





EQUIPMENT LIST
BLACK UTILITIES

0	ISSUED FOR CONSTRUCTION										<div><div></div><div></div></div>		<div><div></div><div></div></div>		
D	90% DD ISSUE														
C	30% DD ISSUE														
B	FINAL BD ISSUE														
A	90% BD ISSUE														
REV	DESCRIPTION										DOC NR:		CLIENT NR:		
												569-DB07-MEC-310-001		PDR-MEC-LIS-007	
REVIEW	REV. A	REV. B	REV. C	REV. D	REV. E	REV. F	REV. G	REV. H	REV. I	REV. J	CLIENT:				
DATE	28AUG2020	16OCT2020	22MAR2021	30JUN2021	30JUL2021						TAKEDA/BAXALTA				
EXEC	ASO	ASO	ASO	ASO	ASO						PROJECT:			REV.:	
CHECK	LFF	LFF	LFF	LFF	LFF						BURITI EPCMV PROJECT			D	
APPROV	MSS	MSS	MSS	RSP	RSP										

REVISION HISTORY

Rev	Reason for Change
A	Original issue
B	The number of document was changed of PRD-MEC-URS-007 to PRD-MEC-TS-007
C	The number of document was changed of PRD-MEC-TS-007 to PRD-MEC-LIS-007
	Changed Water Chiller Capacity from 400 Tons to 530 Tons (CH-7A-1 / CH-7A-2 / CH-7A-3)
	Changed flow rate from 197 m³/h to 238 m³/h (P-CH-7A-1 / P-CH-7A-2 / P-CH-7A-3)
	Changed flow rate from 194 m³/h to 222 m³/h (P-CH-7A-4 / P-CH-7A-5)
	Changed Cooling Tower Capacity from 545 Tons to 720 Tons (CT-7A-1 / CT-7A-2 / CT-7A-3)
	Changed flow rate from 296 m³/h to 495 m³/h (P-C-7A-1 / P-C-7A-2 / P-C-7A-3)
	Changed Water Chiller Capacity from 100 Tons to 150 Tons (PCH-7A-1 / PCH-7A-2)
	Changed flow rate from 59 m³/h to 66 m³/h (P-PCH-7A-1 / P-PCH-7A-2 / P-PCH-7A-3 / P-PCH-7A-4)
	Expansion tank Type (TK-7A-1) will be changed to pressurized.
	Changed electrical power from 15.0 kW to 18.5 kW (HX-7A-1)
	Changed Water Chiller Capacity from 300 Tons to 400 Tons (PCH-7B-1 / PCH-7B-2)
	Changed electrical power from 7.5 kW to 11.0 kW (P-PCH-7B-1 / P-PCH-7B-2)
	Changed electrical power from 11.0 kW to 15.0 kW (P-PCH-7B-3 / P-PCH-7B-4)
	Changed flow rate from 198 m³/h to 254 m³/h (P-CH-7B-6 / P-CH-7B-7)
	Changed Cooling Tower Capacity from 375 Tons to 500 Tons (CT-7B-1 / CT-7B-2)
	Changed flow rate from 207 m³/h to 275 m³/h (P-C-7B-1 / P-C-7B-2)
	Changed electrical power from 15.0 kW to 18.5 kW (HX-7B-1)
Included PI&D number in the notes field	
D	Adjusted equipment capacities according to Process calculation sheets
	Added chemical dosing systems
	Added the followings equipment: PC-7A-1, PC-7B-1 AND TK-7B-1
0	ISSUED FOR CONSTRUCTION
	Added emergency eye wash shower
	Added chemical dosing system for process chilled water (7A bld)

REVISION HISTORY

[illegible]

NOTES:





1 - FOR CLEAN UTILITIES EQUIPMENT AND PROCESS EQUIPMENT SEE:





* ITD19439_Equipment-List_Rev-K_60%-DD-Issue_BDS

* ITD19439_Equipment-List_Rev-K_60%-DD-Issue_FDP

2 -TO VERIFY IF THE EQUIPMENT WILL BE FED BY THE GENERATOR OR UPS, SEE: PRD-ELE-LIS-515 - ELECTRICAL LOAD LIST

3 -TO VERIFY IF THE EQUIPMENT WILL BE CONNECTED TO THE BMS SEE: PRD-AIC-LIS-003 - DRUG PRODUCT - INPUT AND OUTPUT LIST - BMS; PRD-AIC-LIS-004 - DRUG SUBSTANCE - INPUT AND OUTPUT LIST - BMS; AND PRD-AIC-LIS-008 - BOILER - INPUT AND OUTPUT LIST - BMS

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CLIENT NR: PDR-MEC-LIS-007																						REV.: 0					
ITEM	EQUIPMENT DESCRIPTION	TAG NO.	BUILDING	SERVES	CAPACITY	CUSTOM UNIT (Y/N)	DIMEN. (DxLxH) in mm	WET WEIGHT (Kg.)	FURNISHED By	NEW / EXISTING	LEAD TIME (Weeks)	IMPORTED (YES / NO)	PURCH. COST	PLANT STEAM (KG/HR @ BARG)	COND. RETURN, LPM	CHILLED WATER SUPPLY (LPM) @ 3°C	CHILLED WATER RETURN (LPM) @ x°C	CITY WATER, LPM	TOWER WATER RETURN	ELECT. (AMPS or KW) @ 1/60/220 VAC	ELECT. (AMPS, WATTS or KW) @ 3/60/380 VAC	EMERG. POWER (Y/N)	UPS POWER (Y/N)	BMS SYSTEM	REFERENCE DOCUMENTS		
1	WATER TUBE BOILER	B-7C-1	7C	STEAM FOR HVAC AND PROCESS	4,200 kg/Hr	N	1,600 x 3,900 x 3,250	5,720	MIURA	New	-	NO	-	-	-	-	-	-	-	-	32	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
2	WATER TUBE BOILER	B-7C-2	7C	STEAM FOR HVAC AND PROCESS	4,200 kg/Hr	N	1,600 x 3,900 x 3,250	5,720	MIURA	New	-	NO	-	-	-	-	-	-	-	-	32	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
3	WATER TUBE BOILER	B-7C-3	7C	STEAM FOR HVAC AND PROCESS	4,200 kg/Hr	N	1,600 x 3,900 x 3,250	5,720	MIURA	New	-	NO	-	-	-	-	-	-	-	-	32	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
4	DEARETOR	DA-7C-1	7C	STEAM FOR HVAC AND PROCESS	10 m³/h	Y	1,640 x 2,440 x 4,500	8,000	HEATMEC	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7C-M-0-5-61		
5	BLOWDOWN	BDT-7C-1	7C	STEAM FOR HVAC AND PROCESS	1 m³	Y	ø1,000 x1,500	1,500	HEATMEC	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7C-M-0-5-61		
6	SOFTENER	WS-6000-01	7C	STEAM FOR HVAC AND PROCESS	184 L/min	N	ø945 x 2,215	1,480	MIURA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7C-M-0-5-41		
7	SOFTENER	WS-6000-02	7C	STEAM FOR HVAC AND PROCESS	184 L/min	N	ø945 x 2,215	1,480	MIURA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7C-M-0-5-41		
8	BRINE TANK	TQ-6000-01	7C	STEAM FOR HVAC AND PROCESS	1.1 m³	N	ø1,060 x 1,595	1,250	MIURA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7C-M-0-5-41		
9	BOILER WATER FEEDER PUMP	P-B-7C-1	7C	STEAM FOR HVAC AND PROCESS	12.1 m³/h	N	260 x 280 x 1,100	125	MIURA	New	-	NO	-	-	-	-	-	-	-	-	Considered in Boiler	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
10	BOILER WATER FEEDER PUMP	P-B-7C-2	7C	STEAM FOR HVAC AND PROCESS	12.1 m³/h	N	260 x 280 x 1,100	125	MIURA	New	-	NO	-	-	-	-	-	-	-	-	Considered in Boiler	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
11	BOILER WATER FEEDER PUMP	P-B-7C-3	7C	STEAM FOR HVAC AND PROCESS	12.1 m³/h	N	260 x 280 x 1,100	125	MIURA	New	-	NO	-	-	-	-	-	-	-	-	Considered in Boiler	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
12	BOILER WATER FEEDER PUMP (SPARE)	P-B-7C-X	7C	STEAM FOR HVAC AND PROCESS	12.1 m³/h	N	260 x 280 x 1,100	125	MIURA	New	-	NO	-	-	-	-	-	-	-	-	Considered in Boiler	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
13	CHEMICAL TREATMENT	P-B-7C-4 P-B-7C-5	7C	STEAM FOR HVAC AND PROCESS	-	N	-	200	MIURA	New	-	NO	-	-	-	-	-	-	-	-	Considered in Boiler	NOTE 2	NOTE 2	NOTE 3	7C-M-0-5-61		
14	OIL FREE AIR COMPRESSOR	COMP-7A-1	7A	COMPRESSED AIR	850 Nm³/h	N	1,450 x 2,180 x 2,185	2,100	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	90	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-81		
15	OIL FREE AIR COMPRESSOR	COMP-7A-2	7A	COMPRESSED AIR	850 Nm³/h	N	1,450 x 2,180 x 2,185	2,100	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	90	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-81		
16	TWIN ADSORPTION DRYER	AD-7A-1	7A	COMPRESSED AIR	850 Nm³/h	N	800 x 1,750 x 2,560	1,180	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-81		
17	TWIIN ADSORPTION DRYER	AD-7A-2	7A	COMPRESSED AIR	850 Nm³/h	N	800 x 1,750 x 2,560	1,180	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-81		
18	AIR RECEIVER	AR-7A-1	7A	COMPRESSED AIR	2 m³	N	ø1,265 x 3,350	2,600	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-81		
19	WATER COLLED CHILLER	CH-7A-1	7A	CHILLED WATER - AHU	530 tons	N	2,700 x 4,350 x 2,900	10,500	TRANE	New	-	NO	-	-	-	-	-	-	-	-	355	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-43		
20	WATER COLLED CHILLER	CH-7A-2	7A	CHILLED WATER - AHU	530 tons	N	2,700 x 4,350 x 2,900	10,500	TRANE	New	-	NO	-	-	-	-	-	-	-	-	355	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-43		
21	WATER COLLED CHILLER	CH-7A-3	7A	CHILLED WATER - AHU	530 tons	N	2,700 x 4,350 x 2,900	10,500	TRANE	New	-	NO	-	-	-	-	-	-	-	-	355	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-43		
22	CHILLED WATER PUMP - PRIMARY	P-CH-7A-1	7A	CHILLED WATER - AHU	238 m³/h	N	685 x 1,480 x 740	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	15.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-43		
23	CHILLED WATER PUMP - PRIMARY	P-CH-7A-2	7A	CHILLED WATER - AHU	238 m³/h	N	685 x 1,480 x 740	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	15.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-43		
24	CHILLED WATER PUMP - PRIMARY	P-CH-7A-3	7A	CHILLED WATER - AHU	238 m³/h	N	685 x 1,480 x 740	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	15.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-43		
25	CHILLED WATER PUMP - SECONDARY	P-CH-7A-4	7A	CHILLED WATER - AHU	224 m³/h	N	685 x 1,460 x 740	298	KSB	New	-	NO	-	-	-	-	-	-	-	-	18.5	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-44		
26	CHILLED WATER PUMP - SECONDARY	P-CH-7A-5	7A	CHILLED WATER - AHU	224 m³/h	N	685 x 1,460 x 740	298	KSB	New	-	NO	-	-	-	-	-	-	-	-	18.5	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-44		
27	COOLING TOWER	CT-7A-1	7A	CONDENSATION WATER FOR CHILLER	3,160 kW	N	3,607 x 5,530 x 5,645	10,100	EVAPCO	New	-	NO	-	-	-	-	-	-	-	-	37.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
28	COOLING TOWER	CT-7A-2	7A	CONDENSATION WATER FOR CHILLER	3,160 kW	N	3,607 x 5,530 x 5,645	10,100	EVAPCO	New	-	NO	-	-	-	-	-	-	-	-	37.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
29	COOLING TOWER	CT-7A-3	7A	CONDENSATION WATER FOR CHILLER	3,160 kW	N	3,607 x 5,530 x 5,645	10,100	EVAPCO	New	-	NO	-	-	-	-	-	-	-	-	37.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
30	CONDENSATION WATER PUMP	P-C-7A-1	7A	CONDENSATION WATER	495 m³/h	N	760 x 1,660 x 755	517	KSB	New	-	NO	-	-	-	-	-	-	-	-	45.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
31	CONDENSATION WATER PUMP	P-C-7A-2	7A	CONDENSATION WATER	495 m³/h	N	760 x 1,660 x 755	517	KSB	New	-	NO	-	-	-	-	-	-	-	-	45.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
32	CONDENSATION WATER PUMP	P-C-7A-3	7A	CONDENSATION WATER	495 m³/h	N	760 x 1,660 x 755	517	KSB	New	-	NO	-	-	-	-	-	-	-	-	45.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
33	WATER COOLED CHILLER	PCH-7A-1	7A	CHILLED WATER	150 tons	N	1,200 x 3,360 x 1,920	3,810	TRANE	New	-	NO	-	-	-	-	-	-	-	-	132	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-45		
34	WATER COOLED CHILLER	PCH-7A-2	7A	CHILLED WATER	150 tons	N	1,200 x 3,360 x 1,920	3,810	TRANE	New	-	NO	-	-	-	-	-	-	-	-	132	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-45		
35	CHILLED WATER PUMP	P-PCH-7A-1	7A	CHILLED WATER-PROCESS	112 m³/h	N	500 X 1,150 x 440	230	KSB	New	-	NO	-	-	-	-	-	-	-	-	9.2	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-45		
36	CHILLED WATER PUMP	P-PCH-7A-2	7A	CHILLED WATER-PROCESS	112 m³/h	N	500 X 1,150 x 440	230	KSB	New	-	NO	-	-	-	-	-	-	-	-	9.2	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-45		
37	CHILLED WATER PUMP	P-PCH-7A-3	7A	CHILLED WATER-PROCESS	112 m³/h	N	500 X 1,150 x 440	230	KSB	New	-	NO	-	-	-	-	-	-	-	-	15.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-46		
38	CHILLED WATER PUMP	P-PCH-7A-4	7A	CHILLED WATER-PROCESS	112 m³/h	N	500 X 1,150 x 440	230	KSB	New	-	NO	-	-	-	-	-	-	-	-	15.0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-46		
39	BUFFER TANK	BT-7A-1	7A	CHILLED WATER-PROCESS	12 m³	Y	ø2,500 x 3,140	14,000	TRANE	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-45		
40	EXPANSION TANK	TK-7A-1	7A	CHILLED WATER - AHU	0,5 m³	N	ø680 x 1,590	600	IMI	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-43		
41	HOT WATER SKID	HX-7A-1	7A	HOT WATER FOR RHC	574,615 kcal/h	Y	1,900 X 3,560 X 1,500	1,200	SPIRAX SARCO	New	-	NO	-	-	-	-	-	-	-	-	18,5	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-62		
42	CONDENSATE PUMP - SKID	PC-7A-1	7A	CONDENSATE - PROCESS AND HVAC	2,694 kg/h	Y	1,245 x 1,574 x 1,760	1,500	SPIRAX SARCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-47		
43	SPILL CONTAINMENT PALLET	CN-7A-3	7A	CHEMICAL DOSING SYSTEM - CONDESATION WATER	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-42		
44	CHEMICAL DOSING TANK	TK-7A-3	7A	CHEMICAL DOSING SYSTEM - CONDESATION WATER	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-42		
45	CHEMICAL DOSING PUMP	BM-7A-1	7A	CHEMICAL DOSING SYSTEM - CONDESATION WATER	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	20 A	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-42		
46	SPILL CONTAINMENT PALLET	CN-7A-7	7A	CHEMICAL DOSING SYSTEM - CHILLED WATER - HVAC	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-											

<div><div>TESSLER Engenharia</div><div>ips</div></div>				<div><div>Takeda</div><div>Hemobrás <small>Empresa Brasileira de Hemoderivação e Hemotecnologia</small></div></div>				TITLE: EQUIPMENT LIST - BLACK UTILITIES										DOC NR: 569-DB07-MEC-310-001 CLIENT NR: PDR-MEC-LIS-007										SHEET : 4/4 REV.: 0	
ITEM	EQUIPMENT DESCRIPTION	TAG NO.	BUILDING	SERVES	CAPACITY	CUSTOM UNIT (Y/N)	DIMEN. (DxLxH) in mm	WEIGHT (kg.)	FURNISHED By	NEW / EXISTING	LEAD TIME (Weeks)	IMPORTED (YES / NO)	PURCH. COST	PLANT STEAM (KG/HR @ BARG)	COND. RETURN, LPM	CHILLED WATER SUPPLY (LPM) @ 3°C	CHILLED WATER RETURN (LPM) @ 1°C	CITY WATER, LPM	TOWER WATER RETURN	ELECT. (AMPS or KW) @ 1/60/220 VAC	ELECT. (AMPS, WATTS or KW) @ 3/60/380 VAC	EMERG. POWER (Y/N)	UPS POWER (Y/N)	BMS SYSTEM	REFERENCE DOCUMENTS				
1	SPILL CONTAINMENT PALLET	CN-7A-5	7A	CHEMICAL DOSING SYSTEM -HOT WATER - HVAC	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-47				
2	CHEMICAL DOSING TANK	TK-7A-6	7A	CHEMICAL DOSING SYSTEM -HOT WATER - HVAC	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-47				
3	CHEMICAL DOSING PUMP	BM-7A-5	7A	CHEMICAL DOSING SYSTEM -HOT WATER - HVAC	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-47				
4	SPILL CONTAINMENT PALLET	CN-7A-4	7A	CHEMICAL DOSING SYSTEM - CHILLED WATER - PROCESS	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-45				
5	CHEMICAL DOSING TANK	TK-7A-4	7A	CHEMICAL DOSING SYSTEM - CHILLED WATER - PROCESS	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-45				
6	CHEMICAL DOSING PUMP	BM-7A-2	7A	CHEMICAL DOSING SYSTEM - CHILLED WATER - PROCESS	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-45				
7	EYE WASH SHOWER	EWS-7A-1	7A	ROOM A1042 – MAINTENANCE	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-41				
8	EYE WASH SHOWER	EWS-7A-2	7A	ROOM A1043 – UTILITIES	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-41				
9	EYE WASH SHOWER	EWS-7A-3	7A	ROOM A1040 – AMBIENT STORAGE	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-41				
10	EYE WASH SHOWER	EWS-7A-4	7A	ROOM A2033 - CORRIDOR	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-41				
11	EYE WASH SHOWER	EWS-7A-5	7A	ROOM A2004 – PRE-WASH	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7A-M-0-5-41				
12	OIL FREE AIR COMPRESSOR	COMP-7B-1	7B	COMPRESSED AIR	1,200 Nm³/h	N	1,690 x 2,540 x 2,000	2,900	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	140,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-81				
13	OIL FREE AIR COMPRESSOR	COMP-7B-2	7B	COMPRESSED AIR	1,200 Nm³/h	N	1,690 x 2,540 x 2,000	2,900	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	140,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-81				
14	TWIN ADSORPTION DRYER	AD-7B-1	7B	COMPRESSED AIR	1,200 Nm³/h	N	800 X 1,750 x 2,560	1,180	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-81				
15	TWIN ADSORPTION DRYER	AD-7B-2	7B	COMPRESSED AIR	1,200 Nm³/h	N	800 X 1,750 x 2,560	1,180	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-81				
16	AIR RECEIVER	AR-7B-1	7B	COMPRESSED AIR	3 m³	N	ø1,265 x 2,900	3,840	ATLAS COPCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-81				
17	WATER COOLED CHILLER	PCH-7B-1	7B	CHILLED WATER	300 tons	N	1,940x 3,715 x 2,230	9,800	TRANE	New	-	NO	-	-	-	-	-	-	-	-	240,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-44				
18	WATER COOLED CHILLER	PCH-7B-2	7B	CHILLED WATER	300 tons	N	1,940x 3,715 x 2,230	9,800	TRANE	New	-	NO	-	-	-	-	-	-	-	-	240,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-44				
19	CHILLED WATER PUMP	P-PCH-7B-1	7B	CHILLED WATER-PROCESS	283 m³/h	N	685 x 1,640 x 740	450	KSB	New	-	NO	-	-	-	-	-	-	-	-	18,5	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-44				
20	CHILLED WATER PUMP	P-PCH-7B-2	7B	CHILLED WATER-PROCESS	283 m³/h	N	685 x 1,640 x 740	450	KSB	New	-	NO	-	-	-	-	-	-	-	-	18,5	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-44				
21	CHILLED WATER PUMP	P-PCH-7B-3	7B	CHILLED WATER-PROCESS	283 m³/h	N	725 x 1,750 x 795	450	KSB	New	-	NO	-	-	-	-	-	-	-	-	30,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-45				
22	CHILLED WATER PUMP	P-PCH-7B-4	7B	CHILLED WATER-PROCESS	283 m³/h	N	725 x 1,750 x 795	450	KSB	New	-	NO	-	-	-	-	-	-	-	-	30,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-45				
23	CHILLED WATER PUMP - SECONDARY	P-CH-7B-6	7B	CHILLED WATER - AHU	257 m³/h	N	685 x 1,460 x 740	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	22,0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-44				
24	CHILLED WATER PUMP - SECONDARY	P-CH-7B-7	7B	CHILLED WATER - AHU	257 m³/h	N	685 x 1,460 x 740	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	22,0	NOTE 2	NOTE 2	NOTE 3	7A-M-0-5-44				
25	COOLING TOWER	CT-7B-1	7B	CONDENSATION WATER FOR CHILLER	1,660 kW	N	2,643 x 4,261 x 4,201	4,950	EVAPCO	New	-	NO	-	-	-	-	-	-	-	-	18,5	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-42				
26	COOLING TOWER	CT-7B-2	7B	CONDENSATION WATER FOR CHILLER	1,660 kW	N	2,643 x 4,261 x 4,201	4,950	EVAPCO	New	-	NO	-	-	-	-	-	-	-	-	18,5	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-42				
27	CONDENSATION WATER PUMP	P-C-7B-1	7B	CONDENSATION WATER	260 m³/h	N	745 x 1,545 x 725	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	30,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-42				
28	CONDENSATION WATER PUMP	P-C-7B-2	7B	CONDENSATION WATER	260 m³/h	N	745 x 1,545 x 725	315	KSB	New	-	NO	-	-	-	-	-	-	-	-	30,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-42				
29	BUFFER TANK	BT-7B-1	7B	CHILLED WATER-PROCESS	30 m³	N	ø3,000 x 4,800	34,000	TRANE	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-44				
30	HOT WATER SKID	HX-7B-1	7B	HOT WATER FOR RHC	672,235 kcal/h	Y	1,900 X 3,560 X 1,800	1,200	SPIRAX SARCO	New	-	NO	-	-	-	-	-	-	-	-	18,5	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-46				
31	PLATE HEAT EXCHANGE	HX-7B-2	7B	CHILLED WATER (6°C) - PROCESS	781,892 kcal/h	Y	600 X 1,400 X 1,550	600	ALVA LAVAL	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-53				
32	CHILLED WATER PUMP	P-PCH-7B-5	7B	CHILLED WATER (6°C) - PROCESS	168 m³/h	N	685 x 1,750 x 795	260	KSB	New	-	NO	-	-	-	-	-	-	-	-	30,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-53				
33	CHILLED WATER PUMP	P-PCH-7B-6	7B	CHILLED WATER (6°C) - PROCESS	168 m³/h	N	685 x 1,750 x 795	260	KSB	New	-	NO	-	-	-	-	-	-	-	-	30,0	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-53				
34	EXPANSION TANK	TK-7B-1	7B	CHILLED WATER - LOOP 2	0,14 m³	N	ø420 x 1,274	200	IMI	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-53				
35	CONDENSATION PUMP - SKID	PC-7B-1	7B	CONDENSATE - PROCESS AND HVAC	3,694 kg/h	Y	1,245 x 1,574 x 1,760	1,500	SPIRAX SARCO	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-62				
36	SPILL CONTAINMENT PALLET	CN-7B-1	7B	CHEMICAL DOSING SYSTEM - CHILLED WATER FOR PROCESS	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-44				
37	SPILL CONTAINMENT PALLET	CN-7B-2	7B	CHEMICAL DOSING SYSTEM - CHILLED WATER - LOOP 2	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-53				
38	SPILL CONTAINMENT PALLET	CN-7B-4	7B	CHEMICAL DOSING SYSTEM - CONDESATION WATER	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-42				
39	SPILL CONTAINMENT PALLET	CN-7B-5	7B	CHEMICAL DOSING SYSTEM - HOT WATER - HVAC	-	N	650 x 650 x 270	50	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-46				
40	CHEMICAL DOSING TANK	TK-7B-2	7B	CHEMICAL DOSING SYSTEM - CHILLED WATER FOR PROCESS	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-44				
41	CHEMICAL DOSING TANK	TK-7B-3	7B	CHEMICAL DOSING SYSTEM - CHILLED WATER - LOOP 2	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-53				
42	CHEMICAL DOSING TANK	TK-7B-4	7B	CHEMICAL DOSING SYSTEM - CONDENSATION WATER	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-42				
43	CHEMICAL DOSING TANK	TK-7B-6	7B	CHEMICAL DOSING SYSTEM - HOT WATER - HVAC	50 L	N	ø400 x 800	60	KURITA	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-46				
44	CHEMICAL DOSING PUMP	BM-7B-1	7B	CHEMICAL DOSING SYSTEM - CHILLED WATER FOR PROCESS	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	20 A	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-44				
45	CHEMICAL DOSING PUMP	BM-7B-2	7B	CHEMICAL DOSING SYSTEM - CHILLED WATER - LOOP 2	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	20 A	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-53				
46	CHEMICAL DOSING PUMP	BM-7B-4	7B	CHEMICAL DOSING SYSTEM - CONDENSATION WATER	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	20 A	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-42				
47	CHEMICAL DOSING PUMP	BM-7B-5	7B	CHEMICAL DOSING SYSTEM - HOT WATER - HVAC	0,74 l/h @ 10 bar	N	300 x 300 x 1,000	10	KURITA	New	-	NO	-	-	-	-	-	-	-	-	20 A	NOTE 2	NOTE 2	NOTE 3	7B-M-0-5-46				
48	EYE WASH SHOWER	EWS-7B-1	7B	ROOM B1030 - MAINTENANCE	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-41				
49	EYE WASH SHOWER	EWS-7B-2	7B	ROOM B1031 - UTILITIES	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-41				
50	EYE WASH SHOWER	EWS-7B-3	7B	ROOM B2048 - MEDIA BUFFER PREP	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-41				
51	EYE WASH SHOWER	EWS-7B-4	7B	ROOM B2021 - PRE WASH	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-41				
52	EYE WASH SHOWER	EWS-7B-5	7B	ROOM B2044 - INNOCULUM	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-41				
53	EYE WASH SHOWER	EWS-7B-6	7B	ROOM B2045 - IPT	4,65 m³/h	N	-	-	-	New	-	NO	-	-	-	-	-	-	-	-	-	-	-	NOTE 3	7B-M-0-5-41				