalfields Ltd., Lakhanpur Area

Sl. No.	Action plan	Mines	Compliance Status
1.	Dedicated coal transport corridor to be widened and strengthened (Concreted/ Blacktopped) with proper drainage facility in Ib Valley coalfields.	Lakhanpur OCP, Belpahar OCM& Lilari OCP	MCL is using village blacktopped road for transporting of road sale coal connecting all three mines of Lakhanpur Area to NH-49 (about 4.5Km). Mine authority has proposed to construct a dedicated coal corridor road of 3.82Km length from Jurabaga to Kapupada. It was learnt that DPR submitted by Belpahar Municipality for this road is returned back to municipality with certain suggestions for re-costing. However, most of the internal permanent coal

			transport (CT) roads connecting coal stock to railway sidings and internal permanent CT roads (with life more than 5 years) up to exit point of mine are not yet concreted/blacktopped.
2.	Adoption of mine void filling with dry ash from the thermal power plants.	Lakhanpur OCP, Belpahar OCM & Lilari OCP	<p>MCL is back filling the mine voids or de-coaled area with over-burden material generated from the mine itself. No Quarry or Mine of Lakhanpur Area has been abandoned. Stripping ratio is also relatively high. Lower Seams have not been exhausted and proposed to be extracted through integrated projects. Therefore, at present there is no such proposal by the mine authority for mine void filling with dry ash from the thermal power plants.</p> <p>However, it is learnt that roads in the mines and also beyond ML areas for transportation of coal can consume huge quantity of ash during its strengthening and concreting/black topping.</p>
3.	Enhancement of rake loading facility in the coal mines	Lakhanpur OCP	Mine has 01 No. of railway siding (MGR Rly. Siding) operating inside the ML area of Lakhanpur OCP in addition to this mine is using Y-Curve Siding (2Nos.) which comes under ML area of Samaleswari OCP and all three (BOCM Rly. Siding No.3, 6 & 7) sidings comes under ML area of Belpahar OCM for despatch of coal through rail. At present more than 85% coal is being despatched through rail.
		Belpahar OCM	Mine has 03 Nos. of railway sidings operating inside the ML area of Belpahar OCM to facilitate rake loading for despatch of coal through rail. At present more than 85% coal is being despatched through rail.
		Lilari OCP	Mine is dispatching all its coal through road. Coal is not being dispatched through rail.

4.	All Opencast Coal Mines either individually or in combination shall achieve Zero Liquid Discharge. (new action point)	Lakhanpur OCP Belpahar OCM Lilari OCP	As per directives of Hon'ble High Court in matter of WP (C) 6976 of 2014, MCL has conducted surface runoff study through NIT, Rourkela for all opencast mines of Ib Valley and Lakhanpur Area. NIT, Rourkela has recommended some actions to achieve Zero Liquid Discharge in mines. So far MCL has complied with some of the recommendations while rest have not yet been complied. Open Cast Mines of MCL in Ib Valley and Lakhanpur Area are still discharging mine water/surface runoff to the nearby water bodies or open areas.
5.	Enhancement of number of population covered under provision for supply of drinking water in the peripheral villages of coal mining area. (new action point)	Lakhanpur OCP	Lakhanpur OCP is supplying 147.3 KL/day of drinking water to 24 Nos. of villages covering 2500 (Approx.) numbers of population.
		Belpahar OCM	Belpahar OCM is supplying 120 KL/day of drinking water to 06 Nos. of villages covering 5775 (Approx.) numbers of population. But during arbitrary visit of District level committee to Kharkoni village of Lakhanpur it was come to our notice that drinking water was not supplied to that village on that day and villagers complained that timely water is not being supplied.
		Lilari OCP	Lilari OCP is supplying drinking water to 02 Nos. of villages.
6.	Implementation of comprehensive coal mine fire control plan by MCL.(new action point)	Lakhanpur OCP Belpahar OCM Lilari OCP	Blanketing of economically non-viable carbonaceous part of OB material is being done with non-carbonaceous OB materials to avoid supply of oxygen to these carbonaceous OB. Mine has engaged fire tenders and pump mounted water tankers of 28KL capacity for fire fighting in the coal stock, railway siding, OB dump and mine pit/coal seam. Quench-cut-load methodology is being followed for fire fighting at coal seams.
7.	Increase in concurrent back filling of the mine voids and restoration of the mined out area for technical and biological reclamation of mined out	Lakhanpur OCP	At present, all OB is being concurrently used for backfilling in the de-coaled area for technical reclamation. Technically reclaimed area is then biologically reclaimed through plantation of different species of trees. At present out of total 436.63 Ha de-coaled area, 373.37 Ha is

	area.(new action point)		backfilled area. Out of total backfilled area 93.27 Ha is technically and biologically reclaimed.
		Belpahar OCM	Out of total 222.889 Ha de-coaled area, 179.079 Ha is backfilled area. Out of total backfilled area 137.00 Ha is technically reclaimed and out of total technically reclaimed area, 105.80 Ha is biologically reclaimed.
		Lilari OCP	Out of total 44.25 Ha de-coaled area, 41.15 Ha is backfilled area. Out of total backfilled area 26.0 Ha is technically and biologically reclaimed.
8.	Construction of ground water recharge pits in Coal Mines area. (new action point)	Lakhanpur OCP	Lakhanpur OCP has 03 Nos. of existing rooftop rainwater harvesting recharge pits, each at Manager Office, PO Office & Canteen. Mine authority has proposed to construct 15 Nos. of ground water recharge pits inside the mine lease area for recharging with mine discharge water, proposal is under process of tendering at MCL's Headquarter.
		Belpahar OCM	Belpahar OCM has 03 Nos. of existing rooftop rainwater harvesting recharge pits, each at PO Office, BOCM Canteen & Belpahar Integrated Township Building. Mine authority has proposed to construct 20 Nos. of ground water recharge pits inside the mine lease area.
		Lilari OCP	Mine authority has proposed to construct 01 Nos. of ground water recharge pits inside the mine lease area.
9.	Installation of Closed Conveying Systems for transport of coal from pit head to railway siding. (new action point)	Mines of Ib Valley area	It was learnt from the MCL authority that proposal has been made for installation of Closed Conveying Systems for transport of coal from pit head to railway siding.

9. Underground and Opencast Projects of M/s. Mahanadi Coalfields Ltd. Of Orient Area and Ib Valley Area respectively

Sl. No.	Action plan	Mines	Compliance Status
1.	Dedicated coal transport corridor to be widened and	Opencast (Lajkura OCP & Samaleswari OCP) mines of Ib	A scheme for dedicated coal transportation has been proposed from Bundia Mine to NH49 (Near Orient Mine No.4). It is learnt that the

	strengthened (Concreted/ Blacktopped) with proper drainage facility in Ib Valley coalfields.	Valley Area and Underground Mines (Mine No.1&2, Mine No.3 and Hirakhand Bundia Mine) of Orient Area of M/s. Mahanadi Coalfields Ltd.	<p>updated Project Cost and Estimates has been deliberated and approved in principle by MCL Board in its 194th meet on 08.09.2017 and at present it is under tendering stage and tender will be finalized in February 2018 MCL's Board meeting. Coal transportation corridor is divided into following parts:</p> <ul style="list-style-type: none"> (i) Lajkura: 6.184 Km (ii) Samaleswari: 6.850 Km (iii) Orient: 2.40 Km (Concrete) (iv) Orient: 1.60 Km (Bituminous) <p>Total length: 17.034 Km.</p> <p>About 15-20% of coal is being transported through this road corridor.</p> <p>At present part of this corridor is concreted (from ROB to Welcome Gate of Lajkura OCP, about 2.5km)) while rest of the part is WBM, Kachcha (in-situ) or Black-topped (very less and broken). During meeting held on 10.04.2017 in the State Pollution Control Board, Odisha, Bhubaneswar, MCL has proposed and agreed to make this corridor WBM by December 2017 and then concreted before March 2018. However, work has not yet been started.</p> <p>All coal transport road within and outside of ML area with life more than 5 years are also proposed to be concreted.</p>
2.	Adoption of mine void filling with dry ash from the thermal power plants.	Underground mines of Orient Area and Opencast Projects of Ib Valley Area.	<p>MCL is back filling the mine voids or de-coaled area with over-burden material generated from the mine itself. No Quarry or Mine of Ib Valley Area has been abandoned. Stripping ratio is also relatively high. Lower Seams have not been exhausted and proposed to be extracted through integrated projects. Therefore, at present there is no such proposal by the mine authority for mine void filling with dry ash from the thermal power plants.</p> <p>However, It is learnt that there is proposal for de-pillaring of Mine No.4 (underground mine) of</p>

			orient area and M/s. MCL has planned to fill the depillaring area by sand stowing. Hence, M/s. MCL may be directed to fill the depillaring area of Mine-04 of M/s. MCL by fly ash instead of sand stowing as per guidelines prepared by Fly Ash Resource Centre (FARC), on August, 2017.
3.	Enhancement of rake loading facility in the coal mines	Samaleswari OCP	Mine has 02 No. of railway siding (Lajkura Siding No.1 & 2) operating inside the ML area of Lajkura OCP for despatch of coal through rail. At present more that 84%(during previous 03 years) coal is being despatched through rail.
		Lajkura OCP	Mine has 01 No. of railway sidings (Lajkura Siding No.03) operating inside the ML area to facilitate rake loading for despatch of coal through rail. At present more that 98%(during previous 03 years) coal is being despatched through rail.
		Underground Mines (Mine No.1 & 2, Mine No.3, Mine No.4 and Hirakhand Bundia) of Orient Area	Orient Area has 01 No. railway sidings (Orient Rly. Siding)operating near Mine No.1 & 2 and in addition to this Hirakhand Bundia is using Lajkura Siding No.03 which comes under ML area of Lajkura OCP to facilitate rake loading for despatch of coal through rail. At present more that 83%(during previous 03 years) coal is being despatched through rail.
4.	All Opencast Coal Mines either individually or in combination shall achieve Zero Liquid Discharge. (new action point)	Samaleswari OCP & Lajkura OCP	As per directives of Hon'ble High Court in matter of WP (C) 6976 of 2014, MCL has conducted surface runoff study through NIT, Rourkela for all opencast mines of Ib Valley and Lakhanpur Area. NIT, Rourkela has recommended some actions to achieve Zero Liquid Discharge in mines. So far MCL has complied with some of the recommendations while rest have not yet been complied. Open Cast Mines of MCL in Ib Valley and Lakhanpur Area are still discharging mine water/surface runoff to the nearby water bodies or open areas.
5.	Enhancement of number of population covered under provision for supply of drinking	Samaleswari OCP	Ib Valley Area, MCL is supplying 114.5 KL/day of drinking water to 32 Nos. of villages covering 10500 (Approx.) numbers of population. But during arbitrary visit of District level committee to Orampada village and lajkura village of Ib valley area it was come to our notice that
		Lajkura OCP	

	water in the peripheral villages of coal mining area. (new action point)		drinking water was not supplied to that village on that day and villagers complained that timely water is not being supplied.
		Underground Mines of Orient Area	Orient Area is supplying 182 KL/day of drinking water to 07 Nos. of villages covering 6700 (Approx.) numbers of population.
6.	Implementation of comprehensive coal mine fire control plan by MCL.(new action point)	Underground mines of Orient Area and Opencast Projects of Ib Valley Area.	Blanketing of economically non-viable carbonaceous part of OB material is being done with non-carbonaceous OB materials to avoid supply of oxygen to these carbonaceous OB. Mine has engaged fire tenders and pump mounted water tankers of 28KL capacity for fire fighting in the coal stock, railway siding, OB dump and mine pit/coal seam. Quench-cut-load methodology is being followed for fire fighting at coal seams.
7.	Increase in concurrent back filling of the mine voids and restoration of the mined out area for technical and biological reclamation of mined out area.(new action point)	Samaleswari OCP	At present, all OB is being concurrently used for backfilling in the de-coaled area for technical reclamation. Technically reclaimed area is then biologically reclaimed through plantation of different species of trees. At present out of total 446.662 Ha de-coaled area, 329.20 Ha is backfilled area. Out of total backfilled area 115.770 Ha is technically reclaimed and out of total technically reclaimed area, 92.20 Ha is biologically reclaimed.
		Lajkura OCP	Out of total 106.26 Ha de-coaled area, 101.81 Ha is backfilled area. Out of total backfilled area 34.23 Ha is technically and biologically reclaimed.
8.	Construction of ground water recharge pits in Coal Mines area. (new action point)	Samaleswari OCP	Mine authority has constructed 06 Nos. of ground water recharge pits inside the mine lease area for recharging with mine discharge water.
		Lajkura OCP	Mine authority has not proposed any ground water recharge pits inside the mine lease area. However Ib Valley area has one (01) existing rooftop rainwater harvesting recharge pits at Area Office.
		Underground mines of Orient	Orient Area has 04 Nos. of existing rooftop rainwater harvesting recharge pits, each at Area

		Area	Office, Sub Area Office, Sub-Area Manager Office & Netajee Bhawan.
9.	Installation of Closed Conveying Systems for transport of coal from pit head to railway siding. (new action point)	Mines of Lakhanpur area	It was learnt from the MCL authority that there is no such proposal has been made for installation of Closed Conveying Systems at any of the mine for transport of coal from pit head to railway siding.

10. Municipality Area

Sl. No.	Action plan	Municipality	Compliance Status
1.	Construction of a sewage treatment plant for Jharsuguda and Brajarajnagar	Jharsuguda	Sewage treatment plant has not yet been constructed. It was learnt that Jharsuguda Municipality has submitted information to Orissa Water Supply and Sewerage Board (OWSSB) for preparation of DPR for construction of STPs. It was also learnt that proposal is there for construction of small STPs in the Jharsuguda town at strategic locations.
		Brajarajnagar	Sewage treatment plant has not yet been constructed. Orissa Water Supply and Sewerage Board is taking up the matter with Orissa Govt.
		Belpahar	Sewage treatment plant has not yet been constructed. Orissa Water Supply and Sewerage Board is taking up the matter with Orissa Govt.
2.	Construction of MSW Land fill site for Jharsuguda Town	Jharsuguda Brajarajnagar Belpahar	Jharsuguda, Brajarajnagar and Belpahar municipalities have provided their respective municipal solid waste disposal site at Kapumal, Ratakhandi (ward no-08) and Kaduapada respectively. However municipalities have been instructed for segregation facility at the disposal site. Municipal Solid Waste Management study is being carried in the municipality area by M/s. ACPL Global Pvt. Ltd. through Odisha Urban Infrastructure Development Fund (OUIDF).

Following industries, to which action plan is applicable and coming under critically polluted area, were not visited because they are not in operation / closed;

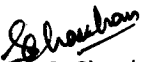
Sl. No.	Name of Industry	Not in Operation Since
1.	Thakur Prasad Sao and Sons Ltd., Lahandabud	February 2015
2.	MSP Metallics Ltd., Marakuta	13 th February 2016

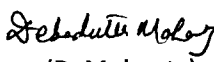
3.	Action Ispat and Power Pvt. Ltd., Pandripathar	October 2016
4.	Concast Steel and Power Ltd., Industrial Growth Centre, Badmal	01 st January 2017
5.	Jai Hanuman Udyog Ltd., Raghunathpali	May 2016
6.	Jain Steel and Power Ltd., Durlaga	Closed
7.	Singhal Enterprises Pvt. Ltd., Hirma	Closed

However, on the basis of previous inspections conducted by Regional Office, SPCB, Jharsuguda, status of implementation of action plan for above mentioned industries is given in **Annexure-1**.


Following additional points were suggested to be included in the action plan by the committee members;


1. Engagement of mechanical road sweepers by industry/mine on the public transport roads which are used by the industry/mine and are located in the human habitation areas.
2. Water supply system to nearby villages by M/s. MCL was not found satisfactory during the visit of the committee. Hence M/s. MCL authority may be directed to increase the frequency of supplying drinking water to the nearby villages.
3. During inspection it was learnt that Mine-04 of M/s. MCL has completed its development work through Board & Pillar (B/P) method of working. Now, they have proposed to start de-pillaring work by sand stowing method. M/s. MCL may be directed to fill the de-pillaring area by fly ash generated from the different power plant, as generation of fly ash is now a burgeoning problem for the Ib Valley – Jharsuguda Critically Polluted Area.
4. Two coal washeries, i.e. M/s. Bhatia Coal Washery and Global Coal & Mining Pvt. Ltd. are coming under Ib Valley – Jharsuguda Critically Polluted Area. Hence, some action plan may be assigned to those Coal Washerries.
5. Municipalities may be asked to provide STPs in all three municipality areas at strategic locations for the treatment of sewage.
6. Municipality may be directed to construct a common municipal solid waste handling, processing and disposal area in Jharsuguda district. Municipality authority may be directed to take up the matter expeditiously.

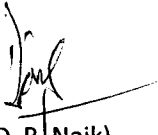

 (T. C. S. Chauhan)
 Asst. Env. Engg.
 SPCB, Jharsuguda

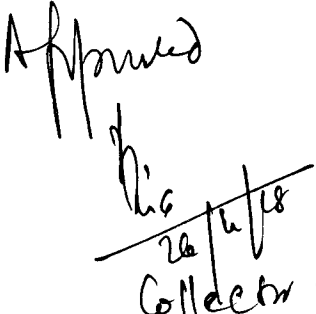

 (D. Mohanty)
 Asst. Env. Engg.
 SPCB, Jharsuguda

(B. Rout)
 DDM, Sambalpur


 (Prabhakar Rao)
 GM, DIC,
 Jharsuguda


 (Balgobind Mishra)
 President, Sr. Citizen
 Association,
 Jharsuguda


 (Dr. D. R. Naik)
 Ex. VC & Honorary
 W.L. Warden


 Approved
 26/12/18
 Collector.

**FINAL SUMMARY OF UNIT WISE IMPLEMENTATION OF
ACTION PLAN FOR IB VALLEY-JHARSUGUDA AREA (2017-
18)**

**DISTRICT LEVEL COMMITTEE
JHARSUGUDA
December 2017**

**FINAL SUMMARY OF IMPLEMENTATION OF ACTION PLAN FOR CPA
OF IB VALLEY-JHASUGUDA**

Thermal Power Plants

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
1.	All TPPs to install/ upgrade ESP and or BF wherever technically feasible to meet the emission standard of 50 mg/Nm ³ with one spare field.	Vedanta Aluminium Ltd. (CPP) (9x135MW)	Industry has installed/ retrofitted hybrid ESP of capacity 9,00,900 Nm ³ /hr having 2 Passes, each pass is having 5 fields, first 03 fields are of ESP followed by 2 bag house at each unit of CPP to meet the emission standard of 50 mg/Nm ³ .	Complied
		Vedanta Ltd. (2400 MW TPP)	Industry has installed hybrid ESP of capacity 3269790 Nm ³ /hr having 4 Passes, each pass is having 4 fields, first 02 fields are of ESP followed by 2 bag house compartment at each unit of TPP to meet the emission standard of 50 mg/Nm ³ .	Complied
		Ib Thermal Power Station,ITPS, OPGC (2x210MW)	ESPs of both units (2x210 MW) have been upgraded to achieve the emission target of 50mg/Nm ³ .	Complied
		Action Ispat and Power (P) Limited (2x43 MW, 1x20MW)	3 Nos of ESPs installed/ retrofitted to meet the emission standard of 50 mg/Nm ³ .	Complied
2.	All lean slurry disposal system to be converted to (High Concentration Slurry Disposal) HCSD or mine void filling subject to technical feasibility	Vedanta Alluminium Ltd. (CPP)	The ash is being disposed in HCSD form.	Complied
		Vedanta Ltd. (2400 MW TPP)	The ash is being disposed in HCSD form.	Complied
		Ib Thermal Power Station, (OPGC)	Lean Slurry Disposal System is being practiced by the unit for disposal of ash to the ash pond. It is learnt that since the year 1999, 100 % of ash water is being recycled & reused for fresh ash slurry making. It is also learnt that conversion to HCSD is not found technically feasible by the unit. However, unit has been putting its best effort to get allotment of nearest mine void i.e. BOCM (Blelpahar Open Cast Mines). Soon after its allotment, action will be taken for disposal/utilization in the said mine void.	Not complied
		Action Ispat and Power (P) Limited	Dry disposal method has been adopted by the unit. The ash is transported to	Not complied

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
			designated place in a covered vehicle in moist condition.	
3..	Installation of in-house Fly Brick Plants and other fly ash based product plants for demonstration purpose and popularization of fly ash utilization .(new action point)	Vedanta Alluminium Ltd. (CPP)	Unit has not installed any in-house Fly Brick Plant and other fly ash based product plant. However, industry is supplying fly ash to 92 Nos. of fly ash bricks manufacturing unit and nearby cement plants. Within 100Km of radius, fly ash is being supplied free of cost and transportation cost beared by the industry. Industry has proposed to install in-house fly ash brick manufacturing plant by February 2018.	Not complied
		Vedanta Ltd. (2400 MW TPP)	Unit has not installed any in-house Fly Brick Plant and other fly ash based product plant. However, industry is supplying fly ash to 92 Nos. of fly ash bricks manufacturing unit and nearby cement plants. Within 100Km of radius, fly ash is being supplied free of cost and transportation cost beared by the industry. Industry has proposed to install in-house fly ash brick manufacturing plant by February 2018.	
		Ib Thermal Power Station, OPGC, Banaharpali, Jharsuguda	Brick plant of capacity 6000 Nos. of brick per day was installed & commissioned in FY 2002-2003. The capacity of the same has been enhanced to 15000 bricks per day in FY 2016-17. It was learnt that Fly ash bricks' use benefits had been campaigned and demonstrated in locality through street play and other awareness campaign.	Complied
		Action Ispat and Power (P) Limited	Unit has not installed any in-house Fly Brick Plant and other fly ash based product plant.	Not complied
4.	All the TPPs of 100 MW or more shall achieve Zero Liquid Discharge except during monsoon.(new action point)	Vedanta Ltd. (CPP)	Additional ETP of 600m ³ /hr capacity along with existing ETP of 80m ³ /hr capacity have been provided. Zero discharge achieved except periodic storm water discharge during monsoon.	Complied
		Vedanta Ltd. (2400 MW TPP)	Two ETP of 15 m ³ /hr & 25 m ³ /hr Capacity have been provided and treated effluent is reused. Industry has proposed to increase the	Partially Complied

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remarks
		Ib Thermal Power Station, OPGC, Banaharpali, Jharsuguda	<p>existing capacity of ETP of 2400MW thermal power plant by February 2018.</p> <p>At present unit is recycling almost 98% of the total effluents generated. Out of the balance 2%, 1% effluent discharged (back wash from gravity sand filter, surplus generation from boiler, turbine and WTP) to the Hirakud Reservoir. Unit has recently completed the construction of a concrete pit of 200m³ capacity for the collection and reuse of remaining 1% effluent generated from CT drift and over flow from the cooling tower. A pump has also been installed at the pit for pumping collected water to the cooling tower basin. Unit has proposed to complete the recycling system for the treated industrial effluent to achieve zero discharge after installation of proposed ETP in phase-2 (Unit-3 & 4, which are under construction stage) by 31st March 2018.</p>	Partially Complied
		Action Ispat and Power (P) Limited	Zero discharge achieved except periodic storm water discharge during monsoon.	Complied

Action Plan for Abatement of Pollution in Coal Mines

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
1.	Dedicated coal transport corridor to be widened and strengthened (Concreted/ Blacktopped) with proper drainage facility in Ib Valley coalfields..	Opencast (Lajkura OCP & Samaleswari OCP) mines of Ib Valley Area and Underground Mines (Mine No.1&2, Mine No.3 and Hirakhand Bundia Mine) of Orient Area of M/s. Mahanadi Coalfields Ltd.	<p>A scheme for dedicated coal transportation has been proposed from Bundia Mine to NH49 (Near Orient Mine No.4). It is learnt that the updated Project Cost and Estimates has been deliberated and approved in principle by MCL Board in its 194th meet on 08.09.2017 and at present it is under tendering stage and tender will be finalized in February 2018 MCL's Board meeting. Coal transportation corridor is divided into following parts:</p> <ul style="list-style-type: none"> (i) Lajkura: 6.184 Km (ii) Samaleswari: 6.850 Km (iii) Orient: 2.40 Km (Concrete) (iv) Orient: 1.60 Km (Bituminous) <p>Total length: 17.034 Km.</p> <p>About 15-20% of coal is being transported through this road corridor.</p> <p>At present part this corridor is concreted (from ROB to Welcome Gate of Lajkura OCP, about 2.5km)) while rest of the part is WBM, Kachcha (in-situ) or Black-topped (very less and broken). During meeting held on 10.04.2017 in the State Pollution Control Board, Odisha, Bhubaneswar, MCL has proposed and agreed to make this corridor WBM by December 2017 and then concreted before March 2018. However, work has not yet been started.</p> <p>All coal transport road within and outside of ML area with life more than 5 years are also proposed to be concreted.</p>	Not Complied
		Opencast (Lilari OCP, Lakhanpur OCP & Belpahar OCM) mines of Lakhanpur Area M/s. Mahanadi Coalfields Ltd.	<p>MCL is using village blacktopped road for transporting of road sale coal connecting all three mines of Lakhanpur Area to NH-49 (about 4.5Km).</p> <p>Mine authority has proposed to construct a dedicated coal corridor road of 3.82Km length from Jurabaga to Kapupada. It was</p>	Partially Complied

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
			<p>learnt that DPR submitted by Belpahar Municipality for this road is returned back to municipality with certain suggestions for re-costing.</p> <p>Internal permanent coal transport (CT) roads connecting coal stock to railway sidings and internal permanent CT roads (with life more than 5 years) up to exit point of mine are not yet concreted/blacktopped.</p>	
2.	Adoption of mine void filling with dry ash from the thermal power plants.	MCL	<p>MCL is back filling the mine voids or de-coaled area with over-burden material generated from the mine itself. No Quarry or Mine has been abandoned. Stripping ratio is also relatively high. Lower Seams have not been exhausted and proposed to be extracted through integrated projects. Therefore, at present there is no such proposal by the mine authority for mine void filling with dry ash from the thermal power plants.</p> <p>However, it is learnt that roads in the mines and also beyond ML areas for transportation of coal can consume huge quantity of ash during its strengthening and concreting/black topping.</p>	Not Complied.
3.	Enhancement of rake loading facility in the coal mines	MCL	MCL has 10 Nos. of railway sidings operating in the IB Valley, Lakhanpur and Orient area to facilitate rake loading for despatch of coal through rail. At present more than 80% coal is being despatched through rail.	Complied.
4.	All Opencast Coal Mines either individually or in combination shall achieve Zero Liquid Discharge .(new action point)	MCL	As per directives of Hon'ble High Court in matter of WP (C) 6976 of 2014, MCL has conducted surface runoff study through NIT, Rourkela for all opencast mines of Ib Valley and Lakhanpur Area. NIT, Rourkela has recommended some actions to achieve Zero Liquid Discharge in mines. So far MCL has complied with some of the recommendations while rest have not yet been complied. Open Cast Mines of MCL in Ib Valley and Lakhanpur Area are still discharging mine water/surface runoff to the nearby water bodies or open areas.	Partially Complied.

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
5.	Enhancement of number of population covered under provision for supply of drinking water in the peripheral villages of coal mining area .(new action point)	MCL	MCL is supplying 563.8KLD drinking water to 69 villages covering a population of about 25544, as reported. In Ib valley coalfield area, one peripheral village (Junanimunda) is covered under departmental piped water supply while rest of the villages under water tanker supply scheme by MCL. But during arbitrary visit of District level committee to Kharkoni village of Lakhanpur Area and Orampada village and Iajkura village of IbValley area it was come to our notice that drinking water was not supplied to that village on that day and villagers complained that timely water is not being supplied.	Partially Complied
6.	Implementation of comprehensive coal mine fire control plan by MCL.(new action point)	MCL	Blanketing of economically non-viable carbonaceous part of OB material is being done with non-carbonaceous OB materials to avoid supply of oxygen to these carbonaceous OB. Mine has engaged fire tenders and pump mounted water tankers of 28KL capacity for fire fighting in the coal stock, railway siding, OB dump and mine pit/coal seam. Quench-cut-load methodology is being followed for fire fighting at coal seams.	Being Complied
7.	Increase in concurrent back filling of the mine voids and restoration of the mined out area for technical and biological reclamation of mined out area.(new action point)	MCL	At present, all OB is being concurrently used for backfilling in the de-coaled area for technical reclamation. Technically reclaimed area is then biologically reclaimed through plantation of different species of trees. At present out of total 1256.691 Ha de-coaled area, 1024.609 Ha is backfilled area. Out of total backfilled area 351.5 Ha is technically and biologically reclaimed of all opencast mines of Ib Valley and Lakhanpur area of MCL.	Being Complied
8	Construction of ground water recharge pits in Coal Mines area	MCL	MCL has 12 Nos. of existing rooftop rainwater harvesting recharge pits at different locations. 06 Nos. of groundwater recharge pits have been constructed inside the mine lease area of Samalswari OCP. Mine authority has proposed to construct	Partially Complied

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
			total 36 Nos. of ground water recharge pits inside the mine lease area of opencast mines of Lakhanpur and Ib Valley areas, proposal is under process.	
9	Installation of Closed Conveying Systems for transport of coal from pit head to railway siding .(new action point)	MCL	It was learnt from the MCL authority that proposal has been made for installation of Closed Conveying Systems for transport of coal from pit head to railway siding.	Not Complied.

Action Plan for abatement of Pollution in Iron & Steel and Ferro Alloys Sector

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
1.	All steel plants and sponge iron plants to develop collection and treatment facility for runoff from char dumps and coal stock piles during monsoon.	SMC Power Generation Limited	Garland drain has been provided along southern and western side of dump site, there is an existing drain along eastern side, all these drains are connected to a settling pond located in the SW side of dump area. A pump is installed at this pond to pump the excess water to the reservoirs which is further reused in the plant. Drain along eastern side was observed to be submerged in water. Water accumulation observed below toe of dump area in eastern and NE side which needs to be routed to the settling pond. Industry has provided common rainwater harvesting pond of capacity 40,000 m ³ over an area of 2.3 acre in between reservoir 1 & 2 for the collection of surface runoff from the work zone areas and raw material including coal stock areas during monsoon.	Complied.
		Concast Steel and Power Limited (Formerly SPS Sponge)	Garland drain and earthen settling pond has not been constructed for runoff from solid waste dump site.	Not Complied. (Unit not in operation since 01.01.2017)
		MSP Metallics Limited	Garland drain has not been constructed for runoff from solid waste dump site. However, industry has one common pond located near to the pellet plant, in which runoff water from dump flows in monsoon through central drain. This pond also serves as common basin for discharge of wastewater from the plant and rainwater harvesting.	Partially Complied. (Unit not in operation since 13.02.2016)
		Jain Steel and Power Limited	---	Unit is closed

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
		Action Ispat and Power (P) Limited	Garland drain has not been constructed for runoff from solid waste dump site. However, industry has one common pond near to the dump area, in which runoff water from dump flows in monsoon through natural gradient. This pond also serves as common basin for discharge of wastewater from the plant and rainwater harvesting.	Partially Complied. (Unit not in operation since October 2016)
		Bhagawati Steel (P) Limited	Garland drain has been provided around solid waste dump area but it was filled with silt. However, industry has not yet constructed settling pond.	Partially Complied
		M/s. Thakur Prasad Sao & Sons Pvt. Ltd (Formerly Eastern Steels and Power Ltd.,)	Garland drain and earthen settling pond has been constructed for runoff from solid waste dump site.	Complied. (Unit not in operation since February 2015)
		L N Mettalics Limited	Most of the exhausted solid waste dump area (about 6.0 Ac) is covered with soil and plantation has been done to prevent any contaminated surface run-off generation. Unit has provided a common settling/guard pond near eastern most side of the plant. Run off from solid waste dump area, raw material storage area and other areas come to this pond. Cleaning and repairing of garland drain provided around solid waste dump area was under progress. Construction of one additional settling pond near active dump site and boundary wall along active dump site was under progress during visit.	Partially Complied.
		Singhal Enterprises (P) Limited		Unit closed
		Jai Hanuman Udyog Limited	Unit has not yet provided garland drain followed by settling pond at the dump area located at the SW corner of the plant, which is active.	Not Complied. (Unit not in operation since May 2016)

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
2.	Use of SMS slag and ferro alloys slag for haul road construction in the plant premises and surrounding areas	SMC Power Generation Limited	Industry has no ferro alloy unit. SMS slag is being crushed in the in-house metal recovery unit which comprises of crusher, screen and magnet for recovery of magnetic material. The Magnetic portion is used in SMS. The non-magnetic slag is either being used for road making or low lying area filling. In the year 2015-16, industry had given 23663.34MT of SMS Non-magnetic slag to the surrounding areas for road making free of cost.	Complied
		Concast Steel and Power Limited (Formerly SPS Sponge)	Currently the slag is used in their own land for road making after metal recovery.	SMS is not in operation since January 2015. Generation of surplus slag has not evaluated.
		MSP Metallica Limited	Currently the slag is used in their own land for road making after metal recovery. Part of the generated slag is sold to stand alone metal recovery units in the nearby areas.	Generation of surplus slag has not evaluated. (Unit not in operation since 13.02.2016)
		Action Ispat and Power (P) Limited	Currently the slag is used in their own land for road making after metal recovery.	Generation of surplus slag has not evaluated. (Unit not in operation since October 2016)
		M/s. Thakur Prasad Sao & Sons Pvt. Ltd (Formerly Eastern Steels and Power Ltd.,)	Currently the slag is used in their own land for road making after metal recovery. Part of the generated slag is sold to stand alone metal recovery units in the nearby areas.	Generation of surplus slag has not evaluated. (Unit not in operation since February 2015)
3.	The DRI industries having AFBC Boilers is to utilise 30% of dolo-char as a supplementary fuel in AFBC Boilers.	SMC Power Generation Limited	The industry has installed AFBC Boilers of capacity 1x 80 TPH (17MW) in which char along with coal is used as fuel. 100 % of dolo char generated in the DRI unit is used in AFBC boiler. Unit has separate storage area near rolling mill for dolo char stacking.	Complied

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
		Concast Steel and Power Limited (Formerly SPS Sponge)	The industry has not installed AFBC Boilers.	Not Complied
		MSP Metallics Limited	The industry has installed AFBC Boilers of capacity 70TPH (16 MW) in which char along with coal is used as fuel. .	Complied
		Action Ispat and Power (P) Limited	The industry has installed two CFBC and one AFBC Boilers of capacity 185, 185 and 80TPH (2x43MW+ 1x20MW) in which char along with coal is used as fuel. .	Complied
		M/s.Thakur Prasad Sao & Sons Pvt. Ltd (Formerly Eastern Steels and Power Ltd.,)	The industry has installed AFBC Boilers of capacity 22 TPH (4MW) in which char along with coal is used as fuel.	Complied
4.	The dead dumps shall be biologically reclaimed and rehabilitated in such a manner so as to make it gainfully utilized for other purpose. (new action point)	SMC Power Generation Limited	Out of 27 acres of land for solid waste disposal inside the factory premises, 13 acres of land has already been exhausted. 6 Ac. of the exhausted area has been biologically reclaimed however rest of the area (7 Ac.) has not been biologically reclaimed. Slope of the exhausted part of the dump area is also needs to be biologically reclaimed and stabilized.	Partially Complied
		Concast Steel and Power Limited (Formerly SPS Sponge)	The unit has provided total 35 acres of land for solid waste disposal out of which 20 acres of land has been exhausted. Presently solid waste (char, slag, dust etc) generated by the unit is disposed off over an area of 15 acre land, part of which has already been exhausted and partly covered with soil. Exhausted dump area has not yet been biologically reclaimed.	Not Complied
		MSP Metallics Limited	Dead dumps has not yet been biologically reclaimed.	Not Complied
		Jain Steel and		Unit closed

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
		Power Limited		
		Action Ispat and Power (P) Limited	Dead dumps have not yet been biologically reclaimed.	Not Complied
		Bhagawati Steel (P) Limited	Old dead solid waste dump of about 1.5 Ac. has already been covered with earth soil and the area has been partially vegetated. Industry was asked to rehabilitate the entire 1.5 Ac. area biologically by 31.03.2018.	Partially Complied
		M/s.Thakur Prasad Sao & Sons Pvt. Ltd (Formerly Eastern Steels and Power Ltd.,)	Part of the dead dump has not yet been biologically reclaimed.	Partially Complied
		L N Metalliks Limited	Old dead solid waste dump(about 6.0 Ac) has already been covered with earth soil and the area has been utilized for tree plantation. However, gap plantation needs to be done over dump.	Complied
		Singhal Enterprises (P) Limited		Unit closed
		Jai Hanuman Udyog Limited	Dead dumps have not yet been biologically reclaimed.	Not Complied
5.	Treatment and utilization of phenol and cyanide bearing effluent from recovery type coke-ovens/ coal gasification plants.(new action point)	SMC Power Generation Limited	Unit has no coke-oven unit. Coal gasification unit installed earlier has been dismantled after installation of arrangement for transferring Hot billets directly from CCM to the rolling mills.	Complied
		Concast Steel and Power Limited (Formerly SPS Sponge)	Unit has no coke-oven unit. Unit has installed one double stage Producer Gas Plant (PGP) of capacity 7000 Nm³/hr. About 25MT coal of 6000 Kcal/Kg is consumed per day. Industry has not yet installed treatment system for the wastewater generated from PGP.	Not Complied.
		Jain Steel and Power Limited	----	Unit Closed
		Action Ispat and Power (P) Limited	Unit has no coke-oven or any coal gasification plant. Hot billets from CCM are being directly transferred to the rolling mills.	Complied

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
		M/s.Thakur Prasad Sao & Sons Pvt. Ltd (Formerly Eastern Steels and Power Ltd.,)	Unit has no coke-oven unit. Coal gasification unit installed earlier has been dismantled after installation of arrangement for transferring Hot billets directly from CCM to the rolling mills.	Complied

Action Plan for abatement of pollution in Aluminium Plants

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
1.	Implementation of findings of comprehensive wastewater audit including runoff management for the smelter plant.	Vedanta Ltd.	It was learnt that water audit and runoff water management report has been submitted to the Board by industry. Technical presentation has also been given to the Board and final report will be submitted after incorporation of suggestion from the Board. Management plan is being implemented by the unit.	Being Complied
2.	Utilisation of carbonaceous portion spent pot lines by Cement Kilns/ Authorised reprocesses	Cement plants / Vedanta Ltd./ Authorised reprocessors	At present Spent Pot Line (SPL) is stored in covered shed inside plant premises. Carbonaceous portion of spent pot lines has been given to the authorized re-processors like M/s. Green Energy, Sambalpur and M/s. Subhra Chemicals, Cuttack for trial run. Discussion with M/s. OCL is under process for co-processing of spent pot lines in cement plant.	Not Complied
3.	The Alluminium Smelter either by itself or in combination with its CPP shall, achieve Zero Liquid Discharge except during monsoon months .(new action point)	Vedanta Ltd.	Industry has installed ETP consisting three (03) modules of 100m ³ /hr capacity each at Plant-1 and ETP of capacity 400m ³ /hr at Plant-2 for the treatment of wastewater generated from smelter (pot room), rectifier, cast house and carbon area. No wastewater was being discharged to outside the plant premises during inspection.	Complied
4.	Co-incineration of Spent pot linings (SPLs) in CPPs of Aluminium Smelters subject to technical feasibility.(new action point	Vedanta Ltd.	No such study has been conducted at Vedanta Ltd. However, study has been conducted for co-processing of SPL in power plant by other aluminium industries and trial run conducted by those units and report submitted to the CPCB for process approval. As this a similar type of study the outcome of the trials conducted and the	Not Complied

Sl. No.	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
			SOP/guidelines by CPCB will be followed by the industry.	
5.	Study of Recycle/recovery/ Reuse and waste minimization potential of hazardous waste in aluminum smelter.(new action point)	Vedanta Ltd.	Industry is following sustainability framework based on IFC (International Financial Corporation) guidelines driven from corporate which emphasizes waste hierarchy of elimination, reduce, recycle, reuse then disposal and many wastes like bath material, coke dust, butt, floor sweeping dust, etc. are being attempted for recycling. For alternate use of two major wastes SPL and Aluminium Dross, collaborative research project has been taken up. The final reports of the same project have been received, process approval and commercialization is under process.	Being Complied

Action Plan for abatement of pollution through Common infrastructure and services

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
1.	Construction of a sewage treatment plant for Jharsuguda and Brajaraj Nagar	Odisha Water Supply and Sewerage Board (OWSSB)	<p>Sewage treatment plant has not yet been constructed. It was learnt that Jharsuguda Municipality has submitted information to Orissa Water Supply and Sewerage Board (OWSSB) for preparation of DPR for construction of STPs.</p> <p>It was also learnt that proposal is there for construction of small STPs in the Jharsuguda town at strategic locations.</p>	Not complied
2.	Establishment of an extensive air quality monitoring network for Ib Valley-Jharsuguda area	OSPCB, Vedanta Ltd., MCL	<ol style="list-style-type: none"> i. The SPCB is monitoring AAQ in CPA at Two Locations under NAMP and SAMP Programme on a continuous basis. ii. Besides for evaluation of CEPI Score CPCB is periodically monitoring AAQ at 8 locations engaging third party NABL accredited Laboratory. iii. One Continuous Ambient Air Quality Monitoring Station has been installed at GM Complex, MCL, Ib Valley Area, Brajarajnagar, Jharsuguda under SPCB/ CPCB Collaboration Project. 	Complied and to be continued with improvement as necessary.

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
3.	Construction of MSW Land fill site for Jharsuguda Town	Municipality	Jharsuguda, Brajrajnagar and Belpahar municipalities have provided their respective municipal solid waste disposal site at Kapumal, Ratakhandi (ward no-08) and Kaduapada respectively. However municipalities have been instructed for segregation facility at the disposal site. Municipal Solid Waste Management study is being carried in the municipality area by M/s. ACPL Global Pvt. Ltd. through Odisha Urban Infrastructure Development Fund (OUIDF).	Partially complied
4.	Promotion of industries in CPA which uses waste products like fly ash, char and waste heat.	Individual Stakeholders	<ul style="list-style-type: none"> i. There are 22 nos. of operating Fly Ash Bricks Plants in Ib valley- Jharsuguda area with combined capacity to produce 74 Million Fly Ash Brick per Annum. ii. There are 16 Pulverized Coal Fired and 07 AFBC/CFBC Boilers installed in Ib valley- Jharsuguda. iii. There are 11 Nos of Waste Heat Recovery Boilers installed in Ib valley- Jharsuguda 	Under implementation.
5	The establishment of on-line monitoring station for water quality monitoring of River Mahanadi and online data transmission facility with SPCB and CPCB.	Vedanta Ltd., Tata Refectories Ltd., MCL, SPCB	The location of on-line monitoring station for water quality monitoring of Ib is under evaluation after formulation of guidelines for online water quality monitoring by CPCB.	Under implementation.

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
6.	Monitoring of ground water quality inclusive of Pb, Cr, Cd and Fluoride concentrations	MCL / SPCB	SPCB is monitoring ground water quality at 8 locations. MCL is regularly monitoring ground water quality with respect to Pb, Cr, Cd and F ⁻ concentration. Similarly Vedanta Ltd. is also monitoring ground water quality with respect to target parameters. Besides for evaluation of CEPI Score CPCB is periodically monitoring GW Quality at 8 locations engaging third party NABL accredited Laboratory.	Complied and GW Quality Monitoring is to be continued.
7	Monitoring of PM _{2.5} and Ozone at traffic intersections.	Vedanta Ltd., And MCL /SPCB	<ul style="list-style-type: none"> i. The monitoring locations has been finalised by SPCB. The monitoring will commence shortly. ii. Some of the Real Time AAQ Monitoring Location within the industrial premises has Ozone Sensors. 	Under implementation.
8.	Epidemiological Study for Assessment of Effect of Pollutants on Human Health in Critically Polluted Areas (Angul-Talcher and Ib Valley-Jharsuguda) in Odisha .(new action point)	SPCB / Major Govt. and Private Hospitals	Under planning stage.	Not yet started.

	Action plan	Stakeholder agency	Current status with action plan for implementation	Remark
9.	Development of Geo-database for Environmental Mapping and Web based GIS application in Critically Polluted Areas (CPAs) in Odisha.(new action point)	SPCB	Field data acquisition and assimilation is being done by SPCB officials and engaging third party, M/s. Spatial Planning and Analysis Research Centre Pvt. Ltd. (SPARC) for Development of Geo-database for Environmental Mapping and Web based GIS application in Critically Polluted Areas (CPAs).	Under Progress
10	Land use and land cover Study in CPA.(new action point)	SPCB	Heat Island Study has been conducted in the Ib Valley – Jharsuguda area by The Energy and Resources Institute (TERI), New Delhi in collaboration with TERI University.	Study is in final stage
11	Improve plantation raised by industries and mines in CPA.(new action point)	All industries and mines in CPA/ DFO/ SPCB	District Administration, Jharsuguda in consultation with the Regional Officer, SPCB and DFO, Jharsuguda proactively constituted a Plantation Monitoring Committee under the District Environment Society and District Eco Club Co-ordination Committee of Jharsuguda to visit the Mines & Industries to conduct periodic audit and to verify the plantation raised by industries and mines.	Under implementation
12	Source Apportionment study in CPA.(new action point)	SPCB	Under planning stage.	Not yet started.