

# Coal Industry's Contribution to Water- Ecosystem

Through Gainful Utilization of Mine-Water



**WESTERN COALFIELDS LIMITED**

(A subsidiary of Coal India Limited)



# Mine Water Utilisation - Process



Aquifers in Indian coal bearing formations constitute of sandstone, while coal acts as aquitards allowing formation of unconfined & confined aquifers resulting in high water table; Also low sulphur content(<1%) means no Acid Mine Drainage(AMD)

## Mine Dewatering

Percolated & logged water from mines is removed through pumps



## Pipeline Transport

Water is transported to desired location through HDPE pipelines



## Treatment in settling tanks

Extracted water is treated through a series of settling tanks



## Filtration

Water is Treated through Pressure Filters, Sand Filters, Reverse Osmosis & Ozonisation Plants

# GAINFUL USE OF MINE WATER



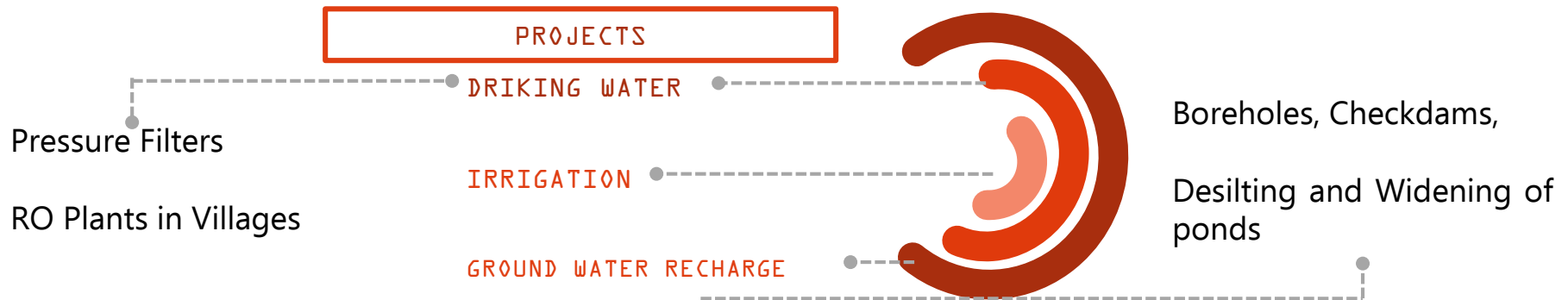
Total Discharge of All Mines in WCL



Utilised for Internal use –  
Spraying, Washing, Dust  
Suppression



To Be Utilized for  
Community Distribution



# Creating Shared Value



## Reconceiving needs, products, and customers

Meeting societal needs through products  
Addressing unserved or underserved customers

RO Water Plants & Coal Neer Initiatives

- Creating new customers
- Products at lower price



## Redefining productivity in the value chain

Using resources, suppliers, logistics, and employees more productively

Disposal of mine water into local channels

- Improves livelihoods of local populace



## Improving the local business environment

Improving the communities in which a company operates

RO Water Plants & Ground water recharge

- Clean drinking water
- Irrigation



# Water Supply for Drinking Water



## Hybrid Water Cooperatives

- WCL has invested in setting up Water Treatment plants with 1000 liters per hour capacity in villages.
- Plant Operation and Maintenance costs recovered through Sale of bottled water under brand name “Coal Neer”
- Local SHGs are used to distribute purified drinking water to nearby villages who earn revenue through sale of water without incurring any cost of plant maintenance
- Each plant operates like a hybrid



## Supply to Municipalities

- One of our first Mine water Initiatives was K2K Project - Water from Kamptee Opencast Mine to Kanhan Township
- Water after being treated through Sand & pressure filters is discharged into water supply

# Water Supply for Irrigation & Ground Water Recharge



## MINE TO BOREHOLES

▶ WCL drills boreholes adjacent to a seasonal channels and discharges the mine water into it



## CHECKDAMS

▶ Constructed downstream of this channel; raising water level over a stretch of the course of channel.



## DESILTING & WIDENING

▶ Of Ponds for increase in water carrying capacity of ponds and increase in soil moisture.





# Water Supply for Large Scale Use



## Water for Thermal Power Utilities

- An average 1000 MW Thermal Power Station consumes water that could irrigate 7000 ha of land or could supply water to 800,000 people in an year

- Khaparkheda Thermal Power Station (TPS) with an installed capacity of 1340 MW draws 37 Million M<sup>3</sup> per year water from Pench reservoir which supplies water to Nagpur City (Population 2.5 Million)

- WCL will provide 10.76 Million M<sup>3</sup> per year water from its Bhanegaon

## Water for Irrigation Development

- While Power sector consumer only 10% of water from Pench Reservoir, 75% water is utilised by Vidarbha Irrigation Development Corporation (VIDC)

- WCL will provide 28.16 Million M<sup>3</sup> per year water to VIDC from its three mines - Kamptee, Inder and Gondgaon Open Cast Mines

# Win-Win Impact



## Community

TILL DATE

136,000

Beneficiaries from  
all our Mine Water  
Projects

## Company

TILL DATE

37.89 MT

5141 Ha of Land  
Acquired & 18  
New Projects  
Opened

## Environment

Water  
Potential

474.5 MM<sup>3</sup>

of Mine water  
Discharge in entire  
company being  
used for community

- WCL has set an example for other mining companies in India
- This Initiative is changing the way mining industry is looked upon in India





THANK YOU

1. Mr. Scott Miller, Newmont, United States
2. Ruth Thomas, Global Agribusiness Alliance, United Kingdom
3. Li Gang, Sinopec Beijing Yanshan Petrochemical Company and Mr. Arnaud Penverne, Veolia, China
4. Mr. Sekhar Rayaprolu, Western Coalfields Limited, India
5. Dr. Paola Vasquez, Autonoma de Occidente University, Colombia
6. Mr. Carlos Toro, Colombia National Cleaner Production Center, Colombia

**Livestreaming:** <https://www.facebook.com/SIWIwater>  
<https://vimeo.com/siwi>

