

JKCW/MGR/ESR/WHRBP/FY-23-24

Date: 27/09/2024

To

The Member Secretary

Rajasthan State Pollution Control Board

4. Industrial Area Jhalana Doongri

Jaipur-302004 (Raj)

Sub: Submission of Environmental Statement Report in Form-V for Financial Year 2023-2024 by M/s JK Cement Works, Mangrol, **Waste Heat Recovery Based Power Plant** in Mangrol Village, Tehsil Nimbahera, Chittorgarh and Rajasthan-312601.

Ref.:

F [CPM]/Chittorgarh(Nimbahera) /11(1)2018-2019/4400-4402

Order No: 2019-2020/CPM/5599 Dated 04/02/2020

Dear Sir,

With reference to the above cited subject, we M/s. J.K. Cement Works, Mangrol, **Waste Heat Recovery Based Power Plant 29.1 MWH** hereby submitting the Environmental Statement Report in Form-V for Financial Year 2023-2024 as per, Rule No 14 of The Environment (Protection) Rules, 1986, EC & CTO order.

This is for your information please.

Thanking You

Yours Faithfully

For J.K. Cement Works, Mangrol



Manish Toshniwal
Unit Head-(Operations).

Encl: Form-V Environment Statement report.

Copy: The Regional Officer, Rajasthan State Pollution Control Board, Near FCI Godown, Chanderiya, Dist - Chittorgarh (Raj)-312021.

Corporate Office

Prism Tower, 6th Floor, Ninaniya Estate,
Gwal Pahari, Gurugram - 122102, Haryana

0124-6919000

admin.padamtower@jkcement.com

www.jkcement.com

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Manufacturing Units at :

Nimbahera, Mangrol, Gotan (Rajasthan) | Muddapur (Karnataka)

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ENVIRONMENTAL STATEMENT FORM - V

Environmental Statement for the financial year 2023-24, ending the 31st March 2024

PART-A

i. Name and address of owner/occupier of the operation or process th e industry	J.K. Cement Works, Mangrol 29.1 MW Waste Heat Recovery System C/o Kailash Nagar, Nimbahera Tehsil: Nimbahera, Chittorgarh (Rajasthan) PIN- 312617
ii. Industry category Primary - (STC Code) Secondary - (STC Code)	Primary
iii. Production capacity	29.1 MW Electric Power generation
iv. Year of establishment-	Year - 2020
v. Date of last environmental statement submitted	23.09.2023

PART-B

WATER AND RAW MATERIAL CONSUMPTION

WATER CONSUMPTION in m³/day

Process : - Nil

Cooling : - 460 m³/day (Boiler-300 KLD, Cooling-160 KLD)

Domestic : - Nil

Name of products	Process water consumption per unit of products (For cooling & domestic)	
	During the previous financial year (2022-23) (KL/MWh)	During the current financial year (2023-24) (KL/MWh)
Power (Electricity)	0.333	

RAW MATERIAL CONSUMPTION

Name of raw material	Name of products	Consumption of raw material per unit of output	
		During the previous financial year (2022-23)	During the current financial year (2023-24)
Waste hot gasses from Kiln & Cooler	Power (Electricity)	Waste heat recovered from Kiln-1, Kiln-2 ,Kiln-3 ,Cooler -1 , Cooler -2 & Cooler-3 (Waste hot gasses depends up on availability)	

PART-C

POLLUTION DISCHARGE TO ENVIRONMENT / UNIT OF OUTPUT

Pollutants	Quantity of pollutants discharged (Ton/Day)	Concentration of pollutants in discharge (mg/Nm3)	Percentage of variation from prescribed standards with reasons
Water	Effluent wastewater generated from blowdown of cooling tower and DM plant wastewater is treated in a neutralization pit as prescribed by Rajasthan State Pollution Control Board and treated water is being utilized in cement plants for cooling purpose, hence maintaining Zero Liquid Discharge unit.		
Air	Waste Heat Recovery Based Power Plant has no any stack , hence it is not applicable		

*Plant has situated in existing Cement plant premises

Neutralization pit treated wastewater yearly average Analysis report

Parameters	Unit	Standards	Average of YTD
pH (at 25° C)	-		7.6
Temperature	°C	°C	23.0
Total Suspended Solid	mg/L	<100 mg/L	38.0
Oil & Grease	mg/L	<10 mg/L	3.1
B.O.D.3 days @27° C	mg/L	<30 mg/l	12.0
Chemical Oxygen Demand	mg/L	<250 mg/l	103.6

Residual Chlorine	mg/L	<0.5 mg/l	BDL
Phosphate as PO4	mg/L	<5.0 mg/l	0.6
Copper as Cu	mg/L	<1.0 mg/l	BDL
Zinc	mg/L	<1.0 mg/l	0.5
Iron as Fe	mg/L	<1.0 mg/l	0.1
Total Chromium	mg/L	<0.2 mg/l	BDL

MONTH & YEAR	CPP BOILER ESP STACK Emission (in mg/Nm3)			CPP BOILER ESP STACK Emission (in Tons)		
	PM	SO2	NOX	PM	SO2	NOX
APRIL-2023	0	0	0	0	0	0
MAY-2023	21.27	230.81	77.3	7.4	80.2	26.86
JUNE-2023	14.32	222.38	74.07	4.8	75.1	25.01
JULY-2023	13.36	192.27	66.34	3.9	55.9	19.3
AUGUST-2023	0	0	0	0	0	0
SEPTEMBER-2023	23.19	223.85	96.17	7.9	76	32.65
OCTOBER-2023	21.65	200.06	82.38	7.6	70.2	28.92
NOVEMBER-2023	14.69	142.26	123.08	4.9	47.7	41.24
DECEMBER-2023	21.37	257.64	77.13	7.4	89.5	26.8
JANUARY-2024	22.13	290.96	155.08	7.7	101.1	53.9
FEBRUARY-2024	41.78	302	239.5	13.9	100.4	79.6
MARCH-2024	13.81	299.08	176.26	4.9	106.3	62.7

Month & Year	NEAR TIME OFFICE				NEAR THERMAL POWER PLANT			
	PM10	PM2.5	SO2	NOX	PM10	PM2.5	SO2	NOX
April-2023	72.5	34.4	10.6	32.3	76.2	23.7	9.8	14.2
May-2023	74.8	35.3	11.6	19.9	73.4	24.9	12.9	25.5
June-2023	71.6	25.1	11.2	24.2	72.5	21.6	13.5	24.6
July-2023	71.3	31.9	10.6	16.5	72.1	35	15.8	22.6
August-2023	75.3	32.8	10.2	22.7	72.9	27.4	12.4	20.1

September-2023	70.3	30.5	11.5	23.5	73.5	26.1	11.5	20.1
October-2023	68.9	22.4	11.7	25.1	71.7	21.6	13.3	24.2

June-2023	64	52	65	51	56.2	46.5	56.80	45.80
July-2023	67	51	67	54	56.8	47.2	57.10	46.20
August-2023	64	53	60.5	48.5	55.2	44.5	57.90	46.50
September-2023	67	51	61.2	49	56.2	45.5	58.10	47.30
October-2023	62	50	62.4	50.1	57.8	46.8	58.60	47.90
November-2023	67	52	62.9	51.35	59.25	49.1	62.00	48.70
December-2023	62.5	49.5	60.8	51.2	58.2	48.5	59.60	48.40
January-2024	63	50.2	59.1	52.1	58.6	44.6	59.80	48.60
February-2024	59.05	47.5	63.2	50.2	59.45	48	60.85	47.65
March-2024	60.1	51	60.4	50.3	59	48.1	60.20	48.00
AVERAGE	63.41	50.79	62.23	51.17	57.58	47.13	58.40	47.63

* Common for plant & colony

STP treated water quality data

STP treated water Quality		
Parameters	Standards	Average results of YTD
pH	Between 5.5 to 9.0	7.4
Total Suspended solids	Not to exceed 100 mg/l	25.3
Biological Oxygen Demand (3 days at 27 Degree C)	Not to exceed 30 mg/l	15.2
Chemical Oxygen Demand	Not to exceed 250 mg/l	99.1
Oil & Grease	Not to exceed 10 mg/l	2.9
Ammoniacal Nitrogen (as N)	Not to exceed 50 mg/l	8.6

Sulfide (as S)	Not to exceed 2.0 mg/l	0.1
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Treated water quality of Neutralization pit data

Parameters	Unit	Standards	Average of YTD
pH (at 25° C)	-		
Temperature	°C	°C	7.8
Total Suspended Solid	mg/L	<100 mg/L	33.3
Oil & Grease	mg/L	<10 mg/L	3.1
B.O.D.3 days @27° C	mg/L	<30 mg/l	11.4
Chemical Oxygen Demand	mg/L	<250 mg/l	90.0
Residual Chlorine	mg/L	<0.5 mg/l	#DIV/0!
Phosphate as PO4	mg/L	<5.0 mg/l	0.5
Copper as Cu	mg/L	<1.0 mg/l	#DIV/0!
Zinc	mg/L	<1.0 mg/l	0.1
Iron as Fe	mg/L	<1.0 mg/l	0.1
Total Chromium	mg/L	<0.2 mg/l	#DIV/0!

Noise level monitoring data

Month & Year	NEAR TIME OFFICE		NEAR THERMAL POWER PLANT		NERA FACTORY GATE LINE-1		NEAR COLONY GUEST HOUSE	
	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB	DAY in dB	NIGHT in dB
April-2023	65	52	61	54	54.3	46.2	54.30	45.60
May-2023	60.25	50.3	63.2	52.3	59.95	50.5	55.60	50.90
June-2023	64	52	65	51	56.2	46.5	56.80	45.80
July-2023	67	51	67	54	56.8	47.2	57.10	46.20
August-2023	64	53	60.5	48.5	55.2	44.5	57.90	46.50
September-2023	67	51	61.2	49	56.2	45.5	58.10	47.30
October-2023	62	50	62.4	50.1	57.8	46.8	58.60	47.90
November-2023	67	52	62.9	51.35	59.25	49.1	62.00	48.70
December-2023	62.5	49.5	60.8	51.2	58.2	48.5	59.60	48.40
January-2024	63	50.2	59.1	52.1	58.6	44.6	59.80	48.60
February-2024	59.05	47.5	63.2	50.2	59.45	48	60.85	47.65

March-2024	60.1	51	60.4	50.3	59	48.1	60.20	48.00
AVERAGE	63.41	50.79	62.23	51.17	57.58	47.13	58.40	47.63

PART-D

(As specified under Hazardous & Other Waste Management Rules-2016)

Hazardous waste	Total Quantity	
	During previous financial year (2022-23) (KL)	During current financial year (2023-24) (KL)
From process	Used oil (5.1)- 5.0* Waste oil (5.2)- 31.6*	Used oil (5.1)- *NIL Waste oil (5.2)- 5.2
From pollution Control facilities	Not applicable	Not applicable

*including Cement Plant Line-1, Line-2, & Line-3, CPP, WHRS, Mines & Colony.

Hazardous waste generated is being sold through an authorized recycler by CPCB.

WASTE DESCRIPTION	WASTE TYPE	AUTHORIZATION NO	QTY SOLD	DATE OF SALE
VENDOR DETAILS	WASTE/RESIDUE CONTAINING OIL	RPCB/HWM/2020 -2021//HSW/141/16	1.6	31/07/2024
VENDOR REGISTRATION NUMBER		RPCB/HWM/2020 -2021//HSW/141/16	3.6	24/05/2023
TOTAL IN MT			5.2	

E-WASTE

NAME OF THE AUTHORIZED VENDOR	AUTHORIZATION NO	QTY SOLD	DATE OF SALE
SAFDAR E-RECYCLING PVT LTD UTTAR PRADESH	H40531/C-1/E- WASTE-465/2019	1580	05/10/2023
SAFDAR E-RECYCLING PVT LTD UTTAR PRADESH	H40531/C-1/E- WASTE-465/2019	1440	27/10/2023
PAKEEZA TRADERS AURANGABAD	MPCB/ROCHQ/HSMD/AUTH/22/EW/31	2400	20/01/2024
TOTAL WEIGHT IN TONS		5.42	

PART-E SOLID WASTE

Total Quantity

S.No	Description	During previous financial year (2022-23) (MT/Year)	During current financial year (2023-24) (MT/Year)
1	From process	Not applicable	Not applicable
2	From pollution control facility	Not applicable	Not applicable
3	Quantity reutilized with in the unit	Not applicable	Not applicable

PART-F

PLEASE SPECIFY THE CHARACTERISTICS (IN TERMS OF COMPOSITION AND QUANTUM) OF HAZARDOUS AS WELL AS WASTES AND INDICATE DISPOSAL PRACTICE ADOPTED FOR BOTH THESE CATEGORIES OF WASTES.

1. Hazardous waste generated in the form of used Oil / spent oil, waste / residue containing oil, which is stored in barrels at safe & dedicated areas and sold to Authorized recycler approved by Central Pollution Control Board.
2. Waste hot gas release from Kiln & Cooler section totally used for power generation by WHRS.
3. Effluent wastewater generated from blowdown of cooling tower and DM plant wastewater is treated in a neutralization pit as prescribed by Rajasthan State Pollution Control Board and treated water is being utilized in cement plant in Mill Spray purpose, hence maintaining Zero Liquid Discharge unit.

PART-G

IMPACT OF THE POLLUTION ABATEMENT MEASURES TAKEN ON CONSERVATION OF NATURAL RESOURCES AND ON THE COST OF PRODUCTION.

Industry has installed a neutralization pit for proper treatment of trade effluent & treated water quality to meet the norms prescribed by Rajasthan State Pollution Control Board. Treated water is being utilized in process and machinery cooling purposes.

PART-H

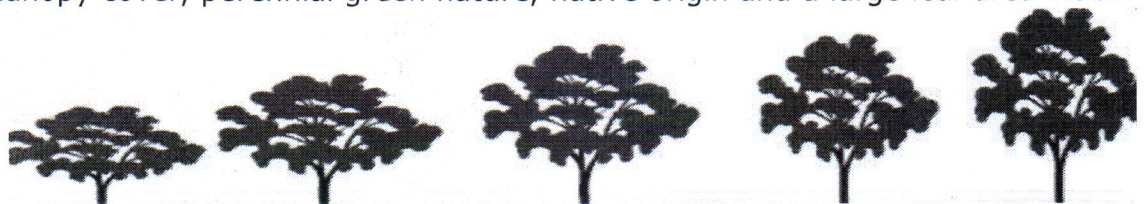
ADDITIONAL MEASURES / INVESTMENT PROPOSALS FOR ENVIRONMENTAL PROTECTION INCLUDING ABATEMENT POLLUTION, PREVENTION OF POLLUTION.

1) Air Cooled condenser installed.

PART-I

ANY OTHER PARTICULARS FOR IMPROVING THE QUALITY OF ENVIRONMENT

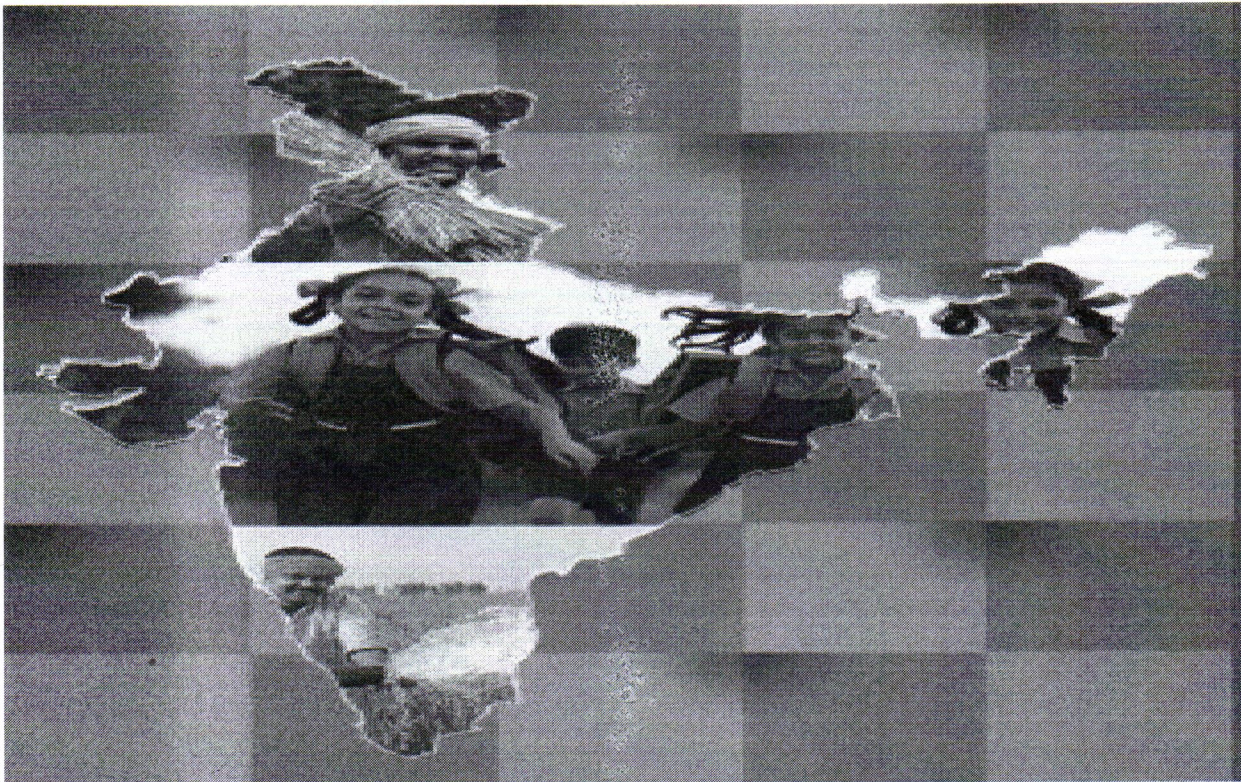
1. Effluent water quality monitoring is being done regularly as mentioned in consent to operate.
2. 4 nos. of Continuous Ambient Air Quality Monitoring Systems (CAAQMS) has been installed at the periphery of the plant.
3. Effluent generated from the cooling tower blowdown and DM plant wastewater is being treated through neutralization and used in cement plants for cooling purposes, hence maintaining Zero Liquid Discharge Unit (ZLD).
4. Proper Housekeeping and cleaning is being done with the help of three road sweeping machines.
5. Domestic waste water generated is being treated in sewage treatment plants (STP). Treated water is utilized for plantation / horticulture development.
6. 16 Rain water harvesting structures have been constructed in plant and colony areas to recharge ground water.
7. Cemented road constructed to avoid fugitive dust generation during the movement of vehicles.
8. Telemetry system installed for online ground water level monitoring.
9. Oxygen generation plant installed to catch the requirement of Oxygen during Covid-19.
10. Green cover is not only pleasing to the eyes but also beneficial in many ways such as conservation of biodiversity, retention of soil moisture, recharge of ground water and moderation of micro climate. It has been derived that trees can act as carbon sinks & efficient biological filters, removing significant amounts of particulate pollution and has tremendous potential for improved air quality. The dust capturing phenomenon of plant species is a cost effective technology for reduction of particulate load in urban agglomerations. Raising of green belt at the project site with right types of species can serve as a useful buffer to contain the menace of pollution from different sources. Whatever space is available around the periphery of the plant will be planned to be utilized for green belt and the open spaces within the factory will be converted to green areas in the form of lawns or flowering plants. A wide range of plant species have been planted in and around the premises to help capture the fugitive emissions and noise levels attenuate the noise generated and improve the aesthetics. This wide range covers plants of fast growing type with thick canopy cover, perennial green nature, native origin and a large leaf area index.



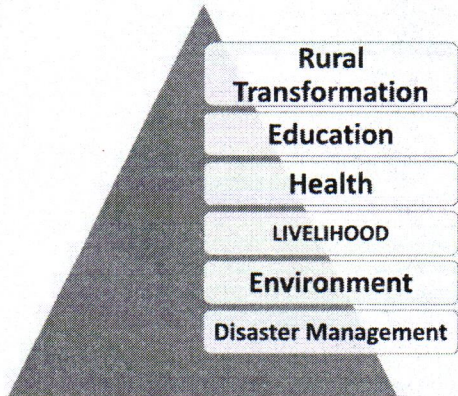
Financial Year No of Saplins	FY 2019-2020	FY 2020-2021	FY 2021-2022	FY 2022-2023	FY 2023-2024
	11100	11369	13255	10928	1770



Corporate Social
Responsibility

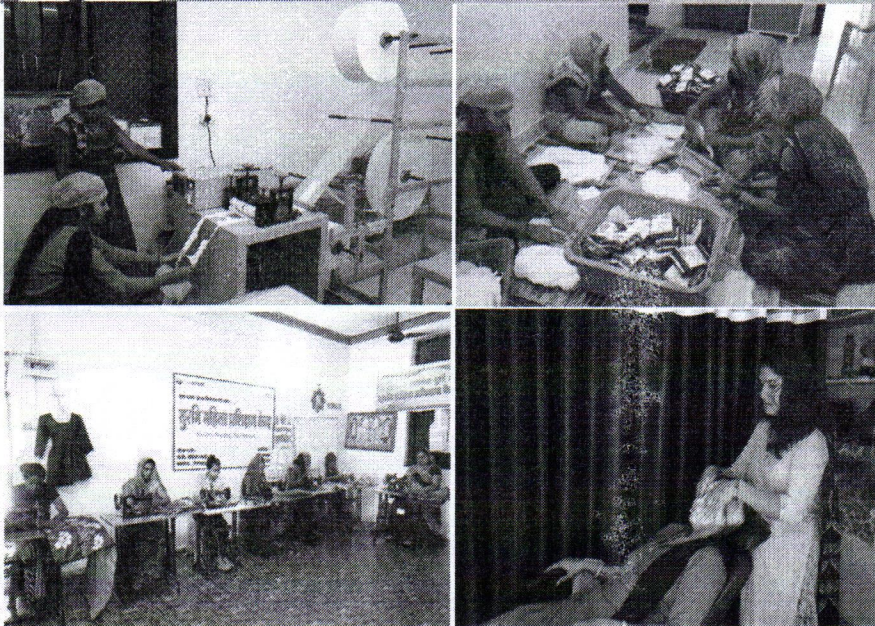


Rational



JK Cement CSR Works Impacting 45,000 People of ten Gram-Panchayat and 28 Villages situated around Plants & Mines Area.

Livelihood



- ✓ Sanitary Pad Production Unit @ Mangrol under "Sparsh" Program.
- ✓ Reach out to 20,000 women's through providing low sanitary pads.
- ✓ Beauty Parlour & Stitching Training Program @ Mangrol, Karunda & Bansa.
- ✓ Around 891 women trained under Surabhi Beauty Parlour Stitching & Training Program.



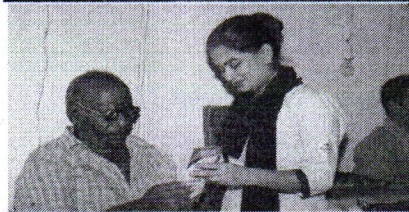
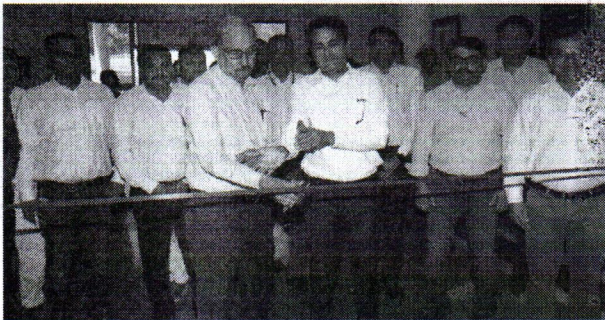
Livelihood



- ✓ Total 33004 AI done in 2022-23, PD-1443 and Calf born-9088.
- ✓ Vaccination drive for prevention from Lumpy disease in surrounding 40 nos. of villages in Nimbahera. Total animals vaccinated around 12000 nos.
- ✓ Lowest mortality in state.
- ✓ Organised 48 medical camp in 2022-23 and benefitted around 1300 families.



Health



Inauguration of Eye Checkup & Screening Camp in Collaboration with Gomabai Eye Hospital at RTC



Health



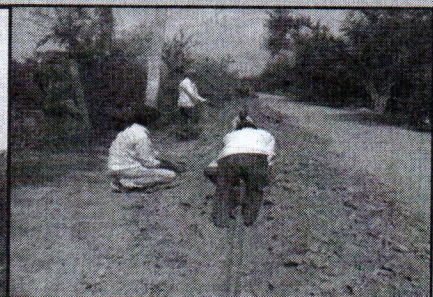
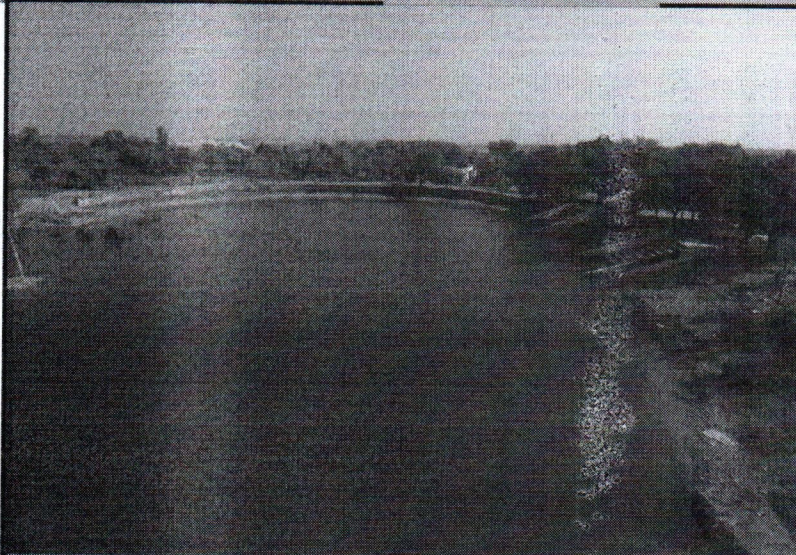
The village named Payeri, located in the Karunda Panchayat, comprises a total of 250 households. One of the major challenges faced by the community was the inadequate availability of water for drinking and domestic purposes.

To address this issue, a solution was implemented wherein all households were connected with water pipelines, and water was supplied through bore wells. The impact of this initiative has been significant, as people now have access to water at their doorstep. This has led to a reduction in the cost of water, saved time and effort, and improved the overall health and well-being of the community, particularly for women who are often burdened with the drudgery of fetching water

Drinking water distribution in Payeri village.



Environment



Social Return of Investment
Brief-A 1.2km pipeline laid from Karunda Mines to Karunda village pond.
Purpose-Agriculture and Cattle drinking
Beneficiaries-Around 150 families are directly benefiting.
Impact- Around 1500 people are directly or indirectly benefiting through this intervention, 7-8 wells and bore wells are getting recharged. Now in surrounding wells and bore well 12 water is available .

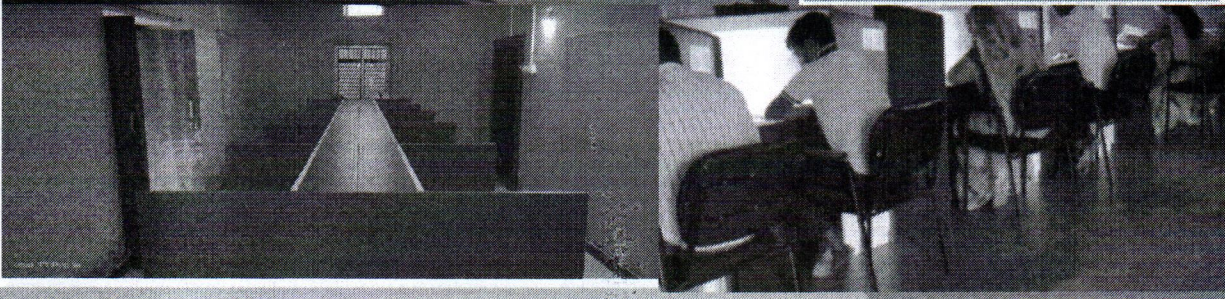
A initiative to make available water for agriculture through Water channel from Karunda Mines to village



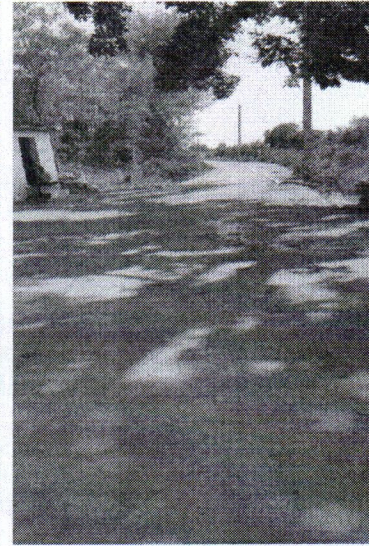
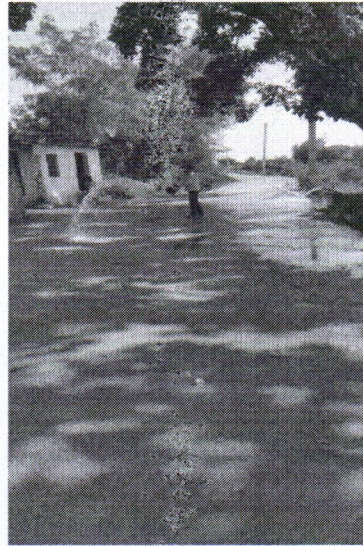
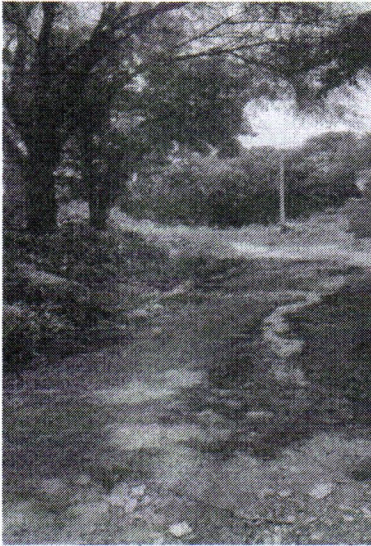
Education



Gyankendra- A initiative to provide environment and infrastructure to the youth who are preparing for government complete exams in village.

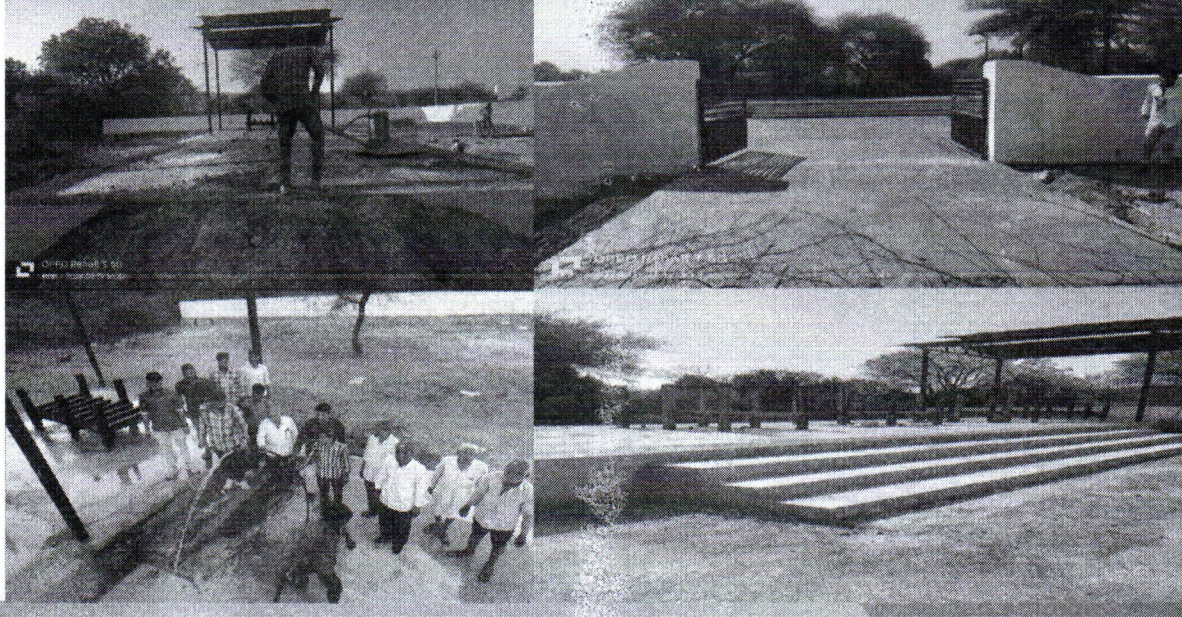


Rural Transformation



Constructed CC Road at Kripa ram Ji ki Dhandhi Arniya Joshi village.

Payri samshan boundary wall and misc work



Pemdiya kheda samshan boundary wall

