

Annexure-1: DESIGN WATER & EFFLUENT PARAMETER at BCPL LEPETKATA

[illegible]

Tentative minimum man-power requirement in the shift of 8 hrs.

- 1 no. of shift in charge for coordinating overall jobs in N2 plant, DM Plant, RWTP and ETP.
- 1 no. of Operator in each of DM Plant, RWTP, N2 plant and 2 nos. of operators for ETP, Total 5.
- 1 no. helper for each unit for up-keeping of these units, total 4.
- 2 nos. of Technician for differentskilled activities in all four units.

Tentative minimum man-power requirement in the general shift.

- 2 nos. Technician,
- 1 no. helpers for up-keeping of all four units.

Bidder to note the following:

- Bidder should provide the details of qualification, experience and skills of the man power resources which are intended to be deployed for operation of this plant. BCPL shall critically review the experience and skills profile of the operation and maintenance personnel intended to be engaged by the bidder. BCPL reserves right to reject any person not acceptable to them.
- Shift In-charge should be Diploma in Chemical Engineering with minimum 3 Years' experience in managing of operation of any chemical /Petrochemical/Fertilizers Industry. However, B.E. (Chemical) will be preferred.
- DCS & Field Operator should have operational experience of 2 years in any chemical /Petrochemical/Fertilizers Industry. For the operator post, B.Sc. qualification is preferred.
- Technician should be Diploma holder/ITI in Mechanical with minimum 1 Year experience in maintenance of any process Industry.

Relievers are included in above required resources.

- Any additional deployment of resources if required shall be provided by the contractor in case it is established that there is a need for such deployment without any cost implication to BCPL. The decision of BCPL shall be final & binding.
- Bidder shall not change his representative at site without prior written approval of BCPL.
- Bidder shall promptly replace any personnel not found suitable or acceptable to BCPL.

ANNEXURE-A

LIST OF ROTARY EQUIPMENTS			
Sl.No.	PUMP	Name	TOTAL NO. OF PUMPS
1	149-PA-01A/B/C	OWS EFFLUENT TRANSFER TO TPI	3
2	149-PA-02A/B/C	EX-TPI TRANSFER PUMP	3
3	149-PA-03A/B/C	DAF FEED PUMP	3
4	149-PA-04A/B	DAF RECYCLE PUMP	2
5	149-PA-05 A/B	SANITARY WASTE TRANSFER PUMPS	2
6	149-PA-07 A/B/C	SBR FEED PUMP	3
7	149-PA-09 A/B/C	FILTER FEED PUMP	3
8	149-PA-35 A/B/C/D	RECIRCULATION OF ACTIVE SLUDGE	4
9	149-PA-36 A/B/C/D	SURPLUS ACTIVATED SLUDGE PUMPS	4
10	149-PA-10 A/B/C	TREATED EFFLUENT PUMP	3
11	149-PA-11 A/B	FILTER BACKWASH PUMP	2
12	149-PA-12 A/B/C	OFF-SPEC EFFLUENT PUMP	3
13	149-PA-32 A/B	CRW FILTER BACK WASH PUMP	2
14	149-PA-13 A/B	FLOOR WASH TRANSFER PUMP	2
15	149-PA-14 A/B/C/D/E/F/G/H/I/J	CRW TRANSFER PUMP	10
16	149-PA-15 A/B/C	CRW TPI FEED PUMP	3
17	149-PA-16 A/B/C	CRW DM/ACF FEED PUMP	3
18	149-PA-34 A/B/C	TREATED CRW TRANSFER PUMP	3
19	149-PA-17 A/B	OILY & CHEM. SLUDGE PUMP	2
20	149-PA-18 A/B	THICKENED OILY & CHEM. SLUDGE PUMP	2
21	149-PA-19 A/B/C	BIO-SLUDGE TRANSFER PUMPS	3
22	149-PA-21 A/B	CONC. H2SO4 TRANSFER PUMP	2
23	149-PA-22 A/B	CAUSTIC LYE TRANSFER PUMP	2
24	149-PA-23 A/B	H2SO4 SOLN. DOSING PUMP	2
25	149-PA-24 A/B	CAUSTIC SOLN. DOSING PUMP	2
26	149-PA-25 A/B	ALUM DOSING PUMPS	2
27	149-PA-26 A/B	DOPE SOLN. DOSING PUMP	2
28	149-PA-27 A/B	NUTRIENTS SOLN. DOSING PUMP	2

29	149-PA-28 A/B	DWPE (OILY) SOLN. DOSING PUMP	2
30	149-PA-29 A/B	DWPE (BIO) SOLN. DOSING PUMP	2
31	149-PA-30 A/B	WET SLOP OIL TRANSFER PUMP	2
32	149-PA-31 A/B	DRY SLOP OIL TRANSFER PUMP	2
33	149-PA-39	DEWATERING PUMP FOR CRW SUMP	1
34	149-PA-40	DEWATERING PUMP FOR WET SLOP SUMP	1
35	149-PA-41	DEWATERING PUMP FOR OFFSPEC EFFLUENT SUMP	1
36	149-PA-42	DEWATERING PUMP FOR OWS SUMP	1
37	149-PA-33 A/B	NEUTRALISED SPENT CAUSTIC TRANSFER PUMP	2
38	149-K-01 A/B	DAF AIR COMPRESSOR	2
39	149-K-02 A/B/C/D/E/F	SBR AIR BLOWERS	6
40	149-K-03 A/B	AIR SCOURING BLOWERS FOR PSF & ACF	2
41	149-K-04 A/B	CRW AIR SCOURING BLOWERS	2
42	149-K-05 A/B	VOC BOOSTER BLOWER	2
43	149-K-06 A/B	VOC BLOWER	2
44	149-AG-01	FLASH MIXER	1
45	149-AG-02	FLOCCULATION MIXER	1
46	149-AG-03	PH ADJUSTMENT MIXER	1
47	149-AG-04	THICKENED OILY & CHEMICAL SLUDGE AGITATOR	1
48	149-AG-07 A/B	CAUSTIC SOLUTION AGITATORS	2
49	149-AG-08 A/B	ALUM SOLUTION DOSING AGITATORS	2
50	149-AG-09 A/B	DOPE SOLUTION DOSING AGITATORS	2
51	149-AG-10 A/B	NUTRIENT SOLUTION AGITATORS	2
52	149-AG-11	DWPE (OILY) SOLUTION AGITATORS	1
53	149-AG-12	DWPE (BIO) SOLUTION AGITATORS	1
54	149-AG-13	COMBO UNIT FLOCCULATOR	1
55	149-G-01	OILY & CHEMICAL SLUDGE CENTRIFUGE	1
56	149-ST-01	OILY & CHEMICAL SLUDGE THICKNER	1
57	149-ST-02	BELT FILTER PRESS	1
58	149-FS-01	DAF SKIMMER	1
59	149-SA-01	DAF SCREW AGUR	1

LIST OF TANKS, VESSELS AND SUMPS				
SI No	Name of vessel/Tank	Tag No	Type of Equipment	Capacity (m3)
1	CONC SULPHURIC ACID TANK	149-T-10	Tank	20
2	CAUSTIC STORAGE TANK	149-T-11	Tank	20
3	DOPE SOLUTION DOSING TANK	149-T-15 A/B	Tank	4.3
4	NUTRIENT SOLUTION DOSING TANK	149-T-16 A/B	Tank	1.6
5	DWPE [OILY] SOLUTION DOSING TANK	149-T-17	Tank	4.33
6	DWPE [BIO] SOLUTION DOSING TANK	149-T-18	Tank	1.36
7	ALUM SOLUTION DOSING TANK	149-T-14 A/B	Tank	1.8
8	CAUSTIC SOLUTION DOSING TANK	149-T-13 A/B	Tank	1.8
9	EQUALISATION TANK	149-T-01A/B	Tank	1670
10	CRW EFFLUENT STORAGE TANK	149-T-08 A/B	Tank	2450
11	WET SLOP OIL TANK	149-T-09 A/B	Tank	510
12	NEUTRALISED SPENT CAUSTIC STORAGE TANK	149-T-19	Tank	77
13	PRESSURE SAND FILTERS	149-F-01 A/B/C	Vessel	11
14	ACTIVATED CARBON FILTERS	149-F-04 A/B/C	Vessel	17
15	CRW ACTIVATED CARBON FILTER	149-F-02 A/B/C	Vessel	21
16	DUAL MEDIA FILTERS	149-F-03 A/B/C	Vessel	17
17	Volatile organic carbon (VOC) Filter	149-F-05 A/B/C	Vessel	21
18	CRW receiving sump	149-S-09	Sump	1324
19	CRW Filter Feed sump	149-S-10	Sump	46.67
20	Treated CRW sump	149-S-16	Sump	31.5
21	OWS receiving sump	149-S-01	Sump	136.81
22	Ex-TPI Transfer sump	149-S-02	Sump	85.4
23	Flash Mixing Tank	149-T-02	Tank	5
24	Flocculation Tank	149-T-03	Tank	50.75
25	Dissolved Air Floatation Tank	149-T-04	Tank	50
26	Saturation Vessel	149-V-01	Vessel	1
27	Sanitary Waste Receiving Sump	149-S-03	Sump	1440
28	pH Adjustment Tank/Biological Feed tank	149-T-06 A/B	Sump	31.5
29	Guard Pond	149-GP-01A/B/C	Sump	9000
30	Treated effluent sump	149-S-07	Sump	95
31	Off spec Effluent Sump	149-S-08	Sump	98
32	Oily & Chemical Sludge sump	149-S-11	Sump	6
33	Thickened Oily & Chemical Sludge sump	149-S-12	Sump	84
34	Bio Sludge Sump	149-S-13	Sump	45
35	WeT SLOP OIL Sump	149-S-15	Sump	6
36	Bioremediation Pit		Pit	450

ANNEXURE-B			
LIST OF ROTARY EQUIPMENTS			
S No.	Equipment	Tag No.	Nos
1	Raw Water Feed Pump	121-PM-101-A/B/C	3 (2R+1S)
2	Effluent transfer Pump	6907-P-21-A/B/C	3 (1R+2S)
3	Back Wash Blower	6907-K-01-A/B	2 (1R+1S)
4	Cooling Water Make-up pump	122-PA-102-A/B	2 (1R+1S)
5	DM Plant/ Service water pump	122-PA-101-A/B/C	4 (3R+1S)
6	Back Wash Pump	6907-17-A/B	2 (1R+1S)
7	Drinking Water pump	124-PA-101-A/B	2 (1R+1S)
8	Clarifier-I/II/III Agitator		1 each
9	Clarifier-I/II/III Raker Arm		1 each
10	Sludge Transfer Pump	6907-P-019-A/B	2 (1R+1S)
11	Lime (River) Chemical Dosing	6907-P-011-A/B/C	3 (2R+1S)
12	Lime (River) Chemical Dosing Tank Agitator	6907-AG-06/07	2
13	Alum Chemical Dosing Pump	6907-P-013-A/B/C	3 (2R+1S)
14	Alum Chemical Dosing Tank Agitator	6907-AG-10/11	2
15	Poly- Electrolyte Chemical Dosing Pump	6907-P-015-A/B/C	3 (2R+1S)
16	Poly- Electrolyte Chemical Dosing Tank Agitator	6907-AG-14/15	2
17	DWPE Chemical Dosing Pump	6907-P-014-A/B	2 (1R+1S)
18	DWPE Chemical Dosing Tank Agitator	6907-AG-12/13	2
19	Fuller Earth Chemical Dosing Pump	6907-P-010-A/B/C	3 (2R+1S)
20	Fullers Earth Chemical Dosing Tank Agitator	6907-AG-04/05	2
21	Recycle pump	6907-P-26A/B	2

LIST OF LIST OF TANKS, VESSELS AND SUMPS				
Sl No	Name of vessel/Tank	Tag No	Type of Equipment	Capacity (m3)
1	STILLING CHAMBER – I & II	RCB – I & RCB - II	Sump	61
2	PARSHALL FLUME – I & II	RCB-I-P & RCB-II-P	Sump	61
3	FLASH MIXING TANK – I & II	RCB-IV & RCB-V	Sump	10
4	FLASH MIXING TANK - III	RCB –III	Sump	10
5	RE-ACTIVATOR CLARIFIER	RCB-VI, RCB-VII, RCB-VIII	Vessel	
6	RAPID GRAVITY SAND FILTERS	RCB-XIII	Reservoir	109

7	CLARIFIER SLUDGE SUMP	RCB –IX	Sump	25
8	SLUDGE THICKNER	RCB- X	Vessel	82
9	THIKENED SLUDGE SUMP	RCB-XI	Sump	28
10	EFFLUENT COLLECTION SUMP	RCB –XII	Sump	650
11	FILTERED WATER RESERVOIR	RCB-XV	Reservoir	12000
12	FILTERED WATER SUMP	RCB-XVI	Sump	357
13	DRINKING WATER SUMP	RCB-XVII	Sump	300
14	FULLERS EARTH DOSING TANK	RCB - 13A/B	Tank	6.4
15	LIME SOLUTION DOSING TANK (RIVER WATER)	RCB - 18 A/B	Tank	6.4
16	LIME SOLUTION DOSING TANK (BORE WELL WATER)	RCB - 19 A/B	Tank	3.375
17	ALUM SOLUTION DOSING TANK	RCB - 20 A/B	Tank	6
18	DE WATERING POLYELECTROLYTE DOSING TANK	CS - 1A/B	Tank	4.5
19	POLYELECTROLYTE DOSING TANK	CS - 2A/B	Tank	4.5

ANNEXURE - C			
LIST OF ROTARY EQUIPMENTS			
SL.NO	NAME OF EQUIPMENT	TAG .NO	QTY
1	Degasser Air Blower	123-K-001 A/B/C	3
2	Degasser Water pump for SBA feed	123-P-001 A/B/C	3
3	Degasser Water Pump for SAC regeneration	123-P-002 A/B	2
4	DM Water Pump for SBA Regeneration	123-P-003 A/B	2
5	DM Water Transfer Pump	123-PA-101 A/B/C	3
6	DM water pump for MB Regeneration	123-P-004 A/B	2
7	Mixed Bed Blower	123-K-002 A/B	2
8	HCL unloading / Transfer pumps	123-P-005 A/B	2
9	Caustic unloading / Transfer pumps	123-P-006 A/B	2
10	46 % Caustic Dilution pumps	123-P-007 A/B	2
11	20 % Caustic Solution transfer pump	123-P-008 A/B	2
12	Alkali Measuring / Dilution tank Agitator (SBA)	123-AG-001 A/B	2
13	Alkali Measuring / Dilution tank Agitator (MB)	123-AG-002 A/B	2
14	Acid / Alkali Dilution Tank Agitator (Neutralization)	123-AG-003	1
15	Brine Preparation and Dosing Tank Agitator	123-AG-004	1
16	Effluent Transfer Pump	123-P-009 A/B/C	3
17	ACF Backwash Pump	123-P-010 A/B	2
18	Morpholine Dosing Pump	123-P-011 A/B	2
19	DM water pump for Caustic Dilution	123-P-012 A/B	2

LIST OF LIST OF TANKS, VESSELS AND SUMPS				
SI No	Name of vessel/Tank	Tag No	Type of Equipment	Capacity (m3)
1	Activated Carbon Filter	123-F-001 A/B	Vessel	20
2	Strong Acid Cation Exchanger	123-E-001 A/B	Vessel	12
3	Strong Base Anion Exchanger	123-E-002 A/B	Vessel	10
4	Mixed Bed Exchanger	123-E-003 A/B	Vessel	7
5	Degasser Tower	123-T-001 A/B	Vessel	9.3
6	Degasser Water Tank	123-T-002 A/B	Tank	100
7	DM water Storage Tank	123-TT-101 A/B	Tank	3300
8	ACF Backwash tank	123-T-013	Tank	34
9	HCL Bulk Storage tank	123-T-003 A/B	Tank	25.5
10	New HCL Bulk Storage Tank	123-T-003C	Tank	50
11	Caustic Bulk Storage Tank	123-T-004 A/B	Tank	90
12	20 % Caustic Solution Storage tank	123-T-005	Tank	156.25
13	Acid Measuring Tank (SAC)	123-T-006 A/B	Tank	1
14	Acid Measuring Tank (MB)	123-T-007 A/B	Tank	0.3
15	Alkali Measuring / Dilution Tank (SBA)	123-T-008 A/B	Tank	0.6
16	Alkali Measuring / Dilution Tank (MB)	123-T-009 A/B	Tank	0.4
17	Acid / Alkali Dilution Tank for Neutralization	123-T-010	Tank	0.1
18	Brine Preparation and Dosing Tank	123-T-011	Tank	14
19	Neutralization Pit (2 Compartments)	123-T-012	Tank	162
20	Priming Chamber	123-V-001 A/B	Vessel	0.314
21	Morpholine Dosing Tank	123-T-014	Tank	1

ANNEXURE - D

LIST OF ROTARY EQUIPMENTS

Sl No	Equipment	Tag No	Nos
1	LP Air compressor	130-KA-101A/B/C/D/E	5
2	HP Air compressor	129-KA-102	1
3	Chilled Water Pump	130-PA-115A.1/115B.1/115A.2/115B.2	4
4	LIN pump	130-PA-113A/B	2
5	Generator Brake Expansion Turbine	130-PZ-108.1/108.2	2

LIST OF LIST OF TANKS, VESSELS AND SUMPS

Sl No	Name of vessel/Tank	Tag No	Type of Equipment	Capacity (m3)
1	LP Air Receiver	129-VV-101	Vessel	18
2	HP Air Receiver	129-VV-102/103	Vessel	168
3	Waste Disposal Drum (2 nos)	130-VV-118.1/118.2	Vessel	1.48
4	Atm. Pressure Storage Tank	130-TT-112A/B(73)	Vessel	530
5	Vaporizer Bath (2 Nos)	130-T-120/121	Sump	16.8
6	Ambient Vaporizer			
7	Direct Cooler	130-EA-101.1(17)	Vessel	6.122
8	Vaporisation Cooler	130-EA-102.1(13)	Vessel	6.51
9	Adsorber Vessel (1W+1S) x 2	130-CP-103A.1/B.1/A.2/B.2	Vessel	5.275
10	Cold box		Vessel	11.391
11	Drain Pit in LIN tank Area		Vessel	0.5