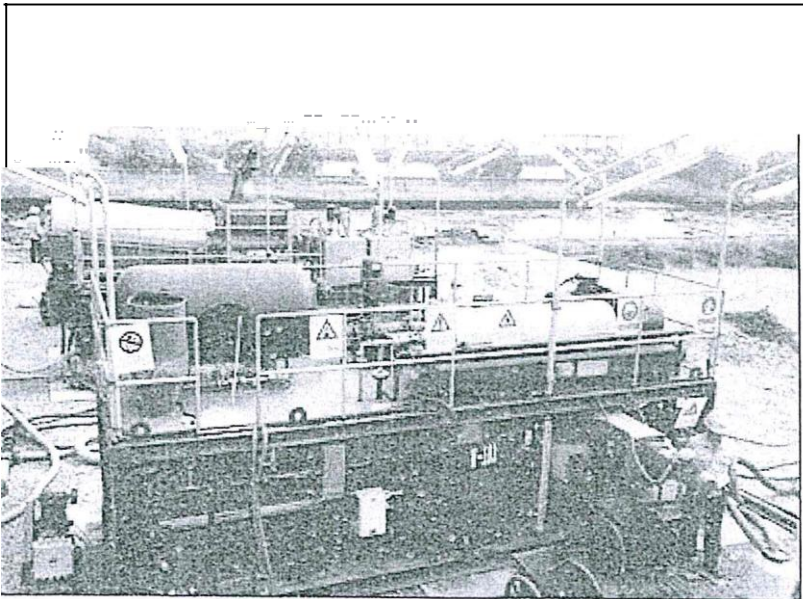


Equipments'

Lists

	<b>OIL SLUDGE SEPARATION PACKAGE</b>		

EQUIPMENT LISTS  
OF  
CRUDE OIL RECOVERY PACKAGE



## 1. Equipment lists

### 1.1 Main equipment lists

Main equipment lists

No.	Descriptions	Unit	Qty.
	<b>Proposed sludge separation package, include,</b>		
1	Floating pump skid (Q=20~30m <sup>3</sup> /h; power:20kW)	set	1
2	Sludge modification skid (HBP-TZG60) (Q=10~20m <sup>3</sup> /h; power: 30kW)	set	3
3	Centrifugal treatment skid (Q=10~20m <sup>3</sup> /h; power: <b>-40kW</b> )	set	1
4	Recovery oil separator skid (HBP-FLQ80)	set	1
5	Process recycle water skid (HBP-HSG80)	set	1
6	Chemical dosing skid (HBP-JYQ)	set	1
7	Boost pump skid (power:30kW)	set	1
8	Steam boiler skid (rated evaporation capacity 2Uh)	set	1
9	Diesel generator set (300 kW)	set	1
10	Oil tank skid (8*2.5*2.5m)	set	1
11	Water tank skids (12*2.5*2.5m)	set	4
12	Diesel tank skid (<D2.0*8m)	set	1
13	Lab container (6*2.5*2.5m)	set	1
14	Wheeled cart	set	3
	<b>Option</b>		
10	Crude dehydration treatment device	set	1

### 1.2 Detailed configuration of main equipment packages

## Detailed configurations of equipment packages

SIN	Equipment name	Qty	Specification/model	Remarks
(1)	<b>Floating pump skid</b>	<b>1 set</b>		
1	Intake pump FP-101	2	Q=30m3/h, H=40m, Power ~11kW	
2	Floating platform	1		
3	Skid base and steel frame	1	4.5x2.5m	
4	Associated instrumentation system	1 set		
5	Electric system	1 set		
6	Piping and valves system	1 set	Stainless steel	
(2)	<b>Centrifugal treatment skid</b>	<b>1 set</b>	<b>HBP-LXJ20.0</b>	Hiller or Flottweg
1	Three phase separator S-101	1	capacity:~20m3/h, main material: duplex SS	
2	Feed double chamber filter F-1011	1	MSL50I-1.6/10CS	
3	Feed heat exchanger E-101	1	KLS0.8-8, spiral plate heat exchanger A=8m2	
4	Centrifuge buffer tank T-102	1	cp1.5x1.44, V=2.5m3	
5	Dehydrated sludge screw conveyor	1	<b>LS320-2.95/LS320-15</b>	
6	Modified sludge boost pump	2	BN17-6L, 8~12m3/h, 30m	SEEPEX
7	Oil-water mixture boost pump	2	BN17-6L, 10~15m3/h, 30m	SEEPEX
8	Electrical-driven gate valve and control system	1		
9	Automatic flushing system	1		
10	Flammable gas detector	2		
11	Feed flow display system	1		
12	heating medium flow control system E-10111	1		
13	Junction box and control display screen	1 set		
14	Main control cabinet	1		
15	Frequency inverter	1		
16	PLC/ touch screen	1		
17	Skid base and steel frame	2	9.5x2.5m	
18	Associated instrumentation system	1 set		
19	Electric system	1 set		
20	Piping and valves system	1 set		
(3)	<b>Sludge modification skid A</b>	<b>1 set</b>	<b>HBP-TZG60</b>	

## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

1	Sludge modified tanks (T-101A)	1	cp3.2x5.5m, V=60m3, vertical, with heating coils, materials: CS	:
1.1	blender	1	HQ1500-125T1 /CX1400-125T1 reducer F108-22-24.2-V1, 15kW	i
1.2	Anti-corrossion	1 set	Heat resistant coating	
1.3	Hot insulation	1 set	Silicate aluminum rock wool t=80mm	:
1.4	Ladder and platform	1 set		
2	Overflow double chambers filter F-103	1	MSL1501-1.6/10CS	:
3	Piping and valves system	1 set		
3.1	Electrical-driven butterfly valve LV-201 A/B/C	1	DN80 PN1.6	
	Electrical-driven butterfly valve LV-202A/B	1	DN80 PN1.6	i
	Electrical-driven butterfly valve FV-201A/B/C	1	DN100 PN1.6	
	Electrical-driven butterfly valve FV-202A/B/C	1	DN80 PN1.6	
3.2	Electrical-driven valve MOV-201(202)	2	DN150/ DN50	i
	Electrical-driven butterfly valve FV-203A/B/C	1	DN50	
3.3	T valve TV-201A/B/C	1	DN25	
3.4	Piping and valves system	1		
4	Instrumentation and control system	1		
4.1	Integrated temperature transmitter	1	SBWZKG-2460S	i
4.2	Floater level switch	1	UQK	
4.3	Pressure gauge	1	YTN	i
4.4	Temperature gauge	1	WSSF-483	
4.5	Differential pressure liquid level transmitter	1	IDP20LTT52S00024SSID	
4.6	Flammable gas sensor	1	DF-7500	:
4.7	Instrument pipes and wire/cable	1 set		: i
				i
(4)	Sludge modification skid B	1 set	HBP-TZG60	i
1	Sludge modified tanks (T-101B)	1	cp3.2x5.5m, V=60m3, vertical, with heating coils, materials: CS	
1.1	blender	1	HQ1500-125T1 /CX1400-125T1 reducer F108-22-24.2-V1, 15kW	i
1.2	Anti-corrossion	1 set	Heat resistant coating	
1.3	Hot insulation	1 set	Silicate aluminum rock wool t=80mm	

## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

1.4	Ladder and platform	1 set		
2	Overflow double chambers filter F-103	1	MSL1501-1.6/1 OCS	
3	Piping and valves system	1 set		
3.1	Electrical-driven butterfly valve LV-201A/B/C	1	DN80 PN1.6	
	Electrical-driven butterfly valve LV-202A/B	1	DN80 PN1.6	
	Electrical-driven butterfly valve FV-201A/B/C	1	DN100 PN1.6	
	Electrical-driven butterfly valve FV-202A/B/C	1	DN80 PN1.6	
3.2	Electrical-driven valve MOV-201(202)	2	DN150/ DN50	
	Electrical-driven butterfly valve FV-203A/B/C	1	DN50	
3.3	T valve TV-201A/B/C	1	DN25	
3.4	Piping and valves system	1		
4	Instrumentation and control system	1		
4.1	Integrated temperature transmitter	1	SBWZKG-2460S	
4.2	Floater level switch	1	UQK	
4.3	Pressure gauge	1	YTN	
4.4	Temperature gauge	1	WSSF-483	
4.5	Differential pressure liquid level transmitter	1	IDP20LTT52S00024SSID	
4.6	Instrument pipes and wire/cable	1 set		
(5)	<b>Sludge modification skid C</b>	<b>1 set</b>	<b>HBP-TZGGO</b>	
1	Sludge modified tanks (T-101C)	1	cp3.2x5.5m, V=60m3, vertical, with heating coils, materials: CS	
1.1	blender	1	HQ1500-125T1/CX1400-125T1 reducer F108-22-24.2-V1, 15kW	
1.2	Anti-corrossion	1 set	Heat resistant coating	
1.3	Hot insulation	1 set	Silicate aluminum rock wool t=80mm	
1.4	Ladder and platform	1 set		
2	Overflow double chambers filter F-103	1	MSL1501-1.6/1 OCS	
3	Piping and valves system	1 set		
3.1	Electrical-driven butterfly valve LV-201A/B/C	1	DN80 PN1.6	
	Electrical-driven butterfly valve LV-202A/B	1	DN80 PN1.6	
	Electrical-driven butterfly	1	DN100 PN1.6	

## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

	valve FV-201A/B/C			
	Electrical-driven butterfly valve FV-202A/8/C	1	DN80 PN1.6	
3.2	Electrical-driven valve MOV-201(202)	2	DN150/ DN50	
	Electrical-driven butterfly valve FV-203A/B/C	1	DN50	
3.3	T valve TV-201A/8/C	1	DN25	
3.4	Piping and valves system	1		
4	Instrumentation and control system	1		
4.1	Integrated temperature transmitter	1	SBWZKG-2460S	
4.2	Floater level switch	1	UQK	
4.3	Pressure gauge	1	YTN	
4.4	Temperature gauge	1	WSSF-483	
4.5	Differential pressure liquid level transmitter	1	IDP20LTT52S00024SSID	
4.6	Instrument pipes and wire/cable	1 set		
( )	<b>Process recycle water skid</b>	<b>1 set</b>	<b>HBP-HSG80</b>	
1	Recycle water tank (V-102)	1	cp2.6x13.8, V=80m3, horizontal type, with heating coil, materials: CS	
1.1	Anti-corrosion	1 set	Anti-rust paint	
1.2	Hot insulation	1 set	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform:1..	1 set		
2	Piping and valves system	1 set		
3	Instrumentation and control system	1 set		
3.1	Differential pressure liquid level transmitter	1	IDP20LTT52S00024SS ID	
3.2	Integrated temperature transmitter	1	SBWZKG-2460S	
3.3	Floater liquid level meter	1	UQK	
3.4	Bi-metal temperature meter	2	WSSF-483	
3.5	Pressure gauge	2	YTN	
3.6	Pressure transmitter	1	3051	
(7)	<b>Recovery oil separator skid</b>	<b>1set</b>	<b>HBP-FLQ80</b>	
1	Oil tank (V-101)	1	cp2.6x13.8, V=80m3, horizontal type, with heating coils and SS padding, main materials: CS	
1.1	Anti-corrosion	1 set	Oil resistant painting	

## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

1.2	Hot insulation	1 set	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform	1 set		
2	Piping and valves system	1 set		
3	Instrumentation and control system	1 set		
3.1	Differential pressure liquid level transmitter	1	IDP20LTT52S00024SSID	
3.2	Integrated temperature transmitter	1	SBWZKG-2460S	
3.3	Floater liquid level meter	1	UQK	
3.4	Bi-metal temperature meter	2	WSSF-483	
3.5	Pressure gauge	2	YTN	
3.6	Instrument piping and wire/cable	1 set		
(8)	<b>Boost pump skid</b>	<b>1 set</b>		
1	Hot water pump P-102	2	Q=50m <sup>3</sup> /h, H=60m	
2	Oil export pump P-101	2	Q=20m <sup>3</sup> /h, H=60m	
3	Piping and valves system	1 set		
3.1	Clamp plate valve	5	Z73-16 DN100	
	Clamp plate valve	3	Z73-16 DN80	
	Clamp plate valve	8	Z73-16 DN50	
3.2	Swing check valve	2	H44H-16C DN100	
	Swing check valve	1	H44H-16C DN80	
	Swing check valve	2	H11H-16P DN50	
3.3	Global valve	3	J41H(R)-16C DN25	
3.4	Gate valve	14	Z11H(R)-16C NPT DN25	
3.5	Y type filter	3	SBY-11 DN100 1_5	
	Y type filter	2	SBY-11 DNS0-1.6	
3.6	Seamless pipe (m)	12	cp114x4 20# GBff8163-1999	
	Seamless pipe (m)	9	cp89x3.5 20# GBff8163-1999	
	Seamless pipe (m)	20	cp60x3 20# GBff 8163-1999	
	Seamless pipe (m)	9	cp34x3 20# GBff8163-1999	
3.7	Piping anticorrosion	1 set	Anti rust painting	
3.8	Piping insulation	1 set	Silicate aluminum	
4	Instrumentation and control system	1 set		
4.1	Magnetic level meter	1	UHZ-51?C10AL-2000	
4.2	Target type flow meter	3	SBL-AY**CCIXN	
4.3	Pressure gauge	6	Y-150 0-1MPa	
4.4	Bi-metal temperature gauge	1	WSSF-483	
4.5	Oil outlet regulator	1	ZDLJP-16B	
4.6	Instrument piping and wire/cable	1		



## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

5	Electric system	1		
6	Skid base	1	9000x2500x200m	
(9)	<b>Steam boiler skid</b>	<b>1 set</b>	<b>HBP-JRL1200</b>	
1	heater	1	WNS2-1.0-Y(Q)	
2	Fuel gas ratio-adjusting burner	1	TBG120PN	
3	Water feed pump	1	40LG12-15x8 Flow rate:9m3/h H:128m 7.5kW	
4	Automatic sodium ion exchanger	1	Rated treat capacity: 2 m3/h	
5	Control panel	1	GKT-Q4T	
6	Piping and valves system	1 set		
7	Instrumentation and control system	1 set		
8	Electric system	1 set		
9	Condensation recovery Systems	1		
(10)	<b>Diesel generator set skid</b>	<b>1 set</b>		
	Commins water cool diesel engine			
	24V DC motor and charging generator		NTA855-G1B	
	Electron speed regulator			
	Single bearing generator, level H		BFWS300-4	
	Exciter/voltage adjust torque match			
	Three stages circuit breaker			
	Fuel filter and engine oil filter, oil water separator			
	Engine oil drain valve			
	Air filter			
	Muffle ( 9db )			
	Automatic digital control system			
{11}	<b>Chemical dosing skid</b>	<b>1 set</b>	<b>HBP-JYQ</b>	
A	Liquid dosing device	3		
1	Dilution box	3	1.0m3, 304ss	
2	Diaphragm metering pump	3	JZM-300/0.6	

## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

3	Mixer	3	FJB-0.75KW	
4	Drainage valve	2	DN50 304	
5	Ball valve	9	DN25 304	
6	Filter for valve	3	DN20 304	
7	Liquid level meter	3	304ss	
8	Safety valve	3	DN15-1.6 304	
9	Pressure gauge	3	DN15-1.6 304	
10	Piping and fitting	1		
11	Ladder and platform	1		
12	Skid base	1		
13	Frequency inverter	3		
B	Flocculent dosing system	1		
1	Chemical mixing box		Effective volume: 2.2.m3	
	Mixing chamber:800L			
	Curing chamber:800L			
	Injection chamber: 600L			
	Dry powder box:60L			
2	Flocculent dosing pump	3	1.0m3/h, 2.0MPa, vertical screw pump	
3	Mixer motor	2	RF37-0.55Y90L,0.55kW	
4	Feed reducer	1		
5	Automatic dehumidifier	1		
6	Automatic level detector	1		
7	Flow induction detector	1		
8	Flocculent flow control system	3		
9	SS piping and valve system	1		
10	Electric and instr1.1rneot2.tJ0.n control system			
11	Skid base	1		
C12)	<b>Water storage skid A</b>	<b>1</b>	<b>12*2.5*2.5m</b>	
1.1	Anti-corrosion	1 set		
1.2	Hot insulation	1 set	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform	1 set		
2	Piping and valves system	1 set		
(13)	<b>Water storage skid B</b>	<b>1</b>	<b>12*2.5*2.5m</b>	
1.1	Anti-corrosion	1 set		
1.2	Hot insulation	1 set	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform	1 set		
2	Piping and valves system	1 set		

## EQUIPMENT LISTS OF OIL SLUDGE SEPARATION PACKAGE

<b>(14)</b>	<b>Water storage skid C</b>	<b>1</b>	<b>12*2.5*2.5m</b>	
1.1	Anti-corrosion	1		
1.2	Hot insulation	1	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform	1		
2	Piping and valves system	1		
<b>(15)</b>	<b>Water storage skid D</b>	<b>1</b>	<b>12*2.5*2.5m</b>	
1.1	Anti-corrosion	1		
1.2	Hot insulation	1	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform	1		
2	Piping and valves system	1		
<b>{16}</b>	<b>Diesel tank skid</b>	<b>1</b>		
A	diesel tank	<b>1</b>	<b>Cf&gt;2*8m</b>	
1.1	Anti-corrosion	1 set	Oil resistant painting	
1.2	Hot insulation	1 set	Silicate aluminum rock wool t=50mm	
1.3	Ladder and platform	1 set		
2	Piping and valves system	1 set		
3	Instrumentation and control system	1 set		
B	diesel pump	<b>2</b>	Q=20m <sup>3</sup> /h, H=60m	
<b>{17}</b>	<b>Lab container</b>	<b>1</b>	<b>6m*2.5m*2.5m</b>	
1	BS&W test kit	<b>1 set</b>		
2	air-conditioner	1 set		
3	Table and chair	1 set		
4	Lighting and vent fan	1set		
<b>(18)</b>	<b>Wheeled cart</b>	<b>3 sets</b>		
<b>(19)</b>	<b>interconnecting materials (pipeline and cables etc.)</b>	<b>1 batch</b>	Oil resistant hose	

## 1.3 Capital spare parts

## Capital Spare Parts

No	Name	Descriptions	Unit	Qty	Remrks
1	bowl belt drive	E 355.400X03	pie	1	centrifuge
2	V-belts	SPAX-2120 LW	pie	4	centrifuge
3	conveyer belt drive	E 325.4016.04	pie	1	centrifuge
4	V-belts	XPA-1900 LW	pie	1	centrifuge
5	Fuel filter		pie	1	generator
6	Engine oil filter		pie	1	generator
7	Air filter		pie	1	generator
8	Pressure gauge		set	2	
9	Temperature gauge		set	2	
10	Differential pressure liquid level transmitter		set	2	
11	Spare valves		batch	1	
12	Spare tubing & fittings		batch	1	
13	Cable and wire		batch	1	
14	Electrical items		batch	1	
15	Automation items		batch	1	