

**BAGHDAD MAYORALTY REQUIREMENTS FOR WATER AND SEWAGE WORK  
EXTENSION NO. 6**

SECTION NO.	ITEM	QTY.	END USER	DEP.OR ACTIVITY
SECTION 1	DIFFERENT MATERIALS & EQUIPMENTS FOR SEWAGE WORK		6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-1	SEWAGE PUMPS , DIFFERENT TYPE AND SIZE	200	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-2	MOTORS	280	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-3	GEAR BOX	45	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-4	ELECTRICAL MATERIALS	LUMP	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-5	TRANSFORMERS	21	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-6	BOLBERINGS	1942	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-7	MATERIALS FOR MECHANICAL MENTENANCE	LUMP	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-8	GENERATORS	40	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-9	WEEL POINT SYSTEM	20	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-10	SUBMERCIBLE PUMPS	109	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-11	COMPRESSORS	9	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 1-13	VENTELATORS FOR PUMPING STATIONS	500	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 2	DIFFERENT MATERIALS & EQUIPMENTS FOR WATER TREATMENT PLANTS&WATER NETWORK		4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-1	PUMPS , DIFFERE TYPE & SIZE	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-2	SPAIR PARTS FOR WATER TREATMENT PLANTS	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-3	VALVES	242	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-4	ELECTRICAL MATERIALS	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-5	LABORTORY MATERIALS	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-6	ALUMENUM SOLPHATE	8000 TON	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-7	CLORINE GAS AND CYLENDERS	1500 TON	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-8	POLY ELECTROLIGHT	120 TON	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-9	PIPES , DIFFERENT SIZE AND DIAMETERS	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-9-1	PVC PIPES AND FITTINGS	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-9-2	DUCTILE PIPES AND FITTINGS	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-10	COMPUTERS, PRINTERS,UPS,CD	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 2-11	CONTROL OF WATER LOSSES IN THE WATER SYSTEM OF BAGHDAD	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATION
SECTION 3	MACHINARY & EQUIPMENTS		6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-1	GARBAGE COLLECTING VEHICAL	400	6.5 MILLION PERSON	MUNICIPALITY SURVICES

SECTION 3-2	STREET SWEEPERS	15	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-3	JETTING VEHICALS	40	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-4	CESSPIT EMPTIER	25	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-5	EXCAVATORS	19	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-6	WATER TANKERS	20	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-7	SHOVELS FOR NETWORKS MAINTENANCE (WHEEL LOAFDER)	45	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-8	TIPPERS	50	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-9	GRADERS	30	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-10	CRAWLER DOZER	18	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-11	ROLLERS	32	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-12	TRACTORS	30	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-13	PORTABLE WATER PUMPS DIESEL OPERATED	30	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-14	FIELD VEHICLES	125	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-15	WHEEL STREET PAVERS	4	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-16	ASPALT HOT RECYCLERS	1	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-17	CONCRETE MIXING TRUCK	25	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-18	POWER CURBER MACHINE	4	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-19	ASPALT PLANT	2	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-20	STREET MAINTENANCE TRUCK	20	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-21	CRANE EQUIPPED TRUCK	20	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-22	TIERS	90	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-23	LOW LOADERS	6	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION3-24	HTYDRAULIC TRUCK CRANE	8	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-25	DIESEL WELDING MACHINE	6	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-26	CRUSHERS	LUMP	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION3-27	ROAD MARKING MACHINE	8	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION3-28	LEAKAGE TREATMENT MATERIALS	1000 KG	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION3-29	COLD MILLING MACHINES	4	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION3-30	TRAFFIC ENGINEERING PROGRAMS	LUMP	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION 3-31	EPOXY	1500 KG	6.5 MILLION PERSON	MUNICIPALITY SURVICES
SECTION3-32	LEAKAGE TREATMENT EQUIPMENTS	4	6.5 MILLION PERSON	MUNICIPALITY SURVICES

<b>SECTION 3-33</b>	<b>GUARD RAIL MAINTENANCE MOBIL WORKSHOP</b>	<b>2</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-34</b>	<b>GUARD RAILS</b>	<b>25 KM</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-35</b>	<b>TRAFFIC LIGHTS REQUIRMENTS</b>	<b>LUMP</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-36</b>	<b>CONCRETE PATCHING PLANT</b>	<b>3</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-37</b>	<b>CONCRETE PUMP TRUCK</b>	<b>2</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-38</b>	<b>CONCRETE CASTING MACHINE FOR WALK WAYS PAVING MATERIALS</b>	<b>6</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-39</b>	<b>HYDRAULIC CLAMPS MACHINE FOR LIFTING CONCRETE PAVING UNITS</b>	<b>4</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 3-40</b>	<b>SMALL CONCRETE LOADERS</b>	<b>6</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>
<b>SECTION 4</b>	<b>SPAIR PARTS FOR MACHINARY</b>	<b>LUMP</b>	<b>6.5 MILLION PERSON</b>	<b>MUNICIPALITY SURVICES</b>

**SECTION 1- SEWAGE PUMPS, DIFFERENT SIZE & TYPE  
VERTICAL PUMPS**

CODE	POWER KW	HEAD M	FLOW L/S	SPEED R.P.M	SUCTI ON MM	DISCH ARGE MM	VOLT. V	QTY	UNIT PRICE &	TOTAL PRICE &
03-01-00001	45	12	250	725			380	15		
03-01-00002	30	12	140	725			=	15		
03-01-00003	90	12	500	585			=	10		
03-01-00004	160	12	1000	735			=	10		
03-01-00005	30	7	120	955	250	250	=	20		
03-01-00006	240	12.7	1500	590	800	700	=	3		
03-01-00007	37	140	140	725	300	300	=	3		
03-01-00008	90	10	500	735	250	250	=	3		
03-01-00009	50	7	300	720	300	300	=	3		
03-01-00010	27	7	110	720	250	250	=	5		
03-01-00011	45	7	300	725	300	300	=	5		
03-01-00012	22	10	140	720			=	8		
03-01-00013	37	12	150	690			=	6		
03-01-00014	30	12	175	950			=	6		
03-01-00015	90	10	500	720			=	3		
03-01-00016	11	12	50	960			=	3		
03-01-00017	160	12	1000	735	600	600	=	3		
03-01-00018	30	21.1	38	1430	6"	8"	=	20 (NON CLOGY) WITH MOTOR		
03-01-00019	90	12	500	585	500	500	=	3		
03-01-00020	45	12	250	725	350	350	=	3		
03-01-00021	55	10.3	225	980	14"	14"	=	3(NON CLOGY) WITH MOTORS		
03-01-00022	110	9.8	450	980	14"	16"	=	2(NON CLOGY WITH MOTOR		
03-01-00023	3.5	7	25	920	100	100	=	24		
03-01-00024	7.5	7.6	38	975	150	150	=	5		
03-01-00025	22	8	170	720	250	250	=	5		
03-01-00026	11.5	7.6	57	975	150	150	=	5		
03-01-00027	30	7	125	715	250	250	=	3		
03-01-00028	3	6.25	19	940			=	3		
03-01-00029	30	11.9	100	725			=	1		
03-01-00030	45	10.5 5	250	725			=	1		
03-01-00031	90	11.5 5	500	580			=	1		
03-01-00032	160	11.5 5	1000	725			=	1		
03-01-00033	35	10	150	715			=	1		

**CENTRIFUGAL PUMPS**

<b>CODE</b>	<b>DESCRIPTION</b>	<b>FLOW L/S</b>	<b>SPEED R.P.M</b>	<b>PUMP QTY</b>	<b>UNIT PRICE &amp;</b>	<b>TOTAL PRICE &amp;</b>
03-01-00034	SUCTION FLANG:DN150-PN16 DISCHARGE FLANG:DN125-PN16 DELIVERY HIGHT: 60M SUCTION HIGHT: 4M	95 CUM/H	1450	3		
03-01-00035	SUCTION FLANG:DN 80 DISCHARGE FLANG:DN 65 DELIVERY HIGHT: 33.5M	65 CUM/H	1450	2		

**SECTION 1-2- SEWAGE MOTORS, DIFFERENT SIZE & TYPE**

CODE	POWER KW	TYPE	SPEED R.P.M	VOLT. V	PUMP QTY	UNIT PRICE &	TOTAL &
03-01-00036	5.5		1460	380	21		
03-01-00037	110		970	380	4		
03-01-00038	400		585	380	6		
03-01-00039	450		585	380	10		
03-01-00040	160	VERTICAL, SQUIRREL-CAGE,3PH,,DELTA CONNECTION	735	380	3		
03-01-00041	90	VERTICAL, SQUIRREL-CAGE,3PH,,DELTA CONNECTION	585	380	3		
03-01-00042	45	VERTICAL, SQUIRREL-CAGE,3PH,,DELTA CONNECTION	725	380	3		
03-01-00043	30	SLIPRING, FLANGED MOUNTED	1430	380	20		
03-01-00044	55	SLIPRINGVERTICAL,FLANGED MOUNTED	980	=	3		
03-01-00045	110	SLIPRINGVERTICAL,FLANGED MOUNTED	980	=	2		
03-01-00046	30	SLIPRINGVERTICAL,FLANGED MOUNTED	1430	=	20		
03-01-00047	30		715	=	1		
03-01-00048	45		715	=	1		
03-01-00049	90	VERTICAL, SQUIRREL-CAGE,3PH,DELTA CONNECTION	580	=	1		
03-01-00050	160		725	=	1		
03-01-00051	35	VERTICAL, SQUIRREL-CAGE,3PH,DELTA CONNECTION	730	=	1		
03-01-00052	30	VERTICAL, SQUIRREL-CAGE,3PH,DELTA CONNECTION	720	=	19		
03-01-00053	22	VERTICAL, SQUIRREL-CAGE,3PH,DELTA CONNECTION	720	=	3		
03-01-00054	110	SLIPRING , VERTICAL	725	=	1		
03-01-00055	55	=	960	=	2		
03-01-00056	30	=	1430	=	1		
03-01-00057	30	INDUCTION , HOREZENTAL	1460	2			
03-01-00058	18.5	= VERTICAL	1455	=	5		
03-01-00059	18.5	= HORIZONTAL	1455	=	3		
03-01-00060	1.5	INDUCTION, HOREZENTAL	1500	380	2		
03-01-00061	1.5	INDUCTION , VERTICAL	1500	=	2		
03-01-00062	3	INDUCTION, HOREZENTAL	1420	=	2		
03-01-00063	0.37	INDUCTION, HOREZENTAL	680	=	15		
03-01-00064	30	SLIPRING,VERTICAL,3PH,STAR CONNECTION,WITH SLIP RING MOTOR STARTER,	575	=	4		
03-01-00065	30	SLIPRING,VERTICAL,3PH,STAR CONNECTION,WITH SLIP RING MOTOR STARTER,	720	=	4		
03-01-00066	30	SLIPRING,VERTICAL,3PH,STAR CONNECTION,WITH SLIP RING MOTOR STARTER,	955	=	4		
03-01-00067	22	SLIPRING,VERTICAL,3PH,STAR CONNECTION,WITH SLIP RING MOTOR STARTER,	705	=	4		
03-01-00068	37	SLIPRING,VERTICAL,3PH,STAR CONNECTION,WITH SLIP RING MOTOR STARTER,	720	=	10		
03-01-00069	2.2	SLIPRING,VERTICAL,3PH,STAR CONNECTION,WITH SLIP RING MOTOR STARTER,	720	=	30		
03-01-00070	0.55	VERTICAL	1420	=	10		
03-01-00071	7.5	=	960	=	10		
03-01-00072	11	=	960	=	4		
03-01-00073	30	SLIPRING , VERTICAL	1440	=	4		
03-01-00074	45	VERTICAL	725	=	2		
03-01-00075	30	=	955	=	5		
03-01-00076	30	=	710	=	1		
03-01-00077	50	=	720	=	3		
03-01-00078	37	=	725	=	3		
03-01-00079	11.5	=	975	=	3		
03-01-00080	7.5	=	975	=	3		
03-01-00081	3.7	=	950	=	3		
03-01-00082	3	=	940	=	15		
03-01-00083	22	=	720	=	21		
03-01-00084	30	=	720	=	3		
03-01-00085	30	=	950	=	4		
03-01-00086	37	=	950	=	6		
03-01-00087	90	=	720	=	2		
03-01-00088	11	=	960	=	3		

### 1-3 : GEARBOXES

CODE NO	DESCRIPTION	QTY	UNIT PRICE &	TOTAL &
03-01-00089	FOR SURFACE AERATION ,TYPE: RNG36 –AN-50 , POWER : 164-114 KW(PN) SPEED: OUT PUT SHAFT. 30RPM AT SPEED 1485 RPM, 20RPM AT SPEED 485 RPM , MANUF: HANSEN ,	3		
	FOR SCREW PUMP , 7200 CUBM/H , MANUF: HANSEN , POWER PLUS RDK 31, RATIO - 50.811:1 , OUT LINE DRAWING NO. 97RDK , 31 ANY 501	8		
03-01-00090	TYPE HC20526 , RDER 1.5 KW , REDUCTION : 1440/20.5 RPM	2		
03-01-00091	WITH COUPLING , TYPE: NC 36 AN, POWER : 18.5 KW, SPEED : 1455/74/19.5 RPM	5		
03-01-00092	FOR FLYGT , ARCHAMEDIAS SCROW PUMP , REDU.TYP 2H26, SPEED: 1230/40 RPM	6		
03-01-00093	WITH FLEX. COUPLING FLEXACIER , NO.OF SEQ:2 , LENGTH OF SEQ: 115.9 MM , THICKNESS : 4.06 MM , WIDTH: 91.3MM , PITCH NO. : 1.48	30		
03-01-00094	DAVID BROWN , TYPE: QHTH, RATIO: 31.45/1	2		
03-01-00095	DAVID BROWN , TYPE: QHD 335 , RATIO: 21.53/1	2		
03-01-00096	COMPLETE , EQUIPED WITH MOTOR TYPE MK6/MK2 , REDUCTION : 1/3 000	10		
03-01-00097	FOR SCREW PUMP, MANUF: HANSEN HT1. TYPE: POWER PLUS RDH31, ASSEMBLY: ANY, RATIO: 49.899:1 , OUTLINE DRAWING NR. 97RDH 31ANY - 504	7		

### 1-4: ELECTRICAL MATERIALS

#### 1-4-1: CONTACTORS:

CODE NO.	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00098	270 AMP,MECHANICAL,220V,3PH	12		
03-01-00099	160 AMP. 3PH,220V,MECHANICAL	9		
03-01-00100	150 AMP. 3PH,220V,MECHANICAL	30		
03-01-00101	90 AMP.(4: 3PH,220V,MECHANICAL)	55		
03-01-00102	60 AMP.(45: 3PH,220V,MECHANICAL)	70		
03-01-00103	12 AMP.	12		
03-01-00104	400 AMP.	20		
03-01-00105	300 AMP.	12		
03-01-00106	80 AMP.	40		
03-01-00107	55 AMP.	30		
03-01-00108	630 AMP.	6		
03-01-00109	1000 AMP,(5:3PH,220V,MECHANICAL)	20		
03-01-00110	350 AMP	50		
03-01-00111	250 AMP(10:220AC,NO.OF AUXILARY:2N/C,2N/O, CLOSED TYPE)	75		
03-01-00112	200 AMP(10: 3PH,220V,MECHANICAL), (8:3PH,,2 AUXI,AC,OPEN TYPE)	78		
03-01-00113	100 AMP,(10:220AC,NO.OF AUXILARY:2N/C,2N/O, CLOSED TYPE),(16: 3PH,,2 AUXI,AC,OPEN TYPE)	126		
03-01-00114	75 AMP	60		
03-01-00115	50 AMP(24: 3PH,,2 AUXI,AC,OPEN TYPE)	104		
03-01-00116	25 AMP(15: 3PH,220V,MECHANICAL),(32: 3PH,,2 AUXI,AC,OPEN TYPE)	117		
03-01-00117	180 AMP	40		
03-01-00118	40 AMP	70		
03-01-00119	CUBIC VACUUM CONACTOR , GEC 3.3KV, 400A, TYPE VB 3AD 400B	4		

**1-4-2 : OVERLOADS**

CODE NO.	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00120	200-400 A	100		
03-01-00121	160-250 A	8		
03-01-00122	95-160 A	8		
	95-160 A(220V,MECHANICAL)	6		
03-01-00123	45-70 A(25: 220V,MECHANICAL)	50		
03-01-00124	32-60 A( 2: 220V,MECHANICAL),(32: THERMAL MEGNATIC,220V)	84		
03-01-00125	25-40 A(2: 220V,MECHANICAL)	35		
03-01-00126	20-32 A(9: 220V,MECHANICAL),(32:THERMAL MEGNATIC,220V)	121		
03-01-00127	17-29 A(220V,MECHANICAL)	11		
03-01-00128	15-20 A(15: 220V,MECHANICAL),(32: THERMAL MEGNATIC,220V)	97		
03-01-00129	6-9 A(18: 220V,MECHANICAL)	43		
03-01-00130	10-15 A(32: THERMAL MEGNATIC,220V)	82		
03-01-00131	2.5-4 A	10		
03-01-00132	1.6-2.5 A	25		
03-01-00133	1-1.6 A	25		
03-01-00134	35-55 A	50		
03-01-00135	25-45 A	50		

**1-4-3 : CIRCUIT BREAKER**
**(ANTI CORROSIVE TYPE FOR SEWAGE PUMPING STATIONS )**

CODE	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00136	3PH, 0.16-0.25 A , SIEMENS-TYPE 3VE 1010 – 2C	50		
03-01-00137	3PH, 1-1.6 A TELEMECHNIQU – TYPE GV1 -MO6	50		
03-01-00138	3PH, Ith2 3150A , U1 1000 V , T&M RELEASE Caloremag-vde 0660 iec 157-1	6		
03-01-00139	3PH, 1250A, MERLIN GERIN- DRAWABLE	14		
03-01-00140	3PH , 630A,MCCB-3-P	16		
03-01-00141	3PH,400A, MCCB-3-P	6		
03-01-00142	3PH,250A,MCCB-3-P	6		
03-01-00143	800A	27		
	800A , SF6 TYPE, 380V,3PH	3		
03-01-00144	400A	32		
	400A , SF6 , 380V, 3PH	13		
03-01-00145	1000A	2		
03-01-00146	11KV/400A BBC HIGH TENTION	4		
03-01-00147	160A	30		
03-01-00148	100A	80		
03-01-00149	60A	101		
03-01-00150	40A	101		
03-01-00151	30A	126		
03-01-00152	10A	116		
03-01-00153	250A, SF6 TYPE, 380V,3PH	15		
03-01-00154	150A, (SF6,3PH,380V)	10		
03-01-00155	63A, (SF6,3PH,380V)	5		
03-01-00156	50A, (SF6,3PH,380V)	5		
03-01-00157	25A(SF6,3PH,380V)	15		
03-01-00158	20A, (SF6,3PH,380V)	25		
03-01-00159	2600A, AIR TYPE , 3PH,380V)	2		



**1-4-5: DIFFERENT, ELECTRICAL MATERIALS**

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00160	HIGH TENSION FUSE , H.R.C 11KV-80A	20SET		
03-01-00161	ELECTRICAL FLOAT WITH CONTROL PANEL	100		
03-01-00163	CABLE 4X4 SQUARE MM	1000 M		
03-01-00164	CABLE 4X10 SQUARE MM	1000M		
03-01-00165	CABLE 4X50 SQUARE MM	1000M		
03-01-00166	CABLE 4X25 SQUARE MM	1000M		
03-01-00167	CABLE 4X16 SQUARE MM	1000M		
03-01-00168	CABLE 4X6 SQUARE MM	1000M		
03-01-00169	CABLE 4X2.5 SQUARE MM	1000M		
03-01-00170	VOLTMETER	10		
03-01-00171	CLAMB METER	10		

**1-5 : TRANSFORMERS**

CODE	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00172	1000KVA 11KV/400VOLT, TYPE NITR	2		
03-01-00173	VOLTAGE TRANSFORMER 380-24 V	50		

DELIVERY TIME

**1-6: BEARINGS**

CODE	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00174	6318	10		
03-01-00175	6317	10		
03-01-00176	QJM4	10		
03-01-00177	6415	10		
03-01-00178	8320	10		
03-01-00179	NU 324	10		
03-01-00180	6308	10		
03-01-00181	1325K	10		
03-01-00182	7321	10		
03-01-00183	22330	10		
03-01-00184	N228	10		
03-01-00185	7330	70		
03-01-00186	22122B	10		
03-01-00187	6410	100		
03-01-00188	1207	10		
03-01-00189	RMS21	10		
03-01-00190	MCDV 221	10		
03-01-00191	6215	10		
03-01-00192	6315	30		
03-01-00193	NU 2222	10		
03-01-00194	23122	10		
03-01-00195	1209	10		
03-01-00196	1216	10		
03-01-00197	1217	10		
03-01-00198	6208	10		
03-01-00199	NU 321	10		
03-01-00200	6321	10		
03-01-00201	NU220	20		
03-01-00202	6220	40		
03-01-00203	22317	16		
03-01-00204	6212 ZZ	30		
03-01-00205	UC 210	20		
03-01-00206	51110	30		
03-01-00207	6319	160		
03-01-00208	6313	60		
03-01-00209	6310	40		
03-01-00210	6416	16		
03-01-00211	CRM24	30		
03-01-00212	CRM 19	30		
03-01-00213	22220	30		
03-01-00214	228 NJ	10		
03-01-00215	6411	30		
03-01-00216	6311	30		
03-01-00217	22330	10		
03-01-00218	6207	20		
03-01-00219	6308	20		
03-01-00220	6309	20		
03-01-00221	6318	10		
03-01-00222	6218	10		
03-01-00223	1215	10		
03-01-00224	318	15		
03-01-00225	7316	10		
03-01-00226	222	10		
03-01-00227	7320	20		
03-01-00228	RMS 22	30		

03-01-00229	RMS 24	30		
03-01-00230	7087	20*		
03-01-00231	11949	40*		
03-01-00232	48548	30*		
03-01-00233	7210	10		
03-01-00234	7208	50*		
03-01-00235	6014	70*		
03-01-00236	3075	20		
03-01-00237	NU 309	35*		
03-01-00238	NU 2211	35*		
03-01-00239	3209	35*		
03-01-00240	6205	30*		
03-01-00241	3205	10		
03-01-00242	3315	40*		
03-01-00243	NU 2315	40*		
03-01-00244	NU 317	30*		
03-01-00245	319	30*		
03-01-00246	NU 320	30*		
03-01-00247	24	32*		
03-01-00248	24A	32*		

### 1-7 : MATERIALS FOR MECHANICAL USE

CODE NO.	DESECRPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00249	OIL SEAL			
03-01-00250	75X100X13	20		
03-01-00252	130X160X13	20		
03-01-00252	100X120X12	80		
03-01-00253	32X52X8	40		
03-01-00254	25X35X7	20		
03-01-00255	20X62X45	50		
03-01-00256	55X75X16	20		
03-01-00257	100X125X12	20		
03-01-00258	100X140X12	20		
03-01-00259	160X170X12	10		
03-01-00260	130X160X12	10		
03-01-00261	V BELTS			
03-01-00262	2200X17	30		
03-01-00263	3658X22	30		
03-01-00264	2100X17	30		
03-01-00265	750X13	30		
03-01-00266	975X13	30		
03-01-00267	2070X17	20		
03-01-00268	1060X9.5	25		
03-01-00269	1100X9.5	25		
03-01-00270	1650X17	50		
03-01-00271	1150X12	50		
03-01-00272	SPC 2500X22	150		
03-01-00273	PACKING			
03-01-00274	½ INCH	100KG		
03-01-00275	1/4 INCH	100KG		
03-01-00276	5/8 INCH	100KG		
03-01-00277	¾ INCH	100KG		
03-01-00278	1 INCH	100KG		
03-01-00279	1 ½ INCH	50KG		
03-01-00280	MULTIPLE STAGE PUMP GUINARD, TYPE: H400/400 HZ, OUT PUT: 6000 GPM	2		
03-01-00281	MULTIPLE STAGE PUMP GUINARD, TYPE: H600/565 HZ, OUT PUT: 1200 GPM	2		
03-01-00282	RUBBER LINED HOSE			

\* amended 27 April 2000

03-01-00283	2 INCH DIAMETER	500 M		
03-01-00284	3 =	500 M		
03-01-00285	4 =	1500 M		
03-01-00286	6 =	1500 M		
03-01-00287	8 =	1250 M		
03-01-00288	10 =	500 M		
03-01-00289	REINFORCED HOSE WITH FITTINGS			
03-01-00290	4 INCH DIAMETER	700M		
03-01-00291	3 =	600M		
03-01-00292	6 =	700M		
03-01-00293	8 =	800M		
03-01-00294	HIGH PRESSURE FLEXIBLE HOSE : 1- INCH DIAMETER, 80 M LONG OPERATING PRESS: 200 BAR, <u>TECH. DESCRIPTION:</u> SEWER JETTING AND HEAVY DUTY, HIGH PRESSURE WATER CLEANING INNER TUBE: SBR,BLACK SMOOTH REINFORCEMENT: SYNTHETIC TEXTILE , BRAIDS COVER: SBR/NR, BLACK, SMOOTH TEMPERATURE RANGE: - 30 C - + 80 C INTERNAL DIA: 25.00MM WALL THICKNESS: 7.15 MM EXTERNAL DIAM: 39.30 MM WORKING PRESSURE : 200 BAR BENDING RADIUS: 110 MM WEIGHT: 0.88 KG/M LENGTH: 80 M	5000 M		
03-01-00295	HIGH PRESSURE FLEXIBLE HOSE : ¾- INCH DIAMETER, 80 M LONG OPERATING PRES: 200BAR	2000 M		
03-01-00296	CLEANING EQUIPMENT'S FOR CLEANING SCREENS : PROTECTION MASCK SAFETY BELT	50 SET		
03-01-00297	CHAIN HOIST , HAND OPERATED	30		
03-01-00298	SAFETY ROPES	2000M		
03-01-00299	SAFETY BELTS	100		
03-01-00300	WATER LEAKAGE DETECTOR	5		
03-01-00301	METAL DETECTOR RANG UP TO 4M POWER SUPPLY : 9VOLT BATTERY DC. MAGNETIC FIELD, LIGHT WEIGHT, EQUIPPED WITH HEAD PHONE	15		
03-01-00302	SEWAGE CLEANING ROADS , 1-1.5 LONG	150000		
03-01-00303	CLEANING NOZZLES FOR JETTING VEHICALS BULLETNOSED NOZZEL WITH REARWARD FACING, ANGELD JETS TO GIVE SELF PROPULSION FOR GENERAL CLEANING PURPOSE ¾ INCH B.S.P THREAD 1 INCH B.S.P THREAD  AS THE FIRST TYPE FOR BLOCKAGE CLEARENCE BUT HAVING AN ADDITIONAL FORWARD FACING JET: ¾ INCH B.S.P. THREAD 1 INCH B.S.P THREAD	30 30  20 20		

03-01-00304	ROTTING TOOLS STANDARD CROCK SCREW 4 INCH DOUBLE CORKSCREW 3 INCH = 5 INCH FISHING TOOLS	60 30 30 40		
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**1-8 GENERATORS**

CODE NO.	DESECRPTION	QTY	UNIT PRICE &	TOTAL PRICE &
03-01-00305	1250 KVA, 3.3KV	1		
03-01-00306	120 KVA	10		
03-01-00307	60 KVA	15		
03-01-00308	20 KVA	10		

**1-9 : WEEL POINT SYSTEM**

CODE NO.	DESECRPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00309	COMPLETE SET FOR UNDER GROUND WATER , SUTIBLE FOR 9M DEPTH , DIESEL AND ELECTRICALLY OPERATED , WITH ALL NECESSARY FITTINGS	20 SET		
03-01-00310	GETTING EQUIPMENT FOR WELL POINT SYSTEM	6		

**1-10: SUBMERSIBLE PUMPS , FOR SEWAGE USE**

CODE NO.	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00311	SUBMERSIBLE PUMPS WITH THE FOLLOWING INSTALATION ACCESSORIES: DISCHARGE ELBOW WITH FLANGE- - FLANGED SLEEVE DISCHARGE HOSE WITH HOSE CLIPS (L HEAD) SKIRT BASE CHAIN WITH SHACKLE CONTROL PANNELS AND CONTROL SYSTEM CABLE TYPE STARTING : Y WET TRANSPORTABLE			
03-01-00312	3 INCH DIAMETER, DN: 80 SOLID SIZE: 70-80 MM H: 15-18 M Q: 15-20 L/S POWER TAKEN FROM MAIN: 8-12 KW POWER AT MOTOR SHFT: 5.5-7.5 KW RATED VOLTAGE : 380	30		
03-01-00313	4 INCH DIAMETER, DN: 100MM SOLID SIZE: 90-110 MM H: 20-22 M Q: 40-60 L/S POWER TAKEN FROM MAIN: 16-18 KW POWER AT MOTOR SHFT:13-15 KW RATED VOLTAGE : 380	26		
03-01-00314	6 INCH DIAMETER, DN: 150 SOLID SIZE: 90-110 MM H: 10-12 M Q: 60-80 L/S POWER TAKEN FROM MAIN: 16-18 KW POWER AT MOTOR SHFT:13-15 KW RATED VOLTAGE : 380	5		
03-01-00315	8 INCH DIAMETER, DN: 200MM SOLID SIZE:90-110 MM H:10-12 M Q: 120-140 L/S POWER TAKEN FROM MAIN:24-26 KW POWER AT MOTOR SHFT:22-24 KW RATED VOLTAGE : 380	16		
03-01-00316	10 INCH DIAMETER, DN: 250MM SOLID SIZE: 110-140 MM H: 10-12 M Q:180-220 L/S POWER TAKEN FROM MAIN:34-36 KW POWER AT MOTOR SHFT: 28-30 KW RATED VOLTAGE : 380	26		

**1-11: COMPRESSORS**

CODE NO.	DESECRPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00317	7 BAR T.M:1250, MAX SPEED 1000 RPM Q: 81 m <sup>3</sup> /h	6		
03-01-00318	TYPE LIBON 70 , SNH 70 LONGLET WITH MOTOR TYPE: MEUL J315 SU POWER: 110 KW SPEED: 1480 RPM , 380 VOLT.	3		
03-01-00319	TYPE SC11, COMPELET WITH MOTOR TYPE MEU1 J 200 LU, , POWER: 30 KW SPEED: 1460 RPM ,	3		
03-01-00320	GEAR BECKER TYPE: KDT 2.6 CAPACITY : 60 CFM MAX. PRESS: 15 PSI SPEED: 1420 RPM ,	3		

**1-12 : VENTILATORS**

CODE NO.	DESECRPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00321	DIFFERENT SIZE S, ROOF TYPE	500		



## 2-1: PUMPS

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00322	BOOSTER PUMP Q: 6 m / h , H: 60 m , RPM : 2820 MULTYSTAGE IMPELLERS, 3 PH , 50 Hz , 380 V	24		
03-01-00323	END - SUCTION HORIZONTAL CENTRIFUGAL PUMP COMPLETE WITH BASE PLATE AND MOTOR Q: 50 m / h , H: 60 m , RPM : 2900, WITH GLAND STUFFING BOX 3 PH , 50 Hz , 380 V	20		
03-01-00324	END - SUCTION CENTRIFUGAL PUMP COMPLETE WITH BASE PLATE AND MOTOR Q: 60 m / h , H: 24 m , RPM : 2900, WITH GLAND STUFFING BOX FOR RAW WATER 3 PH , 50 Hz , 380 V	6		
03-01-00325	END - SUCTION CENTRIFUGAL PUMP COMPLETE WITH BASE PLATE AND MOTOR Q: 70 m / h , H: 15 m , RPM : 1450, WITH GLAND STUFFING BOX FOR RAW WATER 3 PH , 50 Hz , 380 V	6		
03-01-00326	END - SUCTION CENTRIFUGAL PUMP COMPLETE WITH BASE PLATE AND MOTOR Q: 14 m / h , H: 35 m , RPM : 2900, FOR RAW WATER 3 PH , 50 Hz , 380 V P : 3.0 KW	15		
03-01-00327	END SUCTION CENTRIFUGAL PUMP Q: 120 m / hr , HEAD: 45 m , R.P.M: 1465 , P: 30 KW Din = 150 mm , Dout = 150 mm	2		
03-01-00328	END SUCTION CENTRIFUGAL PUMP Q: 100 m / hr , HEAD: 35 m , R.P.M: 2930 , P: 37 KW Din = 100 mm , Dout = 100 mm	4		
03-01-00329	END SUCTION CENTRIFUGAL PUMP Q: 81 m / hr , HEAD: 35 m , R.P.M: 2900 , P: 18.5 KW Din = 100 mm , Dout = 100 mm	4		
03-01-00330	END SUCTION CENTRIFUGAL PUMP COMPLETE WITH BASE PLATE AND MOTOR Q: 80 m / hr , HEAD: 120 m , H : 50 Hz , V: 380 volt	4		
03-01-00331	BOOSTER (MOTIVE WATER PUMP ) r.p.m = 2900 16.6 L/S AT 65 m HEAD , Din = 4" , Dout = 4"	3		
03-01-00332	PUMP (SPILT PUMP ) WITH MOTOR Q = 850 m/hr H = 7 m r.p.m = 1450 Din = 300 mm , Dout = 400 mm	3		
03-01-00333	BOOSTER PUMP Q: 70 m <sup>3</sup> /hr , H: 60m	6		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00334	<p>ELECTRICAL SPLIT CASE PUMP COMPLETE WITH MOTOR, BASE PLATE , STARTER</p> <ul style="list-style-type: none"> <li>• DIRECTION OF ROTATION : ( 3 x CLOCKWISE AND 3 x ANTICLOCKWISE</li> <li>• MEDIUM HANDLED: RIVER WATER</li> <li>• GREASE LUBRICATED, ANTI-FRICTION BEARINGS .</li> <li>• CABLE TERMINAL BOX TO BE TO THE LEFT SIDE OF THE MOTOR</li> <li>• SHAFT SEAL : SLUFFING BOX PACKING</li> <li>• IMPELLER AND CASING WEAR RING MATERIAL: BRONZE GCUSN-10 Zn</li> <li>• SUCTION , DISCH NOZZLE (DN 350 , 300 HORIZO. )</li> <li>• PUMP UNIT INCLUDES : <ul style="list-style-type: none"> <li>- PUMP + DRIVER BASE PLATE</li> <li>- FOUNDATION BOLTS</li> <li>- COUPLING</li> <li>- STARTER PRESSURE AND VACUUM GAUGE WITH COCKS</li> </ul> </li> <li>• DIMENSIONS OF THE REQUIRED PUMPS TO BE ACCORDING TO THE EXISTING PUMPS</li> <li>• SPARE PARTS FOR TWO YEARS OPERATION</li> <li>• SPECIFICATIONS OF THE PUMP : Q: 960 m<sup>3</sup>/h H : 20 m N : 980 rpm SH : 2.6 m</li> </ul>	6		
03-01-00335	<p>BARE PUMP WITH SAME ABOVE MENTIONED SPECIFICATIONS EXCLUDED MOTOR AND BASE PLATE</p>	4		
03-01-00336	<p>KARAMA &amp; DORA RAW WATER PUMPS TYPE VOLUTE CASING PUMP</p> <ol style="list-style-type: none"> <li>1- FLUID CONVEYED- RIVER WATER</li> <li>2- TEMPERATURE 25°</li> <li>3- DISCHARGES FLOW Q: 408.5 L/S : 1470 m<sup>3</sup>/hr</li> <li>4- DISCHARGES HEAD H: 20 m</li> <li>5- NPSH OF SYSTEM 6 m</li> <li>6- NPSH OF PUMP 2.7 m</li> <li>7- SPEED N : 990 r.p.m</li> <li>8- PUMP POWER CONSUMPTION 95 K.W</li> <li>9- DRIVE MACHINE POWER 110 K.W</li> <li>10- TEST PRESSURE 4 bar</li> <li>11- ERECTION MODE - HORIZONTAL</li> <li>12- SUCTION BRANCH DN 500 PN 10 AS PER DIN 2532</li> <li>13- DELIVERY BRANCH DN 400 PN 10 AS PER DIN 2532</li> <li>14- COUPLING - FLEXIBLE</li> <li>15- EXTERNAL FLUID REQUIRED 480 L/H</li> <li>16- CONNECTION FOR EXTERNAL FLUID R 1/2</li> <li>17- SHAFT - S.S</li> <li>18- SLEEVE - S.S</li> </ol>	5		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00337	<p>KARAMA &amp; DORA HIGH LIFT PUMPS TYPE VOLUTE CASING PUMP 1- FLUID CONVEYED- FRESH WATER 2- TEMPREATURE 25° 3- DISCHARGES FLOW Q: 325.5 L/S : 1171.5 m<sup>3</sup>/hr 4- DISCHARGES HEAD H: 65 m 5- NPSH OF SYSTEM 6.1 m 6- NPSH OF PUMP 4.7 m 7- SPEED N : 1490 r.p.m 8- PUMP POWER CONSUMPTION 247 K.W 9- DRIVE MACHINE POWER 315 K.W 10- TEST PRESSURE 10 bar 11- ERECTION MODE - HORIZONTAL 12- SUCTION BRANCH DN 350 PN 10 AS PER DIN 2532 13- DELIVERY BRANCH DN 300 PN 10 AS PER DIN 2532 14- COUPLING - FLEXIBLE 15- IMPLLER : BRONZ 17- SHAFT - S.S 18- SLEEVE - S.S</p>	5		
03-01-00338	<p>RASHEED WASH WATER PUMPS COMPLETE WITH MOTOR TYPE VOLUTE CASING PUMP 1- FLUID CONVEYED- FRESH WATER 2- TEMPREATURE 25° 3- DISCHARGES FLOW Q: 194.5 L/S 4- DISCHARGES HEAD H: 15 m 5- NPSH OF SYSTEM 6.7 m 6- NPSH OF PUMP 2.8 m 7- SPEED N : 985 r.p.m 8- PUMP POWER CONSUMPTION 34 K.W 9- DRIVE MACHINE POWER 45 K.W 10- TEST PRESSURE 3 bar 11- ERECTION MODE - HORIZONTAL 12- SUCTION BRANCH DN 300 PN 10 AS PER DIN 2532 13- DELIVERY BRANCH DN 250 PN 10 AS PER DIN 2532 14- COUPLING - FLEXIBLE 15- IMPLLER : BRONZ 16- SHAFT - S.S 17- SLEEVE - S.S</p>	4		
03-01-00339	<p>RASHEED RAW WATER PUMPS COMPLETE WITH MOTOR TYPE VOLUTE CASING PUMP 1- FLUID CONVEYED- RIVER WATER 2- TEMPREATURE 25° 3- DISCHARGES FLOW Q: 680 m<sup>3</sup>/hr 4- DISCHARGES HEAD H: 20 m 5- NPSH OF SYSTEM 6 m 6- NPSH OF PUMP 2.7 m 7- SPEED N : 990 r.p.m 8- PUMP POWER CONSUMPTION 45 K.W 9- DRIVE MACHINE POWER 50 K.W 10- TEST PRESSURE 4 bar 11- ERECTION MODE - HORIZONTAL 12- SUCTION BRANCH DN 300 PN 10 13- DELIVERY BRANCH DN 200 PN 10 14- COUPLING - FLEXIBLE 15- IMPLLER S.S 16- SHAFT - S.S 17- SLEEVE - S.S</p>	4		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00340	<p>RASHEED HIGH LIFT PUMPS TYPE VOLUTE CASING PUMP 1- FLUID CONVEYED- FRESH WATER 2- TEMPREATURE 25° 3- DISCHARGES FLOW Q: 600 m<sup>3</sup>/hr 4- DISCHARGES HEAD H: 60 m 5- NPSH 2.98 m 6- RATED POWER 121 K.W 7- MAX. POWER 136 K.W 7- SPEED N : 990 r.p.m 8- DRIVE POWER 150 K.W 9- SPPED 1475 r.p.m 10- TEST PRESSURE 10 bar 11- ERECTION MODE - HORIZONTAL 12- SUCTION BRANCH DN 300 PN 10 13- DELIVERY BRANCH DN 200 PN 10 14- COUPLING - FLEXIBLE 15- IMPLLER BRONZE 16- SHAFT - S.S 17- SLEEVE - S.S</p>	4		
03-01-00341	<p>COMPLETE RAW WATER PUMP Q: 600 m<sup>3</sup>/h , H: 40 m SPEED: 1500 r.p.m ERECTION MODE : HORIZONTAL SUCTION BRANCH DN 300 mm DELIVERY BRANCH DN 250 mm COUPLING - FLEXIBLE IMPLLER : STAINLESS STEEL SHAFT : STAINLESS STEEL SLEEVE : STAINLESS STEEL</p>	4		

03-01-00342	<p>FOR PRE BOOSTER PUMP POOSTER PUMP WITH MOTOR DRIVE: DIRECT WITH COUPLING BEARING HOUSE: OIL BATH WITH INDICATOR SUCTION DIA. : 2.5 INCH FLANGE TYPE DISCHARGE DIA. : 2.5 INCH FLANGE TYPE CAPACITY (Q) : 5.28 L/S SPEED : 2900 r.p.m HEAD : 90 m PACKING : GLAND PACKING MOTOR : 19.2 KW , 400 V , 3 PH , 50 HZ</p> <p><b>PUMP BASE DIMENSIO NS:-</b></p> <p>(4) HOLES FOR PUMP - + (4) HOLES FOR BEARING HOOSE SIDE LENGTH 10.5 cm + SIDE LENGTH 30 cm FRONT LENGTH 25 cm FRONT LENGT H 25 cm</p> <p><b>MOTOR BASE DIMENSIO NS:-</b></p> <p>(4) HOLES SIDE LENGTH 25 cm FRONT LENGTH 25 cm</p> <p>PUMP + MOTOR THE OUT (4) HOLES DIMESION</p> <p>SIDE LENGTH 117.5 cm FRONT LENGTH 25 cm</p>	10 COM LETE		
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NOTICE

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 ALL THE REQUIRED PUMPS NEEDED TO BE INCLUDED , MOTORS ,  
 STARTERS , SPARE PARTS FOR TWO YEARS OPERATION .

**CHEMICAL DOSING PUMPS**

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00345	CHEMICAL DOSING PUMPS Q: 40 l/h , H: 40 m , DIAPHRAGM TYPE, FOR ALUMINIUM SULPHATE SOLUTION DOSING WITH 10% CONCENTRATION	20		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00346	HORIZONTAL PUMP FOR TREATED WATER COMPLETE WITH MOTOR AND BASE PLATE .			
03-01-00347	VOLUTE CASING PUMP WITH RADIAL IMPELLERS SUCTION BRANCH = 250mm DN DELIVERY BRANCH = 200mm DN DISCHARGE HEAD = 35m DISCHARGE FLOW = 150 L/S PUMP UNIT DIMENSIONS TO BE ACCORDING TO THE EXISTING PUMP	12		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
	END SECTION PUMP - HORIZONTAL PUMP			
03-01-00348	HEAD = 63m Q = 2 m <sup>3</sup> /min - 120 m <sup>3</sup> /hr RPM = 1440 POWER OF MOTOR = 37 Kw	2		
03-01-00349	HEAD = 70m Q = 5.5 m <sup>3</sup> /min - 330 m <sup>3</sup> /hr RPM = 1450 POWER OF MOTOR = 120 Kw	2		
	MULTI STAGE PUMP - HORIZONTAL PUMP			
03-01-00350	HEAD = 55 m Q = 0.4 m <sup>3</sup> /min 24 m <sup>3</sup> /hr RPM = 1450 POWER OF MOTOR = 120 Kw	2		
	END SECTION PUMP - HORIZONTAL PUMP WITH ELECTRIC MOTOR FIXED ON BASE PLATE			
03-01-00351	HEAD = 55 m Q = 145 m <sup>3</sup> /hr RPM = 2950 POWER OF MOTOR = 37 Kw	4		
03-01-00352	HEAD = 25 m Q = 50 m <sup>3</sup> /hr RPM = 2900 POWER OF MOTOR = 5.5 Kw	4		

**2-2 : SPAIR PARTS FOR WATER TREATMENT PLANTS**

**2-2-1: WEIR SPARE PARTS**

**SPARES FOR 500 mm MIXED FLOW BOWL PUMPS**

**SERIAL N C5/56366/7 - SECTIONAL DRAWING NUMBER P.2002364 WEAR**

CODE	ITEM	ITEM NO.	DRG. NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00353	IMPELLER	1	P 187358	4		
03-01-00354	SHROUD	34	P 187373	4		
03-01-00355	TUNNEL TUBE REDUCING ASSEMBLY	96	PM 2051166	8		
03-01-00356	PUMP BEARING CUTLESS	51	PX 2101556	8		
03-01-00357	SPIDER BEARING CUTLESS	52	PM 2051515	12		
03-01-00358	INTERMEDIATE BEARING CUTLESS	53	PM 2051452	12		
03-01-00359	PUMP BEARING SLEEVE	9	PY2101557	6		
03-01-00360	INTERMEDIATE BEARING SLEEVE	10	PM2051299	6		
03-01-00361	THRUST BEARING COLLAR	18	PY2101612	6		
03-01-00362	COUPLING PINS	23	45/203	30		
03-01-00363	COUPLING BOSSES	24	45/209	30		
03-01-00364	TAPER ROLLER THRUST BEARING 114.3 BORE	42	-	6		
03-01-00365	BEARING HOUSING CAP.	45	PM2051509	6		
03-01-00366	STAVFFER	50	-	6		
03-01-00367	TUNNEL TUBE	97	P2002431	10		
03-01-00368	TUNNEL TUBE	98	P2002431	10		
03-01-00369	TUNNEL TUBE	99	P2002431	10		
03-01-00370	TUNNEL TUBE	100	P2002431	10		
03-01-00371	"O" RING	101	-	20		
03-01-00372	"O" RING	102	-	20		

**SPARES FOR 1000 mm MIXED FLOW BOWL PUMPS**

**SERIAL N C5/56362/3 - SECTIONAL DRAWING NUMBER P2002452 WEAR**

CODE	ITEM	ITEM NO.	DRG. NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00373	IMPELLER	1	P 2002369	4		
03-01-00374	IMPELLER SHROUD	30	P 2002498	8		
03-01-00375	TUNNEL TUBE REDUCING ASSEMBLY	99	P 2002455	8		
03-01-00376	PUMP BEARING CUTLESS	53	PX 2101561	8		
03-01-00377	SPIDER BEARING CUTLESS	54	PM 2051461	32		
03-01-00378	PUMP BEARING SLEEVE	8	PX2101562	8		
03-01-00379	INTERMEDIATE BEARING SLEEVE	9	PM2051299	32		
03-01-00380	"O" RING	104	-	8		
03-01-00381	"O" RING	105	-	8		
03-01-00382	"V" SEAL	79	-	8		
03-01-00383	OIL REAINING STAND PIPE	51	PM2051512			
03-01-00384	COUPLING BUSHES	23	45 / 210	250		
03-01-00385	TAPER ROLLER THRUST BEARING 170 BORE	37	-	5		

**RAW WATER 1000mm FLOW BOWL PUMP**

CODE	ITEM	qty	UNIT PRICE \$	TOTAL PRICE &
03-01-00386	IMPELLER NUT	8		
03-01-00387	THRUST BEARING COOLER	8		
03-01-00388	INTERMEDIATE BEARING CUTLESS	24		
03-01-00389	TUNNEL TUBE REDUCING ASSLY	4		
03-01-00390	TUNNEL TUBE	4		
03-01-00391	TUNNEL TUBE	4		
03-01-00392	TUNNEL TUBE	4		
03-01-00393	TUNNEL TUBE	4		

TREATED WATER PUMPS -  
**SPARES – KARKH WATER TREATMENT PLANT**  
TYPE : 900/800/1024 DESC PUMPS  
SERIAL NO. : C5/56383 R.P.M : 730

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00394	IMPELLER	4		
03-01-00395	IMPELLER EYERINGS	8		
03-01-00396	SHAFT SLEEVES	16		
03-01-00397	SLEEVES RETAINING PLATE	16		
03-01-00398	HEAD LAND "V" RING (VL)	32		
03-01-00399	MEAD LAND "V" RING "VS"	32		
03-01-00400	LOCATITE BLACK SILICON SEALANT	32		
03-01-00401	BLACK BITUMASTIC COMPOUND	32		
03-01-00402	SPHERICAL - ROLLER BEARING	8		
03-01-00403	SPHERICAL - ROLLER BEARING	8		
03-01-00404	BEARING HOUSING	8		
03-01-00405	GLAND PACKING	8		
03-01-00406	LANTERN RING	8		
03-01-00407	SPLIT GLAND	8		
03-01-00408	"O" RING FOR ITEM 63	8		
03-01-00409	BOTTOM BEARING	8		

CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	51 / 950 M.L.D 500-500-405AD - D.E.S.C PUMPS DRAWING NUMBER DR/G03-807 AND 808				
03-01-00410	IMPELLER	1	1		
03-01-00411	SHAFT	6	1		
03-01-00412	IMPELLER EYERINGS	2	2		
03-01-00413	SHAFT SLEEVES	7	4		
03-01-00414	SHAFT NUT	8	12		
03-01-00415	THRUST NUT	9	10		
03-01-00416	MALE STUD COUPLING (3/8 B.SP TAPER TO 10mm OP PIPE )	41	12		
03-01-00417	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	25m		
03-01-00418	CASING EYERING	48	2 st		
03-01-00419	BEARING HOUSING CAP	54+55	1		
03-01-00420	GLAND PACKING	61	25 st		
03-01-00421	LANTERN RING ( IN HALVES ) FIBER GLESS	62	1		
03-01-00422	SPLIT GLAND FIBER GLESS	63	1		
03-01-00423	NECK BUSH FIBER GLESS	65	2		
03-01-00424	BOTTOM BEARING FIBER GLESS	66	2		
03-01-00425	BOTTOM BEARING COVER FIBER GLESS	67	1		
03-01-00426	SPHERICAL ROUER BEARING FIBER GLESS	53	5		

03-01-00427	SPACER RING FIBER GLESS	87	1		
03-01-00428	KEY FOR IMPELLER DRIVE	14	1		
03-01-00429	LOCKING SCREWS FOR ITEMS 8 AND 9	10	4		



CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	170 M.L.D 800-800- 672 AD - D.E.S.C PUMPS DRAWING NUMBER DR/G03-803 - 804				
03-01-00430	IMPELLER	1	1		
03-01-00431	SHAFT	6	2		
03-01-00432	IMPELLER EYERINGS	2	1		
03-01-00433	SHAFT SLEEVES	7	2		
03-01-00434	SHAFT NUT	8	2		
03-01-00435	THRUST NUT	9	10		
03-01-00436	MALE STUD COUPLING	41	4		
03-01-00437	NYLON TUBE 16 mm OUT SIDE DIAMETER	47	25m		
03-01-00438	CASING EYERING	48	2		
03-01-00439	BEARING HOUSING CAP	54+55	1		
03-01-00440	GLAND PACKING	61	25 st		
03-01-00441	LANTERN RING ( IN HALVES ) FIBER GLESS	62	1		
03-01-00442	SPLIT GLAND FIBER GLESS	63	1		
03-01-00443	NECK BUSH FIBER GLESS	65	1		
03-01-00444	BOTTOM BEARING FIBER GLESS	66	1		
03-01-00445	BOTTOM BEARING COVER FIBER GLESS	67	2		
03-01-00446	SPHERICAL ROUER BEARING FIBER GLESS	53	6		
03-01-00447	SPACER RING FIBER GLESS	87	2		
03-01-00448	KEY FOR IMPELLER DRIVE	14	1		
03-01-00449	LOCKING SCREWS FOR ITEMS 8 AND 9	10	6		
03-01-00450	HEAD AND V RING (VS)	17	6		
03-01-00451	'O" RING FOR ITEM 63	64	2		
03-01-00452	THRUST WASHER	60	6		
	102 / 1180 M.L.D 600-600-600 - D.E.S.C PUMPS DRAWING NUMBER DR/G03- 805 – 806				
03-01-00453	IMPELLER ( TOP MARK 11 )	1	1		
03-01-00454	SHAFT	6	2		
03-01-00455	IMPELLER EYERINGS	2	6		
03-01-00456	SHAFT SLEEVES	7	4		
03-01-00457	THRUST NUT	9	2		
03-01-00458	LOCKING SCREWS FOR ITEMS 8 AND 9	10	10		
03-01-00459	MALE STUD COUPLING	41	6		
03-01-00460	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	25m		
03-01-00461	CASING EYERING	48	2		
03-01-00462	BEARING HOUSING CAP	54+28	1		
03-01-00463	GLAND PACKING	61	25 st		
03-01-00464	LANTERN RING ( IN HALVES ) FIBER GLESS	62	2		
03-01-00465	SPLIT GLAND FIBER GLESS	63	2		
03-01-00466	NECK BUSH FIBER GLESS	65	2		
03-01-00467	BOTTOM BEARING FIBER GLESS	66	2		
03-01-00468	BOTTOM BEARING COVER FIBER GLESS	67	2		
03-01-00469	SPHERICAL ROUER BEARING	53	3		
03-01-00470	THRUST WASHER	60	6		
03-01-00471	KEY FOR IMPELLER DRIVE	14	2		
03-01-00472	"O" RING FOR ITEM 63	64	2		

CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	350-300-429 - D.E.S.C PUMPS DRAWING NUMBER DR/G03-801 - 802				
03-01-00473	IMPELLER ( TOP MARK 11 )	1	1		
03-01-00474	SHAFT	6	1		
03-01-00475	IMPELLER EYERINGS	2	4		
03-01-00476	SHAFT SLEEVES	7	4		
03-01-00477	THRUST NUT	9	10		
03-01-00478	LOCKING SCREWS FOR ITEMS. 8 AND 9	10	10		
03-01-00479	MALE STUD COUPLING	41	6		
03-01-00480	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	25m		
03-01-00481	CASING EYERING	48	2		
03-01-00482	BEARING HOUSING CAP	54+28	1		
03-01-00483	GLAND PACKING	61	25 st		
03-01-00484	LANTERN RING ( IN HALVES ) FIBER GLESS	62	1		
03-01-00485	SPLIT GLAND FIBER GLESS	63	1		
03-01-00486	NECK BUSH FIBER GLESS	65	2		
03-01-00487	BOTTOM BEARING FIBER GLESS	66	2		
03-01-00488	BOTTOM BEARING COVER FIBER GLESS	67	1		
03-01-00489	SPHERICAL ROUER BEARING FIBER GLESS	53	3		
03-01-00490	SPACER RING FIBER GLESS	84	1		

03-01-00491	KEY FOR IMPELLER DRIVE	14	1		
03-01-00492	THRUST WASHER	60	6		
03-01-00493	"O" RING FOR ITEM 63	64	1		

CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	12.5 M.L.D 250 - 225 VERTICAL D.E.S.C PUMPS				
03-01-00494	IMPELLER	1	1		
03-01-00495	SHAFT	6	1		
03-01-00496	IMPELLER EYERINGS	2	4		
03-01-00497	SHAFT SLEEVES	7	4		
03-01-00498	SHAFT NUT	8	12		
03-01-00499	THRUST NUT	9	10		
03-01-00500	LOCKING SCREWS FOR ITM. 8 AND 9	10	1		
03-01-00501	MALE STUD COUPLING (3/8 B.SP TAPER TO 10 mm OP PIPE )	41	12		
03-01-00502	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	25m		
03-01-00503	CASING EYERING	48	2 st		
03-01-00504	BEARING HOUSING CAP FIBER GLESS	54+55	1		
03-01-00505	GLAND PACKING	61	25 st		
03-01-00506	LANTERN RING ( IN HALVES ) FIBER GLESS	62	1		
03-01-00507	SPLIT GLAND FIBER GLESS	63	1		
03-01-00508	NECK BUSH FIBER GLESS	65	2		
03-01-00509	BOTTOM BEARING FIBER GLESS	66	2		
03-01-00510	BOTTOM BEARING COVER FIBER GLESS	67	1		
03-01-00511	SPHERICAL ROUER BEARING FIBER GLESS	53	5		
03-01-00512	SPACER RING	87	1		
03-01-00513	KEY FOR IMPELLER DRIVE	14	1		

CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	43 M.L.D , HEAD: 32.04 ,SPEED : 1474 rpm 400-400-410 PUMP DRAWING NUMBER DR/G03-811 - 812				
03-01-00514	IMPELLER	1	1		
03-01-00515	SHAFT	6	1		
03-01-00516	IMPELLER EYERINGS	2	2		
03-01-00517	SHAFT SLEEVES	7	4		
03-01-00518	THRUST WASHER	60	4 st		
03-01-00519	ROLLER THRUST BEARING	53	5		
03-01-00520	MALE STUD COUPLING	41	6		
03-01-00521	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	25st		
03-01-00522	CASING EYERING	48	4		
03-01-00523	BEARING HOUSING CAP	54+55	1		
03-01-00524	GLAND PACKING	61	15st		
03-01-00525	LANTERN RING ( IN HALVES )	62	1		
03-01-00526	SPLIT GLAND FIBER GLESS	63	2		
03-01-00527	NECK BUSH FIBER GLESS	65	2		
03-01-00528	BOTTOM BEARING FIBER GLESS	66	3		
03-01-00529	BOTTOM BEARING COVER FIBER GLESS	67	2		
03-01-00530	SPACER RING FIBER GLESS	85	1		
03-01-00531	KEY FOR IMPELLER DRIVE	14	1		

CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	21.5 M.L.D , HEAD : 32.7 350-300-424 PUMP DRAWING NUMBER DR/G03-801 - 802				
03-01-00532	IMPELLER	1	1		
03-01-00533	SHAFT	6	1		
03-01-00534	IMPELLER EYERINGS	2	2		
03-01-00535	SHAFT SLEEVES	7	4		
03-01-00536	THRUST WASHER	60	2 st		
03-01-00537	ROLLER THRUST BEARING	53	4		
03-01-00538	MALE STUD COUPLING	41	6		
03-01-00539	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	25m		
03-01-00540	CASING EYERING	48	2st		
03-01-00541	BEARING HOUSING CAP	54+55+56	1		
03-01-00542	GLAND PACKING	61	25 st		
03-01-00543	LANTERN RING ( IN HALVES ) FIBER GLESS	62	1		
03-01-00544	SPLIT GLAND FIBER GLESS	63	2		
03-01-00545	NECK BUSH FIBER GLESS	65	1		
03-01-00546	BOTTOM BEARING FIBER GLESS	66	1		
03-01-00547	BOTTOM BEARING COVER	67	1		
03-01-00548	SPACER RING FIBER GLESS	85	1		
03-01-00549	KEY FOR IMPELLER DRIVE FIBER GLESS	14	1		

CODE	DESCRIPTION	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	35 M.L.D 500-450-460 BD - D.E.S.C PUMPS DRAWING NUMBER DR/G03-809 - 810				
03-01-00550	IMPELLER EYE RIMOS	1	1		
03-01-00551	SHAFT	6	1		
03-01-00552	SHAFT SLEEVES	7	4		
03-01-00553	SHAFT NUT	8	2		
03-01-00554	THRUST NUT	9	1		
03-01-00555	THRUST WASHER	60	6		
03-01-00556	MALE STUD COUPLING (3/8 P.S.B TAPER 10 mm O.P PIPE )	41	6		
03-01-00557	NYLON TUBE 10 mm OUT SIDE DIAMETER	47	12 m		
03-01-00558	CASING EYERING	48	2st		
03-01-00559	BEARING HOUSING CAP	54+28	1		
03-01-00560	GLAND PACKING	61	25 st		
03-01-00561	LANTERN RING ( IN HALVES ) FIBER GLESS	62	1		
03-01-00562	SPLIT GLAND FIBER GLESS	63	1		
03-01-00563	NECK BUSH	65	2		
03-01-00564	BOTTOM BEARING	66	2		
03-01-00565	BOTTOM BEARING COVER	67	1		
03-01-00566	SPACER RING FIBER GLESS	87	1		
03-01-00567	KEY FOR IMPELLER DRIVE	14	1		
03-01-00568	LOCKING SCREWS FOR ITEM 8 AND 9	10	9		
03-01-00569	HEAD LAND "V" RING (VS)	16	2		
03-01-00570	HEAD LAND "V" RING (VS)	17	2		
03-01-00571	SPHERICAL ROUER BEARING	53	3		
03-01-00572	"O" RING FOR ITEM 63	64	2		
03-01-00573	LOCKING SCREWS FOR ITEMS. 8 AND 9	10	6		

**2-2-2: IDP SPARE PARTS**

CODE	ITEM	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
	MAIN RAW WATER PUMPS : DWG. : PF 3670 .00. 2310 .2 .06 / 07 / 08				
03-01-00574	INTERMEDIATE SHAFT	9	18		
03-01-00575	TOP SHAFT	15	7		
03-01-00576	SHAFT SLEEVE	16	26		
03-01-00577	BEARING BUSH	7	60		
03-01-00578	IMPELLER BEARING SLEEVE	14	20		
03-01-00579	ADJUSTING NUT	19	2		
03-01-00580	WASHERS (2 PER SET)	8	14		
03-01-00581	WASHER FOR BEARING NUT	24	14		
03-01-00582	COMPLETE MUFF COUPLING WITH SCREWS (2 PER SET)	18	50		
03-01-00583	IMPELLER (1st - 2nd)	13	32		
03-01-00584	1st STAGE PUMP BOWEL	2	6		
03-01-00585	2nd STAGE PUMP BOWL	3	6		
03-01-00586	SET OF RADIAI AND THRUST BEARINGS	21	20SET		
03-01-00587	IMPELLER SHAFT	10	6		
03-01-00588	THRUST BEARING CARRIER	7	5		
03-01-00589	BEARING COVER	9	2		
03-01-00590	IMPELLER BEARING SLEEVE	14	24		
	START RAW WATER PUMPS : DWG. : PF 3670 .00. 2310 .2 .06 / 09 / 10				
03-01-00591	INTERMEDIATE SHAFT	9	6		
03-01-00592	TOP SHAFT	15	3		
03-01-00593	IMPELLER SHAFT	10	4		
03-01-00594	1st STAGE IMPELLER		5		
03-01-00595	2nd STAGE IMPELLER		5		
03-01-00596	1st STAGE PUMP BOWEL	2	4		
03-01-00597	2nd STAGE PUMP BOWL	3	4		
03-01-00598	ADJUSTING NUT	19	2		
03-01-00599	INTERMEDIATE BEARING SLEEVE	16	9		
03-01-00600	IMPELLER BEARING SLEEVE	14	9		
03-01-00601	SET OF RADIAL & THRUST BEARINGS (2 PER SET)	20&19 DWG NO.12J780 5-AN	16SET		
03-01-00602	THRUST BEARING CARRIER	7	1		
03-01-00603	BEARING COVER	9	1		
03-01-00604	BEARING BUSH	7	34		
03-01-00605	COMPLETE MUFF COUPLING WITH SCREWS ( 2PFR SET)	18-34	20		

CODE	ITEM	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
MAIN MOTOR COOLING PUMPS COOLING WATER PUMPS MEN 65 - 160 (P.1005 A/B , P.2005 A/B , P. 3005 A/B, P. 5005 A/B) DWG. 3670 .00 .2310 .2 .05 /4					
03-01-00606	SHAFT	5	13		
03-01-00607	IMPELLER	19	7		
03-01-00608	SHAFT SLEEVE	28	3		
03-01-00609	ROTATING RING	31	9		
03-01-00610	MECHANICAL SEAL SLEEVE	40	3		
03-01-00611	STATIONARY RING	32	9		
03-01-00612	SET OF COUPLING PADS	FOR N.EUPE X B110	11		
03-01-00613	SET OF BEARING	30&50	5SET		

CODE	ITEM	ITM.NO	QTY.	UNIT PRICE \$	TOTAL PRICE &
CLOSED CIRCUIT COOLING TOWERS DWG. NO. PF.00 .2570 .2 .12. 404 & 403 DWG. NO. PF.00 .2570 .2 .12. 004 & 003					
03-01-00614	FAN SHAFT BEARING 40 MM	8	10		
03-01-00615	FAN WHEEL + SCROLL STD - 18 - 13	6	15		
03-01-00616	FAN SHAFT STD - 18	7	6		
03-01-00617	FAN SHAFT - 27	7	10		
03-01-00618	CLUTCH	14	3		
	BULKHEAD GATE				
03-01-00619	SERVO MOTOR	DWG NO 11/13 ITEM9	5		
03-01-00620	COMPLETE GEAR BOX	=	5		
	TRASH RAKE SCREEN	DWG NO 29			
03-01-00621	GEAR BOX WITH MOTOR	6	10		
03-01-00622	MOTOR	6	5		
03-01-00623	JACK	DWG NO 30 ITEM 12	20		
03-01-00624	SET OF ROPE	DWG NO 31 ITEM 8,9	10		

CONSIST - INDUSTRIES

CODE	DWG. PF.00.2340-2-10	ITEM NO	QTY.	UNIT PRICE \$	TOTAL PRICE &
	- HOIST 25 - SPARES	DWG 008-009			
03-01-00625	HOISTING ROPE 08 LENGTH 67 m	34	5		
03-01-00626	ROPE GUIDE PITCH 9,5	57	10		
03-01-00627	SET OF CROSS BAR (STAINLESS STEEL) 2 PER SET	9	10		
03-01-00628	LIMIT SWITCH SPINDLE (STAINLESS STEEL)	35	10		
03-01-00629	R.S HOISTING MOTOR 3 Kw	125&126	2		
03-01-00630	L.S HOISTING MOTOR 0.55 Kw	2&5	2		

CODE	ITEM	ITM NO	QTY.	UNIT PRICE \$	TOTAL PRICE &
	HOIST CRANE SPARES PF . 002340 . 2 . 10 DWG . 0011 & 012				
03-01-00631	HOISTING ROPE Q 13 LENGTH 38,20 mm	34	5		
03-01-00632	ROPE GUIDE PITCH (14)	57	10		
03-01-00633	SET OF CROSS BARS (STAINLESS STEEL) 2 PER SET	9	5		
03-01-00634	LIMIT SWITCH SPINDLE (STAINLESS STEEL)	35	5		
03-01-00635	H.S HOISTING MOTOR 5.5 Kw	125-126	2		
03-01-00636	REMOTE CONTROL BOX WITH ELECTRIC CABLE ( COMPLET SET)	DWG002	5		
03-01-00637	L.S HOISTING MOTOR 0.75 Kw	2&5	2		

CODE	ITEM	ITEM NO	QTY.	UNIT PRICE \$	TOTAL PRICE &
	BOOSTING PUMPS SPARES DWG. 3670 . 00 . 2310 . 2.07 / 08 / 05				
03-01-00638	IMPELLER SHAFT	4	5		
03-01-00639	INTERMEDIATE SHAFT	65	5		
03-01-00640	TOP SHAFT	48	5		
03-01-00641	IMPELLER	11	20		
03-01-00642	CASING WEAR RING	7	20		
03-01-00643	INTER STAGE SLEEVE OF IMPELLER	79	20		
03-01-00644	INTERMEDIATE SOCKET	78	20		
03-01-00645	INTERSTAGE SLEEVE	14	15		
03-01-00646	IMPELLER BEARING	9	20		
03-01-00647	INTERMEDIATE BEARING SLEEVE	42	20		
03-01-00648	BEARING BUSH	23	20		
03-01-00649	NON RETURN VALVE		8		
03-01-00650	SET OF COUPLING PADS		120		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00651	COMPLETE VERTICAL BOOSTING PUMPS WITH MOTORS Q : 20 m <sup>3</sup> /h H : 65 m R.P.M : 2950 , 5.5 Kw , 400 V DIAM. IN=4 INCH, OUT=3 INCH	5		

CODE	ITEM	ITEM NO	QTY.	UNIT PRICE \$	TOTAL PRICE &
	PROGRAMMING CONTROLLER DWG. NO. PF. 3670 . 10 . 2813 . 4 . 01 & 4.03				
03-01-00653	CPU 8 K	2032	2		
03-01-00654	WATCH DOG	2009	1		
03-01-00655	MAIN POWER SUPPLY	6180	1		
03-01-00656	PROGRAMMING KDU		1		

## 2-1-3-5

MAIN RAW WATER PUMPS:- DWG. NO. PF 3670 - 00 - 2310 - 2 - 06 /07 PF 3670 - 00 - 2310 206 / 10					
CODE	ITEM	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00657	BELL MOUTH	1	10		
03-01-00658	COUPLING RING SPLIT ( IN 2 PARTS )	17	20		
03-01-00659	SOCKET FOR TIGHTNESS	40	50		
03-01-00660	UNION ELBOW (1/2")	42	50		
03-01-00661	INTERMEDIATE BEARING	52	10		
03-01-00662	UNION FITTING	49	50		
03-01-00663	UNION FITTING (1.5" )	56	50		
03-01-00664	LUBRICATING PIPE	44	30		
03-01-00665	REDUCED NIPPLE	41	30		
03-01-00666	SET OF SEAL PACKING FOR MAIN PUMPS	6	10 SET		
03-01-00667	GATE VALVE (1/2")	67	40		
03-01-00668	SHAFT TUNNEL TUBE	51	20		
03-01-00669	SHAFT TUNNEL TUBE	24	20		
03-01-00670	SHAFT TUNNEL TUBE	10	10		

START RAW WATER PUMPS:- DWG. NO. PF 3670 - 00 - 2310 - 2 - 06 /09					
CODE	ITEM	ITEM NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00671	BELL MOUTH	1	5		
03-01-00672	COUPLING RING SPLIT ( IN 2 PARTS )	17	20		
03-01-00673	REDUCED NIPPLE (12") COMPLETE WITH LUBRICATING PIPE	41	10		
03-01-00674	SET OF SEAL PACKING	6	5 SET		
03-01-00675	SHAFT TUNNEL TUBE	51	20		
03-01-00676	SHAFT TUNNEL TUBE	24	20		
03-01-00677	SHAFT TUNNEL TUBE	10	10		
03-01-00678	LOCK WASHER FOR BEARING BUSH	13	20		
03-01-00679	INTERMEDIATE BEARING WITH TOP AND LOWER BEARING		10 FOR EACH KIND		
03-01-00680	UNION FITTING (1/2")	42	20		
03-01-00681	UNION FITTING (1.5" )	56	20		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
	SPARE PART LIST FOR 7-NISSAN PROJECT 2B STATION			
03-01-00682	VALVE OPERATER: GEAR BOX ORDERING DATA: TORKMATIC T430/SGA RATIO 699:1	2		
03-01-00683	VALVE OPERATER: GEAR BOX ORDERING DATA: TORKMATIC T250 RATIO 57:1	2		
03-01-00684	VALVE OPERATER: GEAR BOX ORDERING DATA: TORKMATIC T400/SGA RATIO 613:1	2		
03-01-00685	VALVE OPERATER: GEAR BOX ORDERING DATA: TORKMATIC T300 RATIO 70:1	1		
03-01-00686	VALVE OPERATER: GEAR BOX ORDERING DATA: TORKMATIC T330/SGA RATIO 233:1	2		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
	SPARE PART LIST FOR 7-NISSAN PROJECT			
03-01-00687	VALVE SR 450m	3		
03-01-00688	VALVE SR 400m	3		



CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00689	PRESSURE CONTROL VALVE DN 700mm	2		
03-01-00690	PRESSURE CONTROL VALVE DN 500mm	2		
03-01-00691	NON RETURN VALVE DN 250 mm	3		
03-01-00692	BUTTERFLY VALVE DN 700	4		
03-01-00693	BUTTERFLY VALVE DN 500	2		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00694	1" STEEL PIPE FOR CHLORINE SYSTEM NOT LESS THAN (15) bar	200 m		
03-01-00695	1" B.S 1560 FITTING FLANGE	30 FLANGE		
03-01-00696	2" STEEL PIPE FOR CHLORINE SYSTEM NOT LESS THAN (15) bar	60 m		
03-01-00697	2" B.S 1560 FITTING FLANGE	30 FLANGE		
03-01-00698	1/5" STEEL PIPE FOR CHLORINE SYSTEM NOT LESS THAN (15) bar	200 m		
03-01-00699	1/2 " B.S 1560 FITTING FLANGE	30 FLANGE		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00700	HOSE R4" , R3" , R2 " MADE OF TREVIRA COMPLETE WITH STORTS COUPLINGS TYPE A ( QUICK COUPLING ) MADE OF ALUMINIUM ALLOY 25M LENGTHH EACH PEACE PN 10 BAR .	25M X 20 FOR EACH SIZE		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00701	CLORINE VALVE CONNECTIONS FOR CHLORINE DRUMS			
03-01-00702	DØ = 1/4"	100 PCS		
03-01-00703	DØ = 3/4"	100 PCS		
03-01-00704	DØ = 3/8"	100 PCS		
03-01-00705	DØ = 1"	100 PCS		
03-01-00706	DØ = 5/8"	100 PCS		
03-01-00707	DØ = 1.25"	100 PCS		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
	CHLORINE HEADER FOR CHLORINE DRUMS H = 15kg/h			
03-01-00708	CONNECTING PIPE ST.	500		
03-01-00709	TEE ST.	50		
03-01-00710	PIPE CLAMP AND SLUD ST.&NYLUN	50		
03-01-00711	ELBOW ST.	50		
03-01-00712	CONNECTION TUBE Cu	50		
03-01-00713	ISOLATING VALVE ST/TEFL	50		
03-01-00714	TWIN NIPPLE ST.	50		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
	CHLORINATION SYSTEM			
03-01-00715	CHLORINE GAS CHANGEOVER EQUIPEMT WITH PRESSURE GAUGES AND ALL THE CONNECTIONS CAPACITY = 15 KG/H	12		
03-01-00716	CATCH POT WITH ALL THE FITTINGS ( 15 KG/H )	30		
03-01-00717	FITTINGS WITH ALL CONNECTIONS (15KG/H)	20		
03-01-00718	CHLORINATOR (100-1000 ) G/H COMPLETE WITH ALL THE ACCESSORIES LIKE PRESSURE GAUGE FOR CHLORINE SUPPLY CHLORINE BARREL AMXILIARY VALVE WITH FLEXIBLE COPPER LINE ,MANIFOLD CHLORINE VACUMM REGULATOR , CONTROL UNIT , DIAPHRAGM CHECK VALVE , STUNDARD INJECTOR , CHLORINE INJECTION FITTING , BALL RETAINNG VALVE , SOLENOID VALVE ,PREESSURE REDUCING VALVE WITH PRESSURE GAUGE AND STRAINES ,	20		
	RECOMMENDED SPARE PARTS FOR TWO YEARS OPERATION FOR EACH UNIT			

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00719	7 NISSAN BATTERY CELLS CLOSING VOLTAGE TYPE : TLP12 NiCd TYPE NO. : ATSC110/19/3/F3/X AUTOMAT REF. : 52028 RTG A/h : 19 A/h 5 A AT 1.45 VOLTS/ CELL CELLS TOTAL VOLTAGE : 133.4 VOLTS CAPACITY : 200 m <sup>3</sup> /h , H : 50 m	92		
03-01-00720	VARTA TP 55 MCKEL-CADIMUM PATTERY THE CAPACITY :50 A/H VOLTAGE = 43 V D.C VOLT / CELL = 1.2 VOLT	111		
03-01-00721	NICKEL CADMIUM BLOCK BATTERY TYPE : L310-2 823 1.45 V/CELL (TARADE MARK) NIFE JUNGNER	57		

**FOR SWITCH GEAR 630 A  
YORKSHIRE**

CODE	DESCRIPTION	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00722	TRIPPING COIL	10		
03-01-00723	CLOSING COIL	10		
03-01-00724	SPRING CHARGE MOTOR	5		
03-01-00725	SWITCH	5		

FOR YORKSHIRE SWITCH GEAR				
CODE	DESCRIPTION	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00726	VOLTAGE TRANSFORMER BS 3941 SERIAL NO. : 11207 RATIO : 11000 / 110 VA : 100 RVF : 1.5 / 30 sec. FREQUENCY : 50 hz CLASS 1.0 IL : 28 / 75 KV	3		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
	HIGH VOLTAGE FUSES, TYPE: BRUSH			
03-01-00727	125 AMPERE MAIN FUSE	20		
03-01-00728	90 AMPERE MAIN FUSE	40		
03-01-00729	56 AMPERE FUSE	30		
03-01-00730	71 AMPERE FUSE	10		
03-01-00731	LOW VOLTAGE FUSES , TYPE: GEC			
03-01-00732	MAIN FUSE TKF 315	30		
03-01-00733	MAIN FUSE TKF 250	30		
03-01-00734	MAIN FUSE TF 200	30		
03-01-00735	MAIN FUSE TC 80	50		
03-01-00736	MAIN FUSE TBC 32	60		
03-01-00737	MAIN FUSE TBC 16	60		
03-01-00738	MAIN FUSE TMF 355	30		
03-01-00739	MAIN FUSE TCP 100	30		
03-01-00740	MAIN FUSE TBC 63	40		
03-01-00741	MAIN FUSE TF 125	30		
03-01-00742	MAIN FUSE TF 160	20		
03-01-00743	MAIN FUSE TBC 25	60		
03-01-00744	MAIN FUSE TBC 63	60		
03-01-00745	MAIN FUSE TBC 40	30		
03-01-00746	MAIN FUSE TBC 20	30		

**floculators**

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00747	<p>FLOCCULATORS:</p> <p>-----</p> <p>. FLOCCULATORS WILL BE NEEDED FOR BLENDING AND HOMOGENIZING THE SUSPENDED SOLIDS OF RAW WATER (1000 - 15000 NTU ) WITH ALUMINIUM SULPHATE SOLUTION IN WATER TREATMENT PLANTS.</p> <p>. FLOCCULATION TANK QUANTITIES (9 )TANKS IT WILL BE NEEDED ( 3 ) FLOCCULATORS FOR EACH TANK.</p> <p>. FLOCCULATORS NEEDED FOR FLOCS FORMATION AND PREVENTATIVE OF SETTELMENT FORMATION</p> <p>. FIXATION BY SQUARE FLANGE (    ).</p> <p>. SHAFT AND PROPELLER TO BE S. STEEL 316</p> <p>. MOTORS AND ALL THE EQUIPMENTS PROTECTED OF WATER AND ALL CLIMATE VARIATIONS AND TO BE OUT DOR TYPE .</p>	27		
03-01-00748	<p>. CONTROL PANEL FOR EACH THREE FLOCCULATORS TO BE INSTALLED IN ONE PANEL INCLUDED ALL THE PROTECTION SYSTEMS LIKE ( OVER LOAD, SHORT CIRCUIT, PHASE FAILUIR, VOLTAGE VARIATIONS, REVERSE SEQUINCE .. etc. ..</p> <p>. FLEXIBLE CABLE WITH 50m LENGTH FOR EACH FLOCCULATOR.</p> <p>. SPEED (RPM ) OF THE FLOCCULATORS NOT MORE THAN 30 rpm .</p>	9 PANELS (EACH PANEL CAPABI LE FOR OPERAT ION OF THREE FLOCCU LATORS )		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00749	<p>SURFACE TURBIDITY METER FOR CLEAR WATER AND RAW WATER PORTABLE MAX RANG 10000 N.T.U LOWER RANG 0.1 N.T.U</p>	2		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
	NICKEL CADMIUM , BATTERIES NICD			
03-01-00750	TLP24 , CAPACITY : 24 A/h , VOLT: 1.65	200		
03-01-00751	TLP37 , CAPACITY : 46 A/h , VOLT : 1.65	200		
03-01-00752	TLP 11.5 , CAPACITY : 11.5 A/h , VOLT : 1.65	400		

CODE	ITEM	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00753	PACKING 1/2" , 5/8 "	1000m foreach size		
03-01-00754	FOOT VALVE (SCREEN + NON-RETURN VALVE ) SIZE 2" , 3" , 4"	20 pcs for each size		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00755	PROTECTION RELAY TYPE: VAWA/SPEC27BP457A NO. 041754 W	6		
03-01-00756	PROTECTION RELAY TYPE: VAJ Y11BP5044BA NO. 041769 W	6		
03-01-00757	PROTECTION RELAY TYPE: MVAJ 13D/GB0283A NO. 202488E AQUA POWER	6		
03-01-00758	ALKALINE BATTERY TYPE: ALCAD , LP 28	120		
03-01-00759	ALKALINE BATTERY TYPE : ALCAD , EP 3	30		

CODE	ITEM	QTY	UNIT PRICE \$	TOTAL PRICE &
	SPARE PART LIST FOR 7-NISSAN PROJECT			
03-01-00760	UPS CHARGER , SERIAL NO. 8L1117978 INPUT 250 / 240 , FLOAT VOLTAGE : 36 CHARGER OUTPUT : 3A , BOOST VOLTAGE : 42.5 MANUF: AMBERLEC	2		

CODE	DESCRIPTION	QTY.	UNIT PRICE \$	TOTAL PRICE &
	COUPLING TYPE FLANDT NVPX FOR PUMPS TYPE KSB TYPE .			
03-01-00762	RDL 200-400 B	28		
03-01-00763	RDL 150-430 A	8		

INGERSOLL - DRESSER PUMPS PUMP TYPE 25 PKH - 1 STAGE DWG - NO. CS000297						
CODE	DESCRIPTION	REF. NO.	P. NO.	QTY.	UNIT PRICE \$	TOTAL PRICE &
03-01-00764	PUMP SHAFT	6	81828659	8		
03-01-00765	LINE SHAFT	12A	81828634	8		
03-01-00766	LINE SHAFT	12	82424151	6		
03-01-00767	COUPLING	471	82030594	16		
03-01-00768	TOP SHAFT	12B	81827818	6		
03-01-00769	BELL RING	319	81828667	8		
03-01-00770	IMPELLER RING	8	82296989	12		
03-01-00771	BEARING		82449265	12		
03-01-00772	THREAD BRGS	320	82216573	12		
03-01-00773	THREAD BRGS	103	82175696	80		
03-01-00774	PACKING SETS		82123464	12		
03-01-00775	25 PKH IMPELLER		81819849	4		
03-01-00776	SKF 7318 BEARING			6		
03-01-00777	SKF 6022 BEARING			6		
03-01-00778	PACKING SETS		82194911	12		
03-01-00779	ENCL TUBE		81828428	12		
03-01-00780	ENCL TUBE		81828600	10		
03-01-00781	ENCL TUBE		81828626	10		
03-01-00782	BEARING THRUST	444		7		
03-01-00783	GLAND PKG SPLIT	17		7		
03-01-00784	NUT PKG	301		7		
03-01-00785	PLT.TUBE/TENSION	302		7		
03-01-00786	RING LTRN	29		7		
03-01-00787	SLEEVE STUFFING BOX	370		7		
03-01-00788	SLEEVE LINE SHAFT	14		50		

CODE	DESCRIPTION	QTY	UNIT PRICE \$	TOTAL PRICE &
03-01-00789	BEARING ROLLIX GROUP DEFFONTAING TYPE 080675 - Z200A NO - 0230	10		

DELIVERY TIME :

**2-3: H-STARTERS + SWITCH BOARD**

2-3-1:

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	<b>ELECTRIC MOTOR STARTERS</b>			
03-01-00790	<u>A- STAR- DELTA STARTERS</u> GENERAL SPECIFICATIONS 1-POWER SUPPLY 415V,50HZ. 2-CONTROL SUPPLY 230V. 3. ON - OFF PUSH BOTTOMS 4- MAIN C.B. 5- PHASE FAILUIRE 6- OVER LOAD CURRENT 7- INDICATING LAMPS FOR ON - OFF - TRIP 8- VOLTMETER WITH SELECTOR SWITCH. 9- AMMETER WITH SELECTOR SWITCH. 10- THE STARTER EQUIPPED WITH VENT.FAN ,SPACE HEATER AND THERMOSTAT 11- IP: 55,INSULATED ENCLOURE 12- CATEGORY :AC3 13- AMBIENT TEMP 55 °C			
03-01-00791	MOTOR POWER (KW) :-			
03-01-00792	75	10		
03-01-00793	125	10		
03-01-00794	130	10		
03-01-00795	200	10		
03-01-00796	250	10		
03-01-00797	315	10		
	<u>B- DIRECT ON LINE STARTERS</u> GENERAL SPECIFICATIONS 1-POWER SUPPLY 415V,50HZ. 2-CONTROL SUPPLY 230V. 3. ON - OFF PUSH BOTTOMS 4- PHASE FAILUIRE 5- OVER LOAD CURRENT 6- INDICATING LAMPS FOR ON - OFF - TRIP 7- IP :65 ,DOUBLE INSULATED ENCLOUSER. 8- CATEGORY ,AC3 9- AMBIENT TEMP 55°C			
	MOTOR POWER (KW):-			
03-01-00798	2.2	20		
03-01-00799	5.5	20		
03-01-00800	7.5	20		
03-01-00801	10	20		
03-01-00802	15	20		
03-01-00803	18,5	20		

## 2-3-2

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00804	SUPPLY OF 7.2 KV STARTERS A- 7.2 KV C.B TYPE SF6 OR CONTACTOR TYPE SFC 320 RATED CURRENT 300 A , CLOSING CAPACITY 16.5 KA BREAKING CAPACITY 6600 A , COIL VOLTAGE 240 V TO REPLACE THE EXISTING CONTACTORS ACCORDING PHYSICAL DIMENTIONS WITH FOLLOWING . 1- VOLTMETER + SELECTOR SW. 2. AMMETER + = 3- PUSH BOTTOMS FOR MANUAL ON+OFF 4-SHORT CCT CURRENT PROTECTION 5- PHASE SEQUENCE + PHASE FAILURE PROTECTION 6- OVER LOAD PROTECTION 7- INDICATOR LAMPS FOR OFF+ON OPERATION 8- HOUR METER 9- UNDER VOLTAGE PROTECTION 10- EARTH LEAKGE PROTECTION MANUF: DELLE & ALSTHOM)	10		
03-01-00805	B- SUPPLY OF 7.2 KV C.B TYPE : SF6 , RATED CURRENT 630 A , TO REPLACE THE EXISTING C.BS ACCORDING PHYSICAL DIMENTIONS WITH FOLLOWING :- 1- VOLTMETER + SELECTOR SW. 2. AMMETER + = 3- PUSH BOTTOMS FOR MANUAL ON+OFF 4-SHORT CCT CURRENT PROTECTION 5- PHASE SEQUENCE + PHASE FAILURE PROTECTON 6- OVER LOAD PROTECTION 7- INDICATOR LAMPS FOR OFF+ON OPERATION 8- HOUR METER 9- UNDER VOLTAGE PROTECTION 10- EARTH LEAKGE PROTECTION MANUF: DELLE & ALSTHOM	4		

## 2-3-3

	ELECTRIC MOTOR STARTERS <u>C- ELECTRONIC STARTERS (SOFT STARTERS)</u> GENERAL SPECIFICATIONS 1-POWER SUPPLY 415V,50HZ. 2-CONTROL SUPPLY 230V 3- AMBIENT TEMP 55°C 4- SERIAL LINK : COMMUNICATION WITH PC OR PLC . 5- CONSOLE : FOR SIMPLE PROGRAMMING , DIAGNOSTICS .AND PARAMETER VISUALLIZATION VIA KEY PAD AND DIGITAL LCD			
	MOTOR POWER (KW)			
03-01-00806	18.5	12		
03-01-00808	25	8		
03-01-00809	37	10		
03-01-00810	45	12		
03-01-00811	75	35		



2-3-4

ELECTRICAL BOARD

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	ELECTRICAL BOARD FOR HORIZONTAL SCRAPER			
03-01-00812	THE BOARD CONSISTS OF : TOW STARTERS ( D.O.L. ) TO OPERATE (2) MOTORS IN TWO DIRECTIONS ( PS = 0.4KW , V = 400 , N = 700RPM H= 50 HZ , IP = 65 )	8		
	TWO LIMIT SWITCHS FOR EACH MOTOR IN BOTH SIDES THERE FUNCTIONS TO STOP AND REVERSE IT IS DIRECTION			
	SPECIAL RELAYS WORKING WITH LIMIT SWITCHS			
	MAIN CIRCUIT BREAKER			
	D.O.L. STARTER FOR SLUDGE SUBMERSIBLE PUMP WITH MAXIMUM LOAD(20A) AND THE OVERLOAD SETTING TO BE IN THE RANGE (8-15) AMPER			
	EACH STARTER TO INCLUDE THE FOLLOWING PROTECTION RELAYS :- A) SHORT CIRCUIT B) OVER LOAD C) PHASE FAILAIR D) UNDER VOLTAGE			
	ON - OFF MANUALLY AND AUTO -MATICALLY OPERATION FOR ALL THE UNITS			
	ALARM AS ASOUND			
	THE ELECTRICAL BOARD TO BE OUTSIDE DOOR TYPE PROVIDED WITH WATER PROOF ROOF , SUNPROTECTION ROOF			
	INDICATION LAMPS FOR , OPERATION , STOP , FAULT			
	VOLT AND AMPER METERS			
	RECOMEADED SPARE PARTS FOR TWO YEARS OPERATION			

2-3-5

SUPPLY LOW TENTION DISTRIBUTION SWITCH BOARD  
ALQADSSIYA TREATMENT PLANT

PHYSICAL DIMINSIONS : 4 m x 2.15 x 0.7 m

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	THE SWITCH BOARD CONSISTS OF TWO INCOME FEEDER CIRCUIT BREAKER SIX CIRCUIT BREAKERS TO SUPPLY PUMP STARTERS BUS SECTION CIRCUIT BREAKER , AND SMALL POWER DISTRIBUTION BOARD TO SUPPLY DRAINAGE PUMP , SOCKET OUT LETS, LIGHTING , etc. .. THE FRONT PANEL CONSISTS OF ALL MEASURING EQUIPMENT SUCH AS 3 $\phi$ AMMETERS , VOLTMETERS			

03-01-00813	1. INCOME FEEDER CIRCUIT BREAKER AND BUS COUPLER GENERAL TECHNICAL DATA : 3 POLE WITH DRAWABLE TYPE * RATED CONTINUOUS CURRENT : 2000 A * RATED INSULATION VOLTAGE : 1000 V * RATED OPERATIONAL VOLTAGE : 660 V * MANUAL & MOTOR CHARGED SPRING STORAGE MECHANISM ( MOTOR CONTROL VOLTAGE ) : 220 V * CLOSING RELEASE ( CONTROL VOLTAGE ) : 220 V * UNDER VOLTAGE TRIP ( CONTROL VOLTAGE ) : 220 V * THE C.B EQUIPPED WITH SOLID STATE DOGTRIP TO SUIT THE OPERATING CONDITION THE DIGTRIP COMPRISES THE TRIPPING FUNCTIONS & INDICATIONS AS FOLLOWS * OVER LOAD / SHORT CIRCUIT * INSTANTANEOUS SHORT CCT * EARTH FAULT * DIGITAL DISPLAY FOR CURRENT & VOLTAGE	3		
03-01-00814	2. PUMP STARTER CIRCUIT BREAKER GENERAL TECHNICAL DATA : 3 POLE WITH DRAWABLE TYPE * RATED CONTINUOUS CURRENT : 630 A * ALL OTHER TECHNICAL DATA AS IN PARA. 1	6		
03-01-00815	3. SMALL POWER DISTRIBUTION: MIN. C. B BREAKER 60A WITH 1 x 25 C.B. AND 3 x 15 C.B.	2		

2-3-6

\*\*\*\* 3. single line diagram

FRONT PANEL VIEW

\* A : AMMETER

V: VOLTMETER

. ON : RED ON INDICATOR

. OFF : OFF GREEN INDICATOR

2-3-7

SUPPLY LOW TENTION DISTRIBUTION SWITCH BOARD AL-RASHED TREATMENT PLANT				
CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	THE SWITCH BOARD CONSISTS OF TWO INCOME FEEDERS,TWO GENERATOR FEEDERS, SIX BREAKERS TO SUPPLY PUMP STARTERS, BUS SECTION CIRCUIT BREAKERS ,FEEDERS FOR LOW LIFT STATION,FILTERS,ALUMSTATION,CLARIFIERS,SLUGE PUMPS,&SMALL POWER DISTRIBUTION BOARD TO SUPPLY SOCKET OUTLETS, LIGHTING , etc. .. THE FRONT PANELS CONSISTS OF ALL MEASURING EQUIPMENT SUCH AS 3φ AMMETERS , VOLTMETERS.			
03-01-00816	1. GENERATOR FEEDER CIRCUIT BREAKER GENERAL TECHNICAL DATA : 3 POLE WITH DRAWABLE TYPE * RATED CONTINUOUS CURRENT : 1000 A * RATED INSULATION VOLTAGE : 1000 V * RATED OPERATIONAL VOLTAGE : 660 V * MANUAL & MOTOR CHARGED SPRING STORAGE MECHANISM ( MOTOR CONTROL VOLTAGE ) : 220 V AC * CLOSING RELEASE ( CONTROL VOLTAGE ) : 220 V AC * UNDER VOLTAGE TRIP ( CONTROL VOLTAGE ) : 380 V AC * THE C.B EQUIPPED WITH SOLID STATE DIGTRIP TO SUIT THE OPERATING CONDITION THE DIGTRIP COMPRISES THE TRIPPING FUNCTIONS & INDICATIONS AS FOLLOWS * OVER LOAD / SHORT CIRCUIT * INSTANTANEOUS SHORT CCT * EARTH FAULT * DIGITAL DISPLAY FOR CURRENT , VOLTAGE,&FREQUANCY	2		

03-01-00817	<p>2. LOW LIFT STATION FEEDER CIRCUIT BREAKER  GENERAL TECHINCAL DATA :  3 POLE WITH DRAUABLE TYPE  * RATED CONTINUOUS CURRENT : 2000 A  * RATED INSULATION VOLTAGE : 1000 V  * RATED OPERATIONAL VOLTAGE : 660 V  * MANUAL &amp; MOTOR CHARGED SPRING STORAGE MECHANISM ( MOTOR CONTROL VOLTAGE ) : 220 V AC  * CLOSING RELEASE (CONTROL VOLTAGE) : 220 V AC  * UNDER VOLTAGE TRIP (CONTROL VOLTAGE ) : 380 V AC  * THE C.B EQUIBED WITH SOLID STATE DIGTRIP TO SUIT THE OPERATING CONDITION  THE DIGTRIP COMPRISES THE TRIPPING FUNCTIONS &amp; INDICATIONS AS FOLLOWS  * OVER LOAD /SHORT CIRCUIT  * INSTANTANEOUS SHORT CCT  * EARTH FAULT  * DIGITAL DISPLY FOR CURRENT &amp; VOLTAGE</p>	1		
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2-3-8

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00818	<p>3. INCOME FEEDER CIRCUIT BREAKER AND BUS COUPLER  GENERAL TECHINCAL DATA :  3 POLE WITH DRAUABLE TYPE  * RATED CONTINUOUS CURRENT : 2000 A  * RATED INSULATION VOLTAGE : 1000 V  * RATED OPERATIONAL VOLTAGE : 660 V  * MANUAL &amp; MOTOR CHARGED SPRING STORAGE MECHANISM ( MOTOR CONTROL VOLTAGE ) : 220 V AC  * CLOSING RELEASE (CONTROL VOLTAGE) : 220 V AC  * UNDER VOLTAGE TRIP (CONTROL VOLTAGE ) : 380 V AC  * THE C.B EQUIBED WITH SOLID STATE DIGTRIP TO SUIT THE OPERATING CONDITION  THE DIGTRIP COMPRISES THE TRIPPING FUNCTIONS &amp; INDICATIONS AS FOLLOWS  * OVER LOAD /SHORT CIRCUIT  * INSTANTANEOUS SHORT CCT  * EARTH FAULT  * DIGITAL DISPLY FOR CURRENT &amp; VOLTAGE</p>	3		
03-01-00819	<p>4. MCCB PUMP STARTER CIRCUIT BREAKER  GENERAL TECHINCAL DATA :  3 POLE WITH DRAUABLE TYPE  * RATED CONTINUOUS CURRENT : 630 A  * ALL OTHER TECHNICAL DATA AS ABOVE.</p>	6		
03-01-00820	<p>5. SMALL POWER DISTRIBUTION: MIN.MCCB 60A,WITH 1 x 25A &amp; 3 x 15A MCCB.</p>	2		
03-01-00821	<p>6. MCCB FOR AIR BLOWERS 300 A.</p>	2		
03-01-00822	<p>7- MCCB FOR CLARIFIERS,DRAINPUMP,&amp; ALUMSTATION 50A.</p>	5		
03-01-00823	<p>8- MCCB FOR SLUGE PUMPS</p>	2		

2-3-9

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
	<p>11 KV SWITCH BOARD TO REPLACE KPS3 SWITCH BOARD  AS FOLLOWS</p>			
03-01-00824	<p>1- CIRCUIT BREAKER 630 A , 11KV FOR PUMPS &amp; TRANSFORMERS SF6 TYPE .</p>	12		
03-01-00825	<p>2- CIRCUIT BREAKER 1250 A , 11KV FOR FEEDERS &amp; BUS - COUPLER .</p>	3		
03-01-00826	<p>3- COMPLETE PROTECTION &amp; MONITARING SYSTEM FOR THE WITCH BOARD</p>	L.S		
03-01-00827	<p>4- SPARE C.B. 630 A .</p>	2		
03-01-00828	<p>5- SPARE C.B. 1250 A .</p>	1		

2-4: VALVES

CODE	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
	BUTTERFLY VALVE ELECTRICAL ACTUATOR OPERATING PRESSURE 10 bar , THE MEDIUM IS THE WATER WITH 2.5 PPM CL2 SOLUTION , THE INTERNAL PART MUST BE PROTECTED BY COATING WITH RESISTANCE MATERIAL FOR CORROSIVE SOLUTION .			
03-01-00829	SIZE 200 NO. BOLTS(8) LENGTH 225 mm	20		
03-01-00830	SIZE 250 NO. BOLTS(12) LENGTH 240 mm	50		
03-01-00832	SIZE 300 NO. BOLTS(12) LENGTH 260 mm	60		
03-01-00833	SIZE 350 NO. BOLTS(14) LENGTH 292,280 mm	12		
03-01-00835	SIZE 400 NO. BOLTS(16) LENGTH 300 mm	50		
03-01-00836	SIZE 500 =	50		

2-5:LAB

2-5-1

LABORATORY KITS & EQUIPMENTS				
CODE NO.	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00837	1- MACCONKEY BROTH MEDIUM FOR BACTERIOLOGICAL EXAMINATION	50 KG		
03-01-00838	2- MEAT EXTRACT EXTRACT USED FOR BACTRIOLOGICAL TEST	5 KG		
03-01-00839	3- NUETRIENT AGAR	10 KG		
03-01-00840	4- PEPTON FOR BACTERIOLOGY	20 KG		
03-01-00841	5- D.P.D TABLETS NO.1 USED FOR TESTING TGE RESIDUAL CHLORINE IN WATER	1000 TABL ET		
03-01-00842	6- NESSLER REAGENT FOR DETECTION OF AMMONIUM IN WATER CONTAINING ABOUT 3.6% W/V HGH2KI 11/2 H2O AND ABOUT 9% W/V NA2O	10 LITER S		
03-01-00843	7- CONC HYDROCHLORIC ACID SOL AR 36% HCl SP. GR 1.18	25 L		
03-01-00844	8- DI- SODIUM ETHYLENE DI - AMINE TETRA ACCTIC ACID G.P.R	10 KG		
03-01-00845	9- GLYCEROL EXTRA PURE	10 L		
03-01-00846	10 -AMMONIA (AMMONIUM HYDROXIDE) SOL. AR 25% NH3 SP.GR 0.910	10 L		
03-01-00847	11- ASCORBIC ACID MINIMUM ASSAY 99.7%	500 G		
03-01-00848	12- RED MERCURIC IODIDE AR	5 KG		
03-01-00849	13- SILVER NITRATE G.P.R	1 KG		
03-01-00850	14- SODIUM OXALATE G.P.R (COONA)2 = 134.00	500 G		
03-01-00851	15- POTASSIUM ALUMINOM SULFATE	500 G		
03-01-00852	16- DI- SODIUM HYDROGEN ORTHOPHOSPHATE ANALAR	1 KG		
03-01-00853	17- MURE XIDE(AMMONIUM PURPURATE)	500 G		
03-01-00854	18- COBALTOUSE CHLORIDE AR COCL2.6H2O ANALAR	500 G		
03-01-00855	19- ERIOCHROME BLACK T (SOLOCHROME BLACK ) FOR WATER HARDNESS DETERMINATION	500 G		
03-01-00856	20- N-N DIETHYL PARA PHANILINE DIAMINE SULLFATE FW=262.33	1 KG		
03-01-00857	21- ATOMIC ABSORPTION FOR HEAVY METAL FULLY COMPUTERIZED FOR WATER ANALYSIS , COMPLETE ACCESSORIES FOR FIVE YEARS, HALLOW CATHOD LAMPS (SINGLE OR MULTIPLE ELEMENTS),DIFFERENT MODELS (MANY OPTIONS), FLAME,FLAMELESS,ANY OTHER SPECIFICATIONS, CATALOGUES, LEA FLETS, NEWS PAPER, ADVANCE MODEL UP TO DATE , 120/220/240 STORAGE TEPERAURE RANGE 0-60 °C OPERATION TEMP. RANGE 10-40°C THE SUPPLIER IS RESPONSIBLE TO REPAIRE AND MENTENANCE THE DEVICE IF BROCKEN DOWN FOR THREE YEARS AFTER DEL.	1		
03-01-00858	22- SPEETOR PHOTOMETAR FOR WATER ANALYSIS , UV-VISIBLE SPETROPHOTOMETER DOUBLE BEAM SPECIFICATION , FULLY COMPUTERIZED FOR WATER ANALYSIS , COMPLETE ACCESSORIES FOR FIVE YEARS DIFFERENT TYPE OF CELLS (MULTIPLE ANALYSIS), ADVANCE MODELS,UP TO DATE CATALUGES 220/240 VOL. THE SUPPLIER IS RESPONSIBLE FOR REPAIR AND MENT. THE DEVICE IF BROCKEN DOWN FOR THREE YEARS AFTER DEL.	1		

03-01-00859	23- SULPHURIC ACID SOL. FOR ALKALINITY REAGENT N(0.5M) VIALS 0.02N CONVOL	1x80 PIECE S		
03-01-00860	24- DI SODIUM SALT ETHYLENE DI-AMINE TETREA ACETIC ACID SOL. (0.02N) CONCENTRATED FOR WATER HARDNESS REAGENT VIALS VOL	1x80 PIECE S		
03-01-00861	25- 4-DIMETHYL AMINO BENZALDHYDE	4x25 g		
03-01-00862	26- FILTER PAPER TYPE GF/C 7.0 cm.	40x100 PACK		
03-01-00863	27- AUTOMATIC BURETTE CAP. 50ml	10		
03-01-00864	28- DROPPING BOTTLES CAP. 500 , 100 ml	20		

2-5-2

CODE NO.	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00865	1- GRADUATED PIPETTE (5 ML)	250		
03-01-00866	2- GRADUATED PIPETTE (10 ML)	250		
03-01-00867	3- = = (1 ML)	100		
03-01-00868	4- = = (25 ML)	50		
03-01-00869	5- GLASS STOPPERED BOTTLES (150 ML VOL)	200		
03-01-00870	6- = = = (250 ML VOL)	200		
03-01-00871	7- STANDERED NESSLER GLASSES TUBES (100 ML VOL)	200		
03-01-00872	8- = = = (50 ML)	100		
03-01-00873	9- JAR SPECIMEN TRANSPARENT BETG BEAKER CAPACITY 1 LITTER (90 x 180 MM)	50		

03-01-00874	10- AUTOMATIC PIPET GRADUATED (1 ML CAPACITY )WITH (1000) DISPOSABLE TIPS(FIXED VOLUME)	20		
03-01-00875	11- COMBINED ELECTRODE FOR TYPYE UNICA PH METER	6		
03-01-00876	12- SPARE ELECTRODE TYPE LTA 100 NO- 0432-101 FOR LABORATORY CONDUETIVITY METER MODEL LF -42	6		
03-01-00877	13- HEATING ELEMENT 1.5 KW FOR 00B WATER DISTILL	5		
03-01-00878	14- COMPORUTOR TUBE 10 ML CAPACITY MOULDED 13.5 mm CELL CELL USED IN LOVIBOND 2000 COMPARATORE	400		
03-01-00879	15- PIPET SAFETY FILTER ( RUBBER ) PIPETTE FILLER AND CONTROLLER	50		
03-01-00880	16- LABORATORY CONDUCTIVITE METER 220/240 VOL 50/60HZ RANGE(0-10000) $\mu$ S/CMWITH TWO SPARE PART ELECTROD AND ALL ACCESSORIES WITH AUTOMATIC TEMPERATURE COMPENSATION REFERENCE TEMP. ADJUSTTABLE TO 20C AND 25C INTEGRATED TEST VALUE MEMORY TDS- AND SALINITY MEASUREMENT WITH THE APPROVED CONTAMINATION PROOF INSTRUMENT IS SUPPLIED WITH INSTRUCTION MANUAL WITH 6 BOTTLES KCI 0.01 MOLAR/L	4		
03-01-00881	17- LABORATORY PH- METER 220/240VOLT RANGE (0-14), BENCH – TOP LAB. WITH PARALLEL TEMPERATURE WITH POWER SUPPLY WITH TWO SPARE PART ELECTRODE AND ALL ACCESSORIES WITH DESK STAND WITH FLEXIBLE ELECTRODE HOLDER WITH CALIBRATION AND MAINTENANCE KIT WITH TECHNICAL BUFFER SOLUTION FOR GEL- ELECTRODES WITH 6 BOTTLES SOL. (250 ml EACH) PH(7.0) ,2 BOTTLES (250ml) KCI - SOL. 3 MOLE/L SATURATED WITH AgCL SWITCH OFF AUTOMATIC AND BAFFER TABLET. ACCURACY +/- 1 RESOLUTION 0.01.	4		
03-01-00882	18- HEATING ELEMENT FOR WATER DISTILL TYPE GFL	4		
03-01-00883	19- WATER DISTILL TYPE STEEL CAPACITY 8L/h AUTOMATIC , PH 5-6.5 , CONDUCTIVITY 1-2 $\mu$ S/CM,TEMPRATURE 25-35 °C POWER 220/240 V 50/60 HZ WITH TWO HEATING ELEMENT SPARE PART AND ALL ACCESSORIES	4		
03-01-00884	20- COMPARATOR DISC FOR LOVIBOND 2000 FOR TESTING RESIDUAL CHLORINE BY ORTHOTOLIDINE RANGE (0-2) PPM	10		
03-01-00885	21- STANDARIZATION TURBIDITY KIT (1-0, 1,10 , 100 , 1000 N.T.U ) USED FOR (HACH) TURB. METER MODEL 2100 A.(GELEX KIT)	10		
03-01-00886	22- FUNNEL COLLS QUARTZ 1CM, 200-850 NM TYPE MTYU NO. 55 85 69 USED WITH CARLZEISS SPECTROPHOTO METER P M 2 A	2		
03-01-00887	23- COPPER SULFATE	5 KG		

03-01-00888	24- DROPPING BOTTLES GLEAR GLASS CAPACITY 50mL	20		
03-01-00889	25- POTASSIUM FLUORIDE A.R	1 KG		
03-01-00890	26- DENSITY HYDROMETERS RANGE (0-15)	10		

2-5-3

1- BEAKERS				
CODE NO.	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00891	1000 ML	10		
03-01-00892	600 ML	20		
03-01-00893	400 ML	20		
03-01-00894	250 ML	20		
03-01-00895	100 ML	10		
2- VOLUMETRIC FLASKS				
03-01-00896	500 ML	20		
03-01-00897	250 ML	20		
03-01-00898	100 ML	20		
03-01-00899	50 ML	20		
03-01-00900	25 ML	20		
CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00901	ACETIC ACID CH <sub>3</sub> COOH = 60.05 MINIMUM ASSAY ( ACIDIMETRIC) 99.5% (CAT NO 27013 CW (BDH))	30 X 25 L		
03-01-00902	SODIUM ACETATE ANHYDROUS MINIMUM ASSAY (eXNa) 98% CH <sub>3</sub> COONa = 82.03 (CAT NO 30104 CT (BDH))	3 X 50 Kg		

2-5-4

CODE	CHEMICAL REAGENT	QTY	UNIT PRICE &	TOTAL PRICE &
03-01-00903	AMMONIUM CHLORIDE NH <sub>4</sub> Cl	2 x 500 gr		
03-01-00906	MEMBRANE FILTER . PORE SIZE : 0.45 CHARGE NO. : 781 2510600531	100 x 100 paper		
03-01-00907	TRYPTONE . CODE L42	2 x 500 gr		
03-01-00908	TRYPTONE WATER . CODE CM 87	2 x 500 gr		
03-01-00909	YEAST EXTRACT AGAR . CODE CM 19	4 x 500 gr		
03-01-00910	MEMBRANE . FAECAL COLIFORM BROTH , CODE : MM 563	2 x 500 gr		
03-01-00911	BRILLIANT GREEN BILE ( 2% ) BROTH , CODE : CM 31	2 x 500 gr		
03-01-00912	M- ENDO AGAR LES , CODE : MM 551	2 x 500 gr		
03-01-00913	SODIUM GLUTAMATE , CODE : L 124	3 x 500 gr		
03-01-00914	MINERALS MODIFIED MEDIUM BASE , CODE : CM 607	3 x 500 gr		
03-01-00915	MACCONKEY BROTH , CODE : CM 5	2 x 500 gr		
03-01-00916	KF STREPTOCOCCUS AGAR CODE CM 701	1 x 500 gr		
03-01-00917	TEST TUBE 50 ML	50		
03-01-00918	TEST TUBE 100 ML	50		

2-6: CHLORINE DRUM WITH GAS

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00920	SUPPLY AND FILLING ( TON ) CHLORINE DRUM WITH CHLORINE GAS	3,000** tons		

\* amended 26 January 2000

\*\* amended 31 January 2000



CHLORINE DRUMS:

IN ACCORDANCE WITH B.S.S 1500-1958 OR ANY INTERNATIONAL STANDARD EQUIVALENT TO BRITISH STANDARD ABOVE, EACH CYLINDER HAVE A CAPACITY OF 1000 KG OF LIQUID CHLORINE OF 99.9% PURETY.

PRINCIPLE DIMENSION:

WATER CAPACITY	840 LITERS
THICKNESS OF STEEL	0.472 INCH
WALL THICKNESS OF PLATE & PLATS	12 mm
OVERALL LENGTH OF THE SYLINDER	2020 mm

MATERILAS :

- A- SHELL PLATE AND PLATE ARE TO BE MADE OUT OF STEEL PLATE
- B- SCREWED CONNECTION MADE FROM ROUND STEEL BAR.
- C- SKIRT MADE FROM STEEL PLATE.
- D- BACKING STRIP MADE FROM STEEL PLATE .
- E- CAPS MADE FROM MOLDABLE CAST RION.
- F- LEADS PIPE MADE FROM CARBON STEEL PIPE.

SCREWED CONNECTION AND CAP:

SCREWED CONNECTION AND CAP THEEADS SHALL BE MADE ACCORDANCE WITH B.S.341, B.S.2779 . THE SCREWED CONNECTION SHALL BE OF 1-DIA, STANDERD TAPER 1.8.14 THEARD PER INCH AND VALVE EXIT THEARD ACCONDANCE TO B.S.P.R.II.3/5 INCH.

VALVES & FUSE PLUGS :

VALVE AND FUSE PLUG SHALL BE APPLIED THE THREADS MADE IN ACCORDANCE WITH B.S.341 & B.S.2779 . EACH CYLINDER SHALL BE COMPLETE WITH TWO VALVES, ONE FOR CHARGING LIQUID AND OTHER FOR DISCHARGING OF THE GAS. EACH OF THESE TWO VALVES SHALL BE ARRANGE FOR PRESSURE RELINING & THE CONNECTION WITH CYLINDER SHALL BE I INCH B.S.B.R.H. THERD TENDERED TAPER 14 THEARD PER INCH, THE SIDE OUTHER OF THE VALVE SHALL BE 5/8 INCH B.S.P.R.H. 14 THREADS PER INCH WITH PROPER COVER.

THE BODY OF THE VALVE SHALL BE MADE OF SUITABLE BRASS ALLOY WITH MONEL METAL SPINDLE . EACH CYLINDER WHILE IN STORAGE OF USE .

THE MATERIAL OF THE FUSE HAS MILTING POINT 90 + 5 C.

PAINTING:

AFTER REMOVING SCALE CLEANING THE SURFACE , ONE COAT OF PRIMER AND ONE OF FINISHINGPAINT SHALL BE APPLIED. THE COLOR OF FINISHED PAIN SHALL BE GOLDEN YELLOW.

NOTES:

- 2 COPIES OF MANUAL INSTRUCTIONS FOR OPERATION AND MAINTENANCE SHALL BE SUBMITTED
- INSPECTION CERTIFICATED FOR THE CHLORINE CYLINDER GAS ISSUED FROM THE MANUFACTAER , SHALL BE SUBMITTED.

2-7:

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00921	ALUM. SULPHATE WITH FOLOWING SPEC.  1- IN SOLUBLE MATER SHALL NOT EXCEED 0.5 % (PURIFIED) . 2- CONTENT OF ALUMINUM AS Al <sub>2</sub> O <sub>3</sub> NOT LESS THAN 16.5 % . 3- FREE ACIDITY NIL. 4- HAVEY METAL AS (pb) SHALL NOT EXCEED 0.02 IN WEIGHT. 5- ARSENIC (As) AS As <sub>2</sub> O <sub>3</sub> SHALL NOT EXCEED 0.005. 6- PH (SOLUTION 5%) NOT DECREASE THAN 3.0. 7- IRON AS Fe SHALL NOT EXCEED 0.01 % IN WEIGHT. 8- AMMONIUM ASLTS AS (NH <sub>3</sub> ) AT MAXIMUM 0.03 % IN WEIGHT. 9- GROUND ALUMINUM SULFATE FOR USE IN DRY FEEDING MACHINES SHALL BE OF SUCH SIZE THAT NOT LESS THAN 90% SHALL PASS A NO. 10 SIERC 1.7mm & 100 % SIERC NO. 4 mm. 10- PACKED IN 50 KG SACKS.	15,300* TON		

\* amended 20 January 2000



2-8:

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00922	POLY ELECTROLYTE CATONIC ALLIED COLLOIDS	120 TON		

2-9: TREATMENT PLANTS AND RES. COMPUTER WORK STATIONS.

CODE	ITEM	QTY		
03-01-00923	PERSONAL COMPUTER ,PANTIUMII  SPEED 333 MHZ , HARD 6 GB , RAM 128 MB  A GP CARD 8 MB RAM  21" SUGA MONITOR  CD ROM 34 X  3.5" FLOPPY DISC DRIVE  64 BIT SOUND CARD + 100 WATT SPEAKER  KEYBOARD + MOUSE	20		
03-01-00924	PRINTER  1- LQ- FX 2170 WITH RIBBONS & HEADS AS ASPARES  2- A4 LASER PRINTER (12 PAGES PER MINUTE )	15  2		
03-01-00925	UPS ,AS REQUIERD FOR 4 WORKING HOURS	20		
03-01-00926	CD WRITER  4 X WRITER  8 X READER  WITH BLANK ROM 650 MB	2    100		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
03-01-00927	COMPUTER, PENTUM , 6 GB H.D , 64 MB RAM , 300 MH	10		
03-01-00928	IBM MOUSE , WITH MOUSE PAD	10		
03-01-00929	CD DRIVE , 34 X.	10		
03-01-00930	MONITR, SVGA	10		
03-01-00931	LAND CARD , ETHERNET 32 BIT	10		
03-01-00932	PRINTER , EPSON , DFX 8000	4		
03-01-00933	PRINTER , EPSON , LQ2170	4		
03-01-00934	DISTRIBUTION BOARD WITH 10 CONNECTIONS , HUB	2		
03-01-00935	DISTRIBUTION CABLE , 10 M	5		
03-01-00936	DISTRIBUTION CABLE , 3 M	10		
03-01-00937	DISTRIBUTION CABLE , 50 M	2		
03-01-00938	MULTIMEDIA CREATIVE	3		
03-01-00939	POWER SUPPLY , 23V,900VA	4		
03-01-00940	RIBBONS FOR (DFX-8000)	200		
03-01-00941	PAPER FOR REPORTS,THREE COPIES , 36.5CMWIDE,28CM LONG	50 BOX		
03-01-00942	PAPER FOR REPORTS,TWO COPIES , 36.5CMWIDE,28CM LONG	100 BOX		
03-01-00943	PAPER FOR REPORTS,ONE COPY , 36.5CMWIDE,28CM LONG	300 BOX		
03-01-00944	BILL PAPERS, 30.5CMWIDE,28CM LONG	400 BOX		
03-01-00945	PAPER CUTTING MACHINE, GIGH DETACHER 710	2		

2-10: CONTROL OF WATER LOSSES IN THE WATER SYSTEM OF BAGHDAD

2-10-1

CODE	ITEM	qty	UNIT PRICE &	TOTAL PRICE &
	A- SCOPE OF WORK 1- DOCUMENTATION - COLLECTION OF DETAILED MAPS OF TRUNKS AND DISTRIBUTOR NETWORK CONTAINING DIAMETERS, LENGTHS, VALVES, PUMPING STATIONS AND OTHER INSTALLATIONS IN THE NETWORK. 2- CALCULATION STRUCTURE PLAN-BASED ON THE DOCUMENTATION OF THE NETWORK . A DIGITIZED MODEL OF THE NETWORK SHOULD BE IMPLEMENTED ON THE COMPUTER. THIS CALCULATION STRUCTURE PLAN CONTAINS HYDRAULIC NETWORK NODES AND PIPE CONNECTING THESE NODES AS ABASES FOR FURTHER PROCESSING . 3- HYDRAULIC SIMULATION-BASED ON HYDRAULIC MODEL AND THE ALLOCATED CONSUMPTION AND PRODUCTION FIGURES . 4- OPTIMIZATION OF HYDRAULIC OPERATION BASED ON THE IMPROVED HYDRAULIC MODEL . 5-TRAINING OF BWA-STAFF			
	B- SCOPE OF SUPPLY 1- HARDWARE			
03-01-00946	A- DATA SERVER PENTIUM PRO 200 MMX 128 MB MEMORY 12 GB DISK STREAMER FOR BACK - UPS SVGA COLOUR SCREEN 15" CD ROM DRIVE MOUSE KEYBOARD ETHERNET NETWORK BOARD WINDOWS NT SERVER OPERATING SYSTEM	1		
03-01-00947	B- STAND - ALONE WORK STATION AS ABOVE BUT 64 MB MEMORY AND INCLUDING MICROSOFT ANIVIRUS	6		
03-01-00948	C- COMMUNICATION LINKS MODEM 33600 BANDS	1		
03-01-00949	D- PLOTTER AO PLOTTER COLOUR INKJET HPGL COMPATIBLE	1		
03-01-00950	E- PRINTER A4 LASER PRINTER (12 PAGES PER MINUTE )	1		
03-01-00951	F- SCANNING DEVICE A1 SCANNER 400 bpi	1		
	G- SUPPLIES			
03-01-00952	PLOTTER PAPER (roll)	20		
03-01-00953	DISKETTES	100		
03-01-00954	STREAMER TAPES	30		
03-01-00955	PLOTTER INK CARTRIDGES	100		
03-01-00956	CARTRIDGES FOR LASER PRINTER	20		
03-01-00957	A4 PAPER FOR PRINTER	20000		
03-01-00958	NETWORK CABLES	5		

2-10-2

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
	2- SOFTWARE			
03-01-00959	A- SOFTWARE PRODUCT TO MANAGE THE NETWORK DATA BASE TO BE CUSTOMIZED TO MEET BWA'S NEEDS.	3		
03-01-00960	B- DATA SERVER FOR THE WORK STATION	1		
03-01-00961	C- RELATIONAL DATA BASE MANAGEMENT SYSTEM (RDBMS) INCLUDING 1 SERVER LICENSE AND 4 USER LICENSES .	1		
03-01-00962	D- SOFTWARE PROGRAM TO COMPUTE PRESSURE AND FLOW VALVES .	1		
03-01-00963	E- SCANNING RASTER DATA MANIPULATION AND MANAGEMENT SOFT WARE COMPATIBLE WITH THE SCANNING DEVICE PROPOSED .	1		
	3- SUPPLY OF INSTRUMENTS			
03-01-00964	A- PIPE LOCATOR	2		
03-01-00965	B- PRESSURE METER WITH TRANSMITTER	100		
03-01-00966	C- LEVEL METER WITH TRANSMITTER	20		
03-01-00967	D- ULTRA SONIC FLOW METER WITH TRANSMITTER	100		
03-01-00968	E- GAS DETECTOR ( CO , H2S , CH4 , O2 )	4		
03-01-00969	F- RADIO / MODEMS WITH DATA COLLECTOR	40		
03-01-00970	G- OVER HEAD PROJECTOR CONNECTED TO MONITOR	2		
03-01-00971	H- SLAVE MONITORS	4		

## 2-11: PVC PIPES AND FITTING

CODE	ITEM	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-00972	P.V.C VALVE 2" , DIMENSION : 63 NW 50	20		
03-01-00973	P.V.C. T CONNECTION , DIMENSION : 63 NW 50	25		
03-01-00974	P.V.C. ELBOW 90° , DIMENSION : 63 NW 50	35		
03-01-00975	REDUCER BUSH ( P.V.C ) , DIMENSION : 110 - 90	30		
03-01-00976	P.V.C. ELBOW 90° , DIMENSION : 110 NW 100	30		
03-01-00977	P.V.C. T CONNECTION , DIMENSION : 110 NW 100	30		
03-01-00978	P.V.C. FLANGE , DIMENSION : 110 NW 100	15		
03-01-00979	VALVE DIMENSION : 6"	10		
03-01-00980	P.V.C. UNION , DIMENSION : 63 NW 50	60		
03-01-00981	P.V.C. ELBOW 120° , DIMENSION : 63 NW 50	4		
03-01-00982	P.V.C. PIPE , DIMENSION : 110 NW 100	60 m		
03-01-00983	P.V.C. PIPE , DIMENSION : 63 NW 50	74 m		
03-01-00984	P.V.C. BUSH , DIMENSION : 63 NW 50	30		
03-01-00985	P.V.C. ELBOW 90° , DIMENSION : 2"	3		
03-01-00986	P.V.C. T CONNECTION , DIMENSION : 2"	10		
03-01-00987	P.V.C. PIPE , DIMENSION : 2"	25 m		
03-01-00988	VALVE P.V.C. , DIMENSION : 110 NW 100	10		
03-01-00989	P.V.C. BALL VALVE , DIMENSION : 63 NW 50	2		
03-01-00990	P.V.C. PIPE , 63 NW 50	460 m		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	SPARE PART LIST FOR 7-NISSAN PROJECT PVC FITTINGS			
03-01-00991	REDUCING BUSH , SIZE : 110 - 90	8		
03-01-00992	REDUCING BUSH , SIZE : 90 - 63	8		
03-01-00993	REDUCING BUSH , SIZE : 1.5" - 1"	3		
03-01-00994	REDUCING BUSH , SIZE : 2" - 1.5"	1		
03-01-00995	REDUCING BUSH , SIZE : 2" - 3/4"	2		
03-01-00996	BUSH , SIZE : 1"	3		
03-01-00997	PIPE , SIZE : 3/4"	6 m		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	SPARE PART LIST FOR 7-NISSAN PROJECT PVC FITTINGS			
03-01-00998	DIAPHRAGM VALVES , SIZE : DA 63 , NW 50	8		
03-01-00999	DOUBLE UNION BALL VALVES , SIZE: d 32 , DN 25 1"	3		
03-01-01000	DOUBLE UNION BALL VALVES , SIZE: d 25 , DN 20 3/4"	5		
03-01-01001	TEE , SIZE : 1.5"	10		
03-01-01002	TEE , SIZE : DA 63 , NW 50	15		
03-01-01003	TEE , SIZE : DA 110 , NW 100	15		
03-01-01004	TEE , SIZE: BS 4346/1 1.5"	4		
03-01-01005	TEE , SIZE : NW 20 , 25 mm	4		
03-01-01006	ELBOW 90° , SIZE : DA 63 , NW 50	15		
03-01-01007	ELBOW 90° , SIZE : 1.5"	8		
03-01-01008	ELBOW 45° , SIZE : 3/4"	5		
03-01-01009	ELBOW 90° , SIZE : DA 110 , NW 100	15		
03-01-01010	ELBOW 90° , SIZE : NW 20 , 25 mm	6		
03-01-01011	UNION , SIZE : PVC1 NW50	10		
03-01-01012	UNION , SIZE: 1"	10		
03-01-01013	UNION , SIZE: 1.5" PVC1	3		
03-01-01014	UNION , SIZE : NW20 , 25 mm	2		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	SPARE PART LIST FOR 7-NISSAN PROJECT PVC FITTINGS			
03-01-01015	PIPE PVC DIA 63-110-140	50 m		
03-01-01016	TEE 90 DIA 63-110-140-160	10		
03-01-01017	ELBOW 90 DIA 63-110-140-160	10		
03-01-01018	FLANGE ADAPTERS DIA 63-100-110-140-160	10		
03-01-01019	BLACKING FLANGE DIA 110-140-160	10		
03-01-01020	FLANGE ADAPTER ( WITH "O" RING SROOVE) 140-160	10		
03-01-01021	UNION NUT DIA 63	25		
03-01-01022	UNION DIA 50-63-110	20		
03-01-01023	REDUCING BUSH DIA 140 - 110 110 - 90 63 - 50	5 5 5		
03-01-01024	ELBOW DIA 110 - 90 90 - 63	5 5		
03-01-01025	PRESSURE RELIEF VALVE DIA 63	8		
03-01-01026	ISOLATING VALVE DIA 63	20		
03-01-01027	ISOLATING VALVE DIA 50	10		

03-01-01028	VALVE ADAPTER UNION DIA 63	20		
03-01-01029	ELBOW 45 DIA 110-140-160	5		
03-01-01030	SOCKET DIA 63-110-140-160	10		
03-01-01031	TANGIT ( 275) GRM	20		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	P.V.C. PIPES AND FITTINGS			
	DOUBLE UNION BALL VALVE PLAIN SOCKET			
03-01-01032	1"	10		
03-01-01033	1.5"	15		
03-01-01034	2"	25		
03-01-01035	2.5"	25		
03-01-01036	3"	25		
03-01-01037	3.5"	25		
03-01-01038	DOUBLE UNION BALL VALVE THREADED SOCKET			
03-01-01039	1.5"	25		
03-01-01040	2"	25		
03-01-01041	2.5"	25		
03-01-01042	3"	25		
	DOUBLE UNION BALL VALVE FLANGED			
03-01-01043	1"	5		
03-01-01044	1.5"	10		
03-01-01045	2"	15		
03-01-01046	2.5"	15		
03-01-01047	3"	15		
	CHECK VALVE			
03-01-01048	1"	10		
03-01-01049	1.5"	15		
03-01-01050	2"	25		
03-01-01051	2.5"	25		
03-01-01052	3"	25		
03-01-01053	3.5"	25		
	DIAPHRAGM VALVE FLANG TYPE			
03-01-01054	2"	25		
03-01-01055	2.5"	25		
03-01-01056	3"	25		
03-01-01057	3.5"	25		
	ANGLE SEAT VALVE PLAM SOCKS			
03-01-01058	1"	10		
03-01-01059	1.25"	10		
03-01-01060	1.5"	10		
03-01-01061	2"	10		
03-01-01062	2.25"	10		
03-01-01063	2.5"	10		
03-01-01064	3"	10		
	SEDIMENT STRAINERS			
03-01-01065	1"	10		
03-01-01066	1.25"	10		
03-01-01067	1.5"	10		
03-01-01068	2"	10		
03-01-01069	2.25"	10		
03-01-01070	2.5"	10		
03-01-01071	3"	10		
03-01-01072	3.5"	10		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
PIPE FITTING A- SOCKET PLAIN				
03-01-01073	1"	30		
03-01-01074	1.5"	30		
03-01-01075	2"	30		
03-01-01076	2.5"	30		
03-01-01077	3"	30		
03-01-01078	3.5"	30		
ELBOWS 90° PLAIN				
03-01-01079	1"	30		
03-01-01080	1.5"	30		
03-01-01081	2"	30		
03-01-01082	2.5"	30		
03-01-01083	3"	30		
03-01-01084	3.5"	30		
ELBOWS 45° PLAIN				
03-01-01085	1"	10		
03-01-01086	1.5"	10		
03-01-01087	2"	10		

03-01-01088	2.5"	10		
03-01-01089	3"	10		
03-01-01090	3.5"	10		
UNION PLAIN				
03-01-01091	1"	30		
03-01-01092	1.5"	30		
03-01-01093	2"	30		
03-01-01094	2.5"	30		
03-01-01095	3"	30		
03-01-01096	3.5"	30		
TEE 90° PLAIN				
03-01-01097	1"	25		
03-01-01098	1.5"	25		
03-01-01099	2"	25		
03-01-01100	2.5"	25		
03-01-01101	3"	25		
03-01-01102	3.5"	25		
BEND 90° SHORT REDUCE PLAIN				
03-01-01103	1"	10		
03-01-01104	1.5"	10		
03-01-01105	2"	10		
03-01-01106	2.5"	10		
03-01-01107	3"	10		
03-01-01108	3.5"	10		
HOSE ADAPTORS				
03-01-01109	0.5"	10		
03-01-01110	0.75"	10		
03-01-01111	1"	10		
FLANG , FULL FACE FLANG PLAIN				
03-01-01112	0.75"	15		
03-01-01113	1"	15		
03-01-01114	1.5"	15		
03-01-01115	2"	15		
03-01-01116	2.5"	15		
03-01-01117	3"	15		
03-01-01118	3.5"	15		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
03-01-01119	VARIABLE AREA FLOW METERS 2" , FLOW 400-4000 L/HR	15		
03-01-01120	SOLVENT CEMENT 0.5 L	50		
03-01-01121	CLEANER 0.5 L	25		
03-01-01122	PTFE THREAD - WARP TAPE	500		
03-01-01123	CHAIN WRENCH	8		
03-01-01124	STRAP WRENCH	8		
	PIPS			
03-01-01125	1"	200 mm		
03-01-01126	1.5"	200 mm		
03-01-01127	2"	200 mm		
03-01-01128	2.5"	200 mm		
03-01-01129	3"	200 mm		
03-01-01130	3.5"	200 mm		

2-11: DUCTILE IRON PIPES AND FITTINGS

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
	SUPPLY OF SPIGOT AND SOCKET DUCTILE IRON PIPES ACCORDING TO ISO STANDARD 2531 TYPE K=9 WITH THE FOLLOWING TECHNICAL SPECIFICATIONS. 1- INTERNAL PRESSURE PROOF TEST = 50 BARS 2- WALL THICKNESS SHOULD BE ACCORDING TO THE FOLLOWING FORMULA : $e = 5.8 + 0.003 ND$ WHERE , e = WALL THICKNESS IN (mm) ND = NOMINAL DIAMETER (mm) 3- LENGTH OF EACH PIPE SEGMENT SHOULD BE 6 METERS 4- PIPES OF PUSH JOINT. 5- PIPES SHOULD HAVE ASPUN CEMENT MORTER INSIDE LINING AND OUT SIDE BITUMEN COATING. - SCOPE OF SUPPLY :			
03-01-01131	a- DUCTILE IRON PIPES WITH NOMINAL DIAMETER OF 100mm INCLUDING RUBBER JOINTS.	25,000* M		
03-01-01132	b- DITTO. WITH NOMINAL DIAMETER OF 150mm INCLUDING RUBBER JOINTS.	75,000* M		
03-01-01133	c- DITTO. WITH NOMINAL DIAMETER OF 200 mm INCLUDING RUBBER JOINTS.	25,000* M		
03-01-01134	SUPPLY OF DUCTILE IRON FITTINGS SUITABLE FOR DUCTILE IRON PIPES ACCORDING TO ISO STANDARD 2531 WITH THE FOLLOWING TECHNICAL SPECIFICATIONS a- FLANGES SHOULD BE OF TYPE NP 16. b- FITTINGS SHOULD HAVE A CEMENT MORTER INSIDE DINING AND OUT SIDE BITUMEN COATING. c- HYDROSTATIC LEAK-TIEGHTNESS TEST PRESSURE SHOULD BE NOT LESS THEN 25 BARS. d- WALL THICKNESS SHOULD BE ACCORDING TO THE FOLLOWING FORMULA. $e = 7 + 0.014 ND$ FOR TEES. $e = 6 + 0.012 ND$ FOR OTHER FITTINGS. - SCOPE OF SUPPLY THE SCOPE OF SUPPLY INCLUDE ALL NECESSARY RUBBER JOINTS, GASKITS, WASHERS, BOLTS , NUTS AND GLANDS, ALL SOCKET JOINTS TO BE MECHANICAL.			
03-01-01135	a- DOUBLE FLANGE BEND -90 °- Nominal Diameter (mm) : 100	500* PCS.		
03-01-01136	b- DITTO . Nominal Diameter (mm): 150	250*		
03-01-01137	c- DITTO Nominal Diameter (mm) : 200	125*		

\* amended 21 February 2000



03-01-01138	d- DOUBLE SOCKET BEND --90 °- Nominal Diameter (mm) : 100	1250*		
03-01-01139	e- DITTO Nominal Diameter (mm): 150	750*		
03-01-01140	f- DITTO Nominal Diameter (mm) : 200	250*		
03-01-01141	g- DOUBLE FLANGE BEND 45° Nominal Diameter (mm) : 100	250*		
03-01-01142	h- DITTO Nominal Diameter (mm) : 150	250*		
03-01-01143	i- FLANGE SPIGOT Nominal Diameter (mm) : 100	750*		
03-01-01144	j- FLANGE SOCKET Nominal Diameter (mm) : 150	750*		
03-01-01145	k- ALL SOCKET TEE 150X100mm	500*		
03-01-01146	l- ALL SOCKET TEE 100X100mm	500*		
03-01-01147	m- DOUBLE FLANGE REDUCER 150X100	250*		

CODE	ITEM	QTY	UNIT PRICE &	TOTAL PRICE &
03-01-01148	PC 486 33 MH2 16MRAM SVGA MONITOR 500 MB(min) HD	35		
03-01-01149	SLIP PRINTER FOR CASH WITH PUNCHING BILLS AND PAPER ROLE O/P	35		
03-01-01150	PC PENTIUM 200 MH2 64MRAM SVGA MONITOR 2 GB HD	6		
03-01-01151	LQ FX 2170 PRINTER	5		
03-01-01152	CASH COUNTING MACHINE PLUS P329	4		
03-01-01153	BOX CONTAINS PAPER A3 2000 PAPER SINGLE COPY	75		
03-01-01154	BOX CONTAINS PAPER A3 1000 PAPER 2 COPIES	75		
03-01-01155	BOX CONTAINING PAPER A3 700 PAPER 3 COPIES	50		

**SECTION 3 – MACHINERY & EQUIPMENT**

<b>TOTAL PRICE \$</b>	<b><u>UNIT PRICE \$</u></b>	<b>QTY.</b>	<b><u>ITEM</u></b>	<b>CODE NO</b>
		500	GARBAGE COLLECTING VEHICLE	03-01-01156
		15	STREET SWEEPERS	03-01-01157
		40	JETTING VEHICLE	03-01-01158
		50	CESSPIT EMPTIER	03-01-01159
		19	EXCAVATORS	03-01-01160
		40	WATER TANKER	03-01-01161
		45	SHOVELS FOR NETWORKS MAINTENANCE	03-01-01162 03-01-01163 03-01-01164
		90	TIPPERS	03-01-01165
		30	GRADERS	03-01-01166
		18	CRAWLER DOZER	03-01-01167
		32	ROLLER	03-01-01168 - 03-01-01171
		30	TRACTORS	03-01-01172
		30	PORTABLE WATER PUMP DIESEL OPERATED	03-01-01173- 03-01-01175
		205	FIELD VEHICLES	03-01-01176 - 03-01-01180
		4	WHEEL STREET PAVERS	03-01-01181
		4*	ASPHALT HOT RECYCLER	03-01-01182
		25	CONCRETE MIXING TRUCK	03-01-01183
		4	POWER CURBER MACHINE	03-01-01184
		2	ASPHALT PLANT	03-01-01185
		20	STREET MAINTENANCE TRUCK	03-01-01186
		20	CRANE EQUIPPED TRUCK	03-01-01187
		90	TIERS	03-01-01188- 03-01-01189
		6	LOW LOADER	03-01-01190- 03-01-01191
		8	HYDRAULIC TRUCK CRANE	03-01-01192- 03-01-01196
		6	DIESEL WELDING MACHINE	03-01-01197
		3	CRUSHERS	03-01-01198
		LUMP	CRUSHERS REQUIREMENTS & SPARES	03-01-01199- 03-01-01203
		8	ROAD MARKING MACHINE	03-01-01204- 03-01-01205
		1000 KG	LEAKAGE TREATMENT MATERIALS	03-01-01206- 03-01-01207
		4	COLD MILLING MACHINE	03-01-01208- 03-01-01210
		LUMP	TRAFFIC ENGINEERING PROGRAMS	03-01-01211
		1500 KG	EPOXY FOR ROAD STUDS AND CATEYES	03-01-01212
		4	LEAKAGE TREATMENT EQUIPMENTS	03-01-01213
		2	GUARD RAILS MAINTENANCE MOBILE WORKSHOP	03-01-01214

\* Amended 24 March 2000

		25KM,6250 BLADE PIECES	GUARD RAILS	03-01-01215
		LUMP	TRAFFIC LIGHTS REQUIREMENTS	03-01-01216 - 03-01-01221
		3	CONCRETE PATCHING PLANT	03-01-01222 - 03-01-01223
		2	CONCRETE PUMP TRUCK	03-01-01224
		6	CONCRETE CASTING MACHINE	03-01-01225 - 03-01-01227
		4	HYDRAULIC CLAMP MACHINE	03-01-01228
		6	SMALL CONCRETE LOADER	03-01-01229

**SECTION 4 – SPARE PARTS FOR MACHINERY & EQUIPMENT**

TOTAL PRICE \$	QTY.	ITEM	CODE NO
	<u>LUMP</u>	SPARE PARTS FOR VOLVO N12	03-01-01230 - 03-01-01321
	<u>LUMP</u>	SPARE PARTS FOR VOLVO N10	03-01-01322 - 03-01-01425
	<u>LUMP</u>	SPARE PARTS FOR COMATSO W30	03-01-01426 - 03-01-01488
	<u>LUMP</u>	SPARE PARTS FOR LYLAND CLYDESIDAL	03-01-01489 - 03-01-01539
	<u>LUMP</u>	SPARE PARTS FOR LYLAND TRAIN	03-01-01540 - 03-01-01557

**SECTION 1 – MATERIALS & EQUIPMENT FOR SEWAGE WORK**

TOTAL PRICE \$	<u>UNIT PRICE \$</u>	QTY.	ITEM	CODE NO
		202	VERTICAL PUMPS	03-01-00001 - 03-01-00033
		5	CENTRIFUGAL PUMPS	03-01-00034 - 03-01-00035
		317	MOTORS	03-01-00036 - 03-01-00088
		75	GEAR BOX	03-01-00089 - 03-01-00097
		1040	CONTACTOR	03-01-00098 - 03-01-00198
		665	OVERLOAD	03-01-00120 - 03-01-00135
		806	CIRCUIT BREAKERS	03-01-00136 - 03-01-00159
		LUMP	ELECTRICAL MATERIALS	03-01-00160 - 03-01-00171
		52	TRANSFORMERS	03-01-00172 - 03-01-00173
		1916	BOLBEARINGS	03-01-00174 - 03-01-00248
		LUMP	MATERIALS FOR MECHANICAL USE	03-01-00249 - 03-01-00304
		36	GENERATORS	03-01-00305 - 03-01-00308
		20	WEEL POINT SYSTEM	03-01-00309
		6	GETTING EQUIPMENT FOR WEEL POINT SYSTEM	03-01-00310
		103	SUBMERGIBLE PUMP	03-01-00311 - 03-01-00316

		15	COMPRESSORS	03-01-00317 - 03-01-00320
		500	VENTILATORS	03-01-00321

**SECTION 2 – MATERIALS & EQUIPMENT FOR WATER TREATMENT PLANTS & NETWORK**

TOTAL PRICE \$	<u>UNIT PRICE \$</u>	QTY.	<u>ITEM</u>	CODE NO
		199	PUMPS, WITH MOTORS & STARTERS&SPARE PARTS FOR WATER TREATMENT PLANTS	03-01-00322 - 03-01-00352
		LUMP	SPARE PARTS FOR WATER TREATMENT PLANTS , WEIR	03-01-00353 - 03-01-00573
		LUMP	SPARE PARTS FOR WATER TREATMENT PLANTS ,IDP	03-01-00574 - 03-01-00746
		LUMP	STARTERS	03-01-00790 - 03-01-00811
		LUMP	ELECTRIC SWITCH BOARDS , CIRCUIT BREAKERS	03-01-00812 - 03-01-00836
		LUMP	LABORATORY KITS & EQUIPMENT	03-01-00837 - 03-01-00918
		1500 TON	CHLORINE	03-01-00920
		15,300* TON	ALUMINUM SULPHATE	03-01-00921
		120 TON	POLY ELECTROLIGHT	03-01-00922
		LUMP	COMPUTER WORKING STATIONS	03-01-00923 - 03-01-00945 03-01-01148- 03-01-01155
		LUMP	CONTROL OF WATER LOSSES IN THE WATER SYSTEM	03-01-00946 - 03-01-00971
		LUMP	PVC. PIPES & FITTINGS	03-01-00972 - 03-01-01130
		25000M	DUCTILE PIPES	03-01-01131 - 03-01-01133
		1250	DUCTILE FITTINGS	03-01-01134 - 03-01-01147

\* amended 20 January 2000

**SECTION 3: MACHINERY AND EQUIPMENT  
3-1: GARBAGE COLLECTING VEHICLE**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01156	<p align="center">CHASSIS CAB : 4 X 2 ENGINE: 6 CYLINDER, 4 STROKE. TURBOCHARGER POWER: NOT LESS THAN 240 HP. CLUTCH : SINGLE PLATE GEAR BOX : 8 SPEED G. V. W : NOT LESS THAN 19 TON PAYLOAD : NOT LESS THAN 11 TON TIER SIZE : 1200 X 20 DISK TYPE CAPACITY : 16 m<sup>3</sup> COMPACT RATIO: 6:1 WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	500

**3-2: STREET SWEEPERS**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01157	<p align="center">G.V.W: 14-16 TON. DIESEL ENGINE 4 CYLINDERS DIRECT INJECTION PUMPS. POWER 80-110 HP AUXILIARY ENGINE : 4 CYLINDER, WATER COOLED , DIRECT INJECTION PUMP, POWER 80-100HP <u>BODY:</u> CONTAINER CAP: 8-10 M<sup>3</sup> SWEEPING SPEED : 0-20 KM/H AIRFLOW CAP: 8-10 M<sup>3</sup> /H. WATER CONTAINER VOLUME : 1-1250 M<sup>3</sup> CENTER BRUSH: 400 MM Ø X 1500 ML MAX. SUCTION DEPTH : 200 MM WITH REAR HOSE FOR SUCTION MAX. SWEEPING WIDTH NOT LESS THAN 3500 MM WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	15*

**3-3: JETTING VEHICLES**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01158	<p align="center">CHASSIS CAB : 4 X 2 ENGINE: 6 CYLINDER, 4 STROKE. TURBOCHARGER POWER: NOT LESS THAN 200 HP. CLUTCH : SINGLE PLATE GEAR BOX : 8 SPEED G. V. W : NOT LESS THAN 19 TON PAYLOAD : NOT LESS THAN 12 TON TIER SIZE : 1200 X 20 DISK TYPE TANK CAPACITY : 9000 L PUMP PRES. NOT LESS THAN 200 BAR. FLOW 300 L/MIN. WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	40

\* amended 31 January 2000



**3-7: SHOVELS FOR NETWORKS MAINTENANCE (WHEEL LOADER)**

CODE NO.	ITEM	QTY
03-01-01162	OPERATING WEIGHT : 5-6 TON DIESEL ENGINES DIRECT INJECTION PUMP. POWER: 50-70 HP. RING SIZE: 20 VOLTAGE: 24 V BUCKET CAPACITY : 0.7-1.00 m <sup>3</sup> WITH SPARE PARTS FOR TWO YEARS OPERATION	10
03-01-01163	OPERATING WEIGHT : 12 - 13 TON POWER: 140-150 HP ENGINE: 6 CYLINDER WITH TURBOCHARGER TIER SIZE : 20.5X25 BUCKET CAPACITY : 1.8- 2.2 m <sup>3</sup> WITH SPARE PARTS FOR TWO YEARS OPERATION	15
03-01-01164	WEIGHT: (22-25) TON. SIZE: 4-4.5 CUBIC METER ENGINE POWER: NOT LESS THAN 250 HP. WITH SPARE PARTS FOR TWO YEARS OPERATION	20

**3-8: TIPPERS**

CODE NO.	ITEM	QTY
03-01-01165	CHASSIS CAB : 6 X 4 ENGINE : 4- STROKE , 6 CYLINDER IN LINE TURBOCHARGER POWER: NOT LESS THAN 280 HP. CLUTCH : SINGLE PLATE GEAR BOX : 9 SPEED G. V. W : NOT LESS THAN 30 TON PAYLOAD : NOT LESS THAN 20 TON TIER SIZE : 1200 X 20 DISK TYPE TIPPER CAPACITY : 16m <sup>3</sup> WITH SPARE PARTS FOR TWO YEARS OPERATION	90

**3-9: GRADERS**

CODE NO.	ITEM	QTY
03-01-01166	OPERATING WEIGHT : 11-13 TON ENGINE POWER: 135-155 HP BLADE DIMENSION: NOT LESS THAN (LENGTH,HIGHT,THICKNESS) (3710,600,19)MM CUTTING ANGEL: NOT LESS THAN 35 DEGREE TIRE SIZE : 1300X24 STARTING MOTOR, ALTERNATOR :24 V WITH SPARE PARTS FOR TWO YEARS OPERATION	30

**3-10: CRAWLER DOZER**

CODE NO.	ITEM	QTY
03-01-01167	OPERATING WEIGHT : 35000-40000 KG ENGINE POWER: 243 KW DIESEL ENGINE DIRECT INJECTION PUMP. POWER: 50-70 HP. WITH SPARE PARTS FOR TWO YEARS OPERATION	18

**3-11: ROLLERS**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01168	WHEEL ROLLERS OPERATING WEIGHT UP TO 10.8 TON ROLLING WIDTH: 1800 MM NO. OF TIERS :7 WITH SPARE PARTS FOR TWO YEARS OPERATION	4
03-01-01169	STEEL ROLLER DOUBLE DRUM VIBRATING ROLLER OPERATING WEIGHT : NOT LESS THAN 7.2-8.2 TON DRUM WIDTH : NOT LESS THAN 1500 MM WITH SPARE PARTS FOR TWO YEARS OPERATION	4
03-01-01170	SMALL STEEL ROLLERS WITH SPARE PARTS FOR TWO YEARS OPERATION	18
03-01-01171	SHEEP FOOT ROLLERS, WITH VIBRATORY SYSTEM DRUM WIDTH : 1676 MM NO. OF PADS: 96 PAD HEIGHT: 90MM PAD FACE AREA: 90CM SQUARE ENGINE: 4 CYLINDER , TURBOCHARGER, DIESEL ENGINE , NET POWER : 95-105 HP. OPERATING WEIGHT : 7000-7250 KG WITH SPARE PARTS FOR TWO YEARS OPERATION	6

**3-12: TRACTORS**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01172	WEIGHT: 3700-4000 KG ENGINE: 4 CYLINDER, IN LINE, 4 STROKE DIESEL , DIRECT FUEL INJECTING PUMP COOLING SYSTEM: LIQUID RADIATOR FLY WHEEL HP : 80-90 HP GEAR BOX: 4 LOW + 4 HIGH + 1 REV. CLUTCH: DRY FRICTION SINGLE DISK Ø NOT LESS THAN 340 MM AXLE: SINGLE POWER TAKE P.T.O WITH TWO SPEED + OUT PUT SHAFT HYDRAULIC SYSTEM FOR LIFTING THE BODY LIFTING CAPACITY: 4000 KG FRONT TIER: 750 X 16 REAR TIER : 14 X 28 BODY CAPACITY : 4-5 CM <sup>3</sup> WITH SPARE PARTS FOR TWO YEARS OPERATION	30

**3-13: PORTABLE WATER PUMPS DIESEL OPERATED**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01173	PUMP SIZE SUCTION X DISCHARGE 100X100 MM	10
03-01-01174	PUMP SIZE SUCTION X DISCHARGE 150X150 MM	10
03-01-01175	PUMP SIZE SUCTION X DISCHARGE 200X200 MM	10



**3-14: FIELD VEHICLES ,  
WITH SPARE PARTS FOR TWO YEARS OPERATION**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01176	FIELD VEHICLE 2 WHEEL DRIVE 2 CABIN	70
03-01-01177	STATION , 4 WHEEL DRIVE, 4 DOORS	90
03-01-01178	2 CABIN , SEATING CAPACITY : 6 , PAY LOAD :1750- 2000 KG, GVW: 4300-4600KG, ENGINE POWER: 75-80 HP., BODY SIZE: L=3400-3600 MM, W= 1700-1900MM, H= 350-450MM	20
03-01-01179	CITY BUS: SEATING CAPACITY: 31 RIDING CAPACITY :60 WHEEL BASE: 5M, OVER ALL DIMENSION : 10000X2500X3000 MM GVW: 12200KG, ENGIN: 118KW	10
03-01-01180	CITY BUS: SEATING CAPACITY:24 OVER ALL DIMENSION : 7000X200X2800 MM ENGINE: 92KW	15

**3-15:WHEEL STREET PAVERS**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01181	BASIC WIDTH 2.5- 5 M MAX. PAVING WIDTH WITH EXTENSION : 8M ENGINE OUT PUT : NOT LESS THAN 87 KW LAY DOWN RATE : UP TO 600 TON/H. PAVING DEPTH : UP TO 300MM HOPPER CAPACITY: 12TON ALL FUNCTIONS AUTOMATIC WITH SENSORS (TAMPING, VIBRATING, HEATED, SLIDING(SCREED))	4

**3-16:ASPHALT HOT RECYCLERS  
WITH SPARE PARTS FOR TWO YEARS OPERATION**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01182		1

**3-17: CONCRETE MIXING TRUCK**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01183	CHASSIS CAB : 6 X 4 ENGINE : 4- STROKE , 6 CYLINDER IN LINE TURBOCHARGER, WATER COOLING SYSTEM POWER : NOT LESS THAN 280 HP. CLUTCH : SINGLE PLATE DOUBLE AXLE GEAR BOX : 9 SPEED TIRE SIZE : 1200 X 20 DISK TYPE. MIXING: BY HYDRAULIC SYSTEM OR AUXILIARY ENGINE MIXER CAPACITY : NOT LESS THAN 6 M <sup>3</sup> MIXER TO BE WITH COVERING PLATE. WITH SPARE PARTS FOR TWO YEARS OPERATION	25

**3-18: POWER CURBER MACHINE**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01184	<p align="center">CURB AND GUTTER MACHINE CRAWLER TYPE WITH 3 TRACKS SUITABLE FOR ROADS 6M WIDE EQUIPPED WITH MOLDS FOR CURB,BARRIER , TRENCH, TO BE EASY CHANGE TYPE. SUITABLE FOR PAVING ROADS 6M WIDE WITH CONCERT SUPPLIED WITH CONCRETE VIA BELT CONVEYER (SWING) AND NOT WITH AUGER CONVEYOR EQUIPPED WITH TRIMMER TO CUT SOIL.(DEPTH UP TO 100MM ). WORKING WITH COMPLETE HYDRAULIC SYSTEM AND ELECTRONIC SENSORS FOR ALL ACTIVITIES ONE SINGLE PASS TYPE (CUTTING SOIL AND CASTING CONCRETE IN ONE TIME). SUITABLE FOR CASTING STREET SHOULDERS UP TO 3 M HEIGHT AND ALIGNMENT CONTROLLED BY ELECTRONIC SENSORS WORKING WIDTH: 2-6M MAX. PAVING THICKNESS: 450 MM ENGINE OUT PUT: 123 KW/167 PS WEIGH: 13-27 TON. DEPENDING ON JOB.(CURBING OR PAVING). FOR CASTING CURBS UP TO 630 MM HEIGHT, AND GUTTER UP TO 800 MM AND BARRIER UP TO 900 MM ( ADJUSTABLE) DIESEL ENGINE RATTED AT 84.5 HP.,2500 RPM EQUIPPED WITH WATER TANK 300 L. HIGH PRESSURE WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	4

**3-19: ASPHALT PLANTS:**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01185	<p align="center">COMPLETE ASPHALT PLANT WITH CAPACITY NOT LESS THAN ( 250-300 T/HR) .OR(500 M<sup>3</sup> ), WITH COMPLETE FILTERING SYSTEM ( FILTERIZED) AGAINST POLLUTION DETAILS OF PLANT: UN PORTABLE FILLER TANK WITH A CAPACITY NOT LESS THAN: 260 TON. BITUMEN TANK WITH AUTOMATIC HEAT CONTROL FOR OIL TEMPERATURE FOR EACH OF THREE TANKS WITH A CAPACITY OF 60M<sup>3</sup> ALL ACTIVITIES IS AUTOMATIC AND CONTROLLED BY COMPUTER SCREENING SYSTEM WORKS ON SCREENING AND BY PASS. TURBINE PUMP SHALL BE MECHANICAL TYPE ( NO RUBBER PARTS). GENERATOR FOR STARTING THE HEAT EXCHANGER OF THE PLANT WITH ELECTRIC PROTECTION SYSTEM AGAINST ANY CHANGE IN THE CURRENT GENERATOR WITH AUTOMATIC CHANGE OVER(1000 KVA) THE DRYER TO BE DRIVEN EITHER BY FRICTION OR CHAIN. SILOS FOR STORING ASPHALT WITH A CAPACITY NOT LESS THAN 300 TON. WITH HEATING SYSTEM WITH 5 HOPPERS WITH A CAPACITY OF 12M<sup>3</sup> EACH. WITH ADDITIONAL GENERATORS NOT LESS THAN 150 KVA FOR THE BITUMEN HEATER WITH AUTOMATIC FIRE PROTECTION SYSTEM FOR THE BITUMEN HEATER AND MAIN CABIN . THE PLANT SHOULD HAVE COMPLETE SYSTEM FOR FIRING TREATMENT (FIRING ACCIDENT)</p>	2

**3-20: STREET MAINTENANCE TRUCK**

CODE NO.	ITEM	QTY
03-01-01186	<p align="center">CHASSIS CAB : 4 X 2            WITH TIPPING BACK UP TO 4 m<sup>3</sup>            ENGINE: 6 CYLINDER, 4 STROKE. TURBOCHARGER            POWER : NOT LESS THAN 240 HP.            CLUTCH : SINGLE PLATE            GEAR BOX : 8 SPEED            G. V. W : NOT LESS THAN 19 TON            PAYLOAD : NOT LESS THAN 12 TON            TIRE SIZE : 1200 X 20 DISK TYPE            LIFTING CAPACITY : 6 TON - M            EQUIPPED WITH : COMPRESSOR, HAMMER, SM ALL MANUAL STEEL            ROLLER , CRANE WITH SUFFICIENT LIFTING POWER TO LIFT THE STEEL            ROLLER            WITH BUCKET FOR BETUMIN UP TO 100KG            WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	20

**3-21: CRANE EQUIPPED TRUCK**

CODE NO.	ITEM	QTY
03-01-01187	<p align="center">CHASSIS CAB : 4 X 2            ENGINE: 6 CYLINDER, 4 STROKE. TURBOCHARGER            POWER: NOT LESS THAN 240 HP.            CLUTCH : SINGLE PLATE            GEAR BOX : 8 SPEED            G. V. W : NOT LESS THAN 19 TON            PAYLOAD : NOT LESS THAN 12 TON            TIER SIZE : 1200 X 20 DISK TYPE            LIFTING CAPACITY : 6 TON - M            WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	20

**3-22: TIERS**

CODE NO.	ITEM	QTY
03-01-01188	<p align="center">TIER SIZE:            FRONT : E3HR , 2100X35 , 36 RP, NO. 569-30-12250</p>	60
03-01-01189	<p align="center">TIER SIZE:            REAR: E3HR , 2100X35 , 36 PR , NO. 5-30-12550</p>	30

**3-23: LOW LOADER**

CODE NO.	DESCRIPTION	QTY.
03-01-01190	<p align="center">MAX. LIFTING WEIGH: 50 TON            ENG.HP.NOT LESS THAN 220KW            WATER COOLING WITH TORBO , IN LINE 6 CYLINER            GEAR BO 9 SPEED + 1 REVERCE            LOADER WITH THREE ORDINARY AXLE            4 TYRE IN EACH AXLE 2+2=4            LIFTING GOTH: 45 M            WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	2
03-01-01191	<p align="center">MAX. LIFTING WEIGH: 30 TON            ENG.HP.NOT LESS THAN 200KW            WATER COOLING WITH TORBO , IN LINE 6 CYLINER            GEAR BO 9 SPEED + 1 REVERCE            LOADER WITH THREE ORDINARY AXLE            4 TYRE IN EACH AXLE 2+2 = 4            LIFTING GOTH: 45 M            WITH SPARE PARTS FOR TWO YEARS OPERATION</p>	4

**3-24:HYDRAULIC TRUCK CRANE**

CODE NO.	DESCRIPTION	QTY.
03-01-01192	LIFTING WEIGHT: 80 TON ENGINE POWER: 220 kW LIFTING HEIGHT: 50 M WITH SPARE PARTS FOR TWO YEARS OPERATION	1
03-01-01193	LIFTING WEIGHT: 50 TON ENGINE POWER: 210 kW LIFTING HEIGHT: 37 M WITH SPARE PARTS FOR TWO YEARS OPERATION	2
03-01-01194	LIFTING WEIGHT: 30 TON ENGINE POWER: 48 kW LIFTING HEIGHT: 46 M WITH SPARE PARTS FOR TWO YEARS OPERATION	1
03-01-01195	LIFTING WEIGHT: 20 TON ENGINE POWER: 160 kW LIFTING HEIGHT: 34 M WITH SPARE PARTS FOR TWO YEARS OPERATION	2
03-01-01196	LIFTING WEIGHT: 10 TON ENGINE POWER: 160 kW LIFTING HEIGHT: 25 M WITH SPARE PARTS FOR TWO YEARS OPERATION	2

**3-25: DIESEL WELDING MACHINE**

WITH SPARE PARTS FOR TWO YEARS OPERATION

CODE NO.	DESCRIPTION	QTY.
03-01-01197	PORTABLE TYPE WITH WHEEL	6

**3-26: CRUSHERS**

CODE NO.	ITEM	QTY
03-01-01198	IMPACT CRUSHING PLANT WEST ORIGIN CAPACITY PRODUCTION APPROX. 150 M <sup>3</sup> /H	3
03-01-01199	COMPLETE SCREENING SYSTEM PLANT	3
03-01-01200	TRANSPORT BRIDGES WITH BELT CONVEYORS AND ELECTRIC MOTORS & GEAR BOX	24
03-01-01201	WATER PUMPS SIZE 8*6 WITH ELECTRIC MOTORS POWER 55KW	6
03-01-01202	SPARE PARTS FOR ABOVE CRUSHING &SCREENING PLANTS AS :	
	BLOW BARS	100
	LATERAL LINING PLATE	100
	BELT CONVEYORS	100
	GRINDING BARS	100
03-01-01203	ELECTRIC BOARDS DESIGN TO WORKING THE ABOVE CRUSHING & SCREENING PLANTS	4

**3-27:ROAD MARKING MACHINE**

CODE NO.	DESECRPTION	QTY.
03-01-01204	<p>CONSIST OF CHASSIS OF SUITABLE CAR ( SUCH AS MERCEDES BENZ)            2 TON LOAD , THE MACHINE CONSIST OF COMPRESSORS AND PAINT TANK OF CAPACITY OF 1000 LITER OR MORE AND MARKING EQUIPMENTS( GUNE, HOSES, TAPS) , AND THINNER TANK OF 40 LITER.            THECAR HAS OUTOMATIC GEAR BOX AND THE MOTOR WORKS ON BENZIN FUEL OR DIESEL.            ACCESSORIES SUCH AS LINE GUIDE, GUNS CARRIAGE, WORKING LIGHTS WARNING LIGHTS, WORKING CANS , WORKING SUITS ETC.. SHOULD BE PROVIDED</p>	4
03-01-01205	<p>SMALL MACHINE WITH ONE STROKE ENGIN CAPACITY 2 H.P , 40 LITER PAINT/ TANK , WITH ALL ACCESSORIES</p>	4

**3-28:LEAKAGE TREATMENT MATERIALS**

CODE NO.	DESECRPTION	QTY.
03-01-01206	<p>LEYCO PUR 251            VISCOSITY (23 Cú)            ROTATION VISCOMETER M PAS 250-350            DIN BEAKER (4MM) SEC 90-110)            DENSITY(23 Cú) G/CUBIC CM.            MIN. REACTION TEMP. O Cú            REACTION TIMES :            1st. INITIATION SEC 10-15            2nd. B. DEVELOPMENT SEC. 50-60            3rd. SETTING TIME MIN 2-3            MATERIALS MUST HAVE AT LEAST ONE YEAR LIFE TIME (EXPIRY) FROM DATE OF DELIVERY</p>	500 KG
03-01-01207	<p>HI- SEAL 500 ( EPOXY RESIN)            PHYSICAL PROPERTIES :            VISCOSITY 20 Cú 130 MPAS            POT LIFE AT 20 Cú 30 MIN            COMPRESSIVE STRENGTH 80-90 N/ CUBIC MM            TENSILE STRENGTH 60-65 N/CUBIC MM            ELASTIC MODULUS 3100-3300 N/ CUBIC MM            ADHESION TO CONCRETE 4-4.5 N/CUBIC MM</p>	500 KG

**3-29: COLD MILLING MACHINES**

CODE NO.	DESECRPTION	QTY.
03-01-01208	MILLING WIDTH: 1900 MM MILLING DEPTH: 0-300 MM ENGINE OUT PUT: 297 KW /404 PS OPERATING WEIGHT : APPROXMATLY 24-25 TON MILLING DRUM DRIVE :MECHANICAL TRAVEL DRIVE SYSTEM: HYDRAULIC / ALL CRAWLERS SPARE PARTS FOR TWO YEARS OPERATION	2
03-01-01209	MILLING WIDTH: 400-600 MM MILLING DEPTH: 0-300 MM ENGINE OUT PUT: 123 KW /67 PS OPERATING WEIGHT : 12 TON MILLING DRUM DRIVE :MECHANICAL TRAVEL DRIVE SYSTEM: HYDRAULIC / ALL WHEEL NO. OF WHEELS: 4 SPARE PARTS FOR TWO YEARS OPERATION	1
03-01-01210	MILLING WIDTH: 1000 MM MILLING DEPTH: 0-300 MM ENGINE OUT PUT: 165KW /225 PS OPERATING WEIGHT : 17 TON. MILLING DRUM DRIVE :MECHANICAL TRAVEL DRIVE SYSTEM: HYDRAULIC / ALL WHEEL NO. OF WHEELS: 4 SPARE PARTS FOR TWO YEARS OPERATION	1

**3-30:TRAFFIC ENGINEERING PROGRAMS**

CODE NO.	DESECRPTION	QTY.
03-01-01211	PROGRAMS FOR ANALYSING AND EVALUATING THE GEOMETRIC DESIGN OF ROADS AND INTERSECTIONS , FOR ESTIMATION THE LEVEL OF CONGESTION FOR ANY GEOMETRIC DESIGN : 1. SATURN PROGRAMS. FOR BIG NETWORK , 2. TRAFFICO PROGRAMS. FOR SMALL NETWORK 3. SIDRA . FOR ISOLATED INTERSECTION , OR OTHERS	LUMP

**3-31:EPOXY**

CODE NO.	DESECRPTION	QTY.
03-01-01212	CONSIST OF TWO COMPONENT FOR ROAD STUDS AND CATEYES	1500 KG

**3-32:LEAKAGE TREATMENT EQUIPMENTS**

CODE NO.	DESECRPTION	QTY.
03-01-01213	COMPLETE SET OF LEAKAGE TREATMENT EQUIPMENTS	4

### 3-33:GUARD RAIL MAINTENANCE MOBIL WORKSHOP

CODE NO.	DESECRPTION	QTY.
03-01-01214	<p>TRUCK TYPE DIESEL WITH OPEN FLAT BACK            LENGTH OF THE BACK : NOT LEDD THAN 5M , INCLUDES:            -ASPACE FOR 50 PIECES OF BLADE+ 50 POSTS            -AMACHINE FOR NIALING POST ON THE GROUND ( AND            IF POSSIBLE TAKE OUT THE DAMAGED POSTS)            -WELDING MACHINE , DIESEL H.D            -AIR COMPRESSOR MACHINE , DIESEL            WITH MULTY OUTPUT INCLUDES:            -AIR GUN DRILL SETS CAN BE CHANGED TO            -WRENCH SET FOR M16-M10 BOLTS            -HAND CIRCULAR SOW SETS            - SMALL GENERATOR 6 KVA            - SPARE PARTS FOR TWO YEARS OPERATION</p>	2

### 3-34: GUARD RAILS

CODE NO.	DESECRPTION	QTY.
03-01-01215	<p>PROFILE B , C/C LENGTH: 4000 MM WITH 7 SOLTED HOLES            IN EACH END + ONE HOLE IN THE CENTRAL FOR THE            BLADE , ALL HOLES MUST BE FOR BULT TYPE MI6,            THE ENDS OF THE BLADE MUST BE OVER LAPP , THE QTY.            INCLUDES:            1. 50000 BULT TYPE MIBWITH NUTS AND WASHERS,            THE HEAD OF THE BULT MUST BE CIRCULAR , THE            LENGTH MUST BE NOT LESS THAN 60 MM            2. 10000 POSTS TYPE IPEI00, HEIGHT 1500 MM OR ANY            STANDARD TYPE WITH HOLE FOR BULT TYPE MI6            3. 10000 WASHERS ( SMALL PLATE) , 115X40 MM ,            THICKNESS 5 MM WITH HOLE FOR BULT TYPE MI6            4. 500 END – WINGS TYPE B</p> <p>ALL MATERIALS TO BE MADE OF STEEL WITH HOT DEEP            GALVANIZED COAT NOT LESS THAN 60 MICRON OR            ACCORDING TO DIN (RAL RG 620)            ALL MATERIALS MUST BE BANDED STRONG</p>	25 KM 6250 BLADE PIECES

### 3-35:TRAFFIC LIGHTS REQUIREMENTS

CODE NO.	DESECRPTION	QTY.
03-01-01216	HALOGEN LAMP PHILIPS NETHERLAND FOR TRAFFIC LIGHTS , 10VOLT, 50 WATT, 9000 HOUR LIVE, LOMINA: 820	10000
03-01-01217	CABLE MULTI SHELLED ONE OF THEM IS CUPRIC SCREEN , OF THE KIND IS 5X1.5 SQUARE MM SOLD	15 KILOMETER
03-01-01218	ELASTIC CABLE 5X1.5 SQUARE M NOT SOLD	2000M
03-01-01219	BATTERY NICKEL CADMIUM , RECHARGABLE 5 VOLTS , 1200 MPH.	300
03-01-01220	RECHARGEABLE BATTRY 10A 6V	10
03-01-01221	LOGICAL TIMER 24 HOUR , THE OUT PUT SUICUES LESS THAN 6 STILL WORKING WHEN THE ELECTRICITY TURN OFF	300

**3-36:CONCRETE PATCHING PLANT**

CODE NO.	DESECRPTION	QTY.
03-01-01222	FIXED TYPE , WITH CAPACITY UP TO 60CUBIC METER /HR. WITH CONVYER BELT SIZE 800 MM WIDE SPARE PARTS FOR TWO YEARS OPERATION	2
03-01-01223	FIXED TYPE , WITH CAPACITY UP TO 35CUBIC METER /HR. SPARE PARTS FOR TWO YEARS OPERATION	1

**3-37:CONCRETE PUMP TRUCK**

CODE NO.	DESECRPTION	QTY.
03-01-01224	SUITABLE TO REACH HIGHT OF 28 METER SPARE PARTS FOR TWO YEARS OPERATION	2

**3-38:CONCRETE CASTING MACHINE FOR WALKWAYS PAVING MATERIALS**

CODE NO.	DESECRPTION	QTY.
03-01-01225	FOR INTERLOCKING TILES (ZENITH ,940 SUPER WITH HOPER) , OR EQUIVELENT: HYDRAULIC PUMP : 2X5.5 KW 1st. CONCRETE LOADER FEDDING 900/1600LITER 2nd. COVER HEAD PEEDING 2500 LITER WITH ALL AXCESSORIES AND MATERIALS FOR ERECTION AND MAINTENANCE SPARE PARTS FOR TWO YEARS OPERATION	3
03-01-01226	FOR BLOCK UNITS (ZENITH 940 ) , OR EQUIVELENT 800 CYCLESL8 H 4000 BLOCKS/8H WITH ALL AXCESSORIES AND MATERIALS FOR ERECTION AND MAINTENANCE SPARE PARTS FOR TWO YEARS OPERATION	2
03-01-01227	FOR ROAD CURBSTON UNITS (ZENITH ,HYDRO-AUTOMATION -939) , OR EQUIVELENT: CONCRETE LOADER FEEDING 1000 LITERS OVERHEAD LEADING 2500 LITER HYDRAULIC MOTOR : 7.5 KW TRAVEL GEAR MOTOR: 2.2 KW WITH ALL AXCESSORIES AND MATERIALS FOR ERECTION AND MAINTENANCE SPARE PARTS FOR TWO YEARS OPERATION	1

**3-40: SMALL CONCRETE LOADER**

CODE NO.	DESECRPTION	QTY.
03-01-01228	SUITABLE FOR FEEDING CONCRETE CASTING MACHINES , REFERED IN SECTION 3-38 SPARE PARTS FOR TWO YEARS OPERATION	6

**3-39 : HYDRAULIC CLAMP MACHINE FOR LIFTING CONCRETE PAVING UNITS**

CODE NO.	DESCRIPTION	QTY.
03-01-01229	SUITABLE FOR LIFTING AND TRANSPORTING PRODUCT OF THE CONCRETE MACHINES REFEREED IN SECTION 3-38 SPARE PARTS FOR TWO YEARS OPERATION	4



**SECTION 4: SPARE PARTS FOR MACHINERY****SPARE PARTS OF VOLVO N12:**

TOTAL PRICE &	UNIT PRICE &	QTY.	DESCRIPTION	CODE NO
		60	CYLINDER LINER KIT PART NO. 275060	03-01-01230
		60	COMPRESSION RING PART NO. 275309	03-01-01231
		10	OIL PUMP PART NO. 468023	03-01-01232
		20	GASKET COMPLETE LEVER ART NO. 275695	03-01-01233
		25	OIL PUMP PART NO. 1587788	03-01-01234
		40	DRIVEN PLATE PART NO. 1655355	03-01-01235
		40	DRIVEN PLATE PART NO. 1668145	03-01-01236
		40	CLUTCH HOUSING PART NO. 382245	03-01-01237
		30	MASTER CYLINDER PART NO. 1581200	03-01-01238
		30	CLUTCH SERVO PART NO. 267321	03-01-01239
		40	CLUTCH PART NO. 1655899	03-01-01240
		50	HANDLE PART NO. 1526594	03-01-01241
		200	NOZZLE NO. 468218	03-01-01242
		200	PUMP ELEMENT PART NO. 244401	03-01-01243
		200	DELIVERY VALVE PART NO. 240423	03-01-01244
		40	RELEASE BEARING PART NO. 1655843	03-01-01245
		30	REPAIR KIT PART NO. 273660	03-01-01246
		30	RUBBER HOSE PART NO. 273447	03-01-01247
		30	TURBO CHARGER PART NO. 468231	03-01-01248
		50	ROLLER BEARING PART NO. 1584340	03-01-01249
		50	BEARING PART NO. 232367	03-01-01250
		50	STARTER SOLENOID PART NO. 240493	03-01-01251
		50	CENTRAL SOLENOID PART NO. 240488	03-01-01252
		50	RECTOR PART NO. 244343	03-01-01253
		25	CIRCUIT CARD PART NO. 1576950	03-01-01254
		25	SOLENOID VALVE PART NO. 6886834	03-01-01255

TOTAL PRICE &	UNIT PRICE &	QTY	DESCRIPTION	CODE NO
		25	VALVE PROTECTION PART NO. 1573255	03-01-01256
		25	ROBERT COMMAND SREIN PART NO.1589620	03-01-01257
		25	STARTER SWITCH PART NO. 1578866	03-01-01258
		50	ROLLER BEARING PART NO. 184086	03-01-01259
		40	ROLLER SPRING PART NO. 1518450	03-01-01260
		40	FAN NO. 496977	03-01-01261
		10	GEAR BOX PART NO. 1521059	03-01-01262
		20	ENGAGING RING PART NO. 382797	03-01-01263
		20	ENGAGING RING PART NO. 267284	03-01-01264
		20	FLY WHEEL HOUSING PART NO. 468553	03-01-01265
		20	INPUT SHAFT PART NO. 1527077	03-01-01266
		20	ROLLER BEARING PART NO. 1526601	03-01-01267
		20	ENGAGING RING PART NO.267949	03-01-01268
		20	ENGAGING SLEEVE PART NO. 1526943	03-01-01269
		50	SPIDER PART NO. 6885514	03-01-01270
		25	CYLINDER HEAD PART NO. 468869	03-01-01271
		50	GASKET PART NO. 275548	03-01-01272
		25	CONNECTING ROD PART NO. 423029	03-01-01273
		25	FUEL INJECTION PUMP PART NO. 244389	03-01-01274
		10	RADIATOR PART NO. 6886550	03-01-01275
		10	STARTER MOTOR PART NO. 468202	03-01-01276
		8	CRANK SHAFT PART NO. 423401	03-01-01277
		10	OIL PUMP KIT PART NO. 275547	03-01-01278
		10	MAIN BEARING KIT PART NO. 270449	03-01-01279
		10	MAIN BEARING KIT PART NO. 270450	03-01-01280
		10	MAIN BEARING KIT PART NO. 270451	03-01-01281

TOTAL PRICE &	UNIT PRICE &	QTY	DESCRIPTION	CODE NO
		10	MAIN BEARING KIT PART NO. 270452	03-01-01282
		10	BIGEND BEARING KIT PART NO. 270105	03-01-01283
		10	BIGEND BEARING KIT PART NO. 270106	03-01-01284
		10	BIGEND BEARING KIT PART NO. 270107	03-01-01285
		10	BIGEND BEARING KIT PART NO. 270108	03-01-01286
		1000	WHEEL STUD PART NO. 1581604	03-01-01287
		25	ENGINE CASING PART NO. 1607652	03-01-01288
		25	WIPER WASHER SWITCH PART NO. 1594959	03-01-01289
		1000	CLAMP SHOE PART NO. 1581193	03-01-01290
		1000	NUT PART NO. 362166	03-01-01291
		25	OIL RESERVOIR PART NO. 1592945	03-01-01292
		25	LINK RODE PART NO. 1588017	03-01-01293
		25	LINK STERN PART NO. 1626492	03-01-01294
		25	TACHO GRAPH PART NO. 6882068	03-01-01295
		25	AMMETER PART NO. 6882069	03-01-01296
		25	FUEL GAUGE PART NO. 1582762	03-01-01297
		25	VOLTMETER PART NO. 1581772	03-01-01298
		25	PRESSURE GAUGE PART NO. 1590396	03-01-01299
		25	MANOMETER PART NO. 1582254	03-01-01300
		25	OIL PRESSURE SENSOR PART NO. 6884143	03-01-01301
		25	SWITCH PART NO. 1594958	03-01-01302
		5	ENGINE PART NO. 5002852	03-01-01303
		50	BELT PART NO. 165601	03-01-01304
		25	AMNEAU PART NO. 1518438	03-01-01305
		60	FILTER AIR PART NO. 1542743	03-01-01306
		15	MAIN SWITCH PART NO. 6885863	03-01-01307

TOTAL PRICE &	UNIT PRICE &	QTY	DESCRIPTION	CODE NO
		60	RIM LEFT HAND PART NO. 6886672	03-01-01308
		60	RIM RIGHT HAND PART NO. 6886673	03-01-01309
		25	RETAINER PART NO. 1607746	03-01-01310
		25	FILTER WHEEL PART NO. 1591143	03-01-01311
		25	WEARING PART NO. 1518223	03-01-01312
		25	BUMPER PART NO. 1587508	03-01-01313
		50	ENGINE CASING PART NO. 1667652	03-01-01314
		60	MIRROR PART NO. 8121428	03-01-01315
		50	GRILLE PART NO. 1582754	03-01-01316
		10	BONED PART NO. 688005	03-01-01317
		25	HUB PART NO. 6884509	03-01-01318
		25	SPOKE WHEEL HUB PART NO. 1592891	03-01-01319
		25	S. STAY PART NO. 1576252	03-01-01320
		50	HOLLOW SPRING PART NO. 1609657	03-01-01321

DELIVERY TIME:

## SPARE PARTS OF VOLVO N10 :

TOTAL PRICE &	UNIT PRICE &	QTY	DESCRIPTION	CODE NO
		60	CYLINDER HEAD PART NO.154599	03-01-01322
		60	GASKET KIT PART NO.27PART OF 5551	03-01-01323
		60	SEALING RING PART NO. 469336	03-01-01324
		20	FLY WHEEL HOUSING PART NO. 467148	03-01-01325
		50	RUBBER BUSTION PART NO.1502144	03-01-01326
		50	ANCHORAGE PART NO.1503283	03-01-01327
		80	CYLINDER LINER KIT PART NO.275036	03-01-01328
		60	BUSHING PART NO. 417463	03-01-01329
		25	CONNECTING PART NO. 422139	03-01-01330
		20	FLANGE PART NO.469324	03-01-01331
		25	SLEEVE PART NO.1545023	03-01-01332
		60	INLET VALVE PART NO.154290	03-01-01333
		60	EXHOUST VALVE PART NO.467682	03-01-01334
		100	PLUG PART NO. 467714	03-01-01335
		25	OIL PUMP PART NO.467517	03-01-01336
		10	OIL COOLER PART NO. 420365	03-01-01337
		60	OIL FILTER PART NO. 466634	03-01-01338
		20	PISTON RING KIT PART NO. 272896	03-01-01339
		25	OIL PUMP PART NO. 1587787	03-01-01340
		25	FUEL PUMP PART NO. 1545102	03-01-01341
		10	PRESSURE EXHUST NOZZLE PART NO.417652	03-01-01342
		60	DELIVERY VALVE PART NO. 240423	03-01-01343
		100	FILTER PART NO. 243004	03-01-01344
		80	NOZZLE PART NO. 238896	03-01-01345
		25	TURBO CHARGER PART NO.467369	03-01-01346
		10	COOLANT PIPE PART NO. 475002	03-01-01347

TOTAL PRICE &	UNIT PRICE &	QT.	DESCRIPTION	CODE NO
		15	COOLANT PUMP PART NO. 467204	03-01-01348
		25	LEVER PART NO. 467325	03-01-01349
		25	BALL BEARING PART NO. 465328	03-01-01350
		50	V-BELT SET PART NO. 966393	03-01-01351
		50	BRACKET PART NO. 467430	03-01-01352
		25	ALTERNATOR PART NO. 1578938	03-01-01353
		20	SHAFT PART NO. 262985	03-01-01354
		20	ROLLER BEARING PART NO.1584340	03-01-01355
		20	ROLLER BEARING PART NO. 184056	03-01-01356
		50	ROTOR KIT PART NO.1695595	03-01-01357
		20	PLATE PART NO. 1695594	03-01-01358
		20	PLATE PART NO. 1695596	03-01-01359
		20	CLUTCH HOUSING PART NO. 1653158	03-01-01360
		20	MASTER CYLINDER PART NO. 1614351	03-01-01361
		30	REPAIR KIT PART NO.273660	03-01-01362
		25	CENTER BEARING PART NO. 232367	03-01-01363
		15	ROTOR PART NO. 249608	03-01-01364
		15	STATOR PART NO.244334	03-01-01365
		15	RECTIFIER PART NO. 244610	03-01-01366
		20	CONTROL SOLENOID PART NO. 240488	03-01-01367
		20	STARTER SOLENOID PART NO. 240493	03-01-01368
		15	ANCHOR PART NO. 6212614	03-01-01369
		15	BEARING SHIELD PART NO. 244315	03-01-01370
		15	WIPER MOTOR PART NO. 1500403	03-01-01371
		10	ELECTRICAL DISTRIBUTION PART NO. 1501170	03-01-01372
		20	FLASHER RELAY PART NO. 1587993	03-01-01373
		120	RELAY PART NO. 1561832	03-01-01374

		25	CLUTCH PART NO. 267142	03-01-01375
		25	BALL BEARING PART NO. 1527696	03-01-01376
		30	LUBRICATING HOUSE PART NO. 353059	03-01-01377
		25	CLUTCH SERVO PART NO. 267321	03-01-01378
		25	RUBBER HOUSE PART NO. 230191	03-01-01379
		5	ENGINE PART NO. 497710	03-01-01380
		70	EXHAUST MANY FOLD PART NO. 467111	03-01-01381
		20	INLET MANY FOLD PART NO. 467895	03-01-01382
		20	BIGEND BEARING KIT PART NO. 270099	03-01-01383
		20	BIGEND BEARING KIT PART NO. 270100	03-01-01384
		20	BIGEND BEARING KIT PART NO. 270101	03-01-01385
		20	BIGEND BEARING KIT PART NO. 270102	03-01-01386
		20	BIGEND BEARING KIT PART NO. 270 103	03-01-01387
		20	BIGEND BEARING KIT PARTNO. 270104	03-01-01388
		20	MAIN BEARING KIT PART NO. 270438	03-01-01389
		20	MAIN BEARING KIT PART NO. 270439	03-01-01390
		20	MAIN BEARING KIT PART NO. 270440	03-01-01391
		20	MAIN BEARING KIT PART NO. 270441	03-01-01392
		20	MAIN BEARING KIT PART NO. 270442	03-01-01393
		20	MAIN BEARING KIT PART NO. 270443	03-01-01394
		10	CAM SHAFT PART NO. 467853	03-01-01395
		10	CRANK SHAFT PART NO. 1545657	03-01-01396
		15	OIL SUMP PART NO. 479060	03-01-01397
		20	SWITCH PART NO. 1578712	03-01-01398
		30	TEMPERATURE SENSOR PART NO. 1598034	03-01-01399
		8	GEAR BOX PART NO. 254788	03-01-01400
		10	GEAR LEVER PART NO. 382939	03-01-01401
		25	VALVE PART NO.267859	03-01-01402
		25	CLUTCH HOUSING PART NO. 1655158	03-01-01403

		25	SPRING WASHER PART NO. 1505056	03-01-01404
		25	BRAKE CHAMBER PART NO. 1505041	03-01-01405
		25	PARKING BRAKE VALVE PART NO. 1588103	03-01-01406
		10	COMPRESSOR PART NO. 351423	03-01-01407
		50	HOSE PART NO. 87970	03-01-01408
		10	STEERING GEAR PART NO. 250182	03-01-01409
		30	SOLENOID VALVE PART NO. 1501827	03-01-01410
		5	FUEL TANK PART NO. 260084	03-01-01411
		30	FRICTION DISC PART NO. 417512	03-01-01412
		10	INJECTION PUMP PART NO. 243440	03-01-01413
		50	HAND PUMP PART NO. 76703	03-01-01414
		20	FAN PART NO. 475142	03-01-01415
		20	RADIATOR PART NO. 1542816	03-01-01416
		60	BRACKET PART NO. 467430	03-01-01417
		20	RIM PART NO. 1508163	03-01-01418
		50	DIRECTIONAL SWITCH PART NO. 1501805	03-01-01419
		50	WIND SCREEN WIPERS PART NO. 1501806	03-01-01420
		50	SWITCH PART NO. 1578732	03-01-01421
		25	ELECTRICAL PART NO. 1501170	03-01-01422
		20	TACHO GRAPH PART NO. 1508431	03-01-01423
		50	SPEED METER PART NO. 1502191	03-01-01424
		25	TEMPERATURE GAUGE PART NO. 1582901	03-01-01425

DELIVERY TIME:



**SPARE PARTS FOR LOADER . KOMATSO TYPE : W30**

CODE NO.	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-01426	BLOCK CYLINDER, PART NO. 6144-21-1110	10		
03-01-01427	BOLT CUP, PART NO . 6142-21-1610	200		
03-01-01428	CUP METAL NO.,PART NO. 6142-22-1220	50		
03-01-01429	LINER CYLINDER, PART NO: 6142-22-2211	100		
03-01-01430	O- RING , PART NO. 6142-21-2221	100		
03-01-01431	O-RING , PART NO. 6142-21-2230	100		
03-01-01432	OIL SEAL , PART NO. 6144-21-4231	25		
03-01-01433	CRANK SHAFT, PART NO. 6144-31-1110	20		
03-01-01435	GEAR CRANK, PART NO. 6140-31-1121	20		
03-01-01436	KEY, PART NO . 04010-00519	25		
03-01-01437	METAL, PART NO. 6140-21-8110	20		
03-01-01438	METAL, PART NO. 6140-27-8110	20		
03-01-01439	METAL, PART NO. 6140-28-8110	20		
03-01-01440	METAL, PART NO. 6140-26-8110	20		
03-01-01441	METAL, PART NO. 6140-29-8110	20		
03-01-01442	METAL UPPER , PART NO. 6141-21-8510	20		
03-01-01443	METAL LOWER, PART NO. 6141-21-8520	20		
03-01-01444	METAL UPPER (OVER SIZE 0.25), PART NO. 6141-29-8510	20		
03-01-01445	METAL LOWER , ( OVER SIZE 0.25) , PART NO. 6141-29-8520	20		
03-01-01446	METAL UPPER,( OVER SIZE 0.5) PART NO. 6141-28-8510	20		
03-01-01447	METAL LOWER , ( OVER SIZE 0. 5) , PART NO. 6141-28-8520	20		
03-01-01448	METAL UPPER , ( OVER SIZE 0.75) , PART NO. 6141-27-8510	20		
03-01-01449	METAL LOWER , ( OVER SIZE 0.75) , PART NO. 6141-27-8520	20		
03-01-01450	METAL UPPER , ( OVER SIZE 1 ) , PART NO. 6141-26-8510	20		
03-01-01451	METAL LOWER , ( OVER SIZE 1) , PART NO. 6141-26-8520	20		
03-01-01452	PISTON, PART NO. 6142-32-2110	80		
03-01-01453	PIN PISTON, PART NO. 6140-31-2410	80		
03-01-01454	SNAP RING, PART NO. 6140-31-2120	100		
03-01-01455	TOP RING , PART NO. 6140-31-2210	80		
03-01-01456	RING , PART NO. 6142-31-2210	80		
03-01-01457	OIL RING , PART NO. 6142-32-2240	80		
03-01-01458	RED CONNECTION , PART NO. 6141-31-3111	80		
03-01-01459	BUSLING , PART NO. 6140-31-3131	80		
03-01-01460	BOLT CONNECTING ROAD , PART NO. 6140-31-3312	200		
03-01-01461	NUT , PART NO. 6140-31-3320	200		
03-01-01462	METAL STD , PART NO. 6140-31-3410	100		
03-01-01463	METAL UNDER SIZE 0. 5MM , PART NO. 6140-38-3040	100		
03-01-01464	METAL UNDER SIZE 0.75MM , PART NO. 6140-37-3040	100		
03-01-01465	METAL UNDER SIZE 1 MM , PART NO. 6140-36-3040	100		

03-01-01466	CAM SHFT , PART NO. 6144-41-1110	20		
03-01-01467	COVER RONT, PART NO. 6144-21-3112	20		
03-01-01468	COVER OIL PUMP , , PART NO. 6144-51-1120	20		
03-01-01469	GEAR OIL PUMP, PART NO. 6144-52-143020	20		
03-01-01470	OIL COOLER, PART NO. 6144-61-2102	20		
03-01-01471	FUEL PUMP , PART NO. 6144-71-1110	20		
03-01-01472	HOLDER NOZEL, PART NO. 6142-12-3110	80		
03-01-01473	NOZZEL, PART NO. 6142121-3130	80		
03-01-01474	PLUG GL0U, PART NO. 600-815-1340	100		
03-01-01475	HEAD CYLINDER , PART NO. 6144-11-1110	10		
03-01-01476	VALVE INTAKE , , PART NO. 6140-41-4111	80		
03-01-01477	VALVE EXHUST , PART NO. 6142-42-4210	80		
03-01-01478	GASKET HEAD, , PART NO. 6144-11-1810	80		
03-01-01479	GASKET , , PART NO. 6144-11-4810	80		
03-01-01480	GASKET , , PART NO. 6144-11-5811	80		
03-01-01481	GASKET, , PART NO. 6144-21-5811	80		
03-01-01482	GEAR RING, , PART NO. 6144-31-1320	80		
03-01-01483	BEARING , PART NO.06000-06204	50		
03-01-01484	GASKET , PART NO, 6142-22-2810	80		
03-01-01485	WATER PUMP, PART NO. 6144-61-1100	20		
03-01-01486	FAN, PART NO. 600-613-0440	20		
03-01-01487	V- BELT, PART NO. 6144-81-2610	250		
03-01-01488	V- BELT , PART NO. 6144-81-2620	250		

DELIVERY TIME:

SPAIR PARTS FOR LYLAND CLYDESDAL

CODE NO.	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-01489	LINER , PART NO. NAJ-2883	120		
03-01-01490	PISTON, PART NO. 10907240	120		
03-01-01491	CRANK SHAFT , PART NO. CJJ0004	20		
03-01-01492	CONNECTING ROAD , PART NO. AAL-2097	120		
03-01-01493	OIL PUMP , PART NO. 613768	20		
03-01-01494	MASTER CYLINDER, PART NO. 80K5769	100		
03-01-01495	CLUTCH SLAVE CYLINDER, PART NO. AAU-8410	100		
03-01-01496	DUAL CONCENTRIC VALVE, PART NO. 83H-0552	50		
03-01-01497	FAN , PART NO. MAK-8449	100		
03-01-01498	DRIVEN PLATE ASSEMBLY, PART NO. ABU- 1121	100		
03-01-01499	CENTER BEARING ASSEMBLY, PART NO. 846854	50		
03-01-01500	FUEL PUMP, PART NO.ACU5351	20		
03-01-01501	INJECTOR, PART NO. NAJ-IM7405	120		
03-01-01502	STARTER MOTOR, PART NO, 850461	20		
03-01-01503	PISTON RING, PART NO. NAJ 2861	120		
03-01-01504	PISTON RING, PART NO.NAJ2862	120		
03-01-01505	PISTON RING, PART NO. NAJ4103	120		
03-01-01506	OIL PUMP STEARING , PART NO. AAU2069410	50		
03-01-01507	HYDRAULIC PUMP, PART NO. HYP-1002	100		
03-01-01508	WATER PUMP. PART NO. NAJ 8382	100		
03-01-01509	AIR COMPRESSOR, PART NO. AUU-4835	50		
03-01-01510	FAN, PART NO. NJK 1116	150		
03-01-01511	BREAK ACTUATOR, PART NO. AAU-9699	100		
03-01-01512	OIL SEAL, PART NO. 10907024	150		
03-01-01513	COMPENION FLANGE, PART NO, AAU-8296	50		
03-01-01514	VALVE, PART NO. 10898411	100		
03-01-01515	HYD CONTROL, PART NO. HYV-2001	40		
03-01-01516	HYD CONTROL, PART NO, HYV-1001	40		
03-01-01517	BEARING SET , PART NO, 610476 STO	20		
03-01-01518	BIG END BEARING SET, PART NO, 6115711 STD	20		
03-01-01519	BEARING SET , PART NO, 610976 S2	40		
03-01-01520	BIGEND BEARING SET , PART NO, 611571 S2	40		
03-01-01521	STEARING SHAFT ASSEMBLY, PART NO. 1537Z210488112	40		
03-01-01522	SOLENOID, PART NO. 850686	50		
03-01-01523	BUSH, PART NO. 272918	100		
03-01-01524	BUSH, PART NO. 604117	100		
03-01-01525	BUSH , PART NO. 267115	100		
03-01-01526	BUSH SET , PART NO. BUJ-0002	50		
03-01-01527	ALTERNATOR , PART NO. 854221	50		
03-01-01528	CYLINDER HEAD , PART NO. 810131	50		
03-01-01529	RADIATOR, PART NO. 741K67	50		
03-01-01530	FEED PUMP , PART NO. ABU- 4624	50		
03-01-01531	GASKET SET OVERHAUL, PART NO. 10907422	100		
03-01-01532	STERRING BOX LH, PART NO. 1582Z80	25		

03-01-01533	POWER STEERING CYLINDER , PART NO. 1567210	50		
03-01-01534	DRIVE HEAD , PART NO. 664K66	25		
03-01-01535	TORSION BAR, PART NO. 61K355	150		
03-01-01536	GEAR, PART NO. 512K49	20		
03-01-01537	COMPELET GEAR BOX., PART NO. GB 28319	10		
03-01-01538	COVER ASSEMBLY , PART NO. 10897968	50		
03-01-01539	COMPELET ENGIN , PART NO2CD4016D	10		

DELIVERY TIME:

### SPAIR PARTS FOR LYLAND TRAIN

CODE NO.	DESCRIPTION	QTY.	UNIT PRICE &	TOTAL PRICE &
03-01-01540	GASKET, PART NO. CU-3036126	50		
03-01-01541	INJECTOR, PART NO. CU-3013725	60		
03-01-01542	FUEL PUMP , PART NO. CU-3017808	20		
03-01-01543	RING SET , PART NO. CU-3016786	50		
03-01-01544	PISTON ASSEMBLY , PART NO. CU-3013459	60		
03-01-01545	LINER , PART NO. CU-AR11317	60		
03-01-01546	WATER PUMP , PART NO. CU-3022474	20		
03-01-01547	PRESSURE PLATE , PART NO. ABU-979718	50		
03-01-01548	AIR COMPRESSOR , PART NO. CU-3018527	10		
03-01-01549	CRANK SHAFT , PART NO. CU-3004165	20		
03-01-01550	CONNECTING ROAD , PART NO. CU-3013930	60		
03-01-01551	BIG END BEARING SET , PART NO. CU-2149512	20		
03-01-01552	BEARING SET , PART NO . CU-38012621	20		
03-01-01553	TURBO CHARGER , PART NO. CU3502076	25		
03-01-01554	ENGINE PART NO CU-NTE 29012	5		
03-01-01555	BASIC ENGINE, PART NO. CU-3260379	10		
03-01-01556	CYLINDER HEAD, PART NO. CU-3008096	30		
03-01-01557	CAM SHAFT, PART NO. CU-3026955	20		
03-01-01558	BUSH, PARTNO. CU-187420	120		
03-01-01559	BEARING SET , PART NO. CU-214950	20		
03-01-01560	BIGEND BEARING SET ,PART NO. CU-3801260	20		
03-01-01561	VALVE, PART NO. CU- BM69985	30		
03-01-01562	OIL PUMP, PART NO. CU-3015273	50		
03-01-01563	STARTER MOTOR, PART NO. 851078	50		
03-01-01564	ALTERNATOR , PART NO. ACU-3656	50		
03-01-01565	PUMP, PART NO. NCK2899	25		
03-01-01566	MASTER CYLINDER , PART NO. ACU3337	50		
03-01-01567	FIFTH WHEEL , PART NO. HCK 3857	10		
03-01-01568	FLY WHEEL , CU13016481	10		
03-01-01569	GEAR PUMP, PART NO. CU-3026284	30		
03-01-01570	OIL FILTER , PART NO. CU-250825	50		
03-01-01571	AIR FILTER , PART NO. ABU-9145	100		
03-01-01572	SOLENOID, PART NO. 850686	50		
03-01-01573	DRIVE, PART NO. 852959	50		
03-01-01574	GASKET SET OVERHAUL, PART NO. CU-3013480	50		
03-01-01575	RADIATOR, PART NO. RRK1034	20		
03-01-01576	GEAR BOX, PART NO ACU3357	5		
03-01-01577	DRIVING HEAD , PART NO. HAK1471	5		

DELIVERY TIME:

**HEAVY DUTY VACUUM LOADER**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
03-01-01578	<p>CHASSIS CAB : 4 X ENGINE:: DIESEL, 6 CYLINDER IN LINE WATER COOLED TURBOCHARGED AND ENTER COOLED , DIRECT FUEL INJECTION TROPICAL VAN , FUEL FILTER , SINGLE BOX TYPE POWER: NOT LESS THAN 288 HP. CLUTCH : SINGLE PLATE DRY CLUTCH F&amp;S, TYPE MFZ 430 HYDRAULICALLY OPERATED , AIR ASSISTED ASBESTOS – FREE LININGS GEARBOX: ZF 18 S 151 SYNCHROMESH GEARBOX 16 FORWARD SPEEDS 2 REVERES, STICK SHIFT. MAX VACUUM : 800 M BAR MAX. AIR VOLUME : UNLOADED RPM 1500 RPM 5900 CBM/TIM 1795 7070 2025 7970 2200 8660 MEASUREMENTS (APROX) : WIDTH 2460 MM LENGTH : 8270 MM HEIGHT: 2820 MM TYRE SIZE : 1200 X 20 WHEEL : 8.5 X 20 WEIGHT: NOT LESS THAN 13.4 TONS WITH 10% RECOMMENDED SPARE PARTS</p>	10

**1-13 REQUIREMENTS OF DORA MAIN SEWAGE PUMPING STATION**

<b>NO</b>	<b>DESCRIPTION</b>	<b>CODE NO.</b>
2	<p align="center"><b>VERTICAL SEWAGE PUMP (KSB) TYPE WITH GARDEN AND BRACKETS :</b>  <b>Q: 6000 GPM</b>  <b>H: 18 M</b>  <b>POWER: 110 KW</b>  <b>SPEED : 975 RPM</b></p> <p><b><u>D IN: 700 MM</u></b>  <b>D OUT: 600 MM</b></p>	03-01-01579
2	<p align="center"><b>SEWAGE SUCTION VALVE (ROTORK) TYPE</b>  <b><u>MANUALLY AND ELECTRICALLY OPERATED</u></b>  <b>Q: 6000 GPM</b>  <b>SIZE: 700 MM</b></p>	03-01-01580
2	<p align="center"><b>SEWAGE DISCHARGE VALVE (ROTORK) TYPE</b>  <b><u>MANUALLY AND ELECTRICALLY OPERATED</u></b>  <b>Q: 6000 GPM</b>  <b>SIZE: 600 MM</b></p>	03-01-01581
2	<p align="center"><b>SEWAGE CHECK VALVE (HAM BACKER) TYPE</b>  <b>SIZE: 600 MM</b></p>	03-01-01582
4	<p align="center"><b>VERTICAL SEWAGE PUMP (KSB) TYPE WITH GARDEN AND BRACKETS :</b>  <b>Q: 12000 GPM</b>  <b>H: 18 M</b>  <b>POWER: 200 KW</b>  <b>SPEED : 720 RPM</b></p> <p><b><u>D IN: 900 MM</u></b>  <b>D OUT: 800 MM</b></p>	03-01-01583
4	<p align="center"><b>SEWAGE SUCTION VALVE (ROTORK) TYPE</b>  <b><u>MANUALLY AND ELECTRICALLY OPERATED</u></b>  <b>Q: 12000 GPM</b>  <b>SIZE: 900 MM</b></p>	03-01-01584
4	<p align="center"><b>SEWAGE DISCHARGE VALVE (ROTORK) TYPE</b>  <b><u>MANUALLY AND ELECTRICALLY OPERATED</u></b>  <b>Q: 12000 GPM</b>  <b>SIZE: 800 MM</b></p>	03-01-01585
4	<p align="center"><b>SEWAGE CHECK VALVE (HAM BACKER) TYPE</b>  <b>SIZE: 800 MM</b></p>	03-01-01586
7	<p align="center"><b>VERTICAL SEWAGE PUMP (KSB) TYPE WITH GARDEN AND BRACKETS :</b>  <b>Q: 17000 GPM</b>  <b>H: 18 M</b>  <b>POWER: 320 KW</b>  <b>SPEED : 585 RPM</b></p> <p><b><u>D IN: 1000 MM</u></b>  <b>D OUT: 900 MM</b></p>	303-01-01587
7	<p align="center"><b>SEWAGE SUCTION VALVE (ROTORK) TYPE</b>  <b><u>MANUALLY AND ELECTRICALLY OPERATED</u></b>  <b>Q: 17000 GPM</b>  <b>SIZE: 1000 MM</b></p>	03-01-01588
7	<p align="center"><b>SEWAGE DISCHARGE VALVE (ROTORK) TYPE</b>  <b><u>MANUALLY AND ELECTRICALLY OPERATED</u></b>  <b>Q: 17000 GPM</b>  <b>SIZE: 900 MM</b></p>	03-01-01589
7	<p align="center"><b>SEWAGE CHECK VALVE (HAM BACKER) TYPE</b>  <b>SIZE: 900 MM</b></p>	03-01-01590

6	<p align="center"><b>OUT DOOR CONCRETE SCREEN (AMES CROSTA) TYPE COMPLETE WITH ACCESSORIES AND ALL THAT IS NECESSARY TO MAKE THE SYSTEM IN FUNCTION , DIMINUTION IS IN ACCORDANCE WITH ACTUAL IN SITE</b></p>	03-01-01591
2	<p><b><u>CENTRIFUGAL PUMP</u></b>  <b><u>MANUFACTURER: SIHI-HALBERG</u></b>  <i>TYPE: NOWC 6532 BN 041-02-2</i>  <i>CAPACITY: 1450 RPM</i>  <i>SUCTION FLANGE: DN: 80 , PN: 10</i>  <i>DISCHARGE FLANGE: DN:65, PN:10</i>  <i>DELIVERY HEIGHT: 33,5M WC</i></p>	03-01-01592
2	<p><b><u>MOTOR</u></b>  <b><u>MANUFACTURER: AEG</u></b>  <b><u>MOTOR TYPE: SAM 160 LRY</u></b>    <i>CAPACITY: 15 KW</i>  <i>SPEED: 1500 RPM</i>  <i>VOLTAGE: 380 V</i>  <i>FREQUENCY: 50 HZ</i>  <i>PROTECTION: IP54</i>  <i>INSULATION CLASS: F</i></p>	



## HIGH TENSION SWITCHBOARD

TYPE: CEM FRANCE 3.3 KV, 50 HZ , 3 PHASE WITH 30 CUBICAL - LONGE  
 DETAILS AS PER ATTACHED DIAGRAMS

<i><b>QTY</b></i>	<i><b>LOCATION</b></i>	<i><b>DESCRIPTION</b></i>	<i><b>CODE NO.</b></i>
12	<u>MOTOR 1,2,6,7,10,11,12</u> GENERATORS 1,2,3 (400 A) TRANSFORMER 1,2 (400A)	<i>DISCONNECTOR</i> <i>CEM 400A YTP AW460</i> <i>24 KV , KA 40</i>	03-01-01593
2	<u>COPULAR 1,2 (1250A)</u>		
2	<u>INCOMING 1,2(1250A)</u>		
14	<u>MOTORS 1,2,6,7,10,11,12</u> <u>AND THERE</u> CAPACITORS - P.F-	<i>CONECTOR (SF6)OR VACUUM TYPE</i> <i>3.3 KV, 400 A , 110 V D.C CONTROL</i>	03-01-01594
42	<i>CAPACITORS + MOTORS</i>	<i>FUSES</i> <i>H.R.C FWCY 160A, 3.3KV, SEMINSE TYPE</i>	03-01-01595
5	GENERATOR 1,2,3 TRANSFORMER 1,2	<i>C.B</i> <i>OIL-MINIMUM C.B</i> <i>METAL - CLUD</i> <i>400A CEM, TYPE CC4K , 24KV,</i> <i>KA 12.5</i>	03-01-01596
4	<i>INCOMING 1,2</i> <i>COPLER 1,2</i>	<i>C.B</i> <i>OIL-MINIMUM C.B</i> <i>METAL - CLUD</i> <i>400A CEM, TYPE CC4K , 24KV,</i> <i>KA 1250</i>	03-01-01597
24	<i>C.T 'S (7)</i> <i>7.2 KV UI</i> <i>75/ 5 A</i> <i>TYPE K55</i> <i>SAD TEM - FRANCE</i>	<i>PROTECTION RELAYS</i>  <i>FOR MOTORS: ITM 7850</i> <i>IEE FRANCE</i> <i>IN: 5A</i> <i>ITG 7118</i> <i>IEE ( EACH MOTOR)</i>	03-01-01598
18		<i>FOR INCOMING: ITG 7033</i> <i>ITM 7111</i> <i>IEE FRANCE (EACH INCOMONG)</i>	
24		<i>FOR GENERATORS AND TRANSFORMER :</i> <i>ITG 7111</i>  <i>ITG 7261</i> <i>IEE FRANCE ( EACH Tr.g.)</i>	

**REQUIREMENTS OF DORA MAIN SEWAGE PUMPING STATION**

***ELECTRICAL MATERIALS:***

<b>NO</b>	<b>DESCRIPTION</b>	<b>CODE NO.</b>
6	<b>VERTICAL ELECTRICAL MOTOR (FLANGE TYPE) , (AEG) WITH TWO SPEEDS , 380 V (DELTA) POWER: 75-110 KW SPEED : 990 – 1488 RPM TYPE NO : AM 315 MM 416</b>	03-01-01599
4	<b>CIRCUIT BREAKER , LOW VOLTAGE CALOR-EMAG POWER: 3150 A VDE 0660 IEC 157-1 IH12 3150 A U1 1000 V~ T + M RELEASE</b>	03-01-01600

**KARHK WATER SUPPLY SLUDGE PUMPING AIR COMPRESSOR SET**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
03-01-01601	<b>COMPLETE COMPRESSOR SINGLE STAG AIR COMPRESSOR TYPE : 205013 CAPACITY EACH 10 L/S AT 8 BAR MOTOR : 5.5 KW VOLTAGE : 400V , 3PH FREQUENCY : 50 HZ</b>	6
03-01-01602	<b>AIR BLOWER COMPLETE INCLUDES ( BLOWER + MOTOR + COUPLING + BASE PLATE + STATER ) Q = 2700 m<sup>3</sup>/h R.P.M = 960 SUCTION PIPE = 250mm DELIVARY PIPE = 200 mm TYPE : GM 16121 FOR RASHEED &amp; WAHDA WTP</b>	6

## CHEMICAL SUBSTANCES

CODE	ITEM	QTY.
03-01-01603	<p style="text-align: center;">ALUM. SULPHATE WITH FOLOWING SPEC.</p> <p style="text-align: center;">1- IN SOLUBLE MATER SHALL NOT EXCEED 0.5 % ( PURIFIED) .</p> <p style="text-align: center;">2- CONTENT OF ALUMINUM AS A12O3 NOT LESS THAN 16.5 % .</p> <p style="text-align: center;">3- FREE ACIDITY NIL.</p> <p style="text-align: center;">4- HAVEY METAL AS (pb) SHALL NOT EXCEED 0.02 IN WEIGHT.</p> <p style="text-align: center;">5- ARSENIC (As) AS As2O3 SHALL NOT EXCEED 0.005.</p> <p style="text-align: center;">6- PH (SOLUTION 5%) NOT DECREASE THAN 3.0.</p> <p style="text-align: center;">7- IRON AS Fe SHALL NOT EXCEED 0.01 % IN WEIGHT.</p> <p style="text-align: center;">8- AMMONIUM ASLTS AS (NH3) AT MAXIMUM 0.03 % IN WEIGHT.</p> <p style="text-align: center;">9- GROUND ALUMINUM SULFATE FOR USE IN DRY FEEDING MACHINES SHALL BE OF SUCH SIZE THAT NOT LESS THAN 90% SHALL PASS A NO. 10 SIERC 1.7mm &amp; 100 % SIERC NO. 4 mm.</p> <p style="text-align: center;">10- PACKED IN 50 KG SACKS.</p>	<b>8000 TON</b>
CODE	ITEM	QTY.
03-01-01604	POLY ELECTROLYTE CATONIC ALLIED COLLOIDS ( POWDER FORM)	<b>120 TON</b>
CODE	ITEM	QTY.
03-01-01605	<p style="text-align: center;">LIQUID CHLORINE GAS</p> <p style="text-align: center;">1- CHLORINE RATIO IN EVAPORATED LIQUID SHALL NOT DECREASE THAN 99.5% IN SIZE .</p> <p style="text-align: center;">2- WATER RATIO IN EVAPORATED LIQUID SHALL NOT EXCEED THAN 0.010 % IN WEIGHT .</p> <p style="text-align: center;">3- SEDIMENT RATIO RESIDUE AFTER EVAPORATED SHALL NOT EXCEED IN 20 C THAN 0.02 % IN WEIGHT .</p> <p style="text-align: center;">4- WHOLE BOILING POINT OF LIQUID IS - 34C° .</p> <p style="text-align: center;">5- LIQUIDITY POINT IS - 98 - (I.E) - 100C° .</p> <p style="text-align: center;">6- DENSITY OF WATER VAPOUR 3.214 G/L TEMPERATURE DEGREE 760 MM (Hg) .</p> <p style="text-align: center;">7- IT IS IN FORM OF GOLDEN YELLOW LIQUID , EVAPORATES UNDER NORMAL CONDITIONS INTO GREENISH YELLOW GAS Cu , Ni , Fe , CO2 , O2 , N2 ZERO</p> <p style="text-align: center;">8- FILLED IN 1 TON CYLINDERS WHICH ARE SUPPLIED BY CLIENT.</p> <p style="text-align: center;">ALL THE CYLINDERS MUST BE TESTED HYDRAULICLY AND REPLACED THE VALVES WITH NEW ONES .</p>	<b>1500 TON</b>

## KARKH WATER SUPPLY

CODE	ITEM	QTY.
03-01-01606	AMMONIA 0.88 AR (B.D.H)	4x2.5 L
03-01-01607	AMMONIA SOLUTION 35% (B.D.H)	2x2.5 L
03-01-01608	AMMONIA CHLORIDE (B.D.H)	2x500 g
03-01-01609	HYDROCHLORIC ACID AR (B.D.H)	2x2.5 L
03-01-01610	ETHYLENE DIAMINE TETRA ACETIC ACID DISODIUM SALIT (B.D.H)	1x20 g
03-01-01611	HYDROCHLORIC ACID GPR (B.D.H)	2x2.5 L
03-01-01612	SULPHURIC ACID SOLATION 0.02 N CONVAL (B.D.H)	1x20g
03-01-01613	DIMETHYL AMINO BENZALDEHYDE	4x25g
03-01-01614	GIYCEROL ANALAR	2x2.5L
03-01-01615	SILVER NITRITE SOLUTION 0.028 N COMOL	CARTON OF 6x5
03-01-01616	ACETIC ACID CH <sub>3</sub> COOH = 60.05 MINIMUM ASSAY (ACIDIMETRIC) 99.5%	50x2.5L
03-01-01617	SODIUM ACE TATE ANHYDROUS MINIMUM ASSAY (EXNA) 98%	4x50kg
03-01-01618	M-ENDO AGAR LES (OXOID)	3x500g
03-01-01619	BRILLANT GREEN BILE (2%) BROTH	3x500g
03-01-01620	MEMBRINE FAECL COLIFORM BROTH	2x500g
03-01-01621	FUCHSIN (BASIC) (B.D.H)	2x25g
03-01-01622	TRYPTON WATER (OXOID)	2x500g
03-01-01623	ETHANOL 90% (B.D.H)	2x2.5L
03-01-01624	DECON 90% (B.D.H)	5x5L
03-01-01625	DI SODIUM HYOLROGEN ORTHOPHO (B.D.H)	2x500g
03-01-01626	ANTIMONY POTASSIUM TATRATE (B.D.H)	2x100g
03-01-01627	MAGNESIUM SULPHATE (B.D.H)	2x500g
03-01-01628	TEEPOL BLEACH (B.D.H)	5x1L
03-01-01629	YEAST EXTRACT AGAR (OXOID)	4x500g
03-01-01630	MINERALS MODIFIED MEDIUM BASE (OXOID)	=
03-01-01631	NUFLOW MEMBRANE FILTER SIZE 47 mm	50x200
03-01-01632	TEST TUBE SIZE 19X150	100
03-01-01633	TEST TUBE SIZE 16X150	=
03-01-01634	PETRI DISHS 52X58 mm	50
03-01-01635	PETRI DISHS 95X101 mm	50

**P. V. C**

**DIMENSIONS STANDARDS : DN 8063 (IN MILLIMETER)**  
**THREADED JOINT : WITH 150 R7 OR DN 2999**  
**WORKING PRESSUR FOR ADAPTOR FITTINGS**  
**FOR THREADED FITTINGS : PN 10 I.E 10 BAR AT 20C°**

CODE	ITEM	QTY.
03-01-01636	P.V.C VALVE , DIMENSION : 63 NW 50	200
03-01-01637	P.V.C. T CONNECTION , DIMENSION : 63 NW 50	250
03-01-01638	P.V.C. ELBOW 90 ° , DIMENSION : 63 NW 50	350
03-01-01639	REDUCER BUSH ( P.V.C) , DIMENSION : 110 - 90	300
03-01-01640	P.V.C. ELBOW 90 ° , DIMENSION : 110 NW 100	300
03-01-01641	P.V.C. T CONNECTION , DIMENSION : 110 NW 100	300
03-01-01642	P.V.C. FLANGE , DIMENSION : 110 NW 100	150
03-01-01643	P.V.C. UNION , DIMENSION : 63 NW 50	600
03-01-01644	P.V.C. ELBOW 120° , DIMENSION : 63 NW 50	400
03-01-01645	P.V.C. PIPE , DIMENSION : 110 NW 100	600m
03-01-01646	P.V.C. PIPE , DIMENSION : 63 NW 50	740 m
03-01-01647	P.V.C. BUSH , DIMENSION : 63 NW 50	300
03-01-01648	P.V.C. ELBOW 90 ° , DIMENSION : DN 50	30
03-01-01649	P.V.C. T CONNECTION , DIMENSION : DN 50	100
03-01-01650	P.V.C. PIPE , DIMENSION : DN 50	250 m
03-01-01651	VALVE P.V.C. , DIMENSION : 110 NW 100	100
03-01-01652	P.V.C. BALL VALVE , DIMENSION : 63 NW 50	20
03-01-01653	P.V.C. PIPE , 63 NW 50	460 m
	SPARE PART LIST FOR 7-NISSAN PROJECT PVC FITTINGS	
03-01-01654	REDUCING BUSH , SIZE : 110 – 90	80
03-01-01655	REDUCING BUSH , SIZE : 90 – 63	80
03-01-01656	REDUCING BUSH , SIZE : DN 40 – 25	30
03-01-01657	REDUCING BUSH , SIZE : DN 50 – 40	10
03-01-01658	REDUCING BUSH , SIZE : DN 50 – 20	20
03-01-01659	BUSH , SIZE : DN 25	30
03-01-01660	PIPE , SIZE : DN 20	60 m
	SPARE PART LIST FOR 7-NISSAN PROJECT PVC FITTINGS	
03-01-01661	DIAPHRAGM VALVES , SIZE : DA 63 , NW 50	32
03-01-01662	DOUBLE UNION BALL VALVES , SIZE: d 32 , DN 25	50
03-01-01663	DOUBLE UNION BALL VALVES , SIZE: d 25 , DN 20	50
03-01-01664	TEE , SIZE : DN 40	100
03-01-01665	TEE , SIZE : DA 63 , NW 50	150
03-01-01666	TEE , SIZE : DA 110 , NW 100	150
03-01-01667	TEE , SIZE: BS 4346/1 DN 40	40
03-01-01678	TEE , SIZE : NW 20 , 25 mm	40
03-01-01669	ELBOW 90° , SIZE : DA 63 , NW 50	150
03-01-01670	ELBOW 90° , SIZE : DN 40	80
03-01-01671	ELBOW 45° , SIZE : DN 20	50
03-01-01672	ELBOW 90° , SIZE : DA 110 , NW 100	150
03-01-01673	ELBOW 90° , SIZE : NW 20 , 25 mm	60
03-01-01674	UNION , SIZE : PVC1 NW50	100
03-01-01675	UNION , SIZE: DN 52	100
03-01-01676	UNION , SIZE: DN 40 PVC1	30
03-01-01677	UNION , SIZE : NW20 , 25 mm	20

SPARE PART LIST FOR 7-NISSAN PROJECT PVC FITTINGS		
03-01-01678	PIPE PVC DIA 63-110-140	<b>200 m FOR EACH</b>
03-01-01679	TEE 90 DIA 63-110-140-160	<b>40 FOR EACH</b>
03-01-01680	ELBOW 90 DIA 63-110-140-160	<b>40 FOR EACH</b>
03-01-01681	FLANGE ADAPTORS DIA 63-100-110-140-160	<b>40 FOR EACH</b>
03-01-01682	BLACKING FLANGE DIA 110-140-160	<b>410 FOR EACH</b>
03-01-01683	FLANGE ADAPTOR ( WITH "O" RING SROOVE) 140-160	<b>40 FOR EACH</b>
03-01-01684	UNION NUT DIA 63	<b>100</b>
03-01-01685	UNION DIA 50-63-110	<b>80 FOR EACH</b>
03-01-01686	REDUCING BUSH DIA 140 - 110 110 - 90 63 - 50	<b>20 20 20</b>
03-01-01687	ELBOW DIA 110 - 90 - 63	<b>20 FOR EACH</b>
03-01-01688	PRESSURE RELIEF VALVE DIA 63	<b>32</b>
03-01-01689	ISOLATING VALVE DIA 63	<b>80</b>
03-01-01690	ISOLATING VALVE DIA 50	<b>40</b>
03-01-01691	VALVE ADAPTOR UNION DIA 63	<b>80</b>
03-01-01692	ELBOW 45 DIA 110-140-160	<b>20 FOR EACH</b>
03-01-01693	SOCKET DIA 63-110-140-160	<b>40 FOR EACH</b>
03-01-01694	TANGIT ( 275) GRM	<b>100</b>
P.V.C. PIPES AND FITTINGS		
DOUBLE UNION BALL VALVE PLAIN SOCKET		
03-01-01695	1"	<b>10</b>
03-01-01696	1.5"	<b>15</b>
03-01-01697	2"	<b>25</b>
03-01-01698	2.5"	<b>25</b>
03-01-01699	3"	<b>25</b>
03-01-01700	3.5"	<b>25</b>
DOUBLE UNION BALL VALVE THREADED SOCKET		
03-01-01701	1.5"	<b>25</b>
03-01-01702	2"	<b>25</b>
03-01-01703	2.5"	<b>25</b>
03-01-01704	3"	<b>25</b>
DOUBLE UNION BALL VALVE FLANGED		
03-01-01705	1"	<b>5</b>
03-01-01706	1.5"	<b>10</b>
03-01-01707	2"	<b>15</b>
03-01-01708	2.5"	<b>15</b>
03-01-01709	3"	<b>15</b>
EHECK VALVE		
03-01-01710	1"	<b>10</b>
03-01-01711	1.5"	<b>15</b>
03-01-01712	2"	<b>25</b>

03-01-01713	2.5"	25
03-01-01714	3"	25
03-01-01715	3.5"	25
	DIAPHRAGM VALVE FLANG TYPE	
03-01-01716	2"	25
03-01-01717	2.5"	25
03-01-01718	3"	25
03-01-01719	3.5"	25
	ANGLE SEAT VALVE PLAM SOCKS	
03-01-01720	1"	10
03-01-01721	1.25"	10
03-01-01722	1.5"	10
03-01-01723	2"	10
03-01-01724	2.25"	10
03-01-01725	2.5"	10
03-01-01726	3"	10
	SEDIMENT STRAINERS	
03-01-01727	1"	10
03-01-01728	1.25"	10
03-01-01729	1.5"	10
03-01-01730	2"	10
03-01-01731	2.25"	10
03-01-01732	2.5"	10
03-01-01733	3"	10
03-01-01734	3.5"	10
	PIPE FITTING A- SOCKET PLAIN	
03-01-01735	1"	30
03-01-01736	1.5"	30
03-01-01737	2"	30
03-01-01738	2.5"	30
03-01-01739	3"	30
03-01-01740	3.5"	30
03-01-01741	ELBOWS 90° PLAIN	
03-01-01742	1"	30
03-01-01743	1.5"	30
03-01-01744	2"	30
03-01-01745	2.5"	30
03-01-01746	3"	30
03-01-01747	3.5"	30
	ELBOWS 45° PLAIN	
03-01-01748	1"	10
03-01-01749	1.5"	10
03-01-01750	2"	10
03-01-01751	2.5"	10
03-01-01752	3"	10
03-01-01753	3.5"	10
	UNION PLAIN	
03-01-01754	1"	30
03-01-01755	1.5"	30
03-01-01756	2"	30
03-01-01757	2.5"	30
03-01-01758	3"	30
03-01-01759	3.5"	30
	TEE 90° PLAIN	
03-01-01760	1"	25
03-01-01761	1.5"	25

03-01-01762	2"	25
03-01-01763	2.5"	25
03-01-01764	3"	25
03-01-01765	3.5"	25
	BEND 90°SHORT REDUCE PLAIN	
03-01-01766	1"	10
	1.5"	10
03-01-01767		
03-01-01768	2"	10
03-01-01769	2.5"	10
03-01-01770	3"	10
03-01-01771	3.5"	10
	HOSE ADAPTORS	
03-01-01772	0.5"	10
03-01-01773	0.75"	10
03-01-01774	1"	10
	FLANG , FULL FACE FLANG PLAIN	
03-01-01775	0.75"	15
03-01-01776	1"	15
03-01-01777	1.5"	15
03-01-01778	2"	15
03-01-01779	2.5"	15
03-01-01780	3"	15
03-01-01781	3.5"	15
03-01-01782	VARIBLE AREA FLOW METERS 2" , FLOW 400-4000 L/HR	15
03-01-01783	SOLVENT CEMENT 0.5 L	50
03-01-01784	CLEANER 0.5 L	25
03-01-01785	PTFE THREAD – WARP TAPE	500
03-01-01786	CHAIN WRENCH	8
03-01-01787	STRAP WRENCH	8
	PIPS	
03-01-01788	1"	200 m
03-01-01789	1.5"	200 m
03-01-01790	2"	200 m
03-01-01791	2.5"	200 m
03-01-01792	3"	200 m
03-01-01793	3.5"	200 m



### **SPARE PARTS FOR KARMA AND DURA VALVES**

<b>CODE</b>	<b>ITEM</b>	<b>PART NO.</b>	<b>QTY.</b>
<b>03-01-01794</b>	BUTTER FLY VALVE DN 600 WITH SCREW BRAKE WHEEL	10	5
<b>03-01-01795</b>	HAND DRIVEN BUTTER VALVE DN 600 PN10.	10	5
<b>03-01-01796</b>	HAND DRIVEN BUTTER VALVE DN 500 PN10.	10	10
<b>03-01-01797</b>	HAND DRIVEN BUTTER VALVE DN 400 PN10.	10	6
<b>03-01-01798</b>	NON - RETURN VALVE WITH LEVER AND BALANCING WEIGHT DN 500 PN10	10	10
<b>03-01-01799</b>	FLAP TRAP WITH LEVER AND LOAD DN 500 PN10 FOR HYDRAULIC MAIN .	10	10
<b>03-01-01800</b>	FLAP TRAP WITH LEVER AND LOAD DN 400 PN10 FOR HYDRAULIC MAIN .	10	6
<b>03-01-01801</b>	GATE VALVE DN 50 PN10		18
<b>03-01-01802</b>	BUTTER FLY VALVE WITH E - DRIVE DIRECTLY CONSTRUCTED IN FLOW DIRECTION (RIGHT)		
<b>03-01-01803</b>	DN 500 PN10	10	16
<b>03-01-01804</b>	DN 300 PN10	10	16
<b>03-01-01805</b>	DN 250 PN10	10	16
	BUTTER FLY VALVE WITH E - DRIVE DIRECTLY CONSTRUCTED IN FLOW DIRECTION (LEFT)		
<b>03-01-01806</b>	DN 500 PN10	10	16
<b>03-01-01807</b>	DN 300 PN10	10	16
<b>03-01-01808</b>	DN 250 PN10	10	16
<b>03-01-01809</b>	ANNVLAR BUTTER FLY VALVE WITH E - DRIVE SPINDLE EXTENTION DN 300 PN10 .	100	64
<b>03-01-01810</b>	ANNVLAR BUTTER FLY VALVE WITH HAND LEVER DN 150 PN10	10	32
<b>03-01-01811</b>	1000 x 1300 SLIDE VALVE WITH 2 GRAB HANDLES		4
<b>03-01-01812</b>	SLVICE VALVE DN 50 PN10		10

**PRESSURE REDUCING AND SHUT OFF VALVE S1 1812.1 SERIES 71P****1140**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-01813</b>	PRESSURE REDUCING AND SHUT OFF VALVES 71P1140 CHLORINE SULFOR DIOXIDE 8000 PPD AMMOUIA 4000R PPD KEY 71P1140	10
<b>03-01-01814</b>	TRIM COPSVLE ASSEMBLY S1/2 CHLORINE SULFOR DIOXIDE 8000 PPD AMMOUIA 4000R PPD KEY 26	10
<b>03-01-01-815</b>	GASKET KEY 15	20
<b>03-01-01816</b>	GASKET KEY 40	20
<b>03-01-01817</b>	DIAPHRAGM KEY 14	10
<b>03-01-01818</b>	SPRING KEY 11	4
<b>03-01-01819</b>	DIAPHRAGM BOLT ASSEMBLY KEY 16	10
<b>03-01-01820</b>	ORING KEY 8	4
<b>03-01-01821</b>	STEM VALVE RAN KEY 5	6
<b>03-01-01822</b>	GLAND VALVE KEY 7	6

**T.D.V**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
	ACTUATOR TYPE SP2 - 70A SERIAL NUMBER AIH 2813 OUT PUT SPEED 30/50HZ 60H R.P.M MOTOR 3 PHASE SQUIRREL CAGE INDUCION ROTOR RTG 15MINS (5.5)KW 2 P CLASS • SUPPLY 3 PHASE 50/60 HZ 400V AVERAGE CURRENT 13A MAX SEATING CURRENT 35A ENCLOSURE WT OIL SAE 80W/90 3.5 L AUXILIARY 15A 400V SWITCH RTG 0.8A 125V DC	
<b>03-01-01823</b>	SP2 - 70A/WT 100A	4
<b>03-01-01824</b>	SP2 - 45A/WT 70A	4
<b>03-01-01825</b>	SP2 - 45A	2

## WEIR ENGINEERING SERVICES

CODE	ITEM	PART NO.	QTY.
	CATHCART - GLASGOW G44 4EX SCOTLAND 4-K SERIAL NO. :- C5/56408/9 SPARES FOR 800/800/762 D.E.S.C NORTH RESERVOIR PUMPING STATION		
03-01-01826	ROTATING ASSEMBLY ( COMPLETE)	1,6,60,53,8,10,7 ,62,84,65,2,14,1 1,12,66	2
03-01-01827	BEARING HEUSING AND CAP	54,53	2
03-01-01828	THRUST NUT	9,4	2
03-01-01829	THRUST WASHER	60	26
03-01-01830	CLAND PACKING	62,16 ST	20
03-01-01831	SPACER RING	84,4 ST	2 ST
03-01-01832	IMPELLER EYE RING	3 ST	2 ST
03-01-01833	SHAFT NUT	8,4 NO.	3
	CATHCART - GLASGOW G44 4EX SCOTLAND 4-K SERIAL NO. :- C5/56471 SPARES FOR 350/300/429 D.E.S.C TAJI RESERVOIR PUMPING STATION		
03-01-01834	ROTATING ASSEMBLY ( COMPLETE)	1,6,60,53,8,10,7 ,62,84,65,2,14,1 1,12,66	1
03-01-01835	BEARING HEUSING AND CAP	54,53	1
03-01-01836	THRUST NUT	9,4	1
03-01-01837	THRUST WASHER	60	6
03-01-01838	CLAND PACKING	62,16 ST	20
03-01-01839	SPACER RING	84,4 ST	2 ST
03-01-01840	IMPELLER EYE RING	3 ST	1 ST
03-01-01841	SHAFT NUT	8,4 NO.	1
	CATHCART - GLASGOW G44 4EX SCOTLAND 4-K SERIAL NO. :- C5/56450/5/ SPARES FOR 400/400/410 D.E.S.C ABU GHRAIB RESERVOIR PUMPING STATION		
03-01-01842	ROTATING ASSEMBLY ( COMPLETE)	1,6,60,53,8,10,7 ,62,84,65,2,14,1 1,12,66	2
03-01-01843	BEARING HEUSING AND CAP	54,53	2
03-01-01844	THRUST NUT	9,4	1
03-01-01845	THRUST WASHER	60	2
03-01-01846	CLAND PACKING	62,16 ST	20
03-01-01847	SPACER RING	84,4 ST	2 ST
03-01-01848	IMPELLER EYE RING	3 ST	1 ST
03-01-01849	SHAFT NUT	8,4 NO.	1

## SPARE PARTS FOR KARAMA PUMPS

CODE	ITEM	PART NO.	QTY.
	HIGH LIFT PUMP TYPE 300-LNN-500 CV STOMER REF : 96/001 IDP REF : 17200006 SERVICE : H>L>P> CURVE : 928 R1 - A STAGE 1 S/N : 1306317 FLOW : 1200 m3/hr H : 65m R.P.M : 1480 P : 247 KW MAX P 290 KW DROW IMPELLER TO BE GSNZN10		
<b>03-01-01850</b>	SHAFT	301.00	3
<b>03-01-01851</b>	IMPELLER	311.00	2
<b>03-01-01852</b>	IMPELLER RING		6
<b>03-01-01853</b>	IMPELLER KEY	302.00	4
<b>03-01-01854</b>	SLEEVE		6
<b>03-01-01855</b>	SHAFT NUT	363.00	6
<b>03-01-01856</b>	BEARING HOSING	202.00	6
<b>03-01-01857</b>	GLAND	406.00	6
<b>03-01-01858</b>	GLAND RING	406.00	6
<b>03-01-01859</b>	BEARING 6214		8
<b>03-01-01860</b>	SLEEVE KEY	309.00	8
<b>03-01-01861</b>	GAS KET	109.00	8
<b>03-01-01862</b>	BEARING FOR MOTOR 6322C3		8
<b>03-01-01863</b>	LANTERN RING		8
	HIGH LIFT PUMP TYPE 8LR - 20 A CV STOMER REF : 96/001 IDP REF : 17200006 SERVICE : H.L.P CURVE : 24366 - A STAGE 1 S/N : 1306317 FLOW : 600 m3/hr H : 60m R.P.M : 1475 P : 121 KW MAX P 136 KW DROWING NO. 2976453 IMPELLER TO BE GSNZN10		
<b>03-01-01864</b>	SHAFT	301.00	3
<b>03-01-01865</b>	IMPELLER	311.00	2
<b>03-01-01866</b>	IMPELLER RING		6
<b>03-01-01867</b>	IMPELLER KEY	302.00	4
<b>03-01-01868</b>	SLEEVE		6
<b>03-01-01869</b>	SHAFT NUT	363.00	6
<b>03-01-01870</b>	BEARING HOSING	202.00	6
<b>03-01-01871</b>	GLAND	406.00	6
<b>03-01-01872</b>	GLAND RING	406.00	6
<b>03-01-01873</b>	SLEEVE KEY	309.00	8
<b>03-01-01874</b>	GAS KET	109.00	8
<b>03-01-01875</b>	LANTERN RING		8
	ROW WATER PUMP TYPE 200 LNN 325 TAG : 1306327 PWR : 45 Q : 600 m3/hr H : 20m BEARING 6209/620 9 R.P.M : 1470 MIN P : 121 KW MAX P 136 KW DROWING NO. 2976453 IMPELLER TO BE GSNZN10		
<b>03-01-01876</b>	SHAFT	301.00	3
<b>03-01-01877</b>	IMPELLER	311.00	2
<b>03-10-01878</b>	IMPELLER RING		6
<b>03-01-01879</b>	IMPELLER KEY	302.00	4
<b>03-01-01880</b>	SLEEVE		6
<b>03-01-01881</b>	SHAFT NUT	363.00	6
<b>03-10-01882</b>	BEARING HOSING	202.00	6
<b>03-01-01883</b>	GLAND	406.00	6

<b>03-01-01884</b>	GLAND RING	406.00	6
<b>03-01-01885</b>	SLEEVE KEY	309.00	8
<b>03-01-01886</b>	GAS KET	109.00	8
<b>03-01-01887</b>	LANTERN RING		8
<b>03-01-01888</b>	PACKING		200m

**SPARE PARTS FOR 7 NISSAN PUMPS**

CODE	ITEM	PART NO.	QTY.
	LIST PUMP TYPE - DOSING PUMP MILROYAL C COMPANY DOSAPRO PLUNGER LIQUID END C9/32 ST		
<b>03-01-01889</b>	WORM		4
<b>03-01-01890</b>	TANGENTIAL GEAR		4
<b>03-01-01891</b>	INCLINABLE CRANK		8
<b>03-01-01892</b>	CONNECTING ROD		16
<b>03-01-01893</b>	MICROMETER SCREW		2
<b>03-01-01894</b>	CROSS HEAD		8
<b>03-01-01895</b>	PLANGER		6
<b>03-01-01896</b>	VALV ASSEMBLY ( SUCTION )		8
<b>03-01-01897</b>	VALV ASSEMBLY (DIS CHARGE)		8
<b>03-01-01898</b>	CONNECTION ASSEMBLY ( SUCTION )		4
<b>03-01-01899</b>	CONNECTION ASSEMBLY ( DIS CHARGE )		4
<b>03-01-01900</b>	CLAMPING NUT		2
<b>03-01-01901</b>	WRERCH FOR BEARING ADJUSTING SCREW		2
<b>03-01-01902</b>	WRERCH FOR BEARING HOLDER SCREW		2
<b>03-01-01903</b>	CENTRING TOOL		1
<b>03-01-01904</b>	SPANNER FOR CONNECTING ROD		3
<b>03-01-01905</b>	LIST PUMP TYPE - 500 LNN 700 COMPANY IDP		
<b>03-01-01906</b>	BEARING HOUSING	202.00	4
<b>03-01-01907</b>	WEAE RING	161.00	8
<b>03-01-01908</b>	BALL BEARING	231.00	10
<b>03-01-01909</b>	BALL BEARING	241.00	10
<b>03-01-01910</b>	SHAFT	301.00	2
<b>03-01-01911</b>	IMPELLER	311.00	1
<b>03-01-01912</b>	SLEEVE	351.00	8
<b>03-01-01913</b>	SHAFT NUT	363.00	8
<b>03-01-01914</b>	LOCK NUT	366.00	6
<b>03-01-01915</b>	<b>O - RING</b>	<b>374.00</b>	<b>10</b>
<b>03-01-01916</b>	<b>V - RING</b>	<b>378.00</b>	<b>10</b>
<b>03-01-01917</b>	<b>V - RING</b>	<b>379.00</b>	<b>10</b>
<b>03-01-01918</b>	<b>STUFFING BOX HOUSING</b>	<b>401.00</b>	<b>10</b>
<b>03-01-01919</b>	<b>LANTERN RING</b>	<b>405.00</b>	<b>8</b>
<b>03-01-01920</b>	<b>STUFFING BOX GLAND</b>	<b>406.00</b>	<b>6</b>
<b>03-01-01921</b>	<b>GLAND RING</b>	<b>409.00</b>	<b>6</b>
<b>03-01-01922</b>	<b>O - RING</b>	<b>414.00</b>	<b>8</b>
	LIST PUMP TYPE - 300 LNN 475 COMPANY IDP		
<b>03-01-01923</b>	<b>BEARING HOUSING</b>	<b>202.00</b>	<b>8</b>
<b>03-01-01924</b>	<b>WEAE RING</b>	<b>161.00</b>	<b>10</b>
<b>03-01-01925</b>	<b>BALL BEARING</b>	<b>231.00</b>	<b>10</b>
<b>03-01-01926</b>	<b>BALL BEARING</b>	<b>241.00</b>	<b>10</b>
<b>03-01-01927</b>	<b>SHAFT</b>	<b>301.00</b>	<b>5</b>
<b>03-01-01928</b>	<b>IMPELLER</b>	<b>311.00</b>	<b>3</b>
<b>03-01-01929</b>	<b>SLEEVE</b>	<b>351.00</b>	<b>10</b>
<b>03-01-01930</b>	<b>SHAFT NUT</b>	<b>363.00</b>	<b>10</b>
<b>03-01-01931</b>	<b>LOCK NUT</b>	<b>366.00</b>	<b>10</b>
<b>03-01-01932</b>	<b>O - RING</b>	<b>374.00</b>	<b>20</b>
<b>03-01-01933</b>	<b>V - RING</b>	<b>378.00</b>	<b>20</b>
<b>03-01-01934</b>	<b>V - RING</b>	<b>379.00</b>	<b>20</b>
<b>03-01-01935</b>	<b>STUFFING BOX HOUSING</b>	<b>401.00</b>	<b>10</b>

<b>03-01-01936</b>	<b>LANTERN RING</b>	<b>405.00</b>	<b>20</b>
<b>03-01-01937</b>	<b>STUFFING BOX GLAND</b>	<b>406.00</b>	<b>10</b>
<b>03-01-01938</b>	<b>GLAND RING</b>	<b>409.00</b>	<b>10</b>
<b>03-01-01939</b>	<b>O - RING</b>	<b>414.00</b>	<b>20</b>

## SPARE PARTS FOR KARKH PUMPS

CODE	ITEM	PART NO.	QTY.
	SPARE FOR 1000 MM MIXED FLOW BOWL PUMPS		
03-01-01940	PUMP SHAFT	P2002461	1
03-01-01941	INTERMEDIATE SHAFT	P2002462	1
03-01-01942	INTERMEDIATE SHAFT	P2002462	1
03-01-01943	INTERMEDIATE SHAFT	P2002462	1
03-01-01944	TOP SHAFT	P2002464	1
03-01-01945	PUMP BEARING SLEEVE	PX2101562	3
03-01-01946	INTERMEDIATE BEARING SLEEVE	PM2051299	32
03-01-01947	140 BORE COUPLING (SLEEVE TYPE)	P2001134	16
03-01-01948	IMPELLER NUT	PM2051346	16
03-01-01949	IMPELLER NUT LOCKING SCREW		16
03-01-01950	BOWL CASING	P2002496	4
03-01-01951	IMPELLER	P2002369	6
03-01-01952	PUMP BEARING CUTLESS		8
03-01-01953	SPIDER INTERMEDIATE BEARING CUTLESS	PM2051461	32
03-01-01954	TUNNEL TUBE REDUCING ASSLY	P2002462	8
03-01-01955	TUNNEL TUBE	P2002023	8
03-01-01956	TUNNEL TUBE 2322 O/ALL LENGTH	P2002023	8
03-01-01957	TUNNEL TUBE 1639 O/ALL LENGTH	P2002023	8
03-01-01958	TUNNEL TUBE 1616 O/ALL LENGTH	P2002023	8
	SPARE FOR 500 MM MIXED FLOW BOWL PUMPS SECTIONAL DRAWING NOMBER P2002364 ROW WATER PUMPING STATION		
03-01-01959	PUMP SHAFT	P2002902	1
03-01-01960	INTERMEDIATE SHAFT	P2002454	1
03-01-01961	INTERMEDIATE SHAFT	P200245	1
03-01-01962	INTERMEDIATE SHAFT	P2002454	1
03-01-01963	TOP SHAFT	P2002906	1
03-01-01964	60 BORE COUPLING (SLEEVE TYPE)	P2001127	4
03-01-01965	IMPELLER NUT	PZ688590	2
03-01-01966	THRUST BEARING COLLAR	PX.210161 2	6
03-01-01967	PUMP HALF COUPLING	45/52	1
03-01-01968	MOTOR HALF COUPLING	45/70/1	1
03-01-01969	COUPLING BUSHES	45/209	6
03-01-01970	COUPLING NUTS		12
03-01-01971	BOWL CASING	P2002458	1
03-01-01972	PUMP BEARING , CUTLESS	PX2101556	3
03-01-01973	SPIDER BEARING , CUTLESS	PM2051515	6
03-01-01974	INTERMEDIAT BEARING , CUTLESS	PM2051452	6
03-01-01975	BEARING HOUSING (PUMP)	P2002466	2
03-01-01976	STUFFING BOX (GLAND PACKHNG)	P2002481	2
03-01-01977	GLAND PACKING		4 m
03-01-01978	TUNNEL TUBE L = 1980	P2002431	1
03-01-01979	TUNNEL TUBE L = 2020	P2002431	1
03-01-01980	TUNNEL TUBE L = 2079	P2002431	1
03-01-01981	TUNNEL TUBE L = 1841	P2002431	1
03-01-01982	O - RING 3.5 (0.139) Ø x 360 LONG APP CUTTO SVIT		2
03-01-01983	O - RING		18



## TREATED WATER PUMPING STATION

CODE	ITEM	QTY.
<b>03-01-01984</b>	MOTOR FOR TREATED WATER PUMP FRAME SIZE VNL 630-41 8 POLE CONTRACT NO. 01/32423 A MOTOR SENIAL NO. 32423 A – 1 - 5M NO. OFF 5 RATING BS 5000 PT.99 ENCLOSURE C.A.C.W I.P.55 COOLING WATER TEMP 32C° AITITUDE 1000 m CLASS INSULATION F OUT PUT 2300 KW FULL LOAD SPEED 742 R.P.M VOLTAGE 11KV PHASES 3 FREQUENCY 50 HZ PHASES CONNECTED STAR STARTING TORQUE 50% STARTING CURREUT 684 A DIRECTION OF ROTETION ANTI - CLOCKWISE OND-E AIR GAP 2.4 mm. I 10% .	1
	BEARINGS MOTOR FOR 900/800/1024 DESC PUMPS	
<b>03-01-01985</b>	BALL BEARING 190 BORE SKF 6238	16
<b>03-01-01986</b>	SPHIRICAL ROLLER BEARING SKF 29430B	16
<b>03-01-01987</b>	BALL BEARING SKF 6244	16
	SERIAL NO. : CS/56383/84 SPARES FOR 900/800/1024 D.E.S.C. PUMPS SECTION DRAWING NUMBER P2003144	
<b>03-01-01988</b>	IMPELLER C/W EYR,NGS	4
<b>03-01-01989</b>	SHAFT SLEEVE	16
<b>03-01-01990</b>	GLAND PACKING	50
<b>03-01-01991</b>	ROTATING ELEMENTS	2
<b>03-01-01992</b>	O-RING	8

## RAW WATER PUMPING STATION

CODE	ITEM	QTY.
<b>03-01-01993</b>	MOTOR FOR RAW WATER PUMP FRAME SIZE VNL 500/34 10 POLE CONTRACT NO. 01/32421 A MOTOR SENIAL NO. 32421 A - 1 - 6M NO. OFF 6 RATING MCR SPECIFICATION : BS.5000,PT.99 ENCLOSURE C.A.C.W I.P.55 AMBIENT TEMP 50 C° AITITUDE 1000 m CLASS INSULATION F OUT PUT 780 KW FULL LOAD SPEED 593 R.P.M VOLTAGE 3300 KV PHASES 3 FREQUENCY 50 HZ PHASES CONNECTED STAR STARTING TORQUE 0.6 STARTING CURREUT 812 A DIRECTION OF ROTETION ANTI- CLOCKWISE ON D-E AIR GAP 1.8 mm. I 10% .	1
	BEARINGS MOTOR FOR 1000mm MIXED FLOW BOWEL PUMPS	
<b>03-01-01994</b>	BALL BEARING BRG. BAL 150 SKF 6230	16
<b>03-01-01995</b>	THRUST BRG SKF 7322B	32
	SERIAL NO. : CS/56362/63 SPARES FOR 1000MM MIXED FLOW BOWL PUMPS SECTION DRAWING NUMBER P2002452	
<b>03-01-01996</b>	IMPELLER	4
<b>03-01-01997</b>	IMPELLER SHAOUD GLAND PACKING	8
<b>03-01-01998</b>	SPIDER BEARING CATLESS	100
<b>03-01-01999</b>	COMPLETE ROTATING ELEMENTS	32
<b>03-01-02000</b>	O-RING	4

**PUMP TYPE :- N27DC-1 STAGE  
:- 980 RPM**

CODE	DESC.	PART NO.	QTY
03-01-02001	IMPELLER	5845-02	2
03-01-02002	WER RING	5845-08	7
03-01-02003	DISCHARGE BOWL BEARRING	5845-39B	8
03-01-02004	SUCTION BEARING	5845-39D	8
03-01-02005	BOWL CAPSCREWS	5845-199A	96
03-01-02006	IMPELLER KEY	5845-32	3
03-01-02007	IMPELLER THRUST RING	5845-86	3
03-01-02008	BEARING RETAINER	431-3-0304	4
03-01-02009	INTERMEDIATE LINE SHAFT	427-3-7120	6
03-01-02010	LINE SHAFT COUPLING	427-3-0007	6
03-01-02011	LINE SHAFT SLEEVE	429-3-0071	20
03-01-02012	STUFFING BOX COMPLETE	426-3-0206	3
03-01-02013	STUFFING BOX BEARING	400-3-0160	6
03-01-02014	STUFFING BOX GASKET	435-3-0029	3
03-01-02015	PACKING RINGS (SET OF 8)	426-3-0079	14
03-01-02016	PACKING GLAND	426-3-0171	2
03-01-02017	PACKING GLAND STUD & NUT	900-0-823-5014	14
03-01-02018	BEARING INSERT	400-3-5119	20
03-01-02019	DISCHARGE BOWL	5845-199	1
03-01-02020	THRUST RING RETAINER	5845-82	6
03-01-02021	BOWL SHAFT	5845-06	3
03-01-02022	SLINGER	426-3-0196	6
03-01-02023	THRUST BEARING COMPLETE		4

## SPARE PARTS FOR WATHBA PUMPS

CODE	ITEM	QTY.
	PUMP TYPE : 10 LR - 17 B CURVE : A - 24372 STAGES : 1 S/N : 1306323 / 1306324 IMPELLER TO BE GSNZN10	
<b>03-01-0204</b>	PUMP SHAFT	3
<b>03-01-0205</b>	IMPELLER	3
<b>03-01-0206</b>	SHAFT NUT	6
<b>03-01-0207</b>	SHAFT SLEEVE O - RING	6 ST
<b>03-01-0208</b>	SHAFT SLEEVE	6 ST
<b>03-01-0209</b>	CASING WEARING RING	6 ST
<b>03-01-02030</b>	LINE BEARING	4 ST
<b>03-01-02031</b>	THRUST BEARING	4 ST
	PUMP TYPE : 8 LR - 20 A CURVE : A - 24366 STAGES : 1 S/N : 1306314 IMPELLER TO BE GSNZN10	
<b>03-01-02032</b>	PUMP SHAFT	3
<b>03-01-02033</b>	IMPELLER	2
<b>03-01-02034</b>	SHAFT NUT	3
<b>03-01-02035</b>	SHAFT SLEEVE O - RING	3 ST
<b>03-01-02036</b>	SHAFT SLEEVE	3 ST
<b>03-01-02037</b>	CASING WEARING RING	3 ST
<b>03-01-02038</b>	LINE BEARING	3 ST
<b>03-01-02039</b>	THRUST BEARING	3 ST

## SPARE PARTS FOR QADISIA AND RASHEED PUMPS

CODE	ITEM	QTY.
	PUMP TYPE : 10 LR18 RETATION OF PUMPS CLOCK WISE Q = 1000 m <sup>3</sup> /h R.P.M = 1471 IMPELLER TO BE GSNZN10	
<b>03-01-02040</b>	SHAFT	3
<b>03-01-02041</b>	IMPELLER	3
<b>03-01-02042</b>	IMPELLER RING	10 ST
<b>03-01-02043</b>	CASING GASKET	7
<b>03-01-02044</b>	SET OF BEARING ( LINE \$ THURST )	10 ST
<b>03-01-02045</b>	SHAFT SLEEVE O - NO. 79	10 ST
<b>03-01-02046</b>	COMPLETE ROTATING ASSEMBLY INCLUDES ( SHAFT + IMPELLER + WEAR RINGS + BEARINGS + SHAFT SLEEVE )	4
	PUMP TYPE : 10 LR18 RETATION OF PUMPS ANTICLOCK WISE Q = 1000 m <sup>3</sup> /h R.P.M = 1471 IMPELLER TO BE GSNZN10	
<b>03-01-02047</b>	SHAFT	3
<b>03-01-02048</b>	IMPELLER	3
<b>03-01-02049</b>	IMPELLER RING	10 ST
<b>03-01-02050</b>	CASING GASKET	6
<b>03-01-02051</b>	SET OF BEARING ( LINE \$ THURST )	10 ST
<b>03-01-02052</b>	SHAFT SLEEVE O - NO. 79	10 ST
<b>03-01-02053</b>	COMPLETE ROTATING ASSEMBLY INCLUDES ( SHAFT + IMPELLER + WEAR RINGS + BEARINGS + SHAFT SLEVE )	3
	PUMP TYPE : 300 LNN 475 Q = 1060 m <sup>3</sup> /h R.P.M = 986 H = 20 m IMPELLER TO BE GSNZN10	
<b>03-01-02054</b>	SHAFT	3
<b>03-01-02055</b>	SHAFT SLEEVES	6
<b>03-01-02056</b>	IMPELLER	2
<b>03-01-02057</b>	IMPELLER RING	6 ST
<b>03-01-02058</b>	CASING GASKET	3
<b>03-01-02059</b>	SET OF BEARING ( LINE \$ THURST )	10
<b>03-01-02060</b>	COMPLETE ROTATING ASSEMBLY INCLUDES ( SHAFT + IMPELLER + WEAR RINGS + BEARINGS + SHAFT SLEEVE )	2

### SPARE PARTS FOR RAW WATER PUMPS

CODE	ITEM	QTY.
	PF = 3670 - 00 - 2310 - 2.06/07/08	
03-01-02061	SHAFT SLEEVE	20
03-01-02062	IMPELLER BEARING SLEEVE	30
03-01-02063	COMPLETE MUFF COUPLING	20
03-01-02064	WITH SCREWS (2PER SET)	20
03-01-02065	IMPELLER (1 ST - 2 ND)	20
03-01-02066	SET OF RADIAL \$ THRUST	20
03-01-02067	BEARINGS	20
	START RAW WATER PUMPS PF = 3670 - 00 - 2310 - 2.06/09/10	
03-01-02068	IMPELLER SHAFT	10
03-01-02069	IST. STAGE IMPELLER	10
03-01-02070	2ND . STAGE IMPELLER	10
03-01-02071	IN TERNEDIATE BEARRING SLEEVE	20
03-01-02072	IMPELLER BEARING SLEEVE	10
03-01-02073	SET OF RADIAL & THRUST BEARING (2PERSET)	10
03-01-02074	COMPLETE MUFF COUPLING	10

### SPARE PARTS FOR WAHDA WATER PUMPS

CODE	ITEM	QTY.
	PUMP TYPE 8L R-20A 680/H	
03-01-02075	SHAFT	2
03-01-02076	SHAFT SLEEVE	2
03-01-02077	IMPELLER RING	6
03-01-02078	IMPELLER ( TO BE GSNZN10)	4
03-01-02079	COMPLETE ROTARING (ASSEMBLY)	1
03-01-02080	CASING GASKET	3
	PUMP TYPE 10L R-16A 680/H	
03-01-02081	SHAFT	2
03-01-02082	SHAFT SLEEVE	4
03-01-02083	IMPELLER RING	6
03-01-02084	IMPELLER ( TO BE GSNZN10)	2
03-01-02085	COMPLETE ROTARING (ASSEMBLY)	1
03-01-02086	CASING GASKET	3

CODE	ITEM	SITE	QTY.
	PUMP NO. 4756560 UNIT CODE SRA8		
03-01-02087	IMPELLER	WA WAT	2
03-01-02088	SHAFT SLEEVE	RA	4SET
03-01-02089	COMPLETE VOTATING ASSEMBLY	KAD	4
	SPP Q = 263.894S , N = 1450 R.P.M TYPE BR 10 E	KAD	
03-01-02090	IMPELLER		2
03-01-02091	SHAFT SLEEVE		2SET
03-01-02092	COMPLETE VOTATING ASSEMBLY		2
03-01-02093	LUNTERN RING		2SET

**BUIB**

CODE	ITEM	QTY.
03-01-02094	BULB : OPEN TYPE : SCREEN CASE MATERIAL: CASTIRON DIAPHRAGM MATERIAL : NITRLE RUBBER WEIGHT : 6.12 KG	10
03-01-02095	BULB : OPEN TYPE : SCREEN CASE MATERIAL: CASTIRON DIAPHRAGM MATERIAL : NITRLE RUBBER WEIGHT : 6.12 KG	10
03-01-02096	INSTRUMENT NO. 170783 RANGE 0-2000 KG MINOR MARKS 5KG MAJOR MARKS 20.0 KG DIAL DIAMETER 18" CRANE SCALES	6

**SPARE PARTS FOR RAW WATER**

CODE	ITEM	PART NO.	QTY.
	AUTOMATIC BOOSTING UNITS JEUMONT - SCHNEIDER 31-32 QUAI DE DION BOUTON 92806 PUTEAUX		
03-01-02097	CONTACTOR 16 A 48 V (DC) + TIMER LA 3022	km1 , km2	20
03-01-02098	RELAYS 48 V DC	KA1,KA2, KA3,KA3A ,KA4,KA5, KA5A,KA6 ,RKM1, RKM2	40
03-01-02099	VOLTAGE RELAY 400V	RV	20
	WATER MECHANICAL TREATMENT (TRASH RAKE SCREEN ) PERRIER AVENUE L.A. BEAUNIER BP.43 42160 ANDREZIEUX BOUTHEON		
03-01-02100	REVERSING CONTACTOR	LP2 D12GE	60
03-01-02101	CONTACTOR	LC1- D093N	20
03-01-02102	RELAY	CA2 FN244E	40
03-01-02103	THERMAL OVER LOAD RELAY	LA1 D0930, LA1D0930 6	40
	CONTROL DESK SPIE - BATINOLLES LE-BOURGET		
03-01-02104	SPRING RETURN SELECTOR 3 WAYS LEFT (1T+1B) RIGHT (2T)	PF-3670- 10-2820-4- 59-001-003	50
03-01-02105	RAW WATER MAINIFOLD PRESSURE - FULL SCALE 0-100 M.W.C	PI(1004)	5
03-01-02106	RAW WATER FLOW TO NETWORK FULL SCALE 36000 m3/h	FI(1001)	5
03-01-02107	TOTAL FLOW UNIT m3	FQ(1001A)	5
03-01-02108	RESET TOTAL FLOW UNIT m3	FQ(1001B)	5

<b>03-01-02109</b>	FLASHER RELY (FIXED PERIOD)	FQ(1001B)	5
	DIRECT CURRENT BOARO HOUVENAGHEL		
<b>03-01-02110</b>	RELAY 2246-220V - 50 HZ	X1	20
<b>03-01-02111</b>	RELAY 2246 - 48V	X2	20
<b>03-01-02112</b>	DRIVER CARD PLCE	DR	5
<b>03-01-02113</b>	REGULATION CARD CE 37/82 48V DC	RG	5
<b>03-01-02114</b>	EARTH FAULT DETECTOR RELAY CE 133/76 48V DC	XE	10
<b>03-01-02115</b>	VOLTAGE RELAY CE 62/67 48V DC	XV	20
<b>03-01-02116</b>	FAN AE 200 2WS	FA	20
	RELAY PANEL SPIE - BATIGNOLLES LE - BOURGET		
<b>03-01-02117</b>	INSTANTANEOVS RELAY TEC 2246 48V	KA	40
<b>03-01-02118</b>	IN STANTANEOVS RELAY 24 V TEC 224-6	KA	40
<b>03-01-02119</b>	DROP OUT TIME DELAY RELAY 0.25 TO 25- 48V DC	KT6	20
<b>03-01-02120</b>	FLUSHING RELAY TEC		15
<b>03-01-02121</b>	EXHAUST FAN		10
	AIR CONDITIONING CONDITIONNAIR		
<b>03-01-02122</b>	OVER LOAD RELAY`	LRID12316	15
<b>03-01-02123</b>	OVER LOAD RELAY	LR1D1632	15
<b>03-01-02124</b>	OVER LOAD RELAY	LR1D0930 3	15
<b>03-01-02125</b>	OVER LOAD RELAY	LR1D0931 4	15
<b>03-01-02126</b>	PANELS OF COOLING TOWERS S.E.E.A		
<b>03-01-02127</b>	OVER LOAD RELAY 18 TO 25A	FR32	15
<b>03-01-02128</b>	OVER LOAD RELAY 4 TO 6A	FR30	15
<b>03-01-02129</b>	OVER LOAD RELAY 13 TO 18A	FR10	15
<b>03-01-02130</b>	POWER TRANSFORMERTS		
<b>03-01-02131</b>	BUSHING PLUG IN HN 52 S61 (12KV)	A409- 122384	15
<b>03-01-02132</b>	BUSHING THROUGH IN BARS 1KV	SHEET 2046-94-1	15
<b>03-01-02133</b>	SET JOINTS ( FOR TRANSFORMER)	SHEET 2046-94-1	20
<b>03-01-02134</b>	BUCHHOLZ GAS RELAY	DGPT	5
<b>03-01-02135</b>	LOW VOLTAGE SWITCHGEAR		
<b>03-01-02136</b>	CIRCUIT BREAKER 400V 630 A	M.G	5



## ELE. SPARE PARTS FOR WAHDA AND RASHEED WATER PUMPS

CODE	ITEM	QTY.
03-01-02137	CONTACTOR EH 100 55 KW 200 A 3POLE 415 V COIL 380-400 V 50 HZ	10
03-01-02138	CONTACTOR EH 90 55 KW 380-415 V COIL 380-400 V 50 HZ	10
03-01-02139	CONTACTOR EH 300 250 KW 380- 415 V COIL 380-400 V 50 HZ	10
03-01-02140	CONTACTOR EH 210 160 KW 380- 415 V COIL 380-400 V 50 HZ	15
03-01-02141	CONTACTOR EH 175 380- 415 V COIL 380-400 V 50 HZ	6
03-01-02142	FUSE CYL. EI 33 500V 10 A 3-PHASE 10X38	20
03-01-02143	SEQUENCE RELAY EWS 8A 250V 3-PHASE	15
03-01-02144	YD RELAY Y 9A US 100-415V AC1 230 6A 400V 3.8A	15
03-01-02145	CURRENT TRANSFORMER TA 30 A 200/5	15
03-01-02146	CURRENT TRANSFORMER TA 30 A 500/5	15
03-01-02147	CURRENT TRANSFORMER A 300/5	3
03-01-02148	AMMETER 300/5 A	6
03-01-02149	AMMETER 200/5 A RANGE (0-600A)	6
03-01-02150	OVER LOAD T135 DU RANG (80-110)A	6
03-01-02151	OVER LOAD T450 DU RANG (220-310)A	6
03-01-02152	OVER LOAD T200 DU RANG (150-200)A	6
03-01-02153	POWER SWITCH 500A IEC 947	3
03-01-02154	POWER SWITCH 250A T200 K 11 IEC 947-3 SK616	3
03-01-02155	POWER SWITCH 315A IT315 K 111	3
03-01-02156	PUSH BOTTON GREEN SK 616 00-B ITH : 10A	3
03-01-02157	PUSH BOTTON SK 616 003-A 230 V MAX 2W	10
	ELC. EQUIPMENT	
03-01-02158	CONTACTOR TYPE OKYM 5W22 STROMBERG ITH 400 A 415V	30
03-01-02159	CONTACTOR TYPE ASEA 800 A	6
03-01-02160	CONTACTOR TYPE ASEA 300 A	8
03-01-02161	CONTACTOR TYPE ASEA 200 A	6
03-01-02162	VOLTAGE TRANSFORMER TYPE : BS 3941 RATIO 11000/110 FREQ 50 Hz VA : 100 CLASS 1.0 RVF : 1.5/30 SEC IL 28/75 KV	10

## MANOMETER

CODE	ITEM	PART NO.	QTY.
03-01-02163	VACCUMETER WITH SPRING TUBE AND COCKE R 1/2" Ø = 100 - 10/0 m WC .		50
03-01-02164	MANOMETER WITH SPRING TUBE AND COCKE R 1/2" Ø = 100 - 0/100 m WC .		50
03-01-02165	VACCUME PRESSURE SWITCH 1/2"		26

## CONTACTORS (AC BLOCK CONTACTOR)

CODE	ITEM	QTY.
03-01-02166	3TB40 - 170 - AMO	40
03-01-02167	3TB42 - 170 - AMO	12
03-01-02168	3TB43 - 170 - AMO	18
03-01-02169	3TB48 - 170 - AMO	18
03-01-02170	3TB50 - 170 - AMO	12
03-01-02171	3TB54 - 170 - AMO	18
03-01-02172	3TB52 - 170 - AMO	10

## TRANSFORMERS

CODE	ITEM	QTY.
03-01-02173	TRANSFORMERS 400/220 V 5.3 KVA ( -- + 5%)	2
03-01-02174	TRANSFORMERS 400/39 V 3.3 KVA ( -- + 5%)	2

## UPS WITH FOLLOWING SPECIFICATIONS

CODE	ITEM	QTY.
03-01-02175	UPS WITH FOLLOWING SPECIFICATIONS 3x380 V (-+10%) , 50 Hz 6.3 KVA - SELECTING FUSE AT MAINS SIDE 25A WITH 79 - 13 NICAD - CELLS , END CELLS AT THE NEGATIVE END , BATTERY NOT GROUNDED @ CURRENT RATINGS MAIN CHARGER I <sub>G</sub> 30A ADD. CHARGER I <sub>G</sub> 15A LOAD CIRCIUT I <sub>V</sub> 40A  @ VOLTAGE RATING (DC) 110V VOLTAGE OF STOCK CELLS IN FUNCTION FLOAT U <sub>P</sub> 111V ± 1% BOOST U <sub>L</sub> 121V ± 1% VOLTAGE OF END CELLS IN FUNCTION FLOAT U <sub>P</sub> 18.3V ± 1% BOOST U <sub>L</sub> 20.1V ± 1% LOAD CIRCUIT IN FUNCTION FLOAT U <sub>P</sub> 110V ± 1% BOOST U <sub>L</sub> 120V ± 1% CHARGE - DISCHARGE VOLTAGE 121 V TO 102V	2

## CLARIFIER SCRAPER

CODE	ITEM	QTY.
03-01-02176	SCRAPER WHEEL FOR CLARIFIERS THE WHEEL IS MADE OF CYLINDRICAL DRUM COATED WITH POLY - URETHANE SUBSTANCE ALL DETAILS FOR CONSTRUCTION AND DIMENTIONS ARE SHOWN WITH THE INCLUDED DNAWING .	30

## GAP METER

CODE	ITEM	QTY.
	GAPLATON LTD FLOW CONTROL WELLA - ROAD - BASING STOKE RG 22UQ ENGLAND	
03-01-02177	GAP METER TYPE SGV - MS FLOS TAT TYPE VAND F (1 - 4)	6

## CABLES

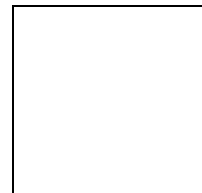
CODE	ITEM	QTY.
	MULTICORE , LOW VOLTAGE (0.6/1KV) POWER CABLES , WITH CIRCULAER STRANDED COPPER CONDUETORS , XPLE INSULATED , STEEL WIRE ARMOURED , PVC SHEATHED , ACCORDING TO BS 502/83 SPECIFICATION	
	NOMINAL CROSS SECTION NR x mm <sup>2</sup> :	
03-01-02178	4 x 1.5	1000 m
03-01-02179	4 x 2.5	1000 m
03-01-02180	4 x 6	1000 m
03-01-02181	4 x 10	1000 m
03-01-02182	4 x 16	1000 m
03-01-02183	4 x 25	1000 m
03-01-02184	4 x 35	1000 m
03-01-02185	7 x 2.5 (CONTROL CABLES)	500 m
03-01-02186	12 x 2.5 (CONTROL CABLES)	500 m
	MULTICORE , LOW VOLTAGE (0.6/1KV) POWER CABLES , WITH CIRCULAER STRANDED COPPER CONDUETORS , XPLE INSULATED , STEEL WIRE ARMOURED , PVC SHEATHED , ACCORDING TO BS 5467/97 SPECIFICATION	
	NOMINAL CROSS SECTION NR x mm <sup>2</sup> :	
03-01-02187	4 x 1.5	2000 m
03-01-02188	4 x 2.5	2000 m
03-01-02189	4 x 4	2000 m
03-01-02190	4 x 6	2000 m
03-01-02191	4 x 10	2000 m
03-01-02192	4 x 16	2000 m
03-01-02193	4 x 25	2000 m
03-01-02194	4 x 35	2000 m
03-01-02195	3 x 35 + 16	1000 m
03-01-02196	3 x 50 + 25	1000 m
03-01-02197	3 x 70 + 35	1000 m
03-01-02198	3 x 95 + 50	1000 m
03-01-02199	3 x 120 + 70	1000 m
03-01-02200	3 x 150 + 70	1000 m
03-01-02201	3 x 185 + 95	500 m
03-01-02202	3 x 240 + 120	500 m
03-01-02203	3 x 300 + 150	500 m

## CIRCUIT BREAKERS

CODE	ITEM	QTY.
	MOLDED CASE CIRCUIT BREAKERS FOR PROTECTION OF LOW - VOLTAGE DISTRIBUTION NETWORKS - ELECTRICAL CLCS AS PER IEC 947-2 AND EN 60947-2. - NO. OF POLES = 3P - RATED INSULATION VOLTAGE (Ui) = 750V - RATED IMPULSE WITH STAND VOLTAGE (KV) (Ui) = 8KV - RATED OPERATIONAL VOLTAGE (Ue) = 690V AC 50 HZ THERMAL & MAGNETIC TRIP UNIT - INSTALLATION AND CONNECTION ACCESSORIES : BARE CABLE CONNECTORS TERMINAL EXTENSIONS AND SPREADERS TERMINAL SHIELDS AND PHASE BARRIERS - AUXILIARY SWITCHES : OPEN/CLOSE TRIP INDICATION FAULT INDICATION - VOLTAGE RELEASE : UNDER VOLTAGE RELEASE	
<b>03-01-02204</b>	RATED CURRENT IN 40°C = 100A PROTECTION AGAINST OVER CURRENT Ir = 12.5 - 100A	<b>50</b>
<b>03-01-02205</b>	RATED CURRENT IN 40°C = 160A PROTECTION AGAINST OVER CURRENT Ir = 12.5 - 160A	<b>50</b>
<b>03-01-02206</b>	RATED CURRENT IN 40°C = 250A PROTECTION AGAINST OVER CURRENT Ir = 12.5 - 250A	<b>50</b>
<b>03-01-02207</b>	RATED CURRENT IN 40°C = 400A PROTECTION AGAINST OVER CURRENT Ir = 160 - 400A	<b>25</b>
<b>03-01-02208</b>	RATED CURRENT IN 40°C = 630A PROTECTION AGAINST OVER CURRENT Ir = 250 - 630A	<b>20</b>
<b>03-01-02209</b>	RATED CURRENT IN 40°C = 800A PROTECTION AGAINST OVER CURRENT Ir = 320 - 100A	<b>20</b>
<b>03-01-02210</b>	RATED CURRENT IN 40°C = 1000A PROTECTION AGAINST OVER CURRENT Ir = 400 - 1000A	<b>20</b>
<b>03-01-02211</b>	RATED CURRENT IN 40°C = 1250A PROTECTION AGAINST OVER CURRENT Ir = 500 - 1250A	<b>10</b>

### 11 KV DISTRIBUTION BOARD FOR KARMA STREAM 1, 2

- INCOMING FEEDERS x 2
- EMERGENCY FEEDERS x 2 (11KV GENERATOR) 1350 KW EACH
- BUS COUPLER x 1
- TRANSFORMER OUTGOING 630 KVA x 5
- SPARE OUT GOING FEEDERS x 2
- ALL THE NECESSARY MEASUREMENT & PROTECTION EQUIPMENTS,
- SUPERVISION OF THE INSTALLATION



## MOBILE CHLORINATION SYSTEM

CODE	ITEM	QTY.
03-01-02212	<p>THE SYSTEM INCLUDES THE FOLLOWING ACCESSORIES :</p> <p>1- TWO CHLORINATORS WALL MOUNTED TYPE ONE DUTY THE OTHER STAND BY CAPACITY OF EACH ONE 10 Kg /h CONSISTING ALL THE CONNECTING PIPES AND FITTINGS , INJECTORS ,MANOMETERS FOR THE GAS AND THE WATER .</p> <p>2- TWO BOOSTING PUMPS <math>Q = 6 \text{ m}^3/\text{h}</math> , <math>h = 100 \text{ m}</math> ONE DUTY AND THE OTHER STAND BY , THESE PUMPS MUST BE CONNECTED TO THE INJECTORS AND THE OTHER SIDE PREPARED TO BE COUNECTED TO THE SOURCC OF THE WATER , THESE PUMPS INVOLVE MANOMETERS TOO .</p> <p>3- a- FLEXIBLE PIPES AND VALVES SUPPLIED TO BE CONNECTED BETWEEN THE CHLORINEATORS AND THE GAS CYLINDERS .</p> <p>b- FLEXIBLE HOSE (REINFORCED HOSE) SIZE 1.5" OR 2" WITH ALL THE FITTING TO BE COUNECTED BETWEEN THE INJECTORS AND THE INJECTION POINT (LENGTH 25 m) .</p> <p>C- ITEMIZED SPARE PARTS FOR ALL THE EQUIPMENTS MOUNTED INSIDE THE CONTAINER .</p> <p>4- ALL A/m ITEMS TO BE MOUNTED INSIDE PORTABLE CLOSED CONTAINER SIZE (2.0m x 2.0 m).</p> <p>5- THE CONTAINER INCLUDES THE ADITIONAL ACCESSORIES : a- SPECIAL VENTELATOR FOR THE CHLORINE GAS LEAKE . b- ELECTRICAL BOARD PROTECTED FROM THE EFECT OF CL2 GAS AND INCLUDE 2 STARTERS FOR THE BOOSTING PUMPS AND 1 STARTER FOR VENTELATOR . c- LIGHTINGS . d- CHLORINE GAS CYLINDER QUANTITY TWO EACH WITH CAPACITY 65 Kg . e- CHLORINE GAS LEAK DETECTOR EQUIPPED WITH SOUND AND LIGHT ALARM .</p>	8

<p><b>03-01-02213</b></p>	<p>THE SYSTEM INCLUDES THE FOLLOWING ACCESSORIES :</p> <p>1- TWO CHLORINATORS WALL MOUNTED TYPE ONE DUTY THE OTHER STAND BY CAPACITY OF EACH ONE 5 Kg /h CONSISTING ALL THE CONNECTING PIPES AND FITTINGS , INJECTORS,MANOMETERS FOR THE GAS AND THE WATER .</p> <p>2- TWO BOOSTING PUMPS <math>Q = 4 \text{ m}^3/\text{h}</math> , <math>h = 70 \text{ m}</math> ONE DUTY AND THE OTHER STAND BY , THESE PUMPS MUST BE CONNECTED TO THE INJECTORS AND THE OTHER SIDE PREPARED TO BE COUNECTED TO THE SOURCC OF THE WATER , THESE PUMPS INVOLVE MANOMETERS TOO .</p> <p>3- a- FLEXIBLE PIPES AND VALVES SUPPLIED TO BE CONNECTED BETWEEN THE CHLORINEATORS AND THE GAS CYLINDERS . b- FLEXIBLE HOSE (REINFORCED HOSE) SIZE 1.5" OR 2" WITH ALL THE FITTING TO BE COUNECTED BETWEEN THE INJECTORS AND THE INJECTION POINT (LENGTH 25 m) . C- ITEMIZED SPARE PARTS FOR ALL THE EQUIPMENTS MOUNTED INSIDE THE CONTAINER .</p> <p>4- ALL A/m ITEMS TO BE MOUNTED INSIDE PORTABLE CLOSED CONTAINER SIZE (2.0m x 2.0 m).</p> <p>5- THE CONTAINER INCLUDES THE ADITIONAL ACCESSORIES : a- SPECIAL VENTELATOR FOR THE CHLORINE GAS LEAKE . b- ELECTRICAL BOARD PROTECTED FROM THE EFECT OF CL2 GAS AND INCLUDE 2 STARTERS FOR THE BOOSTING PUMPS AND 1 STARTER FOR VENTELATOR . c- LIGHTINGS . d- CHLORINE GAS CYLINDER QUANTITY TWO EACH WITH CAPACITY 65 Kg . e- CHLORINE GAS LEAK DETECTOR EQUIPPED WITH SOUND AND LIGHT ALARM .</p>	<p><b>5</b></p>
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<p><b>03-01-02214</b></p>	<p>THE SYSTEM INCLUDES THE FOLLOWING ACCESSORIES :</p> <p>1- TWO CHLORINATORS WALL MOUNTED TYPE ONE DUTY THE OTHER STAND BY CAPACITY OF EACH ONE 2 Kg /h CONSISTING ALL THE CONNECTING PIPES AND FITTINGS , INJECTORS ,MANOMETERS FOR THE GAS AND THE WATER .</p> <p>2- TWO BOOSTING PUMPS <math>Q = 2 \text{ m}^3/\text{h}</math> , <math>h = 70 \text{ m}</math> ONE DUTY AND THE OTHER STAND BY , THESE PUMPS MUST BE CONNECTED TO THE INJECTORS AND THE OTHER SIDE PREPARED TO BE COUNECTED TO THE SOURCC OF THE WATER , THESE PUMPS INVOLVE MANOMETERS TOO .</p> <p>3- a- FLEXIBLE PIPES AND VALVES SUPPLIED TO BE CONNECTED BETWEEN THE CHLORINEATORS AND THE GAS CYLINDERS .</p> <p>b- FLEXIBLE HOSE (REINFORCED HOSE) SIZE 1.5" OR 2" WITH ALL THE FITTING TO BE COUNECTED BETWEEN THE INJECTORS AND THE INJECTION POINT (LENGTH 25 m) .</p> <p>C- ITEMIZED SPARE PARTS FOR ALL THE EQUIPMENTS MOUNTED INSIDE THE CONTAINER .</p> <p>4- ALL A/m ITEMS TO BE MOUNTED INSIDE PORTABLE CLOSED CONTAINER SIZE (2.0m x 2.0 m).</p> <p>5- THE CONTAINER INCLUDES THE ADITIONAL ACCESSORIES :</p> <p>a- SPECIAL VENTELATOR FOR THE CHLORINE GAS LEAKE .</p> <p>b- ELECTRICAL BOARD PROTECTED FROM THE EFECT OF CL2 GAS AND INCLUDE 2 STARTERS FOR THE BOOSTING PUMPS AND 1 STARTER FOR VENTELATOR .</p> <p>c- LIGHTINGS .</p> <p>d- CHLORINE GAS CYLINDER QUANTITY TWO EACH WITH CAPACITY 65 Kg .</p> <p>e- CHLORINE GAS LEAK DETECTOR EQUIPPED WITH SOUND AND LIGHT ALARM .</p>	<p><b>5</b></p>
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## CHLORINATORS

CODE	ITEM	QTY.
03-01-02215	EACH CHLORINATOR WITH CAPACITY 1000g/h CONSISTS THE FOLLOWING 1- WALL MOUNTED CONTROL UNIT 2- INJECTOR 3- VACCUM AND PRESSURE CONTROL UNITS 4- MANUUAL CONTROL SWITCHOVER VALVE 5- FLEXIBLE CONNECTIONS BETWEEN THE UNITS 6- ALL THE VALVES AND FITTINGS 7- LEAD WASHER 1000 PEC. FOR EACH . 8- SPARE PARTS FOR ALL A/ M ITEMS THE PREFERABLE TYPES WALLACE & TIRNANE AND THE CAPETAL CONTROL .	20
03-01-02216	CALCIUM HAYPOCHLORIDE , POWDER FORM , 50 Kg EACH DRUM .	400
03-01-02217	HYPOCHLORIDE DOSING PUMPS CAPACITY 15 L/h , h = 8 bar , MOUNTED ON TANK VOLUME 250 L , THIS TANK INCLUDES : - ELECTRICAL MIXXER . - DRY RUNNING SENSOR . - FLEXIBLE HOSE (LENGHTH 25m) WITH ALL THE FITTINGS AND EJECTION POINTS AND ALSO INCLUDES HOSE WITH STRAINER FOR THE SUCTION SIDE . ITEMIZED SPARE PARTS FOR ALL ABOVE EQUIPMENTS .	20
03-01-02218	ALUMINUM SULPHATE DOSING PUMPS CAPACITY : 40L/h , h = 8 bar MOUNTED ON TANK VOLUME 250 L , THIS TANK INCLUDES : - ELECTRICAL MIXXER . - DRY RUNNING SENSOR . - FLEXIBLE HOSE (LENGHTH 25m) WITH ALL THE FITTINGS AND EJECTION POINTS AND ALSO INCLUDES HOSE WITH STRAINER FOR THE SUCTION SIDE . ITEMIZED SPARE PARTS FOR ALL ABOVE EQUIPMENTS	30

## NORTH RESRVOIR CHLORINEATION MOTIVE WATER BOOSTER PUMPS TYPE R 32-250

CODE	ITEM	PART NO.	QTY.
03-01-02219	CASE WEAR RING	1510	10
03-01-02220	SHAFT WITH KEGS	2100	4
03-01-02221	IMPELLER	2200	4
03-01-02222	COMPLETE ROTTING ASSEMBLY		4
03-01-02223	SHAFT SLEEVE	2450	14
03-01-02224	SET OF GLAND PACKING	4130	20
03-01-02225	COMPLETE COUPLING ALIGNMENT CONTROL		1
03-01-02226	SET OF GASKETS	4541	20
03-01-02227	CASTANETS LEVEL OILIER	3855	2
03-01-02228	STAFFING BOX GLAND	4120	4
03-01-02229	RADIAL SHAFT SEAL RING	4311	4
03-01-02230	IMPELLER NUT LOCK WASHER	6543	4
03-01-02231	FLINGER LANTERN RING	2540	10



## SPARE PARTS

CODE	ITEM	QTY.
	FOR CHLORINATOR TYPE - GS143 ALLDOS COM. 20 Kg/h AND 40 Kg/h	
03-01-02232	MEASURING TUBE	10
03-01-02233	O - RING	30 ST
03-01-02234	VACUUMMETER	10
03-01-02235	RATEVALVE	10
03-01-02236	DIFFERANTIAL PRESSURE REGULATOR	10
03-01-02237	SPRINGS	4 ST
03-01-02238	DIPHRAGM	5 ST
03-01-02239	GASKETS	10 ST

## A.C GENERATOR

CODE	ITEM	QTY.
03-01-02240	TYPE : BRF 500/33 POWER : 740 KW - 925 KVA POWER FACTOR : 0.8 RATING : MCR CURRENT : 1337A CYCLE / SECOND : 50 HZ VOLTAGE 400 / 230 V 3 $\Omega$ SPEED : 1500 REV / MIN INSULATION CLASS H B - S 5000	2
	GENERATORS VT - VTA - 1710 - G	
03-01-02241	WATER PUMPS AND IDLER ASSEMBLY	3009969 2
03-01-02242	PUMP LUBRICATNG OIL PUMP	AR - 11330 1

## BEARINGS

CODE	ITEM	QTY
03-01-02243	PLUMMER BLOCK SKF. SN 216+1216	10
03-01-02244	PLUMMER BLOCK SKF. SN 213+1213	10
03-01-02245	SPHERICAL ROLLER BEARING 6322	30
03-01-02246	BEARING 6310	20
03-01-02247	BEARING 6307	30
03-01-02248	BEARING 6207	40
03-01-02249	BEARING 6315	10
03-01-02250	BEARING 7318	10
03-01-02251	BEARING 22216	10
03-01-02252	BEARING 1209	10
03-01-02253	NAC 205	20
03-01-02254	BALL BEARING SKF 6307/C3	30
03-01-02255	MOTOR BEARINGS SKF 6310/C3	20
03-01-02256	BEARING 6214	16
03-01-02257	BEARING FOR MOTOR 6322C3	26
03-01-02258	BEARING FOR MOTOR 6313 C3 , 6312C3	8
03-01-02259	BALL BEARING FOR MOTOR NO. 6317 C3	26
03-01-02260	BALL BEARING FOR MOTOR NO. 6320 C3	16
03-01-02261	THRNST BEARRING 6309 (SKF)	16
03-01-02262	LINE BEARING 6211 (SKF)	6
03-01-02263	BEARING TYPE : 080675 - ZZ00A NO. 0230	20



<b>03-01-02274</b>	CABLE TERMINALS PRESS MANUAL	20
<b>03-01-02275</b>	CABLE TERMINALS PRESS HYDRALIC	10
<b>03-01-02276</b>	GREASE PUMP MANUAL	20
<b>03-01-02277</b>	GREASE PUMP TRANSPORTABLE	20
<b>03-01-02278</b>	ELECTRIC DRILL WITH ALL DRILL SETS	20
<b>03-01-02279</b>	ELECTRIC DRILL HAMMER SIZE 25 mm WITH ALL ACCESSORES	10
<b>03-01-02280</b>	WELDING MACHINE : 3- PH , 40-170A	10
<b>03-01-02281</b>	WELDING MACHINE : 1- PH , 40-150A	10
<b>03-01-02282</b>	BATTERY CHARGER : 1- PH , 12-24VD.C ; CHARGING CURRENT ; 30A MAX ; SHORT CCT PROTECTION ( AUTO OFF) ; O /P CURRENT READING . ;MAINS PILOT 1 AMP INDICATION ; MAIN / AUTO CHARG CHANG OVER	20

### **RECOMMENDED EQUIPMENT FOR MEASURMENT & TOOLS**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-02283</b>	ACCELEROMETER FOR MEASURING VIBRATION	25
<b>03-01-02284</b>	PHOTOELECTRIC CELL FOR MEASURING SPEED AND PHASE (BALANCING )	25
<b>03-01-02285</b>	DIGITAL CLAMP AMMETER FOR MEASURING CURRENT	25
<b>03-01-02286</b>	VOLTAGE PROBE ; AC & D.C VOLTAGES	25
<b>03-01-02287</b>	INFRA-RED PROBE FOR MEASURING TEMP	25
<b>03-01-02288</b>	COMPLETE SET OF SPANNERS 8 MM TO 36MM	50
<b>03-01-02289</b>	COMPLETE SET OF RING SPANNERS 8MM TO 36 MM	50
<b>03-01-02290</b>	DIGITAL AVO 20 AMPS, 1000 VAC ,500VDC	50
<b>03-01-02291</b>	MEGGER 1000V	50
<b>03-01-02292</b>	COMPLETE SET SCREW DRIVERS	50
<b>03-01-02293</b>	HADRULIC BALL BEARING PULLER	25
<b>03-01-02295</b>	PIPE WRENCH 8,12,18,24,36,48 INCH	20 each

**SPEAR PARTS FOR TAJI RESERIV**

<u>EQ UIP REF</u>	UNIT	QTY	FUNCTION OF UNIT	MANUFACTURER SUPPLIER	MODEL TYPE	MAIN INST REF	OTHER INFOFMATION	<u>CODE NO.</u>
T53.80 1	3 TONNE SWL DOUBLE GIRDER	1	REPLACEMENT AND REMOVAL OF MAIN PUMPS AND IPMENT	A ABACAS ENGINEERING LIT	CLASS II	WH	CAQEACITY SWL HOISTING SPEED FAST 3.5 MTR/MIN HOISTING SPEED FAST 0.43 MTR/MIN CROSS TRAVEL SPEED 5 MTR/MIN LONG TRAVEL SPEED 12 MTR/MIN	03-01-02312
	DIFFERENTIAL PRESSURE SWICH	8	LOW DIFFERENTIAL PRESSURE	BAILY AUL MACKEY	217	=	TO OPEN LOW DIFFERENTIAL RESSURE 3.55/112.5 M FITTED ON ALL PUMPS	03-01-02313
	PRESSURE WICH	8	LOW INLET PRESSURE	BAILY AUL MACKEY	107	=	NORMALLY CLOSED OPENS ON LOW PRESSUREO/10.5 M FITTED ON ALL PUMPS	03-01-02314
P52.810	400 mm UTLERFLY VALVE	1	LARAGE PUMP ISOLATION	NEWTON CHAMBERS ENG. LTD	BUTTERFLY	=	MANUAL WITH GEAR OPERATOR VGCC - 20/3 VALVE SERIAL NO. 1723,1724	03-01-02315
P52.807 /2/3 /4/5 6\$7	400 mm UTLERFLY VALVE	2	LARAGE PUMP SUCTION	=	=	=	MANUAL WITH 3.65 m EXTENSION AND GEAR OPERATOR VGC/3F VALVE SERIAL NO. 1737,1738,1739,1740	03-01-02316
P52.80 9/2/3 6\$7	400 mm UTLERFLY VALVE	2	LARAGE PUMP DISCHARGE	=	=	=	COMPLETE WITH ELECTRICAL ACTUATOR WORM GEAR OPERATOR AND 3.65 m EXTENSION VALVE SERIAL 1731,1732,1733,1734	03-01-02317
P52.80 3/1\$8	300 mm UTLERFLY VALVE	1	SMALL PUMP SUCTION	=	=	=	MANUAL WITH 3.65 m EXTENSION AND GEAR OPERATOR VGC/3F VALVE SERIAL NO. 1749,1750	03-01-02318
P52.80 5/1\$8	300 mm UTLERFLY VALVE	1	SMALL PUMP DISCHARGE	=	=	=	COMPLETE WITH ELECTRICAL ACTUATOR WORM GEAR OPERATOR AND 3.65 m EXTENSION VALVE SERIAL 1747,1748	03-01-02319

## TECHNICAL DATA

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CODE	FRAME SIZE	OUT PUT KW/KVA	VOLTAGE	SPEED	TYPE	PH/CYCLES	QTY
							COMPLETE MOTOR
03-01-02320	VML 400/25 8P	490	3300		DR/L62.801	3 phase  50 hz	3
03-01-02321	VML 400/27	520	3300		32426A1- 8A		3
03-01-02322		100	400	976	D3155.D		5
03-01-02323	VML 400/25 8P	340	3300		DR/L62.802		5

PUMPS

split case pump complete with motor + FLEXIBLE COUPLING + BASE PLATE + STAR-DELTA - STARTER + SET OF WEARING SPARE  
PARTS FOR EACH PUMP

CODE NO.	QTY	PUMP	HE	SP	RO	SUC	DELIV	LD	IMP	SHA	SEAL	NP	MOT	MO	MOTO	VOL	MO	QT	FL	COL	SPAREP
03-01-02325	1000	SPLIT CASE	60	1450	CW	350/PN10	300/PN16	GR EA SE	G S N Z I 0	S T A I N L E S S S T E E L	P A C K I N G		250	55	F	380/350	F A N - C O O L E D	4	T R E A T E D W A T E R	F L E X I B L E C O U P L I N G	- SET OF BEARING + SHAFT SLEEVE + IMPELLER RING+ LANTEM RING FOR EACH PUMP - COMPLETE ROTATING ASSEMBLY FOR THE ITEM
03-01-02326	=	=	=	=	AN TI C W	=	=	=	=	=	=		=	=	=	=	=	3	=	=	- SET OF BEARING + SHAFT SLEEVE + IMPELLER RING+ LANTEM RING FOR EACH PUMP - COMPLETE ROTATING ASSEMBLY FOR EACH ITEM
03-01-02327	=	=	10		CW			=	=	=	=	2.5		=	=	=	=	4	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR EACH ITEM
03-01-02328	200	EN- S U C T I O N	50	1450	=	150/PN10	125/PN16	=	=	=	=		45	=	=	=	=	4	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR THE ITEM
03-01-02329	50	=	=	=	=			=	=	=	=		18.5	=	=	=	=	20	=	=	- DITTO - COMPLETE FOUR ROTATING ASSEMBLY
03-01-02330	25	=	35	=	=			=	=	=	=			=	=	=	=	15	=	=	- DITTO - COMPLETE THREE ROTATING ASSEMBLY FOR THE ITEM
03-01-02331	330	SPLIT C A S E	70	1475	=	200/PN10	150/PN16	=	=	=	=		120	=	=	=	=	3	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR THE ITEM
03-01-02332	200	EN- S U C T I O N	35	2900	=	100/PN10	80/PN16	=	=	=	=		37	=	=	=	=	3	=	=	-DITTO -DITTO
03-01-02333	270	SPLIT C A S E	50	1450	=	200/PN10	150/PN16	=	=	=	=		60	=	=	=	=	3	=	=	- DITTO - DITTO
03-01-02334	50	EN- S U C T I O N	80	2920	=	100/PN10	80/PN16	=	=	=	=		25	=	=	=	=	3	=	=	- DITTO - DITTO
03-01-02335	60	=	55	1450	=	150/PN10	=	=	=	=	=		37	=	=	=	=	3	=	=	- DITTO - DITTO
03-01-02336	540	SPLIT C A S E	35	=	=	=	=	=	=	=	=		75	=	=	=	=	30	=	=	- DITTO - COMPLETE FIVE ROTATING ASSEMBLY FOR THE ITEM
03-01-02337	20	P O O S T E R P U M P	65	2950	=			=	=	=	=		5.5	=	=	=	=	5	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR THE ITEM

<b>CODE</b>	<b>DESCRIPTION</b>	<b>QTY</b>	<b>UNIT</b>
03-01-02339	Aluminium Hydroxide	5,000	Mt

<b>Sector/Item Code</b>	<b>Description</b>	<b>Qty.</b>	<b>Unit</b>
03-01-02343	Activated titanium anodes for chlorine cells. The body is made out of titanium grade 1 according to ASTM B 265. The guaranty for the coating is 5 years.	1,200	Nos.



**Section 1-6 (continued)**

03-01-10230	MJT2 314	20		
03-01-10231	7318	30		
03-01-10232	6320	30		
03-01-10233	3612	30		
03-01-10234	6312	30		
03-01-10235	416 NU	50		
03-01-10236	N 315	20		
03-01-10237	32305	20		
03-01-10238	32206	20		
03-01-10239	22308	20		
03-01-10240	32315	20		
03-01-10241	6213	10		
03-01-10242	6311	30		
03-01-10243	N 312	30		
03-01-10344	22217	20		
03-01-10245	22311	20		
03-01-10246	22309	20		
03-01-10247	6217	20		
03-01-10248	6216	20		
03-01-10249	634	10		

**SPARE PARTS FOR LOADER . KOMATSO TYPE : W30 (continued)**

03-01-11463	METAL UNDER SIZE 0.25MM , PART NO. 6140-39-3040	100		
03-01-11464	LOADING TRUCK WITH SPARE PARTS	41		
03-01-11465	CESSPIT EMPTIER	17		

**PRESSURE REDUCING AND SHUT OFF VALVE S1 1812.1 SERIES 71P 1140 (continued)**

<b>03-01-11814</b>	VALVE OPERATOR OIL FILLED 120V 50 HZ CHLORINE SULFOR DIOXIDE 8000 PPD AMMOUIA 4000R PPD KEY 1	6
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**MEASURING INSTRUMENTS (Continued)**

<b>03-01-12279</b>	ELECTRIC AIR BLOWER	20
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## **COMPACT UNIT**

### **CONTAINERIZED PREMOUNTED WATER TREATMENT PLANT CODE NO. :- 03-01-12322**

-----  
NOS : 20  
PLANT CAPACITY : 200 m<sup>3</sup>/hr  
ELECTRIC POWER : 400 V+ 10% , 50 Hz , 3-PHASE A.C.

#### **RAW WATER PUMPS**

----- :  
NUMBER : 2  
CAPACITY : 260 m<sup>3</sup>/h  
HEAD : 20 m

#### **FILTER LOADING PUMP**

----- :  
NUMBER : 2  
CAPACITY : 200 M<sup>3</sup>/h  
HEAD : 50 m

HORIZONTAL , CENTRIFUGAL END SUCTION TYPE WITH SPEED 1450 R.P.M , GLAND TYPE .

#### **FLOCCULATION**

----- :  
RETENTION PERIOD NOT LESS THAN 14.5 MINUTES

#### **SEDIMENTATION**

----- :  
HYDRAUTIC SURFACE LOAD : 1.0 m/hr  
THICKNESS OF THE TANK PLATE : 6 mm

#### **FILTRATION**

----- :  
FILTRATION VELOCITY NOT MORE THAN : 9.0 m/hr  
DRINKING WATER OUTLET PRESSURE : 50 - 60 METER  
THICKNESS OF THE FILTER PLATE : 10 mm  
THICKNESS OF THE DISHED END OF  
FILTERS TO BE : 12 mm

#### **HYDROPHOR SYSTEM FOR CONTROL OF PRESSURE IN THE NETWORK**

##### **a- COMPRESSOR**

----- :  
NOS : 2

CAPACITY : 3.67 L/S  
PRESSURE : 10 bar

## **b- HYDROPHOR VESSEL**

----- :  
CAPACITY : 5000 LITER FOR EACH  
NUMBER : 2

### **GENERAL**

----- :  
1- THE PREFABRICATED PLANT IS DESIGNED TO PRODUCE POTABLE WATER FROM RIVER , LAKE , THE PLANT IS DESIGNED FOR EXTREMELY EASY ASSEMBLY AND DISASSEMBLY IN REMOTE AREAS , I.E. ALL PROCESS EQUIPMENTS ARE SKID MOUNTED IN CONTAINER UNITS INCLUDING TANKS , PUMPS , FILTERS , HYDROPHORES , ELECTRICAL PANED AND DOSING EQUIPEMENT ARE MOUNTED IN A CONTAINERIZED CONTROL BUILDING THAT IS OPERATIVE AFTER COUNETION OF ELECTRICITY AND WATER .

2- THE DRINKING WATER MEETS THE REQUIREMENTS OF THE ( INTERNATIONAL STANDARDS FOR DRINKING WATER ) ( WORLD HEALTH ORGANISATION) .

### **DISINFECTION**

----- :  
CHLORINE GAS IS USED FOR DISINFECTION , FIRST , BY SHOCK CHLORINATION , SECOND , ACONTINUOUS CHLORINATION IS FORESEEN TO AVOID GERMINATION IN THE DISTRIBUTION NETWORK .

NUMBER OF UNITS : 2  
CAPACITY : 2000 g/h  
ENCLUDING : 2 CYLINDERS WITH 65 Kg ,  
2 BOOSTING PUMPS CAPACITY 4 m<sup>3</sup>/h , HEAD : 80 METER

### **CHEMICAL DOSING SYSTEM**

----- :  
**a- ALUMINIUM SULPHATE PUMPS**

----- :  
CAPACITY : 200 L/h  
HEAD : 6 bar  
NUMBER : 2

## **b- ALUMINIUM SULPHATE TANK**

----- :  
CAPACITY : 1000 L  
NUMBER : 2

INCLUDED ONE FLASH MIXER FOR EACH TANK .

## **CONTAINERIZED PREMOUNTED WATER TREATMENT PLANT CODE NO. :- 03-01-12323**

-----  
NOS : 6  
PLANT CAPACITY : 100 m<sup>3</sup>/hr  
ELECTRIC POWER : 400 V+ 10% , 50 Hz , 3-PHASE A.C.

### **RAW WATER PUMPS**

----- :  
NUMBER : 2  
CAPACITY : 130 m<sup>3</sup>/h  
HEAD : 20 m

### **FILTER LOADING PUMP**

----- :  
NUMBER : 2  
CAPACITY : 100 m<sup>3</sup>/h  
HEAD : 50 m

HORIZONTEL , CENTRFUGAL END SUCTION TYPE WITH SPEED 1450  
R.P.M , GLAND TYPE .

### **FLOCCULATION**

----- :  
RETENTION PERIOD NOT LESS THAN 14.5 MINUTES

### **SEDIMENTATION**

----- :  
HYDRAUTIC SURFACE LOAD : 1.0 m/hr  
THICKNESS OF THE TANK PLATE : 6 mm

### **FILTRATION**

----- :  
FILTRATION VELOCITY NOT MORE THAN : 9.0 m/hr  
DRINKING WATER OUTLET PRESSURE : 50 - 60 METER  
THICKNESS OF THE FILTER PLATE : 10 mm

THICKNESS OF THE DISHED END OF  
FILTERS TO BE :

12 mm

## **HYDROPHOR SYSTEM FOR CONTROL OF PRESSURE IN THE NETWORK**

### **a- COMPRESSOR**

----- :  
NOS : 2  
CAPACITY : 3.67 L/S  
PRESSURE : 10 bar

### **b- HYDROPHOR VESSEL**

----- :  
CAPACITY : 5000 LITER FOR EACH  
NUMBER : 2

### **GENERAL**

----- :  
1- THE PREFABRICATED PLANT IS DESIGNED TO PRODUCE POTABLE WATER FROM RIVER , LAKE ,  
THE PLANT IS DESIGNED FOR EXTREMELY EASY ASSEMBLY AND DISASSEMBLY IN REMOTE AREAS , I.E. ALL PROCESS EQUIPMENTS ARE SKID MOUNTED IN CONTAINER UNITS INCLUDING TANKS , PUMPS , FILTERS , HYDROPHORES , ELECTRICAL PANED AND DOSING EQUIPEMENT ARE MOUNTED IN A CONTAINERIZED CONTROL BUILDING THAT IS OPERATIVE AFTER COUNETION OF ELECTRICITY AND WATER .

2- THE DRINKING WATER MEETS THE REQUIREMENTS OF THE ( INTERNATIONAL STANDARDS FOR DRINKING WATER )  
( WORLD HEALTH ORGANISATION) .

### **DISINFECTION**

----- :  
CHLORINE GAS IS USED FOR DISINFECTION , FIRST , BY SHOCK CHLORINATION , SECOND , ACONTINUOUS CHLORINATION IS FORESEEN TO AVOID GERMINATION IN THE DISTRIBUTION NETWORK .

NUMBER OF UNITS : 2  
CAPACITY : 2000 g/h  
ENCLUDING : 2 CYLINDERS WITH 65 Kg ,  
2 BOOSTING PUMPS CAPACITY 4 m<sup>3</sup>/h , HEAD : 80 METER

## CHEMICAL DOSING SYSTEM

### ----- : a- ALUMINIUM SULPHATE PUMPS

----- :  
CAPACITY : 100 L/h  
HEAD : 6 bar  
NUMBER : 2

### b- ALUMINIUM SULPHATE TANK

----- :  
CAPACITY : 1000 L  
NUMBER : 2

INCLUDED ONE FLASH MIXER FOR EACH TANK .

CODE	DESCRIPTION	QTY	UNIT
03-01-12323*	fuel tankers	250	unit

\* amended 25 May 2000

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