

**BAGHDAD MAYORALTY REQUIREMENTS FOR WATER AND SEWAGE WORK**  
**EXTENSION NO 7.**

SECTION NO.	ITEM	QTY.	END USER	DEP.OR ACTIVITY
SECTION 1	UPVC PIPES AND FITTINGS	60000 M.L	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 2	GRP PIPES AND FITTINGS	15000 ML	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 3	SPARE PARTS AND EQUIPMENTS FOR SEWAGE TREATMENT PLANT	LUMP	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 4	EMERGENCY BYPASS STATION	2	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 5	SEWAGE TREATMENT COMPACT UNITS	10	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 6	SPARE PARTS AND EQUIPMENTS FOR SEWAGE PUMPING STATIONS IN MUNICIPALITIES	LUMP	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 7	SUBMERSIBLE PUMPS	300	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 8	SPARE PARTS FOR RAW WATER PUMPING STATIONS.	LUMP	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATI ON
SECTION 9	DUCTILE PIPES AND FITTINGS	64000 ML	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATI ON
SECTION 10	WATER TREATMENT COMPACT UNITS	20	4.5 MILLION PERSON	WATER SUPPLY ADMINISTRATI ON
SECTION 11	HYDRAULIC AERIAL PLATFORM	4	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 12	FIELD VEHICLE	7	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 13	CESSPOOL EMPTIER	20	6.5 MILLION PERSON	SEWAGE. WORK
SECTION 14	HIGH PRESSURE CESSPOOL EMPTIER	10	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 15	PORTABLE STAND BY GENERATORS	86	6.5 MILLION PERSON	WATER SUPPLY ADMINISTRATI ON
SECTION 16	MINI GARBAGE COLLECTORS	15	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 17	FORK LIFT (5 TON)	6	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 18	AIR COMPRESSORS	30	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 19	RECOVERY TRUCK	2	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 20	FLOOD LIGHT PLANT	10	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 21	PORTABLE DIESEL ENGINE , ON WHEEL	20	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 22	MODERN PHOTO COPY MACHINE	50	6.5 MILLION PERSON	MUNICIPALITY SERVICES
SECTION 23	MODERN TYPE WRITER	50	6.5 MILLION PERSON	MUNICIPALITY SERVICES

**SECTION 1:**

**UPVC PIPES AND FITTINGS FOR SEWERS AND SHALL COMPLY WITH THE REQUIREMENTS OF (DIN 8061 – 8062 ) - WALL THICKNES TO COMPLY WITH DIN 8062 . ALL PIPES AND FITTINGS SHALL HAVE RUBBER RING JOINTS + 10% ADDITIONAL QUANTITY OF RUBBER RING JOINTS :**

**– PIPES:**

<b>COD.NO</b>	<b>DESCRIPTION</b>	<b>QTY</b>
03-01-00001	Diameter 250 mm	252,054 m
03-01-00002	= 315 mm	170,418 m
03-01-00003	= 400 mm	93,660 m
03-01-00004	500 mm	34,128m
03-01-00005	600 mm	25,438m

**B-FITTINGS**

<b>COD.NO</b>	<b>DESCRIPTION</b>	<b>QTY</b>
03-01-00006	T Socket – Spigot 250 110 mm	11,497 pcs
03-01-00007	<u>T Socket – socket 250 110 mm</u>	2,873 pcs
03-01-00008	<u>T Socket - Spigot 315 110 mm</u>	3,265 pcs
03-01-00009	<u>T S socket – socket 315 110 mm</u>	1,085 pcs
03-01-00010	<u>Saddle 250 110 mm</u>	5,437 pcs
03-01-00011	<u>Saddle 315 110 mm</u>	12,014pcs

**SECTION 2:**

**2-GRP pipes for gravity sewers and shall comply with requirements of B.S 5480 – pipes shall be ( SN 10000)with simple push fit joints and addition ajoint should be fitted to one end of each pipe at the factory additional 10% of joint should be supplied .**

<b>COD.No</b>	<b>DESCRIPTION</b>	<b>QTY</b>
03-01-00012	Diameter 700 mm	8,000m
03-01-00013	Diameter 800 mm	8,000 m
03-01-00014	Diameter 900 mm	8,000m
03-01-00015	Diameter 1000 mm	4,000m
03-01-00016	Diameter 1800 mm	2,000m

**SECTION 3:****3- SPARE PARTS FOR SEWAGE TREATMENT PLANTS :**

<b>COD.NO</b>	<b>Descruption</b>	<b>QTY</b>
<b>03-01-00017</b>	<b>Gear box : size MHT 2</b> Rating 1.5 kw output 71.3 rpm ratio 20.34:1	<b>2</b>
<b>03-01-00018</b>	<b>Gear box : size MHT 3</b> Rating 1.5 kw output 46 rpm ratio 31.48:1	<b>2</b>
	<b>TRANSFOR MERS:</b> <b>(INDUSTIERAL TYPE)</b> <b>INDOOR</b>	
<b>03-01-00019</b>	<b>3M.V.A , 11KV- 3.46KV</b>	<b>1</b>
<b>03-01-00020</b>	<b>600 K.V.A, 3.3 KV – 400V</b>	<b>1</b>
<b>03-01-00021</b>	<b>100 K.V.A , 3.3 KV – 400V</b>	<b>1</b>
<b>03-01-00022</b>	<b>2 M.V.A , 11KV –400 V</b>	<b>3</b>
<b>03-01-00023</b>	<b>750 K.V.A, 3.3KV –400V</b>	<b>1</b>
<b>03-01-00024</b>	<b>1M .V.A, 11KV –400 V</b>	<b>2</b>
<b>03-01-00025</b>	<b>250 K.V.A, 3.3 KV – 400V</b>	<b>3</b>
<b>03-01-00026</b>	<b>500 K.V.A ,3.3 KV –400 V</b>	<b>2</b>
<b>03-01-00027</b>	<b>1 M.V.A, 3.3KV – 400 V</b>	<b>1</b>
	<b>ELECTRICAL MOTORS</b>	
<b>03-01-00028</b>	<b>Sequirral cage induction motor: 7.5 kw, 380v ,17.6 A, 975 RPM ,V1 , delta connection class F IP 55</b>	<b>60</b>
<b>03-01-00029</b>	<b>Sequirrel cage .: 15 kw, 380v ,31 A, 1440 RPM ,V1 , delta connection class F IP 55</b>	<b>60</b>
<b>03-01-00030</b>	<b>Slip ring : 105 HP ,3.3kv ,585 rpm, Ip 23,v1 ,Vrot = 400 Irat =119A class F-H</b>	<b>1</b>
<b>03-01-00031</b>	<b>Slip ring :,3.3kv 220kw,422 rpm, Ip 23, ,Vrat 500 Irat =252A class F-H</b>	<b>1</b>
<b>03-01-00032</b>	<b>Slip ring : 160 kw ,3.3kv,492 rpm,V1 , class F-</b>	<b>2</b>

COD.NO	Descreption	QTY
03-01-00033	Slip ring : 400v,297 kw , ,585 rpm,V1 , (F1) class F- Ip 23	1
03-01-00034	Slip ring : 160 kw ,3.3kv ,720 rpm,V1 , class F- Ip 23	1
03-01-00035	Slip ring: 90 kw ,3.3kv ,720 rpm,V1 , class F- Ip 23	1
03-01-00036	GRAPHITE BRUSHES : Copper –graphite brushes with flexible wire coated by anti corrosive metal : 60*40*30 mm	500
03-01-00037	Centrifugal pump with motor Type:- nowc 6532 BN 041.02.2 Capacity 65cbm/hr Speed:- 1450 rpm Suction flange:- Dn80 , pn10 Discharye flang:- DN 65 , pn 10 Delivery Height:- 33,mwc Motor - type:- AEG- SAM 160 LR\$ Power :- 15 kw Speed:- 1500 rpm Voltage/frequency:- 380 v ,50 HZ Insulation class:- F	2
03-01-00038	AUTOMATIC GREASE PUMP WITH MOTOR Type:- FZ-A Reduction:- 1420:1 Container volume :- 2.5 litres Motor -make:- M.E.Z Type:- 3AP 63-4 Power :- 0.18 kw/ speed :- 1350 rpm Voltag/ Insulation class:- 380 v/50 HZ/f	10
03-01-00039	Screw pump with upper and lower bearing: Inclinaison :30 Geometric head: 4.64m Delivery head : 4.66m Screw diameter : 1200/609 mm Screw length : 9/32m Capacity : 305 l/s	12
03-01-00040	AIR Compressor Speed :- 1420 rpm Motor :- capacity 3.kw Max pressure : 105 bar With spare rotor vanes	4

	<b>AIR blowers roots type</b> <b>Capacity :1000m3/HR</b> <b>Power :30 kw</b> <b>Pressure:600 MBAR</b> <b>Speed : 1610</b> <b>AIR blowers roots type</b> <b>Capacity :1000m3/HR</b> <b>Power :30 kw</b> <b>Pressure:600 MBAR</b> <b>Speed : 1610</b> <b>Equipped with electric motor squirrel cage</b> <b>Power rate :30 kw</b> <b>1500 RPM</b> <b>Ip55 class f 380 v 50 HZ</b>	
<b>03-01-00041</b>	<b>AIR blowers roots type</b> <b>Capacity :4200m3/HR</b> <b>Power :110 kw</b> <b>Pressure:600 MBAR</b> <b>Speed : 1155</b> <b>Equipped with electric motor squirrel cage</b> <b>Power rate :110 kw</b> <b>1500 RPM</b> <b>Ip55 class f 380 v 50 HZ</b>	<b>4</b>
<b>03-01-00042</b>	<b>Wineflex coupling flexacier</b> <b>Length of seg . 155.9 mm</b> <b>Thicknass 4.06 mm</b> <b>Width.91.3mm</b> <b>Pitch no 1.48</b>	<b>60</b>

**SECTION 4:**  
**EQUIPMENT FOR SEWAGE NETWORK REPAIRS**

<b>CODN.o</b>	<b>DES</b>	<b>QTY</b>
<b>03-01-00043</b>	<b>Trench Boxes for reliable shoring , depth</b>  <b>of excavation up to 6.0 m</b> <b>width up to 4.5m pipe sizes up to 1000mm</b>	<b>10</b>

**B – pipe stoppers for pipe diameters:**

<b>COD.NO</b>	<b>DESCRIPTION</b>	<b>QTY</b>
<b>03-01-00044</b>	<b>250 to 315 mm</b>	<b>100</b>
<b>03-01-00045</b>	<b>400 mm</b>	<b>40</b>
<b>03-01-00046</b>	<b>500 mm</b>	<b>40</b>
<b>03-01-00047</b>	<b>600 mm</b>	<b>40</b>
<b>03-01-00048</b>	<b>700 mm</b>	<b>30</b>
<b>03-01-00049</b>	<b>800 mm</b>	<b>30</b>
<b>03-01-00050</b>	<b>900 mm</b>	<b>10</b>
<b>03-01-00051</b>	<b>1000 mm</b>	<b>10</b>

C\_ Submersible Pumps :

COD.NO	DESCRIPTION	QTY
	<b>SUBMERSIBLE PUMPS FOR DEWATERING AND DRAINAGE TO BE SUPPLIES WITH STARTORS AND 50 M LONGTH HOZE FOR EACH PUMP:</b>	
<b>03-01-00052</b>	<b>MOTOR 7.5 KW RPM 2870 HMAX :40M DIMENSIONS SUITABLE TO BE USED IN DEEP WELLS</b>	<b>10</b>
<b>03-01-00053</b>	<b>MOTOR :5.2 KW RPM : 2850 HMAX : 20M WITH BUILT IN MOTOR PROTECTION – OVER TEMPERATURE PROTECTION IN STATOR WINDINGS</b>	<b>10</b>
<b>03-01-00054</b>	<b>MOTOR :8 KW RPM : 2800 HMAX : 30M WITH BUILT IN MOTOR PROTECTION – OVER TEMPERATURE PROTECTION IN STATOR WINDINGS</b>	<b>10</b>

COD.NO	DESCRIPTION	QTY
	<b>SUBMERSIBLE PUMPS FOR SEWAGE USE SUBMEGIBLE PUMPS WITH THE FOLLOWING LNSTALATION ACCESSORIES  -DISCHARGE ELBOW WITH FLANGE - FLANGED SLEEVE DISCHARGE HOSE WITH HOSE CLIPS (L HEAD) SKIRT BASE CHAIN WITH SHACKLE CONTROL PANELS AND CONTROL SYSTEM CABLE TYPE STARTING :Y^ WET TRANSPORTABLE</b>	
<b>03-01-00055</b>	<b>3 INCH DIAMETER DN: 80 SOLID SIZE: 70-80 MM H:15.18M Q:15.20 L/S POWER TAKEN FROM MAIN : 16-18 KW POWER AT MOTOR SHFT :13-15 KW RATED VOLTAGE :380</b>	<b>100</b>

<b>03-01-00056</b>	<b>4 INCH DIAMETER DN :100MM SOLID SIZE: 90-100 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</b>	<b>100</b>
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**D\_ TRAILER FOR EMERGENCY WORKS**

<b>QTY</b>	<b>DES</b>	<b>COD.NO</b>
4	<p>equipped with following components</p> <p>- crane 10 ton</p> <p>- Generating set 1250 k.v.a , 400 v , 50hz submersible pumps with control board , discharge pipes, fittings(quick fit) and all necessary items for over pumping to 300 m l 3 size 16 inch ,H 20 m , 200 kw 3 3 size 14 inch ,H 20 m , 160 kw <u>mobile work shop equipped with all -equipment. and -</u> <u>Tolls for the above submersibles installation</u></p>	03-01-00057

**SECTION 5:****5-SEWAGE COMPACT UNITS**

<b>QTY</b>	<b>DEC.</b>	<b>COD N.O</b>
10	<p>Sewage treatment package system</p> <p><b>POPULATION 50000</b></p> <p><b>FLOW 10000 M3/ DAY</b></p>	03-01-00058

**-SEWAGE COMPACT UNITS ( SEWAGE TREATMENT PACKAGE SYSTEM ) QTY 10**  
**POPULATION 50000**  
**FLOW 10000 M3/ DAY**



**SECTION 6:****SPARE PARTS AND EQUIPMENTS FOR SEWAGE PUMPING STATIONS IN MUNICIPALITIES**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00059</b>	<b>VERTICAL PUMPS AND MOTORS</b> <b>1-VERTICAL PUMPS</b> <b>- 10 L/S-2100 L/S</b> <b>2- MOTORS</b> <b>- 3KW -490KW</b>	<b>265</b>
<b>03-01-00060</b>	<b>CONTACTORS</b> <b>25 A- 1000 A</b>	<b>1000</b>
<b>03-01-00061</b>	<b>CIRCUIT BREAKER</b> <b>25 A- 800 A</b>	<b>1000</b>
<b>03-01-00062</b>	<b>OVERLOADS</b> <b>7 A-400 A</b>	<b>500</b>
<b>03-01-00063</b>	<b>FUSE HIGH TENSION</b> <b>63 A-200 A</b> <b>FUSE LAW TENSION</b> <b>25 A- 630 A</b>	<b>500</b> <b>500</b>
<b>03-01-00064</b>	<b>TRANSFORMERS</b> <b>- 11000 V – 3300 V 800 KVA</b> <b>-11000 V- 400 V 400 KVA</b>	<b>20</b> <b>10</b>
<b>03-01-00065</b>	<b>LIGHTING PROJECTOR</b> <b>160 W – 500 W</b>	<b>800</b>
<b>03-01-00066</b>	<b>FLUORESCENT</b>	<b>5000</b>

**SECTION 7****SUBMERSIBLE PUMPS**

<b>CODE NO</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>03-01-00067</b>	FOR DRINKING WATER 2 INCH DIAMETER , 30MHIGHT , 10-20L/C DISCHARGE	<b>75</b>
<b>03-01-00068</b>	FOR DRINKING WATER 4 INCH DIAMETER , 30MHIGHT , 50 L/SEC DISCHARGE	<b>75</b>
<b>03-01-00069</b>	FOR SEWAGE 2 INCH DIAMETER 15 M HIGH 10-20 L/SEC DISCHARGE	<b>75</b>
<b>03-01-00070</b>	FOR SEWAGE 4 INCH DIAMETER , 15M HEIGHT , 50 L/SEC DISCHARGE	<b>75</b>

**SECTION 8****SPARE PARTS FOR RAW WATER PUMPING STATIONS**

valves

type – a – diaphragm valves standard

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00071	100 MM DIAPHRAGM VALVE Q GRADE (2 OFF) COMPLETE HAND WHEEL OPERATED .	10
03-01-00072	DIAPHRAGM Q GRADE .	15

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00073	50 MM DIAPHRAGM VALVE Q GRADE (17 OFF) COMPLETE HAND WHEEL OPERATED .	20
03-01-00074	DIAPHRAGM Q GRADE .	30

AL – QUADisyah water plant

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00075	STARTER FOR 10 PUMP WITH MOTORS OF 210 AMP 110 KW ACCORDING TO THE DRAWING INSTALLED BELLOW.	10

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00076	CIRCUIT BREAKER WITH 1600 AMP ACCORDING TO THE DRAWING INSTALLED BELLOW .	4

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<u>code</u>	<u>item</u>	<u>QTY</u>
	BUTTER FLY VALVES	
03-01-00077	BUTTER FLY VALVES WITH ELECTRICAL MOTOR DRIVE DIRECTLY CONTACTED IN FLOW DIRECTION . DN/PN : 500/PN10 LIQUID : WATER P.P.M : 2.5 NOTS : FOR WASH WATER	16 RIGHT 16 LEFT
03-01-00078	BUTTER FLY VALVES WITH ELECTRICAL MOTOR DRIVE DIRECTLY CONTACTED IN FLOW DIRECTION . DN/PN : 300/PN10 LIQUID : AIR P.P.M : - NOTS : FOR AIR	16 RIGHT 16 LEFT
03-01-00079	BUTTER FLY VALVES WITH ELECTRICAL MOTOR DRIVE DIRECTLY CONTACTED IN FLOW DIRECTION . DN/PN : 250/PN10 LIQUID : WATER P.P.M : 0.5 NOTS : FOR FILTERED WATER	16 RIGHT 16 LEFT
03-01-00080	ANNULAR BUTTER FLY VALVES WITH ELECTRICAL MOTOR DRIVE SPINDLE EXTENTION . DN/PN : 3000/PN10 LIQUID : WATER P.P.M : 0.5 NOTS : FOR THE INLET FOR FILLTER	64

<b>03-01-00081</b>	BUTTER FLY VALVES WITH HYDRAULIC ROTATING PISTON DRIVE PD 75 . DN/PN : 500/PN10 LIQUID : - P.P.M : - NOTS : DISCHARGE WATER FROM RIVER	10
<b>03-01-00082</b>	BUTTER FLY VALVES WITH HYDRAULIC ROTATING PISTON DRIVE PD 110 . DN/PN : 500/PN10 LIQUID : WATER P.P.M : 2.5 NOTS : DISCHARGE CLEAR WATER	10
<b>03-01-00083</b>	HAND DRIVEN BUTTER FLY VALVES . DN/PN : 400/PN10 LIQUID : WATER P.P.M : 2.5 NOTS : INLET WATER FOR WASHING	6
<b>03-01-00084</b>	HAND DRIVEN BUTTER FLY VALVES . DN/PN : 600/PN10 LIQUID : RAW WATER P.P.M : - NOTS : INLET WATER FOR WASHING	
<b>03-01-00085</b>	HAND DRIVEN BUTTER FLY VALVES . DN/PN : 500/PN10 LIQUID : WATER P.P.M : 2.5 NOTS : INLET TO HIGH LIFT PUMPS	10

<u>code</u>	<u>item</u>	<u>QTY</u>
	NON RETURN VALVES	
<b>03-01-00086</b>	NON RETURN VALVES WITH LEVER AND BALANCING WEIGHT . DN/PN : 500/PN10 LIQUID : RAW WATER P.P.M : - NOTS : RAW WATER LINE	10
<b>03-01-00087</b>	FLAP TRAP WITH LEVER AND LOAD FOR HYDRAULIC MAIN . DN/PN : 500/PN10 LIQUID : CLEAR WATER P.P.M : 2.5 NOTS : CLEAR WATER LINE	10
<b>03-01-00088</b>	FLAP TRAP WITH LEVER AND LOAD FOR RINSING PIPE . DN/PN : 400/PN10 LIQUID : CLEAR WATER P.P.M : 2.5 NOTS : RINSING WATER LINE	6

<u>code</u>	<u>item</u>	<u>QTY</u>
	THREAD VALVES	
<b>03-01-00089</b>	THREAD VALVES (DIS CHARGE) CIRCULAR GATE COMPL WITH SEALING RUBBER , SPINDLE EXTENSION GUIDING DEVICE FOR SPINDLE , FASTENINGS AND OPERATING WHEEL DEPTH OF INSTALL ATION = 6000 MM . DN/PN : 1000 LIQUID : CLEAR WATER P.P.M : 10 NOTS : NEAR THE POINT FOR CHLORINE INJECTION TO THE WATER STORE	4



CODE	ITEM	QTY.
<b>03-01-00094</b>	DIGITAL CLIP - ON AMMETER - MEASURES LARGE CURRENT INTENSITIES : 0-200-200A,AC,DC AC VOLTAGE 0 - 750 v DC VOLTAGE 0-200V RESISTANCE 0 - 2000 $\Omega$  BATTERY : 9 V DC	20

CODE	ITEM	QTY.
<b>03-01-00095</b>	INSULATION TESTER TEST VOLTAGE : 250V → 0-200 MOHM 500V → 0-200 MOHM 1000V → 0-2000 MOHM WITH SUITABLE BAG \$LEADS	20

CODE	ITEM	QTY.
<b>03-01-00096</b>	HAND TACHOMETERS FOR BOTH CLOCKWISE & ANTI CLOCK WISE ROTATION - ACCURACY $\pm 0.1$ R/MIN - DIGITAL DISPLAY (4 DIGITS) - MEASURING RANGE R/MIN : 5-19999 M/MIN : 0.05 - 19999.9	20

CODE	ITEM	QTY.
<b>03-01-00097</b>	INDUSTRIAL THERMOMETER (INFRARED TYPE) - MEASURING RANG : 50 - + 150 C° - RESOLUTIEAM : 0.1 - ACCURACY $\pm 1$ - BATTERY : 9V DC	20

CODE	ITEM	QTY.
<b>03-01-00098</b>	ACCELEROMETER FOR MEASUNENG VIBRATION	20

CODE	ITEM	QTY.
<b>03-01-00099</b>	TOOL KIT FOR ELECTRICIANS - WIRE STRIPPER , STRIPPING KNIFE. FOR CABLES , SCREWDRIVERS SET (BOTH STRAIGHT SLOT & PHILLIPS HEAD) , SIDE CUTTERS , WATER PUMP PLIERS , COMBINATION PLIERS , ROUND NOSE PHERS ALL IN SUITABLE TOOL BOX	20

CODE	ITEM	QTY.
<b>03-01-00100</b>	TOOL KIT FOR MECHANICAL WORK - HEXAGON SOCKET SET , TOINTED SOCKER SPANNER SET PHILLIPS SCREW DRIVER SET , SLOT HEAD SCREW DRIVER SET, FLAT CHISEL , HAMMER , LONG NOSED PLIERS , COMBINATION PLIERS , UNIVERSAL PLIERS , PIPE WRENCH , CASSELTE WITH 19 HIGH SPEED DRILLS IN STEP OF 0.5 mm SAW , RING SPANNER SET , ALLEN KEY SET ALL IN SUITABLE TOOL BOX	LUMP

CODE	ITEM	QTY.
<b>03-01-00101</b>	LL BEARING EXTRACTOR MANUAL TYPE TH THREE SIZES ADJUSTABLE TYPE	60
<b>03-01-00102</b>	LL BEARING EXTRACTOR HYDRAULIC TYPE TH ALL ACCESSORIES	20

CODE	ITEM	QTY.
<b>03-01-00103</b>	CABLE TERMINALS PRESS MANUAL	20
<b>03-01-00104</b>	CABLE TERMINALS PRESS HYDRAULIC	10

CODE	ITEM	QTY.
03-01-00105	GREASE PUMP MANUAL	20
03-01-00106	GREASE PUMP TRANSPORTABLE	40

CODE	ITEM	QTY.
03-01-00107	ELECTRIC DRILL WITH ALL DRILL SETS	20
03-01-00108	ELECTRIC DRILL HAMMER SIZE 25 mm WITH ALL ACCESSORIES	10
03-01-00109	ELECTRIC AIR BLOWER	20

CODE	ITEM	QTY.
03-01-00110	WELDING MACHINE : 3- PH , 40-170A	10
03-01-00111	WELDING MACHINE : 1- PH , 40-150A	10

CODE	ITEM	QTY.
03-01-00112	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 CHARGE CHANG OVER	20

#### **RECOMMENDED EQUIPMENT FOR MEASUREMENT & TOOLS**

CODE	ITEM	QTY.
03-01-00113	CELEROMETER FOR MEASURING VIBRATION	25

CODE	ITEM	QTY.
03-01-00114	OTOELECTRIC CELL FOR MEASURING SPEED AND ASE (BALANCING )	25

CODE	ITEM	QTY.
03-01-00115	DIGITAL CLAMP AMMETER FOR MEASURING CURRENT	25

CODE	ITEM	QTY.
03-01-00116	VOLTAGE PROBE ; AC & D.C VOLTAGES	25

CODE	ITEM	QTY.
03-01-00117	INFRA-RED PROBE FOR MEASURING TEMP	25

CODE	ITEM	QTY.
03-01-00118	COMPLETE SET OF SPANNERS 8 MM TO 36MM	50
03-01-00119	COMPLETE SET OF RING SPANNERS 8MM TO 36 MM	50

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00120</b>	DIGITAL AVO 20 AMPS, 1000 VAC ,500VDC	50

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00121</b>	MEGGER 1000V	50

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00122</b>	COMPLETE SET SCREW DRIVERS	50

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00123</b>	HYDRAULIC BALL BEARING PULLER	25

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00124</b>	PIPE WRENCH 8,12,18,24,36,48 INCH	L U M P



**CABLES**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00125</b>	MULTICORE , LOW VOLTAGE (0.6/1KV) POWER CABLES , WITH CIRCULAR STRANDED COPPER CONDUCTORS , XPLE INSULATED , PVC SHEATHED , ACCORDING TO VDE0271 AND IEC502/83 SPECIFICATION	
	NOMINAL CROSS SECTION NR x mm <sup>2</sup> :	
<b>03-01-00126</b>	4 x 1.5	<b>2000 m</b>
<b>03-01-00127</b>	4 x 2.5	<b>2000 m</b>
<b>03-01-00128</b>	4 x 4	<b>2000 m</b>
<b>03-01-00129</b>	4 x 6	<b>2000 m</b>
<b>03-01-00130</b>	4 x 10	<b>2000 m</b>
<b>03-01-00131</b>	4 x 16	<b>2000 m</b>
<b>03-01-00132</b>	4 x 25	<b>2000 m</b>
<b>03-01-00133</b>	4 x 35	<b>2000 m</b>
<b>03-01-00134</b>	3 x 35 + 16	<b>1000 m</b>
<b>03-01-00135</b>	3 x 50 + 25	<b>1000 m</b>
<b>03-01-00136</b>	3 x 70 + 35	<b>1000 m</b>
<b>03-01-00137</b>	3 x 95 + 50	<b>1000 m</b>
<b>03-01-00138</b>	3 x 120 + 70	<b>1000 m</b>
<b>03-01-00139</b>	3 x 150 + 70	<b>1000 m</b>
<b>03-01-00140</b>	3 x 185 + 95	<b>500 m</b>
<b>03-01-00141</b>	3 x 240 + 120	<b>500 m</b>
<b>03-01-00142</b>	3 x 300 + 150	<b>500 m</b>

**ALWAHDA**

<u>code</u>	<u>item</u>	<u>QTY</u>
<b>03-01-0143</b>	BUTTER FLY VALVE WITH ELECT MOTOR DRIVE DIRECTLY CONSTRICTOR IN FLOW DIRECTION TWO FLANGE (12) HOLES AND WIDTH OF FLANGE (6 CM) WIDE OF THE VALVE IS 50 CM SIZE 300MM. . LIQUID : WATER P.P.M : 2.5 NOTS : THESE VALVE FROM FILTER TO RESERVOIR	8
<b>03-0100144</b>	BUTTER FLY VALVES WITH ELECTRICAL MOTOR TWO SOCKET WITH ADAPTER FLANGE WIDTH OF FLANGE IS (5CM) WIDE OF THE VALVE (35CM) SIZE (150 MM) . DN/PN : 500/PN10 LIQUID : WATER P.P.M : 2.5 NOTS : FOR WASH WATER	8
<b>03-01-00145</b>	BUTTER FLY VALVES WITH ELECTRICAL MOTOR SIZE (300 MM) .DOUBLE FLANGE (12)HOLES FOR SCREM . DN/PN : 500/PN10 LIQUID : WATER P.P.M : 2.5 NOTS : FOR WASH WATER	8
<b>03-01-00146</b>	BUTTER FLY VALVES WITH ELECTRICAL MOTOR SIZE (300 MM) .DOUBLE FLANGE (12 )HOLES FOR SCREAM . LIQUID : WATER R.P.M : 2.5	8
<b>03-01-00147</b>	SWITCHBOARD TO OPERATE AT LEAST (4) VALVE DRIVEN BY ELECTRICALMOTOR IN TO DIRECTION AND ALSO CONTAIN PUSH BUTTON WITH SIGNAL LAMP FOR OPEN AND ALSO PUSH BUTTON FOR SIGNAL LAMP FOR CLOSED Q = 8.	8

**Automatic CYLINDER CHANGE OVER UNIT**

<u>code</u>	<u>item</u>	<u>QTY</u>
<b>03-01-00148</b>	automatic CYLINDER CHANGE OVER UNIT - 240 V AC SUPPLY , 1 PH , 50 Hz - EACH CHLORINE CYLINDER IS 1000 Kg - AUTOMATIC & MANUAL OPERATION - INDICATING LAMPS FOR THE STATE OF EACH CONNECTED CYLINDER ( EMPTY , FULL , STANDBY , IN OPERATION .. ETC ) - ALARM UNIT :- 1- GIVES AUDIBLE ALARM FOR 5 SEC (ADJUSTABLE) IN CASE OF CHANGING CYLINDERS . 2- GIVES AUDIBLE ALARM FOR 30 SEC (ADJUSTABLE) IN CASE OF INSUFFICIENT PRESSURE .	<b><u>8</u></b>

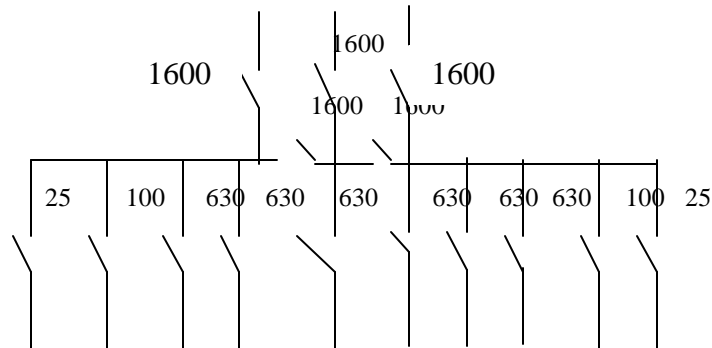
**WATER Treatment PLANT WITH CAPACITY  
OF 15 MGD (66500 M<sup>3</sup>/d)**

CODE	DESCRIPTION	QTY
03-01-00149	<p>WATER Treatment PLANT WITH CAPACITY OF 15 MGD (66500 M<sup>3</sup>/d)</p> <p>THE ABOVE MENTIONED PLANT HAS EXISTING SEDIMENTATION WITH DIMENSIONS THE FIRST ONE (30 X 30.0 X 4.0 m) AND THE SECOND (30.0 X 48 X 3.5 m) .</p> <p>SO THE REQUIRED EQUIPMENTS ARE AS BELOW :-</p> <p>PRESSURE FILTER (HORIZONTAL TYPE) WITH FOLLOWING SPECIFICATIONS :-</p> <ul style="list-style-type: none"> <li>- CAPACITY OF EACH FILTER 200M<sup>3</sup>/h .</li> <li>- FLOW RATE OF THE FILTER 8 m<sup>3</sup>/m<sup>3</sup>/h .</li> <li>- THICKNESS OF THE SHELL 10 mm .</li> <li>- THICKNESS OF THE DISHED END 12.0 mm .</li> <li>- BACK WASHING FLOW RATE 30m<sup>3</sup>/m<sup>3</sup>/h .</li> <li>- NO. OF THE FILTERS 16 .</li> <li>- THE FILTERS EQUIPPED WITH ALL INLET , OUTLET , BACK WASHING , DRAIN , AIR RELIEF VALVES , FLOW METER FOR EACH ONE , INLET , OUTLET MANOMETERS, AND ALSO CONTAINS SAND , GRAVEL .</li> </ul>	2
	<ul style="list-style-type: none"> <li>- ALL THE FILTERS INSTALLED IN TWO ROWS ONE FACE TO THE OTHER:-</li> </ul> <p>SUPPLY AND INSTALL THE MAIN INLET SEDIMENT PIPE ( LENGTH APPROXIMATELY 60m NOMINAL DIAMETER 800 mm)</p> <p>THE MAIN OUTLET FILTERED PIPE WITH ITS FITTINGS AND ACCESSORIES .</p> <p>MAIN PIPE FOR THE OUTLET OF THE BACK WASHINGS DRAINAGE , DESLUDGING , CONNECTED TO APIT .</p> <p>MAIN FLOW METER AND PRESSURE METER FOR THE OUTLET OF THE PLANT :-</p> <ul style="list-style-type: none"> <li>- THE FILTERS TO BE ON SKID .</li> <li>- THE DISTANCE BETWEEN EACH TWO FILTER TO BE 70 cm FOR ONE ROW .</li> </ul> <p>2- ALUMINIUM SULFATE SOLUTION PREPARING AND DOSING SYSTEM INCLUDES :-</p> <ul style="list-style-type: none"> <li>- TWO TANKS CAPACITY OF EACH ONE 10 m<sup>3</sup> .</li> <li>- ONE MIXER FOR EACH TANK .</li> <li>- STAINLESS STEEL BASKET INSTALLED AT THE TOP OF THE TANK WITH CAPACITY 200Kg .</li> <li>- TWO DOSING PUMPS CAPACITY OF EACH 1000 L/h , HEAD 40 m WITH ALL THE PVC FITTINGS BETWEEN THE TANKS AND THE PUMPS , BETWEEN THE PUMPS AND THE EJECTION POINT AND ALSO INCLUDES FLOWMETER (0 – 2000 L/h) AND PRESSURE METER .</li> <li>- LIFTING CRANE CAPACITIES 200 Kg SUPPORTED BETWEEN THE TANKS .</li> <li>- LADDER AND WALK WAY AROUND THE TANKS .</li> </ul> <p><b>THE TANKS COVERED WITH ROOF .</b></p>	*

\* amended 1 September 2000

	<p>3- DISINFECTION SYSTEM :- INVOLVES THE FOLLOWING :-</p> <ul style="list-style-type: none"> <li>- THREE CHLORINATING CAPACITY OF EACH ONE 10 Kg/h INCLUDES ALL THE FITTINGS AND THE ACCESSORIES LIKE PRESSURE , VACUUM REGULATORS , INJECTORS , WATER PRESSURE METER , CHLORINE GAS PRESSURE METER .</li> <li>- FLEXIBLE PIPES WITH VALVES BETWEEN THE GAS CYLINDER , AND THE COLLECTOR PIPE , AND BETWEEN THE COLLECTOR PIPE AND THE CHLORINATIONS :- <ul style="list-style-type: none"> <li>• GAS LEAK DETECTOR AND ALARM .</li> <li>• CHANGE OVER SWITCH .</li> <li>• TWO BOOSTER PUMPS WITH TWO STARTERS FIXED IN ONE ELECTRICAL BOARD ONE STAND BY AND THE OTHER UNDER OPERATION CAPACITY OF EACH ONE 6 m<sup>3</sup>/h , H = 80 m .</li> <li>• THERE ARE TWO LOCATIONS FOR THE DISINFECTION :- <ul style="list-style-type: none"> <li>- AT THE MAIN INLET SEDIMENTED WATER PIPE ( PRE – CHLORINATION ) .</li> <li>- AT THE MAIN OUTLET FILTERED WATER PIPE (POST – CHLORINATION) .</li> </ul> </li> <li>- THE SYSTEM INCLUDES BOTH INJECTION POINTS AND ALL THE PVC PIPES AND THE CONNECTIONS .</li> </ul> </li> </ul> <p>4- AIR BLOWER THIS SYSTEM TO BE USED IN THE BACK WASHING OF THE FILTERS .</p> <ul style="list-style-type: none"> <li>- TWO AIR BLOWERS ONE STAND BY THE OTHER UNDER OPERATION CAPACITY OF EACH ONE 1000 m<sup>3</sup>/h , H = 10 m .</li> <li>- ELECTRICAL PANEL INCLUDES MAIN CIRCUIT BREAKER AND TWO STARTS WITH ALL PROTECTION UNITS , CABLES , AND THE FITTINGS BETWEEN THE AIR BLOWERS AND THE STARTERS THE DISTANCE BETWEEN THE STARTERS AND THE ELECTRICAL PANEL ABOUT 25 m .</li> <li>- AIR BLOWER SYSTEM MUST BE CONNECTED TO ALL THE FILTERS SO MUST BE INCLUDES NON-RETURN VALVES , VALVE FOR EACH FILTER , ALL THE PIPES AND THE FITTINGS</li> </ul>	
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5- SUPPLY AND INSTALL 4 FILTER LOADING PUMPS IN ONE ROOM WITH CAPACITY  $Q = 950M^3/H$   $H = 50 M$  FOR EACH PUMP.

3 PUMPS UNDER OPERATION THE FOURTH STAND BY  
THE PUMPS TO BE INSTALLED IN LOCATION CLOSE TO THE SEDIMENTATION TANK.

- SUCTION OF THE PUMPS TO BE ONE COLLECTED PIPE DIAMETER ( ) LINED ALONG THE CHANNEL INCLUDES :-
  - 1- BRANCH WITH GATE VALVE.
  - 2- FOR EACH PUMP.
  - 3- SCREEN FOR EACH BRANCH ALL THE FITTINGS .
- BUTTER FLY VALVE FOR EACH .
- NON-RETURNS VALVE FOR EACH .
- MAIN COLLECTOR PIPE FOR ALL THE DISCHARGES OF THE PUMPS .
- MAIN FLOW METER AND PRESSURE METER .
- PRESSURE METER FOR EACH PUMP .
- CONTROL PANEL FOR THE FOUR PUMPS INCLUDES THE FOLLOWINGS :-
  - THREE MAIN CIRCUIT BREAKER WITH CAPACITY 1600 A .
  - TWO BUS COUPLERS EACH 1600 A .
  - SIX CIRCUIT BREAKERS WITH CAPACITY 630 A .
  - TWO CIRCUIT BREAKERS WITH 100 A.
  - TWO CIRCUIT BREAKERS WITH 25 A.
  - FOUR SOFT STARTERS CAPACITY OF EACH 250 Kw
  - TWO STARTERS 100 A EACH .
  - TWO STARTER 25 A .

6- LOW LIFT PUMPING STATION  
THE STATION ABOVE IS EXISTING AND THE  
REQUIRED AS BELOW :-

- 4 (FOUR) ROW WATER PUMPS WITH CAPACITY OF 1060 m<sup>3</sup>/h , H = 20 m , NPSHr = 2.5 m , N = 1450 RPM OR LESS , SPLITE CASE PUMP TYPE .
  - SUCTION VALVE FOR EACH PUMP WITH DIAMETER ACCORDING TO THE PUMP DIMENSIONS .
  - DISCHARGE VALVE AND NON-RETURN VALVES WITH DIAMETER S ACCORDING TO THE PUMP DIMENSIONS .
  - ALL THE ACCESSORIES FITTINGS , PRIMING VALVES AND FITTINGS .
  - OVER HEAD TRAVELLING CRANE WITH CAPACITY 3.5 TON AND ALL THE EQUIPMENT FOR THE CRANE THE TOTAL HEIGHT OF THE STATION IS( ) THE LENGTH( ) THE WIDTH ( ) .
- ELECTRICAL CONTROL PANEL INCLUDES THE FOLLOWING :-

	<ul style="list-style-type: none"> <li>- TWO MAIN CIRCUIT BREAKERS EACH WITH CAPACITY 630 A ( 400 V , 3 ph , 50 C/S) .</li> <li>- BUS COUPLER 630 A .</li> <li>- 5 (FIVE) CIRCUIT BREAKERS EACH WITH 250 A .</li> </ul> <p>4- TWO 100 A CIRCUIT BREAKER .</p> <p>5- TWO 60 A CIRCUIT BREAKER .</p> <p>ACCORDING TO THE FOLLOWING DRAWING</p> <div style="text-align: center;"> <p>630 A                  630</p> <p>630</p> <p>60    100    250       250       250    250    250       100    60</p> </div> <ul style="list-style-type: none"> <li>• THE PANEL INCLUDES THREE AMPERE METERS , ONE VOLTMETER FOR EACH PART AND ALL THE INDICATION LAMPS , AND FOULT ALARM .</li> <li>• 4 (FOUR) STAR-DELT STARTERS ONE FOR EACH PUMP CAPACITY 100 Kw THE STARTER MUST BE INSTALLED CLOSE TO THE PUMP .</li> <li>• STARTER 5 Kw OR SIMILLAR FOR THE SUBMERSIBLE PUMP .</li> <li>• ALL THE CABLES BETWEEN THE CONTROL PANEL AND THE STARTERS APROXIMAT LENGTH 60 m AND ALL THE CABLE TRYS , FITTINGS .</li> <li>• CABLES BETWEEN THE STARTERS AND THE MOTORS .</li> </ul>	
	<ul style="list-style-type: none"> <li>- ALL THE REQUIREMENT AND THE ADAPTATIONS BETWEEN THE PUMPS AND THE COLLECTOR PIPE .</li> </ul>	
	<ul style="list-style-type: none"> <li>- NOTICE :-</li> <li>RESPONSIBILITY OF THE SUPPLIERS :-</li> <li>- INSTALLATIONS OF THE FILTERS , PUMPS , PANELS , STARTERS , AIR BLOWERS , CRANES , CHEMICAL , SYSTEMS , PIPES , FITTINGS , CABLES .</li> <li>- OPERATION FOR TESTING .</li> <li>- TRAINING ENGINEERING STAFF FOR ONE MONTH .</li> </ul>	



**PRESSURE REDUCING AND SHUT OFF VALVE S1 1812.1 SERIES 71P 1140**  
**FISCHER AND PORTER (P.R.V)**  
**ORIGIN: FRANCE**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00150</b>	PRESSURE REDUCING AND SHUT OFF VALVES 71P1140 CHLORINE SULFOR DIOXIDE 8000 PPD AMMONIA 4000R PPD. KEY 71P1140	10
<b>03-01-00151</b>	VALVE OPERATOR OIL FILLED 120V 50 HZ CHLORINE SULFOR DIOXIDE 8000 PPD AMMONIA 4000R PPD. KEY 1	6
<b>03-01-00152</b>	VALVE COPSVLE ASSEMBLY S1/2 CHLORINE SULFOR DIOXIDE 8000 PPD AMMONIA 4000R PPD KEY 26	10
<b>03-01-00153</b>	VALVE SKET KEY 15	20
<b>03-01-00154</b>	VALVE SKET KEY 40	20
<b>03-01-00155</b>	DIAPHRAGM KEY 14	10
<b>03-01-00156</b>	SPRING KEY 11	4
<b>03-01-00157</b>	DIAPHRAGM BOLT ASSEMBLY KEY 16	10
<b>03-01-00158</b>	ORING KEY 8	4
<b>03-01-00159</b>	STEM VALVE RAN KEY 5	6
<b>03-01-00160</b>	GLAND VALVE KEY 7	6

**T.D.V**  
**ROTORK SHIMADRO KYOTO**  
**JAPAN**

CODE	ITEM	QTY.
	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>03-01-00161</b>	SP2 - 70A/WT 100A	4
<b>03-01-00162</b>	SP2 - 45A/WT 70A	4
<b>03-01-00163</b>	SP2 - 45A	2

**NORTH RESRVOIR CHLORINEATION MOTIVE WATER BOOSTER PUMPS TYPE R 32-250**  
**S.P.P SIGUND PULSOMETER PUMPS LTD READING W/GEN/52**

CODE	ITEM	PART NO.	QTY.
<b>03-01-00164</b>	CASE WEAR RING	1510	10
<b>03-01-00165</b>	SHAFT WITH KEGS	2100	4
<b>03-01-00166</b>	IMPELLER	2200	4
<b>03-01-00167</b>	COMPLETE ROTTING ASSEMBLY		4
<b>03-01-00168</b>	SHAFT SLEEVE	2450	14
<b>03-01-00169</b>	SET OF GLAND PACKING	4130	20
<b>03-01-00170</b>	COMPLETE COUPLING ALIGNMENT CONTROL		1
<b>03-01-00171</b>	SET OF GASKETS	4541	20
<b>03-01-00172</b>	CASTANETS LEVEL OILIER	3855	2
<b>03-01-00173</b>	STAFFING BOX GLAND	4120	4
<b>03-01-00174</b>	RADIAL SHAFT SEAL RING	4311	4
<b>03-01-00175</b>	IMPELLER NUT LOCK WASHER	6543	4
<b>03-01-00176</b>	FLINGER LANTERN RING	2540	10

**KENT PROCESS CONTROL BB-C OPEN-SCREEN TYPE PRESSURE BUIB**  
**ORIGN : U.K**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00177</b>	BULB : OPEN TYPE : SCREEN CASE MATERIAL: CASTIRON DIAPHRAGM MATERIAL: NITRLE RUBBER WEIGHT : 6.12 KG	10
<b>03-01-00178</b>	BULB : OPEN TYPE : SCREEN CASE MATERIAL: CASTIRON DIAPHRAGM MATERIAL: NITRLE RUBBER WEIGHT : 6.12 KG	10

**LINES INSTRUMENT ENGINEERS LTD REG. OFFICE 43 HONEY HILL ROAD KINGS WOOD**  
**BRISTOL BSIS4JB ENGLAND**

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00179</b>	INSTRUMENT NO. 170783 RANGE 0-2000 KG MINOR MARKS 5KG MAJOR MARKS 20.0 KG DIAL DIAMETER 18" CRANE SCALES	6

**TELEMETRY SYSTEM FOR SUPERVISION OF TREATMENT PLANT AND NETWORK**

<b><u>code</u></b>	<b><u>item</u></b>	<b><u>QTY</u></b>
<b>03-01-00180</b>	TELEMETRY SYSTEM FOR SUPERVISION OF TREATMENT PLANT AND NETWORK :- <ul style="list-style-type: none"> <li>- PROVISION OF COMPUTER SYSTEM TO REPLACE THE EXISTING 6 (PDP 11/73) COMPUTERS WITH ALL THE NECESSARY PERIPHERALS AND HARDWARE .</li> <li>- PROVISION OF SOFTWARE SUITABLE FOR THE NEW COMPUTER SYSTEM TO MANGE THE RECEIVED INFORMATION FROM THE RADIO SYSTEM AND TRANSFORM THEM TO REPORTS , GRAPHS , PICTURES .. ETC .</li> <li>- PROVISION OF RADIO TRANSMITTERS TO SEND THE MEASURED VALVE TO THE COMMAND CENTER WITH ALL THE NECESSARY POWER SUPPLIES &amp; AUXILIARIES .</li> <li>- THE OFFER MAY INCLUDE THE USING OF THE EXISTING EQUIPMENT .</li> <li>- THE OFFER SHOULD INCLUDE SITE SUPERVISION OF INSTALLATION &amp; TRAINING OF BWA STAFF .</li> <li>- RECOMMENDED SPARE PARTS SHOULD BE INCLUDED .</li> </ul>	1

**DAIAATSU DIESEL GENERATING SET MFG. CO. LTD. OSAKA JAPAN**

<u>code</u>	<u>item</u>	<u>PART NO.</u>	<u>QTY</u>
	MODEL 6 DV-22 NO OF CYL 12 , ENGIN NO D622022V BORE 220 mm , MAX CONTINUOS RATING 10600PS STROK 280 mm ENGINE SPEED 1000 RPM		
<b>03-01-00181</b>	COMPLETE CRANK SHAFT AS EMBOLI	E44060	2 SET
<b>03-01-00182</b>	MAIN BEARING ASSEMBLY COMPLETE	E44070	2 SET
<b>03-01-00183</b>	COMPLETE CAM SHAFT ASSEMBLY	E44110 & E44120	2 SET
<b>03-01-00184</b>	TIMING GEAR CASE ASSEMBLY COMP	E44300	2 SET
<b>03-01-00185</b>	GOVERNOR DRIVING GEAR ASSEMBLY COMP	E44370 & E44450	2 SET
<b>03-01-00186</b>	COMPLETE PISTON & CONNECTING ROCL ASSEMBLY	E22510 , E44520 & E22530	24

<u>code</u>	<u>item</u>	<u>QTY</u>
<b>03-01-00187</b>	WOOD WARD GOVERNOR COMPANY MAIN OFFICE : ROOK FORD 111 INOIS V.SA FORT COLLINS , COLORADO , U.S.A , SYDNEY , AUSTRALIA	
<b>03-01-00188</b>	COMPLETE GOVERNOR TYPE VG8 DIAL GOVERNOR	3
<b>03-01-00189</b>	MEDEN VACUUM CIRCUIT BREAKER TYPE. VBED - B22OB-E RATED VOLTAGE 12 KV RATED CURRENT 600 A SERIAL NO MM. 1489 -2 MEIDENSH ELECTRICAL MFG .CO LTD.	5
<b>03-01-00190</b>	DAIHATSU DIESEL MFG . CO . LTD 1- HEAD OFFICE. TLX 0524-2723 2- TOKYO OFFIE . TLX 0222-3377 JAPAN 3- LONDON OFFICE TLX 918932 DAILDN 4- G LONDON	

**CHECK VALVES**

<u>code</u>	<u>item</u>	<u>PART NO.</u>	<u>QTY</u>
<b>03-01-00191</b>	VENDOR : GUICHON SA 73104 AIX LESBIANS		
<b>03-01-00192</b>	CHECK VALVES DN500 ORING DN500		
<b>03-01-00193</b>	CHECK VALVES DN700 O RING DN700		
<b>03-01-00194</b>	SONIC AIR EXHAUST VALVE ERIRS:- SONIC AIR VALVE Ø 250 AIR INLET VALVE Ø 250	NEYRTEC , ALSTHAM ATLAN TIGUE	8

<u>code</u>	<u>item</u>	<u>PART NO.</u>	<u>QTY</u>
	DIAPHRAGM VALVES ERIK		
<b>03-01-00195</b>	DIAPHRAGM VALVES DN. 200 PN16 RF	CODE MCO1	10

**BALL VALVES**

<u>code</u>	<u>item</u>	<u>PART NO.</u>	<u>QTY</u>
	MECAFRANCE 10/18 RUE DU LANGNE DOC. Z.A DES BETHUNES .		
<b>03-01-00196</b>	BALL VALVE SW.3EN DN 8	REF DBO1/A	20
<b>03-01-00197</b>	BALL VALVE SW.3EN DN 8	REF DCO1	20
<b>03-01-00198</b>	BALL VALVE SW.1EN DN 20	REF DCO1	20
<b>03-01-00199</b>	BALL VALVE SW.3EN DN 20	REF DCO1	20
<b>03-01-00200</b>	BALL VALVE SW.1EN DN 20	REF DCO1	20
<b>03-01-00201</b>	BALL VALVE SW.6EN DN 80	REF DCO1	20
<b>03-01-00202</b>	BALL VALVE SW.12EN DN 80	REF DCO1	20
<b>03-01-00203</b>	BALL VALVE SW.3EN DN 20	REF DCO1	20
<b>03-01-00204</b>	BALL VALVE SW.1EN DN 20	REF DCO1	20

# COOLING WATER PUMPS

<u>code</u>	<u>item</u>	<u>PART NO.</u>	<u>QTY</u>
03-01-00205	COOLING WATER PUMPS : INGER SSOL PUMP		
03-01-00206	COMPLETE COOLING MATER PUMP WITH MOTOR MEN 65-160 , Q = 70 m <sup>3</sup> /h , H = 21 m , 2900 R.P.M , 5.5 KW .	PF.3670.00.2310 2.05/4	6
03-01-00207	COMPLETE COOLING MATER PUMP WITH MOTOR MEN 65-160 , Q = 70 m <sup>3</sup> /h , H = 21 m , 2900 R.P.M , 5.5 KW .	PF.3670.00.2310 2.05/5	4

# ON – LINE PUMP

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00208	<p style="text-align: right;">ON – LINE PUMP</p> <p><b>THE REQUIRED PUMPS MUST BE ON – LINE TYPE WITH FOLLOWING SPECIFICATIONS :-</b></p> <p>1st) * Q = 175 MLD (175000 m<sup>3</sup>/d) , H = 30 m , QAUNTITY (2) .</p> <ul style="list-style-type: none"> <li>• THE PUMP INSTALLS ONE ON APIPE WITH DIAMETER 1600 mm , THE SECOND ONE ON APIPE WITH DIAMETER 1400 mm .</li> <li>• THE PUMPS INCLUDE THE FOLLOWINGS :- <ul style="list-style-type: none"> <li><u>ALL THE ELECTRICAL PANELS AND</u> 1-</li> <li><u>STARTERS , TRANSFORMERS FROM 11 Kv/3.3Kv</u></li> <li><u>OR TO THE 0.4 Kv .</u></li> </ul> </li> </ul> <p>2- VALVES , ACCESSORIES , ADEPTATIONS , FITTINGS , FLOWMETERS , PRESSURE METERS FOR EACH LINE .</p> <p>3- OVER HEAD TRAVELLING CRANE WITH CAPACITY SUITABLE TO THE TOTAL WEIGHT OF THE PUMP .</p> <p>4- SPARE PARTS FOR FIVE YEARS OPERATION .</p> <p>5- CABLES , CABLE TRAYS , BETWEEN THE ELECTRICAL PANELS AND THE MOTORS AND ALL OTHERS .</p> <p>2nd) Q = 1000 m<sup>3</sup>/h , H = 40 m , QUANTITY (4) PUMPS .</p> <ul style="list-style-type: none"> <li>• THE PUMP COMPLETE WITH MOTOR AND INCLUDES THE FOLLOWINGS :- <ul style="list-style-type: none"> <li>1- ELECTRICAL PANELS , STARTERS , TRANSFORMERS FROM 11 Kv/0.4 Kv .</li> <li>2- VALVES , ACCESSORIES , ADEPTATIONS , FITTINGS , FLOWMETER , PRESSUREMETER , FOR EACH PUMP .</li> <li>3- SPARE PARTS FOR FIVE YEARS OPERATION</li> <li>4- CABLES , CABLE TRAYS , BETWEEN THE ELECTRICAL PANELS AND THE MOTORS , AND ALL OTHERS .</li> </ul> </li> </ul> <p>3rd) Q = 200 m<sup>3</sup>/h , H = 40 m , QUANTITY (4) , THE PUMP COMPLETE WITH MOTOR AND INCLUDES ALL THE ITEMS MENTIONED ABOVE FOR (B) EXCEPT TRANSFORMER .</p> <p>4th) Q = 100 m<sup>3</sup>/h , H = 40 m , QUANTITY (8) PUMPS THE PUMP COMPLETE WITH MOTOR AND INCLUDES ALL THE ITEMS MENTIONED ABOVE FOR (B) EXCEPT TRANSFORMER .</p> <p><b>NOTICE :-</b>  <b>The supplier responsible for installing the system mentioned above for item (a) only .</b></p>	

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

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00209</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	6

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00210</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 & WAHDA WTP	6

<b>CODE</b>	<b>ITEM</b>	<b>QTY.</b>
<b>03-01-00211</b>	POLY ELECTROLYTE CATONIC ALLIED COLLOIDS ( POWDER FORM)	<b>50 TON</b>

**KARKH WATER SUPPLY**

CODE	ITEM	QTY.
03-01-00212	AMMONIA 0.88 AR (B.D.H)	4x2.5 L
03-01-00213	AMMONIA SOLUTION 35% (B.D.H)	2x2.5 L
03-01-00214	AMMONIA CHLORIDE (B.D.H)	2x500 g
03-01-00215	HYDROCHLORIC ACID AR (B.D.H)	2x2.5 L
03-01-00216	ETHYLENE DIAMINE TETRA ACETIC ACID DISODIUM SALIT (B.D.H)	1x20 g
03-01-00217	HYDROCHLORIC ACID GPR (B.D.H)	2x2.5 L
03-01-00218	SULPHURIC ACID SOLATION 0.02 N CONVAL(B.D.H)	1x20g
03-01-00219	DIMETHYL AMINO BENZALDEHYDE	4x25g
03-01-00220	GIYCEROL ANALAR	2x2.5L
03-01-00221	SILVER NITRITE SOLUTION 0.028 N COMOL	CARTON OF 6x5
03-01-00222	ACETIC ACID CH <sub>3</sub> COOH = 60.05 MINIMUM ASSAY (ACIDIMETRIC) 99.5%	50x2.5L
03-01-00223	SODIUM ACE TATE ANHYDROUS MINIMUM ASSAY (EXNA) 98%	4x50kg
03-01-00224	M-ENDO AGAR LES (OXOID)	3x500g
03-01-00225	BRILLANT GREEN BILE (2%) BROTH	3x500g
03-01-00226	MEMBRINE FAECL COLIFORM BROTH	2x500g
03-01-00227	FUCHSIN (BASIC) (B.D.H)	2x25g
03-01-00228	TRYPTON WATER (OXOID)	2x500g
03-01-00229	ETHANOL 90% (B.D.H)	2x2.5L
03-01-00230	DECON 90% (B.D.H)	5x5L
03-01-00231	DI SODIUM HYOLROGEN ORTHOPHO (B.D.H)	2x500g
03-01-00232	ANTIMONY POTASSIUM TATRATE (B.D.H)	2x100g
03-01-00233	MAGNESIUM SULPHATE (B.D.H)	2x500g
03-01-00234	TEEPOL BLEACH (B.D.H)	5x1L
03-01-00235	YEAST EXTRACT AGAR (OXOID)	4x500g
03-01-00236	MINERALS MODIFIED MEDIUM BASE (OXOID)	=
03-01-00237	NUFLOW MEMBRANE FILTER SIZE 47 mm	50x200
03-01-00238	TEST TUBE SIZE 19X150	100
03-01-00239	TEST TUBE SIZE 16X150	=
03-01-00240	PETRI DISHS 52X58 mm	50
03-01-00241	PETRI DISHS 95X101 mm	50



**WEIR COMPANY**

CODE	ITEM	SITE	QTY.
	PUMP NO. 4756560 UNIT CODE SRA8		
03-01-00242	IMPELLER	WA WAT	2
03-01-00243	SHAFT SLEEVE	RA	4SET
03-01-00244	COMPLETE VOTATING ASSEMBLY	KAD	4

CODE	ITEM	SITE	QTY.
	SPP Q = 263.894S , N = 1450 R.P.M TYPE BR 10 E	KAD	
03-01-00245	IMPELLER		2
03-01-00246	SHAFT SLEEVE		2SET
03-01-00247	COMPLETE VOTATING ASSEMBLY		2
03-01-00248	LUNTERN RING		2SET

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

CODE	ITEM	QTY.
03-01-00249	CONTACTOR EH 100 55 KW 200 A 3POLE 415 V COIL 380-400 V 50 HZ	10
03-01-00250	CONTACTOR EH 90 55 KW 380-415 V COIL 380-400 V 50 HZ	10
03-01-00251	CONTACTOR EH 300 250 KW 380- 415 V COIL 380-400 V 50 HZ	10
03-01-00252	CONTACTOR EH 210 160 KW 380- 415 V COIL 380-400 V 50 HZ	15
03-01-00253	CONTACTOR EH 175 380- 415 V COIL 380-400 V 50 HZ	6
03-01-00254	FUSE CYL. EI 33 500V 10 A 3-PHASE 10X38	20
03-01-00255	SEQUENCE RELAY EWS 8A 250V 3-PHASE	15
03-01-00256	YD RELAY Y 9A US 100-415V AC1 230 6A 400V 3.8A	15
03-01-00257	CURRENT TRANSFORMER TA 30 A 200/5	15
03-01-00258	CURRENT TRANSFORMER TA 30 A 500/5	15
03-01-00259	CURRENT TRANSFORMER A 300/5	3
03-01-00260	AMMETER 300/5 A	6
03-01-00261	AMMETER 200/5 A RANGE (0-600A)	6
03-01-00262	OVER LOAD T135 DU RANG (80-110)A	6
03-01-00263	OVER LOAD T450 DU RANG (220-310)A	6
03-01-00264	OVER LOAD T200 DU RANG (150-200)A	6
03-01-00265	POWER SWITCH 500A IEC 947	3
03-01-00266	POWER SWITCH 250A T200 K 11 IEC 947-3 SK616	3
03-01-00267	POWER SWITCH 315A IT315 K 111	3
03-01-00268	PUSH BOTTON GREEN SK 616 00-B ITH : 10A	3
03-01-00269	PUSH BOTTON SK 616 003-A 230 V MAX 2W	10

CODE	ITEM	QTY.
	ELC. EQUIPMENT	
03-01-00270	CONTACTOR TYPE OKYM 5W22 STROMBERG ITH 400 A 415V	30
03-01-00271	CONTACTOR TYPE ASEA 800 A	6
03-01-00272	CONTACTOR TYPE ASEA 300 A	8
03-01-00273	CONTACTOR TYPE ASEA 200 A	6

**CLARIFIER SCRAPER**

CODE	ITEM	QTY.
03-01-00274	SCRAPER WHEEL FOR CLARIFIERS THE WHEEL IS MADE OF CYLINDRICAL DRUM COATED WITH POLY - URETHANE SUBSTANCE ALL DETAILS FOR CONSTRUCTION AND DIMENSIONS ARE SHOWN WITH THE INCLUDED DRAWING .	30

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

CODE	ITEM	QTY.
03-01-00275		

- 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

**BEARINGS**

CODE	ITEM	QTY
03-01-00276	PLUMMER BLOCK SKF. SN 216+1216	10
03-01-00277	PLUMMER BLOCK SKF. SN 213+1213	10
03-01-00278	SPHERICAL ROLLER BEARING 6322	30
03-01-00279	BEARING 6310	20
03-01-00280	BEARING 6307	30
03-01-00281	BEARING 6207	40
03-01-00282	BEARING 6315	10
03-01-00283	BEARING 7318	10
03-01-00284	BEARING 22216	10
03-01-00285	BEARING 1209	10
03-01-00286	NAC 205	20
03-01-00287	BALL BEARING SKF 6307/C3	30
03-01-00288	MOTOR BEARINGS SKF 6310/C3	20
03-01-00289	BEARING 6214	16
03-01-00290	BEARING FOR MOTOR 6322C3	26
03-01-00291	BEARING FOR MOTOR 6313 C3 , 6312C3	8
03-01-00292	BALL BEARING FOR MOTOR NO. 6317 C3	26
03-01-00293	BALL BEARING FOR MOTOR NO. 6320 C3	16
03-01-00294	THRNST BEARRING 6309 (SKF)	16
03-01-00295	LINE BEARING 6211 (SKF)	6

**SUPPLIER : DEGREMONT COMPANY**

**ORIGEN : FRANCE**

**MANUFACTURER : ROLLIX GROUPE DEFONTAING**

CODE	ITEM	QTY.
03-01-00296	BEARING TYPE : 080675 – ZZ00A NO. 0230	20

**LAB**

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00297	WATER STILL (GFL) 8L/H 220V WITH AQLL ACCESSORIES STEEL COLONY COUNTER COUNT WITH ALL ACCESSORIES. PORTABLE TURBIDING METER RANGE (0-1000) N.T.U WITH ALL ACCESSORIES 1- (0-1) (0-10) (10-100) N.T.U PRECISION AND ANALYTICAL BALANCE , SATARIOUS . 220 VOLT WITH ALL ACCESSORIES . 2- HACH LABORATORY – TURBIDITEMETER SERIE 2100 N , 220 VOLT RANGE (0-1,1-100,0-1000,0-10000)N.T.U ACCESSORIES (BENCH) 3- FIELD CODUCTOETER LF 197 WTW (BENCH ) ,220 VOLT , 0.00 MS/CM .... 2000 MS/CM T= -5 ....99 C (BENCH ) WITH ALL ACCESSORIES 4- POCKET - CONDUCTOMETER , W.T.W LF 340–A	

5	- LABORATORY PLL METER RANGE (0-14) , 220 VOLT WITH ALL ACCESSORIES.	2
	POKET PH METER PH (0-14)	2
	VIBRATORY SIVE SHAKER (220VOLT ) ANALY SENE TYPE AS 200 (RETSCH )	1
	STELL BASKET 10 CM× 12 × 14 CM	10
	ACCA CHARGERS INPUT (200- 240) V OUT PUT DC 2,4 V /9V	10
	POLYETHYLENE WASH BOTTLES SIZE 250 ML	
	AUTOMATIC BURETTES (0-50) ML	50
	DISPENSETTE STANDARD (1-10) ML VOLUME	40
	GLASS, PLASTIC PETRI DISH 100 MM DIAMETER	40
	200 GLASS , 200 PLASTIC	200 for each
	AUTO CLARES , PRESSURE GAUGE , AUX	
	701% D SAFETY VALVE , TEMPERATURE GAUGE (220-240)V WITH ALL ACCESSORIES	2
	ANALYTICAL ELECTROIC BALANCE WITH DIGITAL DISDLY RANGE 160 G READ ABILITY 0.0001 GM PRECISION STANDARD 0.001 GM	2
	TES TUBE SIZE 19× 150 ,16× 150 MM , 10× 180 MM	200 for each
	20 – NESSLER CYLINDERS 100 ML CAP TALL FORM AND SHORT FORM COLOUR LESE GLASS WITH PDISHED 60 AOMS	100
	21- FILTER PAPER WHAT MAN NO. SIZE 15BCM NO. 1,40,40	
	22 - WHAT MAN FILTER PAPER GF/C FILTER SIZE 7 CM	10x100
	AUTOMATIC BARETTE ZERRO 25ML CAPACITY WITH BLOWING BALL CLEAR GLASS AND AMBER GLASS	10x100 20
	JAR SPECMEN PETG COP 1L (90× 180MM) BEAKER	
	25- STANDARIZATION TURBIDITY KIT (1.0,10,100,1000) USED WITH LAB TURBIDIMETER MODEL HACH 2100	60
		7

<u>code</u>	<u>item</u>	<u>QTY</u>
03-01-00298	26 – SILICA DISH DEEP FORM 100ML	<u>50</u>
03-01-00299	27 – PORCELAIN DISH DEEP (100,250)	<u>50 FOR EACH SIZE</u>
03-01-00300	28 – CONICAL FLASH ERLNMEGER , PYREX ,GLASS NARROW NECK GRADUATED 100 ML CAP. 100,200ML	<u>100 FOR EACH SIZE</u>
03-01-00301	29- BEAKER POLYTHENE , GRADUATED SIZE 50, 100, 250ML	<u>50 FOR EACH SIZE</u>
03-01-00302	30- CULTURE MEDIA BOTTLES NARROW MONTH PYREX GLASS WITH INTER CHANGEABLE GLASS STOPPER CAPACITY 100 ML 250 ML	<u>100 FOR EACH SIZE</u>
03-01-00303	31- BOTTLES NARROW MONTH , REAGENT PYREX GLASS AND WIDE MONTH CAPACITY 500 ML	<u>50050 FOR EACH SIZE</u>
03-01-00304	32- BOTTLE DROPPING AMBER GLASS WITH GROORE IN STOPPER CERAMIC ENOMEL LABEL SELF COLOUR ON WHITE BACK GROND , SIZE 50 ML	<u>20</u>
03-01-00305	33- BOTTLES ASPIRATOR GLASS WITH STOPPER ,AND GROUND SIDE SOCKET , FITTED WITH INTER CHANGE ABLE STOP COCK SIZE 10 AND 20 LITER	<u>10 FOR EACH SIZE</u>
03-01-00306	34- STOP COCK PYREX GLASS WITH 29/32 JOINT	<u>20</u>
03-01-00307	35- FUNNELS COCK PYREX GLASS DIMETER 35,45 MM	<u>30 FOR EACH SIZE</u>
03-01-00308	36- ACETONE (ANALAR) 99.5%	<u>5L</u>
03-01-00309	37- ACETONE ACID (ANALAR) 99.5%	<u>10L</u>
03-01-00310	38- ETHANNL (ANALAR) (99-100)%	<u>10L</u>
03-01-00311	39- SULPHURIC ACID (ANALAR) 98.5%	<u>10L</u>
03-01-00312	40- POTASSIUM + HIO CYANATE (ANALAR)	<u>1 KG</u>
03-01-00313	41- DI- SODIUM METHYLENE DI – AMINE TETRA ACETIC ACID SOL : (0.02N) CONROL	<u>1× 80 PIECES</u>
03-01-00314	42- SULPHURIC ACID SOL : 0.02 N CONVOL	<u>1× 80 PIECES</u>
03-01-00315	43- D.PD TABLE NO.I	<u>1000 TAB</u>
03-01-00316	44- SULPHANIL AMIDE (AR)	<u>6×250G</u>
03-01-00317	45- SODIUM ACETATE ANHYDROUS CH <sub>3</sub> COONA= 82.03	<u>1KG</u>
03-01-00318	46- POTASSIUM IODIDE	<u>1KG</u>
03-01-00319	47- HYDROGEN FLURIDE (AR) HF	<u>4× 250 ML</u>

**FILTERS FOR 7 NISSAN**

CODE	ITEM	QTY
	FILTERS COMPANY VANNES LEFEBVRE	
03-01-00320	BUTTER FLY VALVE TYPE 310 DIAMETER 600 mm WITH PNEUMATIC ACTUATOR TYPE AP 75-250 WITH ADDITIONAL TWO FLANGES OF 600 mm .	14
03-01-00321	BUTTER FLY VALVE TYPE 310 DIAMETER 450 mm WITH PNEUMATIC ACTUATOR TYPE AP 75-200 WITH ADDITIONAL TWO FLANGES OF 450 mm .	28
03-01-00322	BUTTER FLY VALVE TYPE 310 DIAMETER 300 mm WITH PNEUMATIC ATNATOR TYPE AP 50-160 WITH ADDITIONAL TWO FLANGES OF 300 mm .	14
03-01-00323	VIKING JONSON JOINT 600 m	28
03-01-00324	VIKING JONSON JOINT 450 m	56
03-01-00325	VIKING JONSON JOINT 300 m	28
03-01-00326	VALVE 100 mm	14
03-01-00327	VALVE 50 mm	14
03-01-00328	NOZZLES TYPE D.20-CODE 60 436 WITH JOINTS Ø 28 x 40 – 2 mm THICK – CODE 60463 .	92000
03-01-00329	PARTIALIZATION BOX TYPE DE.40 COMPLETE WITH ALL ACCESSORIES .	14
03-01-00330	SCOUR AIR BLOWER (HIBBON) TYPE DV50 COMPLETE WITH MOTOR AND STARTER (Q = 3900 m <sup>3</sup> /h , H = 0.3 bar ) .	3
03-01-00331	DESK AND WASHING AUTOMATION CABINET CONSIST OF THE FOLLOWING :- One- CYCLOMATIC TYPE SEM 70/2. Two- SOLENOID VALVE M2T301 . Three- HEAD LOSS METER . Four- ON/OFF SWITCH . Five- SIGNAL LAMPS . Six- AIR VALVES . Seven- ALL CONTROL EQUIPMENTS FOR OPERATIONS .	14
03-01-00332	GATE VALVE 450 mm	3
03-01-00333	GATE VALVE 400 mm	3
03-01-00334	NON – RETURN VALVE 400 m	3
03-01-00335	NON – RETURN VALVE 200 m	3
03-01-00336	IRON PIPE 600 mm	300 m
03-01-00337	IRON PIPE 300 mm	200 m
03-01-00338	IRON PIPE 350 mm	70 m
03-01-00339	IRON PIPE 450 mm	80 m
03-01-00340	IRON PIPE 900 mm	50 m
03-01-00341	CUPPER PIPE 8 mm	400 m
03-01-00342	CUPPER PIPE 10 mm	600 m
03-01-00343	CUPPER PIPE 12 mm	400 m
03-01-00344	CONNECTING FITTINGS 8 mm	200
03-01-00345	CONNECTING FITTINGS 10 mm	200
03-01-00346	CONNECTING FITTINGS 12 mm	200



**HIGH LIFT PUMPING STATION FOR 7 NISSAN**

CODE	ITEM	QTY
<b>03-01-00347</b>	HIGH LIFT PUMPING STATION ELECTRICAL SWITCH BOARD (7.2 Kv) DIMTION : L x W x H 323x100x224 THE BOARD CONTAIN 4 FOR CUBICLES WITH DRAWABLE CIRCUIT BREAKERS SF6 :- 2 IN COMERS 630 A 1 OUT GOING 630 A 1 BUS COUPLER 1250 A WITH PROTECTION RELAYS (S.CT. , THERMAL , UNDER VOLTAGE ) AND MEASURMENTS (VOLTS , AMPS , SWITCHS , ETC ) THE BOURD TO BE MATCHED WITH EXISTING EQUIPMENT.	1
<b>03-01-00348</b>	ELECTRICAL SWITCH BOARD (7.2 Kv) DIMTION : L x W x H 370x100x224 THE BOARD CONTAIN 4 FOR CUBICLES WITH DRAWABLE CIRCUIT BREAKERS SF6 :- 2 IN COMERS 630 A 2 OUT GOING 630 A 1 BUS RISER WITH PROTECTION RELAYS (S.CT. , THERMAL , UNDER VOLTAGE ) AND MEASURMENTS (VOLTS , AMPS , SWITCHS , ETC ) THE BOURD TO BE MATCHED WITH EXISTING EQUIPMENT.	1

CODE	ITEM	QTY
	SPARES CIRCUIT BREAKERS FOR THE ABOVE ITEM	
<b>03-01-00349</b>	630 A	2
<b>03-01-00350</b>	1250 A	1

CODE	ITEM	QTY
<b>03-01-00351</b>	CONTACTOR 7.2 Kv , 300 A , TYPE SFC320 , FIXED TYPE , MAIN COUL VOLTAGE , Cr 16.5 KA , EFFECT 6.6 KA , 16 AUXILLARY CONTACTS , DIMENTIONS L x W x H 56x54x40	10

**BRUSH ELECTRICAL MACHINES LIMITED FOR 7 NISSAN**

CODE	ITEM	QTY
	MOTOR TYPE : VNWL 560/42 8 POLE VERTICALLY FLANGED INDUCTION MOTOR DRW. NO : AO 1432427	
03-01-00352	BRUSH GEAR SPINDLE	12
03-01-00353	BRUSH GEAR BRACKET	9
03-01-00354	BRUSH	180
03-01-00355	BRUSH HOLDER	90
03-01-00356	SLIP RING FAN	2
03-01-00357	SLIP RING	6
03-01-00358	BRUSH HOUSING SLEEVE	2
03-01-00359	INSULATION BUSH	12
03-01-00360	THRUST BRG	6
03-01-00361	INNER SPACER	2
03-01-00362	BALL BRG	3
03-01-00363	SLIP RING CLAMP (HALVE)	2

**TURBO SAN FOR 7 NISSAN**

CODE	ITEM	QTY
	PUMP TYPE : TURBO CEP 400/400 SERIAL NO. : 44422	
03-01-00364	CASING WEAR RING	10
03-01-00365	BEARING CAP	4
03-01-00366	IMPELLER DOUBLE SACTION	2
03-01-00367	BEARING HOUSING	2
03-01-00368	BEARING COVER (INSIDE)	2
03-01-00389	BEARING COVER ( MOTOR SIDE )	2
03-01-00370	BEARING END COVER	1
03-01-00371	OIL RING	10
03-01-00372	BEARING COVER	2
03-01-00373	STUFFING BOX BUSHING	10
03-01-00374	PUMP SHAFT	2
03-01-00375	SHAFT SLEEVE	10
03-01-00376	SHAFT NUT	10
03-01-00377	OIL RING SLEEVE	10
03-01-00378	OIL RING SLEEVE ( MOTOR SIDE )	10
03-01-00379	OIL THROWER	10
03-01-00380	OIL THROWER (MOTOR SIDE)	10
03-01-00381	STUFFING BOX BUSHING	10
03-01-00382	STUFFING BOX GLAND	10
03-01-00383	IANTERN RING	10

**11KV SF6 DRAWOUT BREAKERS FOR 7 NISSAN**

CODE	ITEM	QTY
<b>03-01-00384</b>	RATED VOLTAGE 11 Kv RATED IMPULSE WITH STAND VOLTAGE 75 Kv RATED FREQUENCY 50/60 HZ RATED NORMAL CURRENT 630 A RATED SHORT CIRCUIT BREAK CURRENT 20 KA RATED DURATION OF SHORT CIRCUIT 3 SEC , SERIAL NO. YS/N/86/003	4

CODE	ITEM	QTY
	YORK SHIR SWITCH GEAR FOR THE ABOVE BREAKERS	
<b>03-01-00385</b>	CLOSING COIL	10
<b>03-01-00386</b>	TRIPPING COIL	10
<b>03-01-00387</b>	CHARGING MOTOR	10

CODE	ITEM	QTY
<b>03-01-00388</b>	VOLTAGE TRANSFORMER TYPE Bs 3941 , RATION 11000/110 FREQ 50 HZ VA 100 CLASS 1.0 RUF 1.5/30 SEC IT 28/75 KV	4

**ELECTRICAL ACTUATORS FOR 7 NISSAN**

CODE	ITEM	QTY
<b>03-01-00389</b>	ROTORK CONTROLS LIMITED TYPE : 11 A , SERIAL NO. : Z10910 A WIRING DIG NO. 2220 OUTPUT SPEED : 24 REV/MIN MAXIMAM TORQUE SETTING 68 N.m MOTOR RATING : 0.15 KW MOTOR SUPPLY 420-3-50 NOMINAL MOTOR CURRENT : 1.75A AUXILIARY SWITH 15A 440 VA.C 0.5A 125 VD.C	4
<b>03-01-00390</b>	SPARE : ELECTRICAL STATOR COIL	10
<b>03-01-00391</b>	ROTORK CONTROLS LIMITED TYPE : 11 A , SERIAL NO. : Z10910 D1 WIRING DIG NO. 2220 OUTPUT SPEED : 48 REV/MIN MAXIMAM TORQUE SETTING 54 N.m MOTOR RATING : 0.24 KW MOTOR SUPPLY : 420.3.50. NOMINAL MOTOR CURRENT : 1.75A AUXILIARY SWITH 15A 440 VA.C 0.5A 125 VD.C	6
<b>03-01-00392</b>	SPARE : ELECTRICAL STATOR COIL	10

**CONTACTOR FOR 7 NISSAN**

CODE	ITEM	QTY
<b>03-01-00393</b>	COMPANY : STROMBERG TYPE : OKYMSW22 , Ith 400A , COIL VOILTAGE 110 V	20
<b>03-01-00394</b>	COMPANY : ASEA (ABB) TYPE : EH 550 , Ith 800A , COIL VOILTAGE 110 V	4
<b>03-01-00395</b>	COMPANY : ASEA (ABB) TYPE : EH 250 , Ith 440A , COIL VOILTAGE 110 V	8
<b>03-01-00396</b>	COMPANY : ASEA (ABB) TYPE : EH 160 , Ith 300A , COIL VOILTAGE 110 V	8

## PUMPS

### SPLITE CASE PUMP COMPLETE WITH MOTOR + FLEXIBLE COUPLING + BASE PLATE + STAR - DELTA - STARTER + SET OF WEARING SPARE PARTS FOR EACH PUMP

CODE	PUMP MODLE	Q m3/h	PUMP TYPE	HEAD m	SPEED R.P.M	ROTA-TION SENSE	SUC- TION DN/PN	DELIVERY DN/PN	LUBRICA- TION	IMPELLER MATERIAL	SHAFT MATERIAL	SEAL	NPS HR (m)	MOTOR POWER KW	MOTOR IP	MOTOR INSULA-TION CLASS	VOLT/PH/FREQ 380/3/50	MOTOR COOLING	QTY	FLUID	COUPLING	SPARE PARTS	CIF\$ UNIT PRICE	CIF\$ TOTAL PRICE
03-01-00397		1000	SPLIT CASE	60	1450	CW	350/PN10	300/PN16	GREASE	GSNZ10	STAINLE SS STEEL	PACKING		250	55	F	380/3/50	FAN- COOLED	4	TREATE D WATER	FLEXIBL E COUPLIN G	- SET OF BEARING + SHAFT SLEEVE + IMPELLER RING+ LANTEM RING FOR EACH PUMP - COMPLETE ROTATING ASSEMBLY FOR THE ITEM		
03-01-00398		=	=	=	=	ANTI CW	=	=	=	=	=	=		=	=	=	=	=	3	=	=	- SET OF BEARING + SHAFT SLEEVE + IMPELLER RING+ LANTEM RING FOR EACH PUMP - COMPLETE ROTATING ASSEMBLY FOR EACH ITEM		
03-01-00399		=	=	10		CW			=	=	=	=	2.5		=	=	=	=	4	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR EACH ITEM		
03-01-00400		200	EN- SUCTION	50	1450	=	150/PN10	125/PN16	=	=	=	=		45	=	=	=	=	4	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR THE ITEM		
03-01-00401		50	=	=	=	=			=	=	=	=		18.5	=	=	=	=	20	=	=	- DITTO - COMPLETE FOUR ROTATING ASSEMBLY		
03-01-00402		25	=	35	=	=			=	=	=	=			=	=	=	=	15	=	=	- DITTO - COMPLETE THREE ROTATING ASSEMBLY FOR THE ITEM		
03-01-00403		330	SPLIT CASE	70	1475	=	200/PN10	150/PN16	=	=	=	=		120	=	=	=	=	3	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR THE ITEM		
03-01-00404		200	EN- SUCTION	35	2900	=	100/PN10	80/PN16	=	=	=	=		37	=	=	=	=	3	=	=	- DITTO - DITTO		
03-01-00405		270	SPLIT CASE	50	1450	=	200/PN10	150/PN16	=	=	=	=		60	=	=	=	=	3	=	=	- DITTO - DITTO		
03-01-00406		50	EN- SUCTION	80	2920	=	100/PN10	80/PN16	=	=	=	=		25	=	=	=	=	3	=	=	- DITTO - DITTO		
03-01-00407		60	=	55	1450	=	150/PN10	=	=	=	=	=		37	=	=	=	=	3	=	=	- DITTO - DITTO		
03-01-00408		540	SPLIT CASE	35	=	=	=	=	=	=	=	=		75	=	=	=	=	10	=	=	- DITTO - COMPLETE FIVE ROTATING ASSEMBLY FOR THE ITEM		
03-01-00409		20	BOOSTER PUMP	65	2950	=			=	=	=	=		5.5	=	=	=	=	5	=	=	- DITTO - COMPLETE ROTATING ASSEMBLY FOR THE ITEM		

**FACE MASK AND BREATHING EQUIPMENTS**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00410</b>	<b><u>BREATHING SYSTEM INCLUDES:</u></b> <b>SYLINDERS WITH CAPACITY SUTABLE FOR TWO HOURS WORKING X2</b> <b>FACE MASK WITH FILTER SUTIBLE TO BE USED WITH CHLORINE GAS, WITH ACCESSORIES</b> <b>SUTABLE COMPRESSOR TO FILL THE CYLINDERS</b>	<b>20</b>

**ELECTRICAL CHANGE OVER BOARD**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
	<b><u>LAW VOLTAGE ( 400 VAC, 3PH, 50HZ)</u></b> <b>AUTOMATIC OPERATION , (USING CONTECTORS OR CIRCUIT BREAKERS)</b> <b>SUTABLE FOR STAND BY GENERATORS</b> <b>MECHANICAL AND ELECTRICAL INTEROCKS TO PROVIDE SAFE</b> <b>OPERATION EITHER FROM MAIN OR GENERATOR INCLUDED IN SUTABLE BOARD TO BE WALL MMAUNTED</b> <b>LUMP INDECATORS FOR VOLTAGE SOURS</b>	
<b>03-01-00411</b>	<b>400A</b>	<b>20</b>
<b>03-01-00412</b>	<b>630A</b>	<b>10</b>
<b>03-01-00413</b>	<b>1250A</b>	<b>5</b>
<b>03-01-00414</b>	<b>800A</b>	<b>10</b>

**SECTION 9**  
**DUCTILE IRON PIPES AND FITTINGS**

CODE NO	DESCRIPTION	QTY.
	<p>SUPPLY OF SPIGOT AND SOCKET DUCTILE IRON PIPES ACCORDING TO ISO STANDARD 2531 TYPE K=9 WITH THE FOLLOWING TECHNICAL SPECIFICATIONS.</p> <p>1- INTERNAL PRESSURE PROOF TEST = 50 BARS</p> <p>2- WALL THICKNESS SHOULD BE ACCORDING TO THE FOLLOWING FORMULA : <math>e = 5.8 + 0.003 ND</math></p> <p>WHERE , e = WALL THICKNESS IN (mm)</p> <p>ND = NOMINAL DIAMETER (mm)</p> <p>3- LENGTH OF EACH PIPE SEGMENT SHOULD BE 6 METERS</p> <p>4- PIPES OF PUSH JOINT.</p> <p>5- PIPES SHOULD HAVE ASPEN CEMENT MORTAR INSIDE LINING AND OUT SIDE BITUMEN COATING.</p> <p>- SCOPE OF SUPPLY :</p>	
03-01-00415	a- DUCTILE IRON PIPES WITH NOMINAL DIAMETER OF 100 mm INCLUDING RUBBER JOINTS.	309,900
03-01-00416	b- DITTO. WITH NOMINAL DIAMETER OF 150 mm INCLUDING RUBBER JOINTS.	160,000 M
03-01-00417	c- DITTO. WITH NOMINAL DIAMETER OF 200 mm INCLUDING RUBBER JOINTS.	84,000 M
03-01-00418	D- DITTO. WITH NOMINAL DIAMETER OF 300 mm INCLUDING RUBBER JOINTS.	60,000 M
03-01-00419	E- DITTO. WITH NOMINAL DIAMETER OF 400 mm INCLUDING RUBBER JOINTS.	60,000 M
03-01-00420	F- DITTO. WITH NOMINAL DIAMETER OF 500 mm INCLUDING RUBBER JOINTS.	60,000 M
03-01-00421	G- DITTO. WITH NOMINAL DIAMETER OF 600 mm INCLUDING RUBBER JOINTS.	60,000 M
03-01-00422	H- DITTO. WITH NOMINAL DIAMETER OF 700 mm INCLUDING RUBBER JOINTS.	60,000 M
03-01-00423	I- DITTO. WITH NOMINAL DIAMETER OF 800 mm INCLUDING RUBBER JOINTS.	12,000 M
03-01-00424	J- DITTO. WITH NOMINAL DIAMETER OF 900 mm INCLUDING RUBBER JOINTS.	12,000 M
03-01-00425	K- DITTO. WITH NOMINAL DIAMETER OF 1000 mm INCLUDING RUBBER JOINTS.	12,000 M
	<p>SUPPLY OF DUCTILE IRON FITTINGS SUITABLE FOR DUCTILE IRON PIPES ACCORDING TO ISO STANDARD 2531 WITH THE FOLLOWING TECHNICAL SPECIFICATIONS</p> <p>a- FLANGES SHOULD BE OF TYPE NP 16.</p> <p>b- FITTINGS SHOULD HAVE A CEMENT MORTAR INSIDE LINING AND OUT SIDE BITUMEN COATING.</p> <p>c- HYDROSTATIC LEAK- TIGHTNESS TEST PRESSURE SHOULD BE NOT LESS THEN 25 BARS.</p> <p>d- WALL THICKNESS SHOULD BE ACCORDING TO THE FOLLOWING FORMULA. <math>e = 7 + 0.014 ND</math> FOR TEES.</p> <p><math>e = 6 + 0.012 ND</math> FOR OTHER FITTINGS.</p> <p>- SCOPE OF SUPPLY</p> <p>THE SCOPE OF SUPPLY INCLUDE ALL NECESSARY RUBBER JOINTS, GASKETS, WASHERS, BOLTS , NUTS AND GLANDS.</p> <p>ALL SOCKET JOINTS SHALL BE MECHANICAL JOINTS.</p>	
03-01-00426	a- DOUBLE FLANGE BEND -90 ° - Nominal Diameter (mm) : 100	6,000 PCS.
03-01-00427	b- DITTO . Nominal Diameter (mm): 150	3,000
03-01-00428	c- DITTO Nominal Diameter (mm) : 200	1,200

03-01-00429	d- DOUBLE SOCKET BEND --90 ° - Nominal Diameter (mm) : 100	6,000
03-01-00430	e- DITTO Nominal Diameter (mm): 150	3,000
03-01-00431	f- DITTO Nominal Diameter (mm) : 200	600
03-01-00432	g- DOUBLE FLANGE BEND 45° Nominal Diameter (mm) : 100	1,800
03-01-00433	h- DITTO Nominal Diameter (mm) : 150	1,100
03-01-00434	i- FLANGE SPIGOT Nominal Diameter (mm) : 100	3,000
03-01-00435	j- FLANGE SOCKET Nominal Diameter (mm) : 150	3,000
03-01-00436	k- ALL SOCKET TEE 150X100 mm	6,000
03-01-00437	l- ALL SOCKET TEE 100X100 mm	12,000
03-01-00438	m- DOUBLE FLANGE REDUCER 150X100	1,200
03-01-00439	N- FLANGE SPIGOT Nominal Diameter (mm) : 300	1,200
03-01-00440	M- FLANGE SOCKET Nominal Diameter (mm) : 300	1,200
03-01-00441	P- DOUBLE SOCKET COLLAR NOMINAL DIA MM: 400	2,400
03-01-00442	Q- DOUBLE SOCKET BEND --90 ° - Nominal Diameter (mm) : 300	1,700
03-01-00443	r- DOUBLE SOCKET BEND --90 ° - Nominal Diameter (mm) : 400	1,200
03-01-00444	- S.DOUBLE SOCKET BEND 45 Nominal Diameter (mm) : 300	1,200
03-01-00445	t- DOUBLE SOCKET BEND --45 ° - Nominal Diameter (mm) : 400	1,200

#### SECTION 10:

#### COMPACT UNIT

CODE NO	DESCRIPTION	QTY.
03-01-00446	COMPACT UNIT OF 50 m3 capacity	12*

#### CONTAINERIZED PREMOUNTED WATER TREATMENT PLANT

-----  
 NOS : 12\*  
 PLANT CAPACITY : 50 m3/hr  
 ELECTRIC POWER : 400 V+ 10% , 50 Hz , 3-PHASE A.C.

#### RAW WATER PUMPS

----- :  
 NUMBER : \*24  
 CAPACITY : 65 m3/h  
 HEAD : 20 m

#### FILTER LOADING PUMP

----- :  
 NUMBER : 2  
 CAPACITY : 50 M3/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

---

\* amended 17 August 2000



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

## 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 : 12\*  
CAPACITY : 1000 g/h  
ENCLUDING : 2 CYLINDERS WITH 65 Kg ,  
2 BOOSTING PUMPS CAPACITY 2 m<sup>3</sup>/h , HEAD : 80 METER

## CHEMICAL DOSING SYSTEM

----- :

### a- ALUMINIUM SULPHATE PUMPS

----- :

CAPACITY : 50 L/h  
HEAD : 6 bar  
NUMBER : 2

### b- ALUMINIUM SULPHATE TANK

----- :

CAPACITY : 1000 L  
NUMBER : 2

INCLUDED ONE FLASH MIXER FOR EACH TANK .

## COMPACT UNIT

CODE NO	DESCRIPTION	QTY.
03-01-00447	COMPACT UNIT	6

## CONTAINERIZED PREMOUNTED WATER TREATMENT PLANT

----- :

NOS : 6  
PLANT CAPACITY : 30 m<sup>3</sup>/hr  
ELECTRIC POWER : 400 V+ 10% , 50 Hz , 3-PHASE A.C.

## RAW WATER PUMPS

----- :

NUMBER : 2  
CAPACITY : 40 m<sup>3</sup>/h  
HEAD : 20 m

## FILTER LOADING PUMP

----- :  
NUMBER : 2  
CAPACITY : 30 M3/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

## 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

----- :

1st) 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 : 500 g/h

ENCLUDING : 2 CYLINDERS WITH 65 Kg ,

2 BOOSTING PUMPS CAPACITY  $2 \text{ m}^3/\text{h}$  , HEAD : 80 METER

2nd) SODIUM HYPO CHLORIDE SOLUTION SYSTEM INCLUDES THE FOLLOWING :-

1- TWO DOSING PUMPS CAPACITY = 50 L/h , H = 80 m .

2- TWO TANKS CAPACITY OF EACH ONE = 500 L .

3- ELECTRICAL MIXER FOR EACH TANK .

4- ALL THE FITTINGS , HOSES , AND ACCESSORIES .

5- TWO INJECTION POINTS (PRE – AND POST CHLORINATIONS) .

CHEMICAL DOSING SYSTEM

----- :-

a- ALUMINIUM SULPHATE PUMPS

----- :

CAPACITY : 50 L/h

HEAD : 6 bar

NUMBER : 2

b- ALUMINIUM SULPHATE TANK

----- :

CAPACITY : 500 L

NUMBER : 2

INCLUDED ONE FLASH MIXER FOR EACH TANK .

**SECTION 11****HYDRAULIC AERIAL PLATFORM**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00448</b>	<b>MONKING HEIGHT (17-22) M</b> <b>PLATE FORM HEIGHT (15-21) M</b> <b>LATERAL OUTREACH TO</b> <b>EITHER SIDE APPROX. (8.50-10)</b> <b>RANGE OF ROTATION APPROX. 360°</b> <b>SWIVELING ANGLE OF THE RUSSELL APPROX. 105°</b> <b>SIZE TUBULAR STEEL WORKING CAGE 1.20X1.00</b> <b>CARRYING CAPACITY OF CAGE (190-200) KG</b> <b>ENGINE : 4 CYLINDER, DIESEL ENG. TURBOCHARGED ,</b> <b>H.P 200</b> <b>TIRE SIZE : 900X20, 4X2</b> <b>GEAR : 6 SPEED</b> <b>CLUTCH : SINGLE-PLATE, DRY CLUTCH</b>	<b>4</b>

**SECTION 12****FIELD VEHICLES**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00449</b>	<b>ENGINE : 6 CYLINDER, FOUR STORK, GASOLINE</b> <b>2000-3000 CC</b> <b>H.P : (175-200) H.P , 5000 R.P.M-5000 R.P.M</b> <b>GEAR BOX : 5 SPEED, MANUAL</b> <b>CLUTCH : SINGLE DRY PLATE</b> <b>TIRE SIZE : 750/16</b> <b>ADDITIONAL:</b> <b>FOUR DOORS – 2 BACK SIDE</b> <b>CARPURATER SYSTEM</b>	<b>7</b>

**SECTION 13****CESSPOOL EMPTIER**

<b>CODE NO</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>03-01-00450</b>	<b>CHASSIS CAB : 4 X 2</b> <b>ENGINE: 6 CYLINDER, 4 STROKE. TURBOCHARGER</b> <b>POWER: NOT LESS THAN 240 HP.</b> <b>CLUTCH : SINGLE PLATE</b> <b>GEAR BOX : 8 SPEED</b> <b>G. V. W : NOT LESS THAN 19 TON</b> <b>PAYLOAD : NOT LESS THAN 12 TON</b> <b>TIER SIZE : 1200 X 20 DISK TYPE</b> <b>TANK CAPACITY : NOT LESS THAN 10000 L</b> <b>FLOW RATE : 600 m<sup>3</sup> /h</b> <b>WITH SPARE PARTS FOR TWO YEARS OPERATION</b>	<b>30</b>

**SECTION 14**  
**HIGH PRESSURE CESSPOOL EMPTIER**

CODE NO	DESCRIPTION	QTY.
03-01-00451	<b>CHASSIS CAB: 8X4</b> <b>ENGINE: DIESEL , WATER COOLED , 6 CYLINDER IN LINE</b> <b>ENGINE TURBOCHARGED AND ENTER COOLED , DIRECT</b> <b>FUEL INJUNCTION TROPICAL FAN, FUEL FILTER , SINGLE</b> <b>BOX TYPE</b> <b>POWER: NOT LESS THAN 288 HP.</b> <b>CLUTCH: SINGLE PLATE DRY CLUTCH F&amp;S , TYPE MFZ,,</b> <b>430 HYDRAULICALLY OPERATED , AIR ASSISTED .</b> <b>ASBESTOS – FREE LININGS</b> <b>GEAR BOX : ZF 18S 151 SYNCHROMESH GEAR BOX 16</b> <b>POWER WARD SPEEDS , 2 REVERSE , STICK SHIFT.</b> <b>MAX VACUUM : 800 MBAR</b> <b>MAX AIR VOLUME : UNLOADED RPM</b> <b>1500 RPM 5900 CBM/TIM</b> <b>1795 RPM 7070 CBM/TIM</b> <b>2025 RPM 7970 CBM/TIM</b> <b>2200 RPM 8660 CBM/TIM</b> <b>MEASUREMENTS (APPROX.) WIDTH 2460 MM</b> <b>LENGTH 8270 MM</b> <b>HEIGHT 2820 MM</b> <b>TIRE SIZE : 1200 X 20</b> <b>WHEEL : 8.5X20</b> <b>WEIGHT : NOT LESS THAN 13.4 TONS</b> <b>WITH 10% RECOMMENDED SPARE</b>	12

**SECTION 15**

**PORTABLE STAND BY GENERATORS**

CODE NO	ITEM	QTY
03-01-00452	<b>GENERATING-SETS OF 75 KVA</b> <b>SPECIFICATION:</b> <b>1- PORTABLE</b> <b>2- TROPICAL RADIATOR</b> <b>3- WITH ELECTRONIC BATTERY CHARGE</b> <b>4- MANUALLY CHANG OVER SWITCH</b> <b>5- WEATHER PROOF CANOPY</b>	30
03-01-00453	<b>GENERATING-SET OF :</b> <b>1st- 150 KVA</b> <b>2nd- 250 KVA</b> <b>3rd- 370 KVA</b> <b>SPECIFICATION:</b> <b>1-TROPICAL RADIATOR</b> <b>2- WITH ELECTRONIC BATTERY CHARGE</b> <b>3- MANUALLY CHANG OVER</b> <b>4-WEATHER PROOF CANOPY</b>	20 10 20
03-01-00454	<b>GENERATING-SET OF 1000 KVA 400 V</b> <b>SPECIFICATION:</b> <b>1- TROPICAL RADIATOR</b> <b>2- MANUALLY CHANG OVER</b> <b>3- WEATHER PROOF CANOPY ONLY ONE IS PROOF</b> <b>SOUND.</b> <b>4- STARTING BY ELECTRICAL STARTING MOTOR</b>	6

**SECTION 16****MNI GARBAGE COLLECTORS**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00455</b>	<b>CHASSIS CAB 4X2 ENGINE : 4 CYLINDER, WATER COOLED, DIRECT ENG. DIESEL ENG. POWER : 20-100 H.P CLUTCH : SINGLE PLATE GEAR BOX : 6 SPEED CAPACITY : 8 M3 COMPACT RATIO : 6:1</b>	<b>16</b>

**SECTION 17****FORK LIFT**

<b>CODE NO.</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00456</b>	<b>CAPACITY : 3X5 TON H.P : 80-100 ENGINE : 4 CYLINDER, FOUR STROKE, DIESEL ENGINE. MAX FORK HEIGHT : 3,000 MM GROUND CLEARANCE : 200-300 MM</b>	<b>6</b>

**SECTION 18****AIR COMPRESSORS**

<b><u>CODE NO</u></b>	<b><u>ITEM</u></b>	<b><u>QTY</u></b>
<b>03-01-00457</b>	<b>7 BAR T.M : 1250 MAX SPEED : 1000 R.P.M Q :81 M3/H</b>	<b>30</b>

**SECTION 19**  
**RECOVERY TRUCK**

<b>CODE NO</b>	<b>ITEM</b>	<b>QTY</b>
<b>03-01-00458</b>	ENGINE : 6 CYLINDER, INLINE, DIRECT ENG., TURBOCHARGED POWER: 280 H.P G.V.W : 28 TON PAYLOAD: 15 TON CLUTCH : SINGLE DRY PLATE GEAR : 8+1 TIRE SIZE : 1200X24 ROD THICKNESS : (1.5đ-2đ) LIFTING WEIGHT: 15 TON PULLING WEIGHT : 50 TON	<b>4</b>

**SECTION 20**

**FLOOD LIGHT PLANT**

<b>CODE NO</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>03-01-00459</b>	AIR COOLED PORTABLE HYDRAULIC LIFTING AND LOWERING	<b>10</b>

**SECTION 21**

**PORTABLE DIESEL ENGINE , ON WHEEL**

<b>CODE NO</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>03-01-00460</b>	100X100 MM 150X150 MM SPECIFICATION: AIR COOLED STARTING BY TWO MEANS A-HANDLE , B-ELECTRICAL STARTING SELF PRIMING WITH VACUUM PORTABLE CAPACITY OF FUEL TANK : 8-10 WORKING HOUR	<b>20</b>

**SECTION 22**

**MODERN PHOTO COPY MACHINE**

<b>CODE NO</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>03-01-00461</b>	<b>MODERN PHOTO COPY MACHINE</b>	<b>50</b>

**SECTION 23**

**MODERN TYPE WRITERS**

<b>CODE NO</b>	<b>DESCRIPTION</b>	<b>QTY.</b>
<b>03-01-00462</b>	<b>MODERN TYPE WRITERS</b>	<b>50</b>

03-01-00463      Rollers with spare parts

8pcs



SECTOR: Water and Sanitation - Phase VII

Subsector: Requirements for Processing and Distribution Sector of Oil & Gas

PROJECT or TITLE: Asphalt plant in Dora - amended 23 August 2000

CODE	DESCRIPTION	QTY	UNIT OF MEASURE
	<b>Feeder to the dryer</b>		
03-01-00464	Bracket of roller with adjustment and bearings	tba	
03-01-00465	Gearbox	tba	
03-01-00466	Motor	tba	
	<b>Bitumen tanks</b>		
03-01-00467	Burner set	tba	
03-01-00468	Loading pump including motor and starter for loading incoming bitumen	tba	
	<b>Dryer</b>		
03-01-00469	Steel rollers	tba	
03-01-00470	Bearings	tba	
03-01-00471	Ring of drums	tba	
03-01-00472	Mechanical part at the center of the dryer for the balance of the system (center dryer)	tba	
03-01-00473	Gear box	tba	
03-01-00474	Sprocket and chain	tba	
03-01-00475	Filter air and trap recover	tba	
	<b>Mixing Unit</b>		
03-01-00476	The unit comprising of arm	tba	
03-01-00477	ball bearing and shaft	tba	
03-01-00478	paddle	tba	
03-01-00479	pneumatic cylinder mixture	tba	
03-01-00480	compressed air system	tba	
03-01-00481	electrical components	tba	
03-01-00482	Gear box	tba	
03-01-00483	Sieve	tba	
	<b>Other issues</b>		
03-01-00484	Generator	tba	
03-01-00485	Crane	tba	
03-01-00486	Electrical and electronic components	tba	
03-01-00487	Piping for bitumen	tba	
03-01-00488	Quality control laboratory	tba	
03-01-00489	Laboratory supplies	tba	
03-01-00490	truck-mounted bitumen spraying machines & spare parts	4	Unit
03-01-00491	Road pavers with spare parts	12	pcs
03-01-00492	11KV switchboard and associated DC system	1	Unit