

### List of items – 0.75 MLD Desalination Plant

Sl.No.	Details of Equipment	Quantity
1	Sea Water Pump	2
2	Brine Pump	1
3	Distillate Pump	1
4	Brine Plate Heat Exchanger	1
5	Distillate Plate Heat Exchanger	1
6	Circulation Pump	1
7	Vacuum Pump	1
8	Basket Filter	2
9	Evaporation & Condensation Vessel	1
10	Auto-Filter	1
11	Air Compressor	1
12	Anti-scalant Dosing Pump	1
13	PH Dosing Pump	1
14	Piller Blower	1
15	Oil Pump	1
16	Dearator	1
17	Complete Associated Piping & Valves installed at Desalination Plant building	Lot
18	Complete Electrical & Control System panels & cables available at site	Lot

## **EQUIPMENT SPECIFICATION**

### **DESALINATION PLANT**

Make: Alfa Laval Desal Aps

Capacity: 750m<sup>3</sup>/day

Feed Water Salinity (TDS): 45000 ppm(mg/l)

Ambient Temperature average/max.: 35/40°C

Type of Installation: Indoor

Energy Source: Electrical

Distillate Flow: 31.25m<sup>3</sup>/hr.

Distillate TDS: <5ppm (mg/l)

Distillate Pressure: 0.6barg

Distillate Temperature (Nominal): 35°C

FW Supply Flow: 84.4m<sup>3</sup>/hr

FW Supply Pressure: 3.5barg

FW temperature: 30°C

FW Suspended Solids (max): 0.5mm

Brine Blow-Down flow: 53.2m<sup>3</sup>/hr

Brine Blow-Down Pressure: 0.6barg

Brine Blow-Down Temperature: 35°C (nominal)

CW Flow: 2.6m<sup>3</sup>/hr

CW Pressure: 1barg

CW Temperature: 30°C

Instrument Air Supply: 7m<sup>3</sup>/hr at 5.5barg

Installed Electrical Load: 250KW MCC & Control Panel; 360KW Compressor

Anti-Scaling Chemical Consumption: 6-8g/m<sup>3</sup>

Sulphamic Acid for Chemical Cleaning: 1 kg/l

### **Equipments:-**

#### **Sea Water Pump (SWP-A/B)**

Make: Kirloskar

Model: KPD 65/20

Capacity: 100m<sup>3</sup>/hr

Head: 50m

Sr. No.: 1371700017

Motor KW: 19.24

RPM: 2920

#### **Distilled Water Transfer Pump (DWTP-A/B)**

Make: Kirloskar

Model: CPHM 50/26

Capacity: 50m<sup>3</sup>/hr

Head: 75m

Sr. No.: 1781300041

Motor KW: 18.24

RPM: 2920

**Brine Pump (BP) (PU-BR-01)**

Make: KSB  
Model: ETANORM C-65/315-C10  
Capacity: 53.2m<sup>3</sup>/hr  
Head: 0.6barg  
Sr. No.: 7-912-205468/1  
RPM: 1450

**Distillate Pump (DP) (PU-ER-01)**

Make: KSB  
Model: ETANORM B 60/160-B10  
Capacity: 31.3m<sup>3</sup>/hr  
Head: 0.6barg  
Sr. No.: 7-917-205483/1  
RPM: 2900

**Brine (BPHE)**

Type: M15 BFG8  
Manufacturing No.: 30103-18221  
Volume: 719.2L  
Test Pressure: 9bar  
Maximum Working Pressure: 6bar  
Maximum Working Temperature: 95°C  
T1/0.5/NIT/CLIP-ON  
N-465 A-1399mm

**Distillate (DPHE)**

Type: M15BFG-8  
Mfg. No.: 30103/18222  
Volume: 458.8L  
Test Pressure: 9bar  
Maximum Working Pressure: 6bar  
Maximum Working Temperature: 95°C  
A-895mm N-279  
T1/0.5/NIT/CLIP-ON

**Circulation Pump (CRP) (PU-CL-01)**

Make: KSB  
Model: ETANORM B 125/250 B10  
Sr. No.: 7-917-205490/1  
RPM: 1450

**Vacuum Pump (DVP)**

Make: KSB  
Model: ETANORM B50/160 B10  
Sr. No.: 7-917-205461/1  
RPM: 2900

**Basket Filter (BF-A/B)**

Make: Gujarat Otofit

Drawing No.: 397SB3390 Rev1

End Connection: 6" NB Flange to 150 #, ANSI B-16.5

Degree of Filtration: 500 micron

Fluid to be handled: Sea Water (Flow Rate: 100m<sup>3</sup>/hr)

Working Pressure: 5kg/cm<sup>2</sup> g

Hydro test Pressure: 7.5 kg/cm<sup>2</sup> g

**Evaporation & Condensation Vessel (ECV)** /

**Auto Filter (AUF)**

**Air Compressor (A&C)**

Make: Ingersoll Rand

Model: 2340 F3

Model: SS-1

Bore & Stroke: 3 & 1.3/4 & 2.3/4

Regulation: ASSC

Receiver Size: 150KL

Discharge Pressure: 150psig

Piston Displacement: 8.7 FAD

Speed: 1000rpm

Power: 3HP

**Antiscalant Dosing Pump(ADP-1)**

**PH Dosing Pump (Dp-2)**

Make: Multiflow Dosing Pump

Tag No.: 534AV

Model: PR10

Ratio: 15:1

Capacity: 43L/hr.

Pressure: 6kg/cm<sup>2</sup>

MP No.: 4570/1

**Piller Blower (PF)**

Make: Piller Industrieventilatoren GmbH

Order No.: VA 3 99 03173

Machine No.: 787 692

Fan Type: 5257 KKXGAE 80800, GR 90

GA Drawing: 59.5.243.0049

Installation Plan: 59.5.243.8046

Impeller MOC: 1.4462

Impeller OD: 1600mm

Impeller speed: 3000 rpm

Shaft Seal: Espey make; WD 500 type; shaft diameter 140mm; 4 sealing rings, MOC E10C

Block Bearing: 1037 862-7 (Squeeze oil damper)(SKF)  
Impeller side Bearing: NU 1026 ML/C3  
Drive Side Bearing: 6228/C3  
Coupling: Fa.Flender make; Arpex type; Size NRSN205  
Oil Supply: Lubricant according to ISO VG 46 ; Fa. LEFA make; type VK4/23 with sea water resistant cooling unit; tank volume 60 l  
Conveyed medium: Steam  
Mass flow rate: 31587 Kg/hr  
Volume Flow Rate: 38m<sup>3</sup>/s  
Inlet Velocity related to DN 800: 75.8m/s  
Oil Capacity of Bearing: 0.6 l/m  
Oil Pressure: 6bars  
Bearing Temperature: 90°C  
Housing Temperature: 100°C  
Oil Supply System Flow Rate: 1.5L/min.  
Oil Supply System Operating Pressure: 5bars  
Oil Supply System Oil Viscosity: 46mm<sup>2</sup>/s at 40°C  
Oil Supply System Heat Dissipation: 1.4 kW  
Oil Supply System Cooling Water: Sweet water @ 0.62m<sup>3</sup>/hr  
Oil Supply System Water Inlet Temperature: 33 °C  
Oil Supply System Water Outlet Temperature: 38 °C  
Oil Supply System Oil Filter Type: Double Switch Filter  
Pressure drop in Oil Filter: 0.2 bars  
Oil Cooler Design: Single Tube Heat Exchanger  
Cooling Surface of oil cooler: 0.26 m<sup>2</sup>

#### **Oil Pump (Gear Pump)(OIL-1)**

Make: Fa. LEFA Olsysteme GmbH  
Model: for Oil Supply System VK 4/23  
Capacity: 0.102m<sup>3</sup>/hr  
Discharge Pressure: 5 bars  
Motor kW: 0.13

#### **Deaerator**

Ads=0.9m  
Project No.: 1-242A-000-00  
Diameter: 900mm  
Model: VVC-400-500 CE3Bear Trap

#### **DG Set Data**

Make: Caterpillar  
S/No.: 9JRC500026      AR No.81571057  
Rating: 725KVA    580KW    0.8cosφ<sub>z</sub>  
Model: S-BRG      Part No.: 81571066  
3 Phase ~ 4 wire  
Wye Connection: Series  
Generator: 415V    1008Amp.