



Believes in Nature

MCS GREEN ENVIRO SOLUTIONS

(Formerly –KALYANI GREEN ENVIRO)

(DIV.-MCS INDUSTRIES LIMITED)

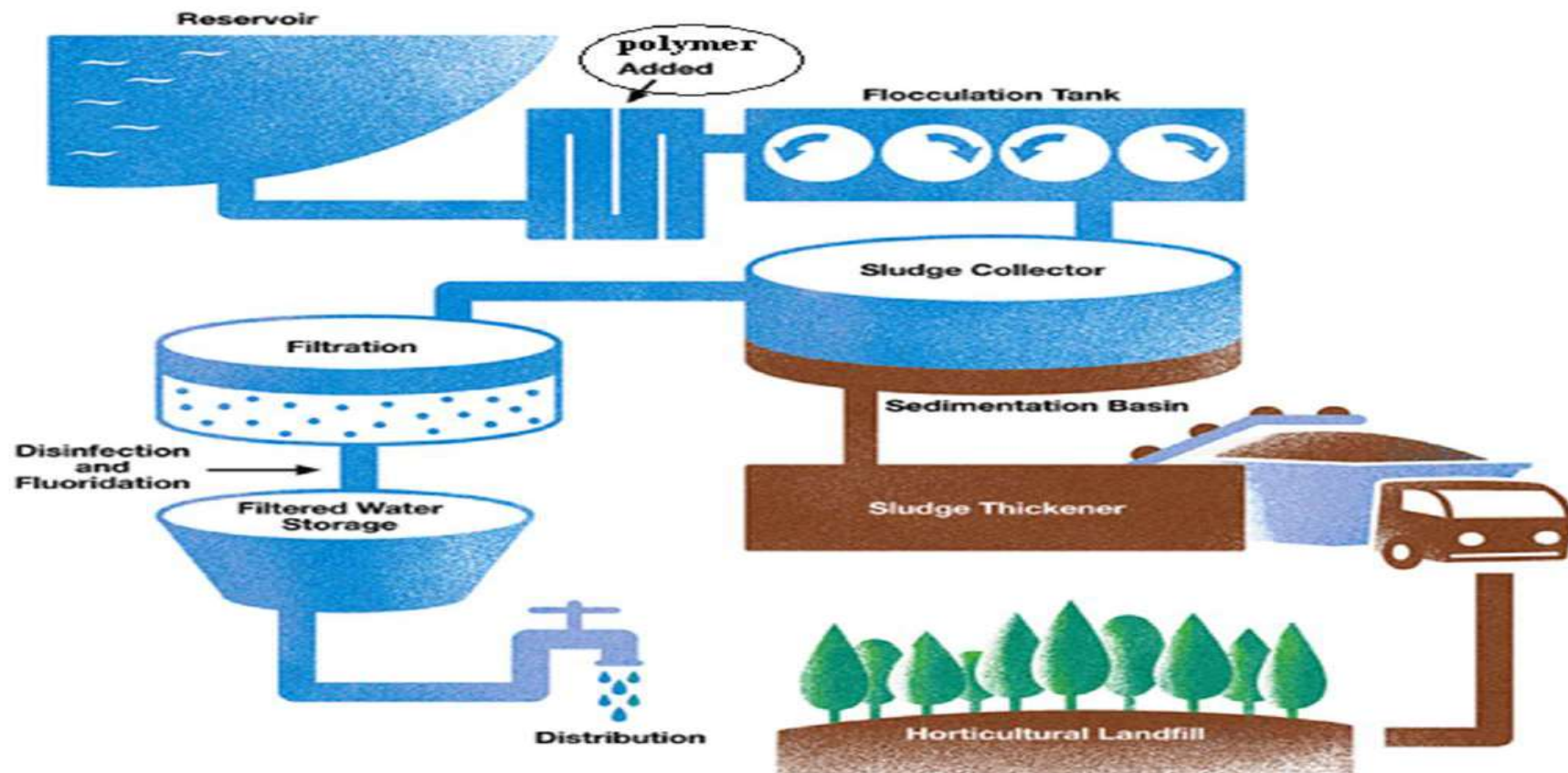
ABOUT POLYMERS:

- Susceptible to high humid condition affect polymer make down & dilution process.
- Solution viscosity varies according to molecular weight.
- Appropriate Level of agitation is required.
- Powder to be properly wetted with water.
- Sensitive to mechanical degradation(ageing).
- Maturation time should be maintained for optimal dissolution.
- Usually, Agitated at slow speed(100 rpm/less).

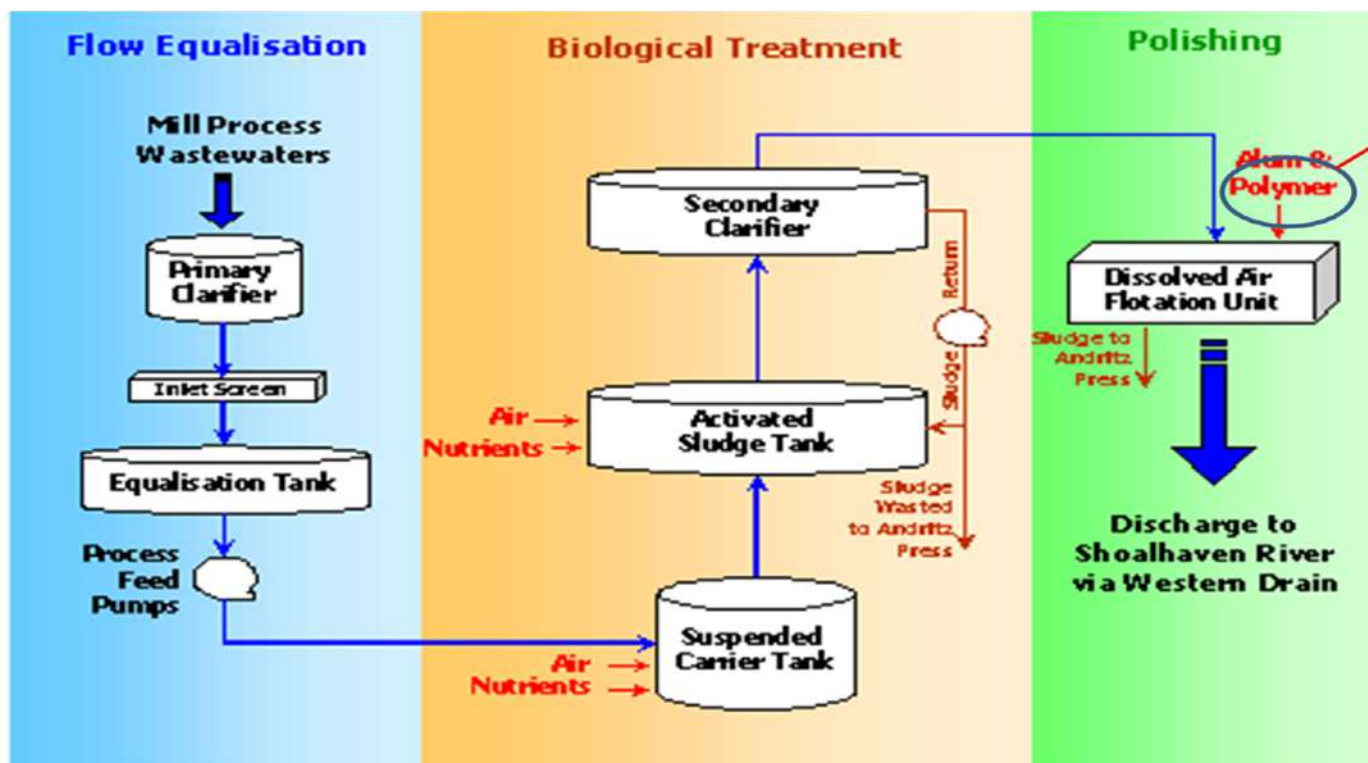
FACTORS AFFECTING PERFORMANCE OF POLYMERS:

- **POLYMER TYPE**
 - Is the correctly charged polymer with correct quantity is being used?
- **DOSE**
 - Are you applying the correct
 - polymer dose?
- **POLYMER CONCENTRATION**
 - Is it at an optimal concentration (0.1% to 0.5%) to deliver the correct dose and prevent shearing?
- **POLYMER MAKE-DOWN**
 - Is the make-down water within an acceptable pH range (6 ~ 8) to prevent hydrolysis?
- **MAKE-DOWN WATER QUALITY**
 - Is the hardness of the water is <300ppm ?

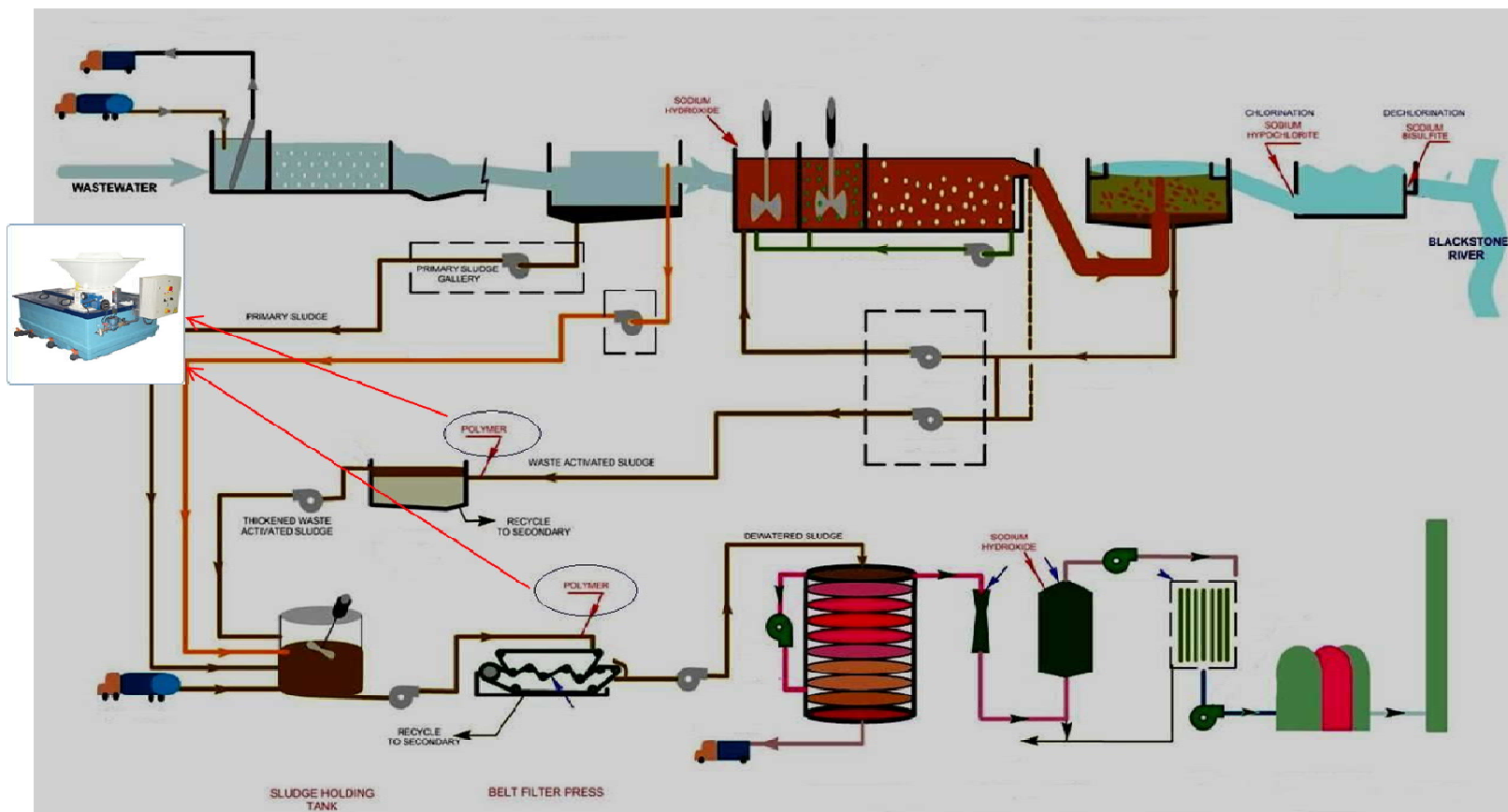
POLYMER USED IN CLARIFICATION PROCESS:



POLYMER USED IN EFFLUENT TREATMENT:



POLYMER USED IN SLUDGE TREATMENT:



DRAWBACKS IN CONVENTIONAL METHOD:

- Manual errors
- Higher tank size
- Higher chemicals cost
- Not uniform mixing
- Forms lumps
- Improper wetting & dissolution
- Inefficient polymer action
- More floor space requirement
- Deployment of labour

POLYPACK (AUTOMATIC PREPARATION UNIT)

- Continuous and automatic preparation of polymers (powder)
- Compact and functional, suitable for pallet loading
- Control of maturing time
- Many configurations and options
- 3-compartment tank with 1 to 3 mixers
- A system to “wet” the powder by water flow
- Concentrations up to 5 g/l and higher
- Extraction/dosing flow up to 6660 l/h and higher



DESCRIPTION OF PARTS

- **AUTOMATIC POLYMER PREPARATION UNIT**
- **CONTINUOUS SUPPLY OF POLYMER**
- **COMPACT READY TO USE SYSTEM**
- **AVAILABLE IN FRP AND SS VERSIONS**
- **THREE CHAMBERS- PREPARATION, MATURATION AND DOSING**
- **CONNECT WATER LINE, POWER SUPPLY, FILL POLYMER & CONNECT DOSING PUMP – SYSTEM IS READY TO USE.**
- **VARIOUS CONCENTRATIONS –FROM 0.5 GPL(0.05%) TO 7 GPL(0.7%) CAN BE PREPARED**
- **CAN HANDLE MATURATION TIMES FROM 30 MINUTES TO 2 HOURS.**
- **AVAILABLE IN VARIOUS CAPACITIES – 1000LPH TO 13,000 LPH OF CONTINUOUS POLYMER SOLUTION OFF TAKE.**

POLYPACK WORKING PRINCIPLE:

- **WATER LINE HAS PRESSURE REDUCER, CONTROL VALVE, FLOW METER, SOLENOID VALVE, WETTING CHAMBER**
- **POWDER FEEDER HAS HOPPER, GEARED MOTOR, FEEDER SCREW**
- **POWDER FEEDER MOTOR IS CONNECTED TO A VARIABLE FREQUENCY DRIVE FOR ADJUSTING THE POWDER FLOW RATE.**
- **DOSING CHAMBER HAS THREE LEVEL SWITCHES- VERY LOW, LOW AND HIGH LEVEL**
- **CONTROL PANEL FITTED WITH PLC FOR AUTOMATIC OPERATION.**
- **PREPARATION AND MATURATION CHAMBERS ARE FITTED WITH AGITATORS.**
- **WHEN SWITCHED ON BOTH WATER AND POWDER ARE FED TO PREPARATION CHAMBER AND THE PREPARATION STARTS.**
- **FIRST THE PREPARATION CHAMBER IS FILLED, THEN OVER FLOWS TO MATURATION CHAMBER AND THEN OVER FLOWS TO DOSING CHAMBER.**
- **WHEN HIGH LEVEL IS REACHED IN THE DOSING CHAMBER, BOTH THE POWDER FEEDER AND THE SOLENOID VALVE ARE SWITCHED OFF STOPPING THE PREPARATION OF POLYMER.**
- **WHEN LOW LEVEL IS REACHED IN THE DOSING CHAMBER, THE SOLENOID VALVE AND THE POWDER FEEDER ARE SWITCHED ON STARTING THE PREPARATION AGAIN.**
- **THE AUTOMATIC CYCLE CONTINUES..**

POLY PACK ADVANTAGES:

- **FULLY AUTOMATIC SYSTEM**
- **LESS FLOOR SPACE**
- **GOOD POWDER WETTING**
- **HOMOGENEOUS DISSOLUTION**
- **LESS CHEMICAL CONSUMPTION**
- **PROVIDES SUPERIOR USAGE AND DOSAGE CONTROL WITH PROPERLY CALIBRATED.**
- **PROVEN TO REDUCE HANDLING ISSUES.**
- **UNITS ARE FULLY AUTOMATED REQUIRING LESS OPERATOR ATTENTION**

POLYPACK SELECTION:

- VOLUME OF WATER TO BE TREATED = 1000M³/HR

- TREATMENT LEVEL = 5 PPM (BY WEIGHT)

- DILUTED POLYMER CONCENTRATION = 0.5% (5 GPL)

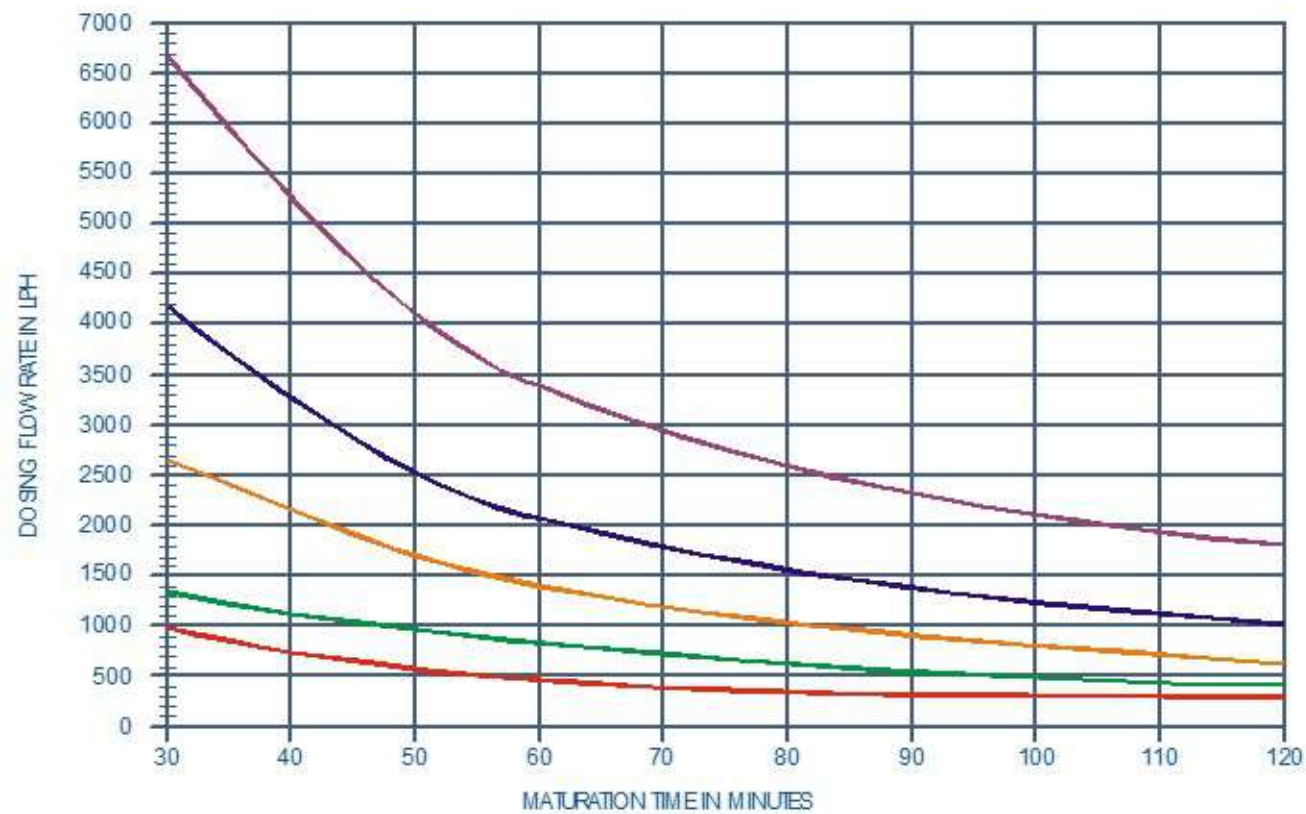
- MATURATION TIME = 30 MINUTES

- MASS FLOW RATE OF POLYMER = (1000X 10³) X (5 X 10⁻⁶)

= 5 KG/ HR

- DOSING FLOW RATE = 5 X 1/ 0.005 = 1000L/HR

POLYPACK SELECTION



POLYPACK IMAGES



CASE STUDY:

Volume of Water to be treat: 1000 M3/Hr, Treatment Level: 5PPM,Diluted polymer concentration: 0.5%(16.5L/5GPL), Maturation Time : 30mints, Mass Flow Rate:(1000 x10³ LPH) X (5 X 10⁻⁶)= 5KG/HR, Dosing Rate: 5kg/hr x concentration = 5 x 1/0.005= 1000LTS/HR

| MANUAL SYSTEM | SIZE | QUANTITY | PRICE IN LAKHS |
|---------------------|------|----------|----------------|
| BOM | | | |
| Tank Size | 10KL | 2 | 7 |
| Agitator | | 2 | 2 |
| Water Transfer pump | | 2 | 0.5 |
| Piping works | | 25 Mtr | 1 |
| Level switch | | 2 | 0.15 |
| Level Gauge | | 4 | 0.3 |
| Base Frame | | | 2.4 |
| Valves | | 2 | 0.01 |
| NRV | | 1 | 0.01 |
| Push button station | | 2 | 0.07 |
| Painting & Labour | | | 0.5 |
| Total | | | 13.94 |

CONTACT MCS:

MCS GREEN ENVIRO SOLUTIONS

(DIV.-MCS INDUSTRIES LIMITED)

www.mcsgroup.asia

Regd. office

306, Narmada Dham,
Navghar Road, Bhayandar (E)
Mumbai-401 105,
Maharashtra, India.

T:+91 22 2817 0777

Unit-I

Plot No.52, Expansion Area,
52 Heactor, GIDC Umbergoan,
Dist. Valsad 396 171,
Gujarat, India.

T:+91 26 0256 0165

Unit-II

Propert Bo. 5/557,
S.No. 30/27, Laxmi Industrial,
Near RK Engineering,
Dhayri,Pune-411 041

T:+91 20 2469 0091

Mr.Manik Bachhav

Manager Technical & Marketing

Mo.No. +91 882 882 2600 / 955 252 5881