

PURATEK® OIL SLUDGE TREATMENT PLANT

TYPICAL CUSTOMERS FOR OIL SLUDGE TREATMENT PLANT ARE:

- Tank cleaning companies
- Companies for environmental remediation of oil lagoons
- Oilfield drilling companies
- Petrochemical industry
- Refineries
- Industrial waste treatment operation companies
- Contaminated soil treatment companies
- Optimization of the process
- Environmental service companies

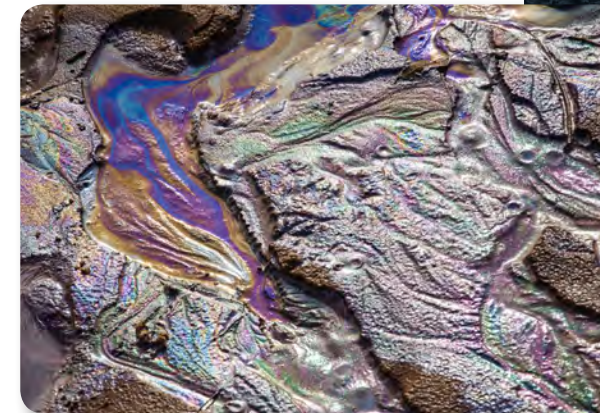


PURATEK® SCOPE OF SERVICES:

- Concept studies
- Laboratory testing
- Basic engineering, including layout of the plant
- Detail engineering
- Manufacturing of Equipment in own factory
- Delivery to site and construction / erection
- Commissioning
- Optimization of the process
- After sales service



CONCEPT + DESIGN © KERSTIN BERGER, Pictures: Puratek, Dr.-J. Susa, fotolla.com



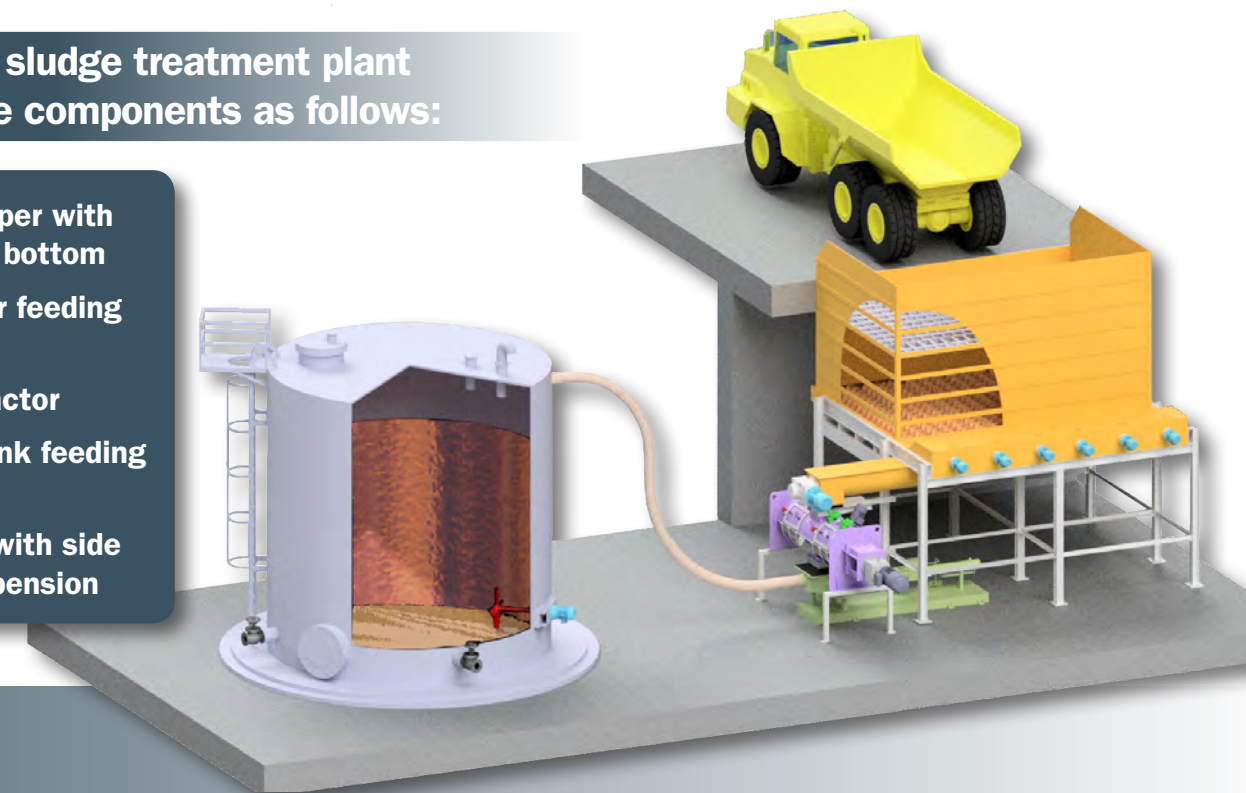
PURATEK® has developed Oil Sludge Treatment Plant for processing of oil sludge from various sources:

- Oil sediment from tank bottom cleaning business
- Oil sludge from environmental remediation of oil lagoons
- Oil sludge from oil drilling fields
- Oil sludge from refineries
- NORM oil scale from oilfield pipes contaminated with $RaSO_4$, $RaCO_3$
- NORM oil sludge
- Low radioactive oil sludge

Oil solid sludge is pasty material, containing oil, tar, grease, sand, dust, stones, dirt, water, mineral salts and clumps - containing all of the above. Oil sludge can be successfully treated using the present technology; in addition, useful oil can be gained.

PURATEK® oil sludge treatment plant consists of the components as follows:

- Receiving hopper with live discharge bottom
- Lateral reactor feeding conveyor
- Oil sludge Reactor
- Dual piston tank feeding pump
- Storage tank with side stirrer for suspension



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PROCESS DESCRIPTION

Oil sludge is received via duper truck and unloaded into receiving hopper, ca 30 tons oil solid sludge per truck. Heavy duty receiving hopper can receive up to 60 m³ of pasty and clumpy not-pumpable oil sludge containing also sand and stones.



PURATEK® screw discharge base, type: SAB 8 (typical only)

Receiving hopper has vertical walls and it is equipped with strong grizzly bars. Alternative to grizzly bars is motor driven finger sieve for removal of oversized material/stones.

The receiving hopper has a live bottom feeder to feed lateral horizontal conveyor. Lateral conveyor feeds oil sludge treatment Reactor.

Capacity of the oil sludge treatment plant is up to 15m³/h of the slurry leaving the Reactor. The receiving hopper can take up to 60 m³ of incoming oil sludge. The slurry storage tank should have ca. 250 m³ capacity to serve properly 3-phase decanter centrifuge line or thermal desorption line.

Typical application of PURATEK® oil sludge treatment plant is pretreatment of raw material for 3-phase decanter centrifuge line or thermal desorption line.

PURATEK® OIL SOLIDE SLUDGE TREATMENT REACTOR/DELUMPER TYPE PSM 2400-2C

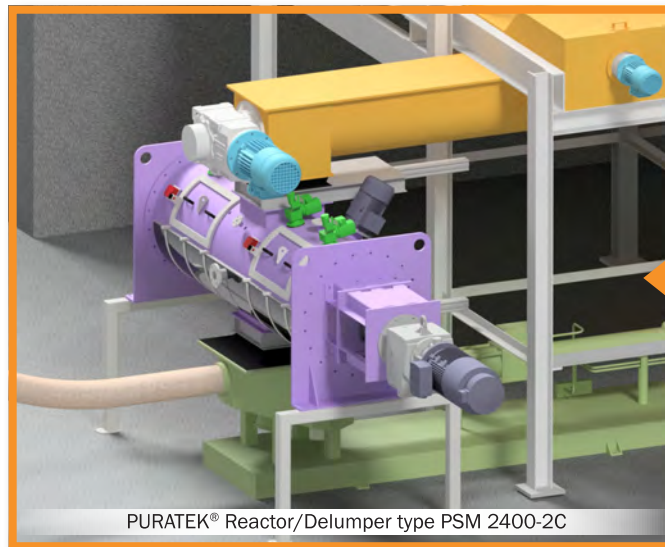
PURATEK® Reactor/Delumper type PSM 2400-2C has compact and robust design. Batch or continuous operation mode is possible. Reactor type PSM 2400-2C is proven high efficient machine for complete disintegration of pasty and clumpy materials, such as oil sludge. Reactor has a gross capacity of 1.8 m³ and operating capacity of 1.4 m³.

Well-dimensioned shaft is flexible coupled with strong drive, powered by 30 kW motor. Bulk mixing tools are designed as rotating mixing plough share tools, anti-wear, Ni-hard, as material deflectors, bottom/wall scrapers, easily adjustable and exchangeable.

Additionally two high speed rotating cutters are installed in the Reactor shell from the top with special mixing tools for cutting of clumps and agglomerates, powered by 2 x 7.5 kW motors. Due to high abrasion of solid sludge, the shell material is duplex steel.

The openings for input and output of material are designed as rectangle flanges. The additive inputs (hot water, chemical additives) are arranged via round inlet pipes with flanges. Off-gases can be extracted through additional connection. The reactor can be equipped with 4 x motor driven 3D high pressure washing heads.

The slurry leaving the Reactor contains fine solid suspended matter, water and oil. Under the reactor, there is a heavy-duty two-piston pump, which pumps the slurry into storage tank.



PURATEK® Reactor/Delumper type PSM 2400-2C

PURATEK® oil sludge treatment Reactor type PSM 2400-2C has one main shaft with bulk mixing tools and two high-speed cutters. Due to intensive mixing, oil sludge is completely disintegrated. The high-speed rotor knives destroy the clumps. Hot dilution process water and chemicals are added directly into Reactor. Reactor can operate continuously or in batch operation mode.

PURATEK® HD RECEIVING HOPPER WITH DISCHARGE BASE - SAB TYPE

PURATEK®-discharge base is suitable for emptying large sludge bunkers or receiving hoppers. It has proven ability to transport pasty and clumpy materials such as oil sludge. The discharge base consists of concatenated worm trees. The worm trees are driven by coupled spur gears. With live discharge base, the oil sludge will be effectively transported from the bottom area of receiving hopper. Discharge takes place over the entire width. Bridging in receiving hopper is avoided.

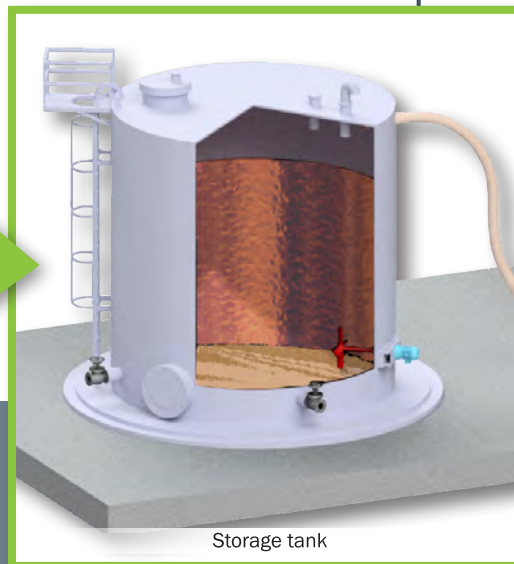
The receiving hopper is made of prefabricated mounting sheet steel plates with stiffening. Alternatively, an on-site concrete bunker design is possible. Typical dimensions of receiving hopper are: L x W x H=6,0m x 4,0m x 2,5m= 60 m³.

On the top of the receiving hopper, there are strong grizzly bars. Alternative to grizzly bars is motor driven finger sieve for removal of oversized material/stones.

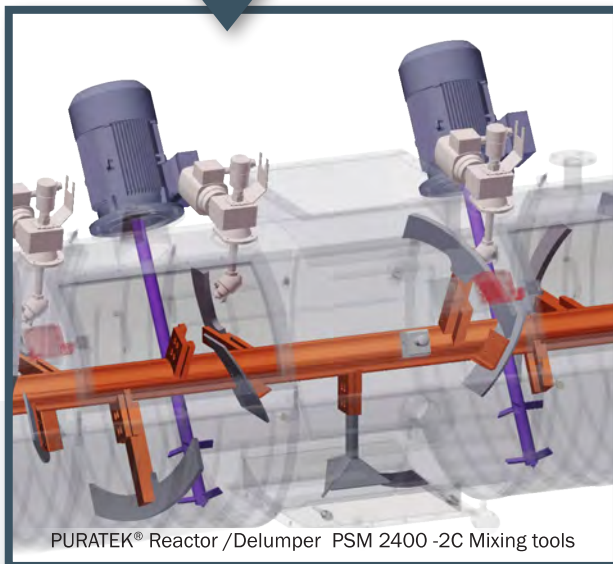
PURATEK® heavy-duty screw discharge base type SAB has 6 planetary gear motors, 2.2 kW power per drive and capacity up to 12 m³/h. Construction material is stainless steel, duplex steel on demand.

Storage tank is equipped with a side stirrer for homogenization of the slurry, which is ready for further treatment with 3-phase decanter centrifuge technology (for separation of solids, water and oil), or for further treatment with thermal desorption technology.

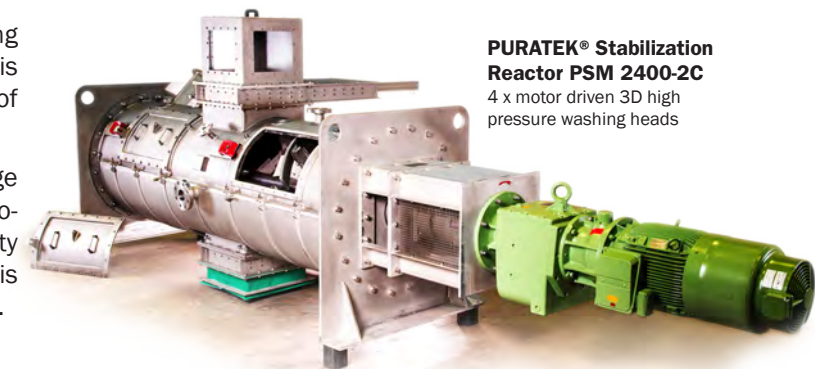
Dewatered and de-oiled sand from 3-phase centrifuge is suitable for deposition on landfill or comes to Stabilization & Solidification process. Gained oil fraction comes to oil recycling, the process water from centrifuge is reused for dilution of incoming oil sludge.



Storage tank



PURATEK® Reactor /Delumper PSM 2400 -2C Mixing tools



PURATEK® Stabilization Reactor PSM 2400-2C
4 x motor driven 3D high pressure washing heads