MWS WASHING SYSTEMS

Smarter Washing Solutions

Item	Qty	Description
A	1	SandStorm™ 620 3D 2S

Price includes: -

Feeder:

- 15' feed collection hopper with full length tipping grid
- 12-meter cubic capacity
- 1050mm Feed Conveyor with 3 ply conveyor belting
- Integrated Hydraulic Power pack for Feeder Control of tipping grid
- 100mm spaced bofor grid bars
- Hydraulic Angle Adjustment
- Remote control tipping grid

Main Feed Conveyor:

- Heavy duty static Feed Conveyor
- 1050mm Wide Heavy Duty 15 meter
- Large feed hopper
- Galvanized Static A Frame construction
- Feed boot support mount
- 15kW Electric Drive
- 3 PLY - 3/16 x 1/16 PLAIN
- Polyurethane belt scrapper

- **Structure & piping:**
- Mild steel substructures in modular form offering ease of build
- Galvanized walkways 760mm wide – Access around full system
- Large steel sump tank between sizing screen & Sand system with large access door for maintenance
- C5 Marine specification paint – Used in deep sea drilling industry. Offers substantial protection within marine based applications
- Rubber & rubber lined piping between all associated areas

Sizing screen:

- 20 x 6' (6 x 1.8 meter) 3 Deck Heavy-Duty High Energy Rinsing Screen box
- Wash box at inlet for separation of particles
- Self-supported & individually Isolated Spray bars with rubber protection seals
- Polyurethane screen media operating a pin & wedge locking system
- Rubber lined single grade catch box
- Rolling discharge chute rubber lined offering full access to screen decks

Aggregate Conveyor: **qty x 3**

- Aggregate Stackers at 11 Meter length
- 650mm width
- Large feed hopper
- Galvanized Static A Frame construction
- Feed boot support mount
- 5.5kw Electric Drive
- 3 PLY - 3/16 x 1/16 PLAIN
- Polyurethane belt scrapper

Sand classification unit:

- 200TPH Two Grade Sand Recovery plant
- 1 x 660mm Linatex Rubber Lined G4 Hydro Cyclones
- 1 x 500mm Linatex Rubber Lined G4 Hydro Cyclones
- 1 x 200/150mm Linapump Mk3R Slurry pumps (Warman/Linatex pump) 30kw
- 1 x 200/150mm Linapump Mk3R Slurry pumps (Warman/Linatex pump) 22kw
- Roll Out Pump system for Easy Access and Maintenance
- Rubber lined underflow box
- 16 x 4' (4.9 x 1.2m) High Force (5G) Dewatering Screens
- Polyurethane screen media set at 0.5mm for promoting a good bed depth
- Self-regulating sump tank
- Left- or right-hand drain valve for draining system down
- Anti-turbulence cell

Radial sand Conveyor

- 2 x Radial stockpile conveyor at 11.5 Meter length
- 650mm width
- Automated Electric radial drive
- Galvanized Static A Frame construction with radial wheels
- 7.5kw 15HP electrical drive system
- 3 PLY - 3/16 x 1/16 PLAIN
- Polyurethane belt scrapper

Electrical:

- Full Radio Control of all major functions
- PLC touchscreen control unit for easy running of plant
- Fully compliant wiring to EU or local requirement
- Touch screen mounted on side of equipment

Additional Item:

1. Two Grade sand Chute
2. Water flow meter on inlet pipe
3. Belt Scale on main feed belt

Item	Qty	Description

B 1 Water Management System – Complete

Price includes: -

High Rate Thickener:

Decanter built in steel plate divided into flanged sections for easy transport and assembly.

Features

Diameter	mm	10,000
Height of cylindrical part	mm	3,650

Equipped with:

- ***Supporting structure for dewatering screen;***
- ***tank for flocculant injection and mixing installed beneath the dewatering screen;***
- fixed bridge installed onto the thickener equipped with gearbox unit to lift the scraper;
- central pipeline for inlet of turbid water into the decanter;
- thomson-profile channel for recovery of decanted water;
- access ladder.

N.B.: The bottom of the thickener will be manufactured in reinforced concrete at Customer's charge and care.

Internal decanter treatment

The decanter is internally lined with a corrosion proof, anti-abrasive and stick-proof lining. This lining protects the metal from incrustations and allows easy detaching of the sludge from the walls.

Motorized scraping unit

Composed of the following items:

- Girder equipped with reinforcement cross bars, walking platform and railings.
- Scraping paddles for conveying the slurry into the central collecting cone.
- Two-stage motor gearbox coupled to the driving wheel.
- Automatic system for lifting the scraper (a gearbox moves the transmission that allows the lifting of the scraping unit. The lifting is made by rotation of four screws).
- System for controlling the current absorption of the motor driving the bridge rotation. In this way, the conditions of the slurry can be checked.

Group for Slurry Discharge:

Group for extracting the slurry from the bottom cone of the thickener.

Equipped with:

- manual valve FB 150 M;
- pneumatic valve FB 150 P complete with rubber anti-abrasive sleeve;
- solenoid exhaust valve for pneumatic cylinder pressure;
- flange (diam. 150 mm) with rubber support for piping connection;
- single screw pump (power 22 kW, flow rate 120 m^3/h);
- attachment for delivery pipe;
- temperature sensor;
- clampers.

Automatic Flocculant Station:

Composed of the following items

Rectangular container in stainless steel, divided into nr. 3 tanks connected to each other, so that the mixture water-flocculant overflows from the first tank to the last one.

Nr. 2 helical electric mixers, low speed mixers, designed for maximum utilization of separation properties of flocculant.

Features

Power	kW	0.37

Flocculant batching unit equipped with:

- stainless steel hopper for flocculant powder (capacity 60 l);
- gearmotor for regulating the quantity of powder complete with screw feeder (power 0.18 kW).

Funnel for diluting the flocculant with water

Nr. 1 single-screw motor driven pump for batching with adequate delivery for the plant, programmable according to specific requirements.

Features

Capacity	l/h	3,500
Maximum pressure	Bar	4

Equipped with:

- hose in screened rubber for delivery (max. pressure 10 Bar, diam. 1");
- bronze non return valve (diam. 1").

Flocculant Analyzer:

The system controls the presence of flocculant in the water, through a sample of decanting water. The system automatically changes the working parameters of the flocculant dosing pump in accordance to the variations of the settling speed of the suspended solids contained in the sample, in such a way to keep the settling speed within the preset values.

The system includes the following components.

- electro-valve for cleaning brush;
- electro-valve for filling/emptying the analyzer;
- resistance heating;
- photo-electric cells;
- pipe for taking the samples of decanting water;
- ***bilge pump and tank.***

Fresh Water Tank:

Nr. 1 fresh water tank in steel for feeding the flocculant station.

Features

Diameter	mm	1,500
Height	mm	2,000
Capacity	m^3	3.5

Nr. 1 fresh water pump for flocculant station:

Features

Capacity	l/h	7,000
Maximum pressure	Bar	2

Clarified Water Tank:

Nr. 1 clean water storage tank with bottom built in reinforced concrete ***(concrete bottom is part of the plant foundations, at Customer's charge and care)***.

Retention time is 20 minutes.

Features

Diameter	mm	8,000
Height	mm	3,000
Capacity	m^3	150

Equipped with:

- level probes.

- manual valve.

Clarified Water Recycling pump:

Nr. 2 centrifugal pumps working together:

Features

Centrifugal pump with Widia sealing

Flow rate of each pump	m^3/h	200
Delivery head	m	25
Power	kW	22

Equipped with:

- nr. 1 supporting platform.
- nr. 1 suction manifold, equipped with closing valves, couplings and flanges;
- nr. 1 delivery manifold, equipped with adjusting valves, couplings and flanges.

One pump equipped with:

- Nr. 1 VFD.
- Nr. 1 pressure switch.

Piping:

Piping connecting the various items constituting the plant, as follows.

- From flocculant station to mixing tank
- From thickener to flocculant analyser
- From flocculant analyser to the thickener
- From thickener to clarified water storage tank
- From fresh water tank to flocculant station

Electrical panel board:

Electric panel board manufactured in painted steel plate with door locked by a main switch, according to current safety norms.

Equipped with:

- Siemens S7 PLC;
- power transformer;
- alarm siren;
- touch screen panel ASEM;
- ***tele-assistance.***

Slurry Buffer tank:

Nr. 1 slurry storage tank in mild steel 100m3 capacity

Equipped with:

- sonar for detecting the slurry level.
- manual valve.
- nr. 2 mixers (power 7.5 kW) to allow constant slurry homogenization and prevention of settling.
- mixer support.
- access ladder.

Filter Press Feed Pump:

High pressure feeding pump with anti-abrasive body and nr. 2 impellers.

Features

Power	kW	55
Flow rate at atmospheric pressure	m^3/h	150
Max. pressure	bar	12

Each equipped with:

- electronic inverter.
- reinforced rubber hose.
- closed loop system for cooling the seals.

Filter Press – 1500 x 1500 x 100 PLATE:

- **Filterpress structure**

N. 1 fixed head on the side of mud delivery, supporting the hydraulic pistons, manufactured in electro-welded steel processed by machine tool.

Equipped with:

- supports for fixing the filterpress;
- mud delivery pipe;
- supports for fixing the beams;
- support for nr. 4 hydraulic pistons.

N. 1 mobile head manufactured in electro-welded steel processed by machine tool.

Equipped with nr. 4 sliding wheels with roller cage bearings.

Nr. 2 upper beams for the support and sliding of the plates.

Nr. 4 tie rods for mobile head.

Equipped with:

- nr. 4 processed circular bars;
- nr. 4 threaded joints for connection to the hydraulic pistons.

- **Hydraulic pistons**

Nr. 4 hydraulic pistons for opening and closing of the plates, with chrome-plated rectified piston rods.

Features

External cylinder diameter	mm	270
Rod diameter	mm	90
Piston stroke	mm	1,400

Nr. 4 steel bars connecting the mobile head to the fixed head.

- **Hydraulic power unit**

Hydraulic power unit for feeding the pistons.

Motor power	kW	18.5

Type of oil IP HYDRUS OIL H.I. 46.
Equipped with:

- electric distributor for delivery reversal with pilot valve;
- pressure discharge valve;
- max. pressure valve and filter for oil;
- pressure switch/manometer;
- connection piping between hydraulic power unit and cylinders.

- **System for opening the plates**

The plates open subsequently in groups of 10 at the same time, by means of a robot sliding above the pack of plates to open.

- **Plates**

Nr. 100 polypropylene plates sliding on PVC wheels.

Features

Dimensions	mm	1500 x 1500
Nr. of ***recessed plates***		100
Thickness of chambers	***mm***	***25***

Set of clothes types P3802 and under clothes.

- **Tank for collecting the filtered water**

Steel tank, where the water squeezed out from the filter press flows.

Equipped with nr. 2 probes and one sonar for adjusting the dehydration stage of the mud panel.

- **Electric panel board**

Electric panel board manufactured in painted steel plate with door locked by a main switch, according to current safety norms.

Equipped with:

- Siemens S7 PLC.
- remote controls for every use.
- power transformer.
- alarm siren.
- touch screen panel ASEM.
- ***tele-assistance.***

Core Blow System:

System for expelling the slurry accumulated in the central part of the plates at the end of the filtration process, to prevent retention of liquid mud. It consists of a series of automatic valves, which, by means of an air blow, allows to empty the central part of the plates once the dehydrated cakes are formed.

Equipped with:

- nr. 1 pressure vessel (volume 2,000 l);
- nr. 1 compressor (power 7.5 kW, flow rate 1210 l/min, vessel volume 270 l, max. pressure 11 bar);
- nr. 2 valves for core blow.

Plate Shaker:

The machine is equipped with a shaker, which automatically shakes the plates at the end of cycle, to make sure the dry cakes do not stick to the plates.

Equipped with:

- nr. 10 hardened cams for shaking mounted on the shafts.
- nr. 2 central supports with PVC bushing.
- nr. 1 gearbox with self-arresting motors.
- nr. 1 magnetic sensor for programming the r.p.m. of the shafts.

Drip Tray:

Mobile tray for automatic collection of dripping water.

Equipped with:

- Nr. 2 hydraulic pistons for opening and closing, driven by the hydraulic power unit);
- Nr. 2 gutters for collection of dripping water;
- Nr. 2 IPE beams to support the drip tray;
- Walking gratings on drip tray.

Lateral Walkways:

Bearing structure in structural steel with filter press cross-bar support.

Equipped with:

- Attachments for support of walking platform;
- Walking platform in galvanized crinkled plate, Graepel type;
- Access ladder to filterpress.

Fencing:

- Safety fencing around filter press

Automatic Cloth Washer:

This device allows to program and execute the automatic washing of the filter press clothes with a high-pressure water jet on the whole cloth surface. The screens are washed one by one without taking them out of the plates, directly on the filter press. The system features the following groups.

- **Nozzle carrying trolley**

The trolley is equipped with sliding wheels. The movement is achieved by means of a motor gearbox, controlled by ***inverter***, driving a pinion-rack system.
The system for opening and closing the spraying pipe is located on the trolley. The movement is given by a motor gearbox, controlled by ***inverter***.

- **Nozzle carrying bar**

Spraying bar in steel (diam. 1"), equipped with a series of nozzles and high-pressure pipe.

- **Clean water tank for feeding the high-pressure pump**

Equipped with electro-valve for the make-up water from the well.

- **High pressure pump**

Piston pump feeding the clean water to the automatic cloth washing system.

Equipped with:

- Max. pressure valve.
- 3-way electro-valve.
- Piping connecting the pump with the spraying bar.
- Piping connecting the water tank and the pump.

Features

Power	kW	30
Flow rate	l/min	250
Pressure	Bar	45

N.B.: The water used for the washing system must be clean (not recycled) water.

Filter press Housing:

- Cladded sectional steel building surrounding of filter press
- Access stairs to Filter press housing

Item	Qty	Description
C	1	**Electrical control room**

Price includes: -

- 40-foot Insulated control room
- Control system all running in
- Lined walling & floors
- Access door
- Electrical sockets
- Lighting
- Control panel secured to the unit
- Allows for all units to be easily monitored from a centralized location
- Flocculant station control