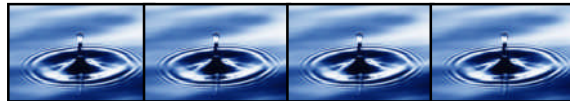




Excellence in Water Management

@

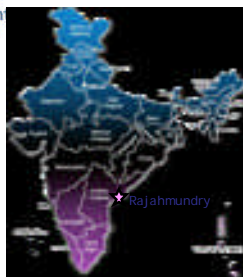
*GlaxoSmithKline Consumer Healthcare Ltd
Rajahmundry*



Every Drop Counts  GlaxoSmithKline



Site Profile



EHS Vision

To achieve
Competitive Business
advantage through
Leadership
and Excellence
in EHS

ISO: 9001

ISO: 14001

OHSAS: 18001

SA 8000

GSKCH, India

- Ø Indian branch of GlaxoSmithKline plc U.K.
- Ø Manufacturing sites at Nabha, Rajahmundry and Sonapat

About Rajahmundry

- Ø Commercial production started in 1973
- Ø Capacity Installed - 24 KT
- Ø Product Portfolio: Horlicks, Chocolate Horlicks, Boost Chocoblas
- Ø Employees ~ 1500 (Incl. contractor employees)



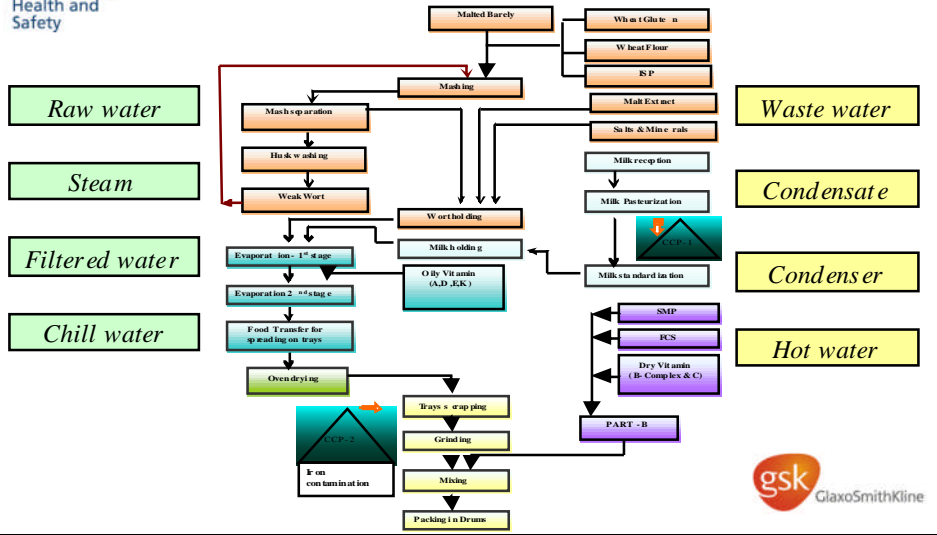
www.gsk.com



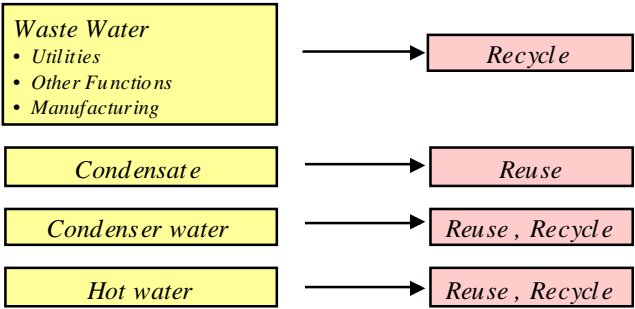


Mfg Process & Water IPO

HORLICKS - Manufacturing process flow diagram



Water Out flow

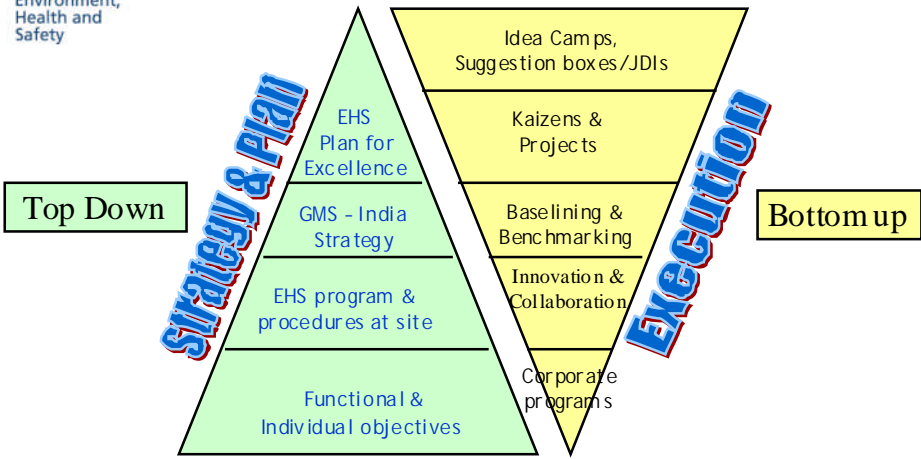


3 R (Zero Discharge) - 100% Compliance





Resource Conservation Strategy



Employee Engagement



Awareness campaign

- 🛠 Training & Education
- 🛠 Visual displays/Controls
- 🛠 Idea Camps
- 🛠 Competitions - Posters/Slogans
- 🛠 Suggestion Boxes
- 🛠 Just Do Its
- 🛠 Rewards & Recognition/ Spirit Awards



Reward to Employee



Site Director observing the entries in Slogan Competition





Water Kaizen

Process followed

Baseline and the current performance studied to understand the baseline for last 1 year identified process functional team conducted kaizen event on 21st Sep 08

Key Result Areas

Identified critical systems like:
- Replaced raw water points with treated one
- Replaced push type cocks in toilets
- Leaking tap/cap on clamps
- Rationalization of wash basins to 3rd and 4th floor

Benefits

Key DOE identified implemented all quick win solutions in 3 months
- Water consumption has reduced by 30% as a result

Brainstorming session on water conservation



Solution identification for the opportunities



Community Involvement

Environment, Health and Safety

Students witnessing a demonstration during the session



Slide from 'Connecting Little Hearts' on water conservation



Imbided EHS concepts in 1550 young "Ignited Minds"

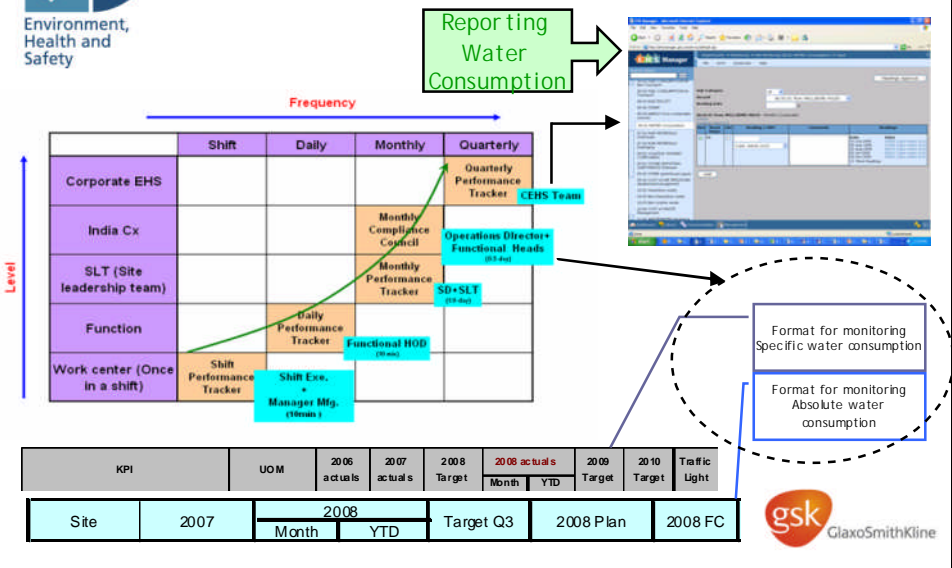


Site Director administering oath to Conserve Natural Resources





Monitoring & Review system



List of Water Conservation Projects

Project/JDI	Investment Rs. in '000	Water Savings (m3/day)	Annual Saving (Rs.)
Floor cleaning machine	660	20	9782
Tray cleaning machine	365	55	26900
Optimization of water pressure	-	100	105668
Improving condensate recovery	75	30	14673
Use of Cooling Tower water for vacuum pump sealing	-	130	60262
Auto flush for toilets at Admin block	12	2	978
Use of nozzles for drum washing	-	5	4891
Treated Water for flushing of toilet	3	3	1467
Treated water for coal wetting	5	5	4891
Modification of flushing at Amenity blocks	5	20	9782
Introduction of self closing taps	1	5	4891



Initiatives : Floor Cleaning machine (2006)

Wastage of water arising from conventional floor cleaning is eliminated through use of Floor Cleaning machine

Investment : 6.6 Lakhs

Water savings per annum : 7300 m³

Before



After



Mechanized Cleaning using Floor Cleaning machine



Initiatives : Mechanization of Tray cleaning (2007)



Before

Manual cleaning of food trays was replaced with mechanized cleaning

Investment : Rs. 3.65 Lakhs

Water savings per annum : 20000 m³

After





Initiatives : Optimization of Water pressure

- Reduction of Water pressure : 1.5 to 0.9 Kgs/Sq cm
- Use of Variable Frequency Drive

Investment : Nil

Water savings per annum : 36500 m³



Initiatives : Improving Condensate Recovery

Improvement of Condensate recovery : 61.7 to 75 %

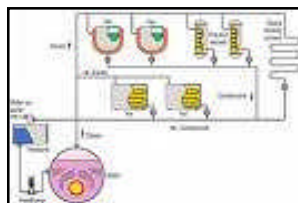
Result : Reduction in DM water consumption by 28.7 Cu. M / Day

Investment : Rs. 0.75 Lakhs

Before implementation : 84.3 m³/day

After implementation : 55 m³/day

Water savings per annum : 10700 m³

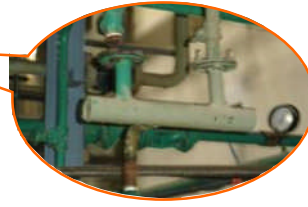




Initiatives : Cooling Water for seal cooling of Vacuum pumps

Cooling Tower water was reused for seal cooling of Vacuum pumps in place of Fresh water

Investment	:	Insignificant
Before implementation	:	130m ³ /day
After implementation	:	Nil (As Cooling Tower water is reused)
Water savings per annum	:	47450 m ³



Fresh water line disconnected and connected with Cooling water



Initiatives : Auto flush for toilet

Every drop counts ...

Small change ...

Sustained improvement





Initiatives : Sprinkler & Drip Irrigation



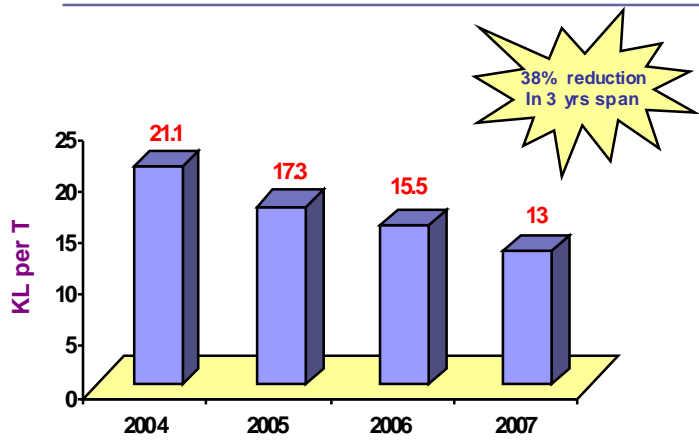
Sprinkler in use



Drip irrigation on-site



Performance delivered

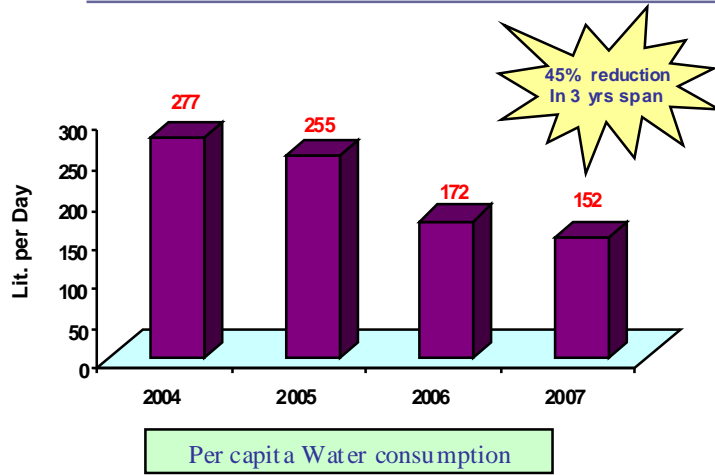


Specific Water consumption

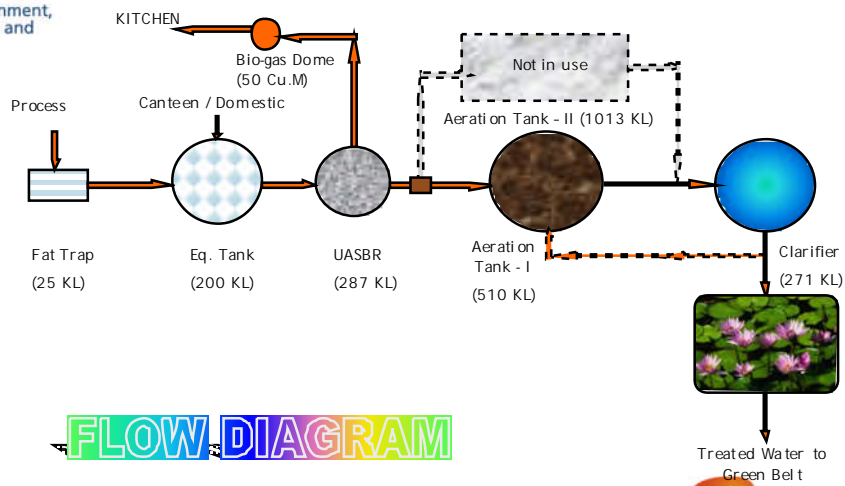




Performance delivered

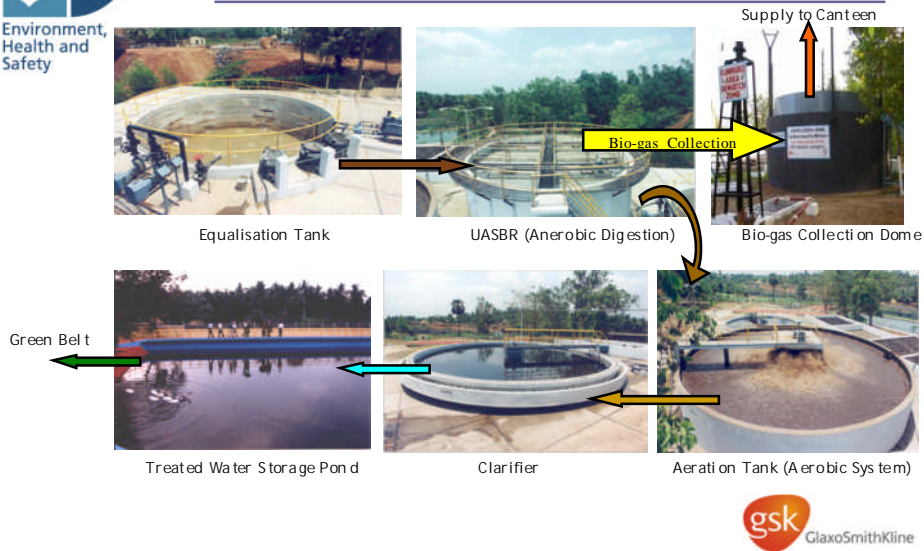


Waste Water Treatment - Process





Waste Water Treatment - Facility



Rain Water Harvesting

Objective :

GSKCH, Rajahmundry uses bore well water for its operation. In order to avoid adverse effect of the operations on the water table, implemented Rain water harvesting.



Rain Water Collection

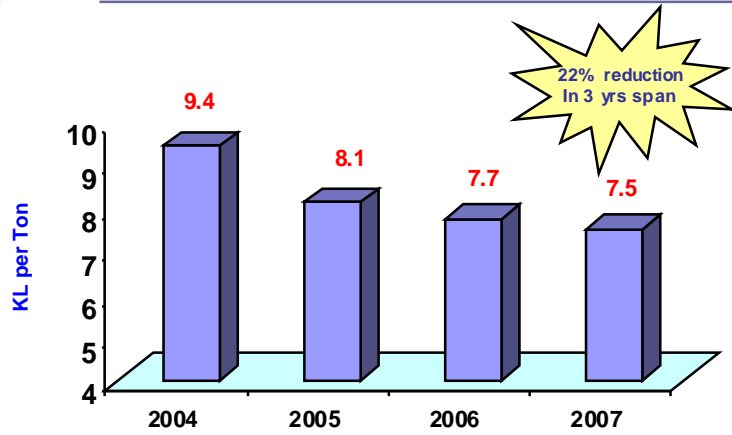


Rain Water Harvesting





Waste Water Generation



Laurels

External



APPC B Award 2004



National Energy Conservation Award 2005



Director of Factories Award '05 for "OHSAS18001"



FAPCCI Award -2008

Internal



CEO's Award 2005 – First Place honor for U SE Methane- Aug '06



CEO's Award 2005 - Vanguard Award presented by JIM in Aug '06



CEO's Award 2007 – Special commendation Awards





Way forward...

- 🔧 **Installation of sub meters at identified areas**
- 🔧 **Conducting Water balance regularly**
- 🔧 **Year on year stretched targets**
- 🔧 **Innovative suggestions / ideas from employees**

20 %
Reduction
by 2010

