

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)

MINISTRY OF LOCAL ADMINISTRATION AND ENVIRONMENT
(MOLAE)
THE SYRIAN ARAB REPUBLIC

**THE CAPACITY DEVELOPMENT
OF
ENVIRONMENTAL MONITORING
AT
DIRECTORATES
FOR
ENVIRONMENTAL AFFAIRES
IN
GOVERNORATES
IN THE SYRIAN ARAB REPUBLIC**

PROJECT COMPLETION REPORT

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January 2008

NIPPON KOEI CO., LTD.

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Equipment List

3.1.1 Basic Water Quality

Additional Instrument Purchased by JET for Laboratories in 14 DFEAs (2005)

No.	Name	Number (for 14 DFEAs)	Supplier	Date of Delivery	Price S.P	
					Unit	Total
1	White cloth	30	Alba	Jun. 2005	540	16,200
		50	Alba	Jun. 2005	540	27,000
		20	Alba	Jun. 2005	540	10,800
2	Brush	28	Alba	Jun. 2005	50	1,400
		28	Alba	Jun. 2005	50	1,400
		14	Alba	Jun. 2005	50	700
3	pH paper	28	Alba	Jun. 2005	375	10,500
4	Tube support rack	14	Alba	Jun. 2005	430	6,020
5	Drying rack	14	Alba	Jun. 2005	1,600	22,400
6	Temperature, humidity and barometric pressure meter	14	Alba	Jun. 2005	2,400	33,600
7	Temperature meter	28	Alba	Jun. 2005	320	8,960
8	Long-handled dippers	14	Alba	Jun. 2005	350	4,900
9	Weight boats (Small size)	1	Alba	Jun. 2005	1,600	1,600
	Weight boats (Middle size)	1	Alba	Jun. 2005	2,150	2,150
10	Spatula-spoon	28	Alba	Jun. 2005	80	2,240
11	Trays	14	Alba	Jun. 2005	160	2,240
12	Bucket with spout	14	Alba	Jun. 2005	80	1,120
13	Rope	14	Alba	Jun. 2005	300	4,200
14	Vinyl tape	70	Alba	Jun. 2005	50	3,500
15	Oil pen	28	Alba	Jun. 2005	50	1,400
16	Safety gloves	14	Alba	Jun. 2005	200	2,800
17	Waterproof boots	14	Alba	Jun. 2005	300	4,200
18	Cold reserving material	168	Alba	Jun. 2005	100	16,800
19	Working board	28	Alba	Jun. 2005	150	4,200
20	Micropipette adjustable 20-100 ul	8	Alba	Jun. 2005	6,000	48,000
21	Micropipette fixed 100 ul	6	Alba	Jun. 2005	4,500	27,000
22	Pipette filler 2 ml	14	Alba	Jun. 2005	425	5,950
23	Pipette filler 10 ml	14	Alba	Jun. 2005	425	5,950
24	Pipette filler 25 ml	14	Alba	Jun. 2005	475	6,650
25	Carton cutter	14	Alba	Jun. 2005	70	980
26	Pipette holder	14	Alba	Jun. 2005	1,000	14,000
27	Sciso	14	Alba	Jun. 2005	50	700
28	Meter 5 m	14	Alba	Jun. 2005	100	1,400
29	Screw driver set	14	Alba	Jun. 2005	60	840
30	Paper mask (set/100)	14	Alba	Jun. 2005	200	2,800
31	Beaker plastic 100 ml	14	Alba	Jun. 2005	100	1,400
32	Plastic cup with lid	14	Alba	Jun. 2005	10	140
33	water tank 5 litre w/2 hoses	14	Alba	Jun. 2005	100	1,400
34	Stainless steel tube holer	14	Alba	Jun. 2005	3,500	49,000
35	Distilled water tank 10 litre with tape	14	Alba	Jun. 2005	1,250	17,500
36	Glass rods	7	Alba	Jun. 2005	50	350
37	Yellow tips (bag/1000)	1	Alba	Jun. 2005	500	500
38	Adaptor & battery charger	1	Hasakeh shop	Jul. 2005		2,550
39	Sampling tool	1	Hasakeh shop	Jul. 2005		2,825
40	Sampling tool	1	Hasakeh shop	Jul. 2005		2,450
41	Battery charger	2	Hasakeh shop	Jul. 2005	2500	5,000
42	BOD Stabilizer (Hasakeh DFEA)	1	Hasakeh shop	Jul. 2005		1,600
43	Stabilizer of lab. (Hasakeh DFEA)	1	Hasakeh shop	Jul. 2005		16,500
44	Funnel plastic 12 cm diam.	28	Alba	Aug.-Oct. 2005	100	2,800
45	Safety gloves	14	Alba	Aug.-Oct. 2005	200	2,800
46	Calculator	28	Alba	Aug.-Oct. 2005	225	6,300
47	Electronic timer	28	Alba	Aug.-Oct. 2005	1,000	28,000
48	cooling box round shape	14	Alba	Aug.-Oct. 2005	1,000	14,000
49	Water-proof boot	28	Alba	Aug.-Oct. 2005	300	8,400
50	Gloves disposable (box/100)	70	Alba	Aug.-Oct. 2005	200	14,000
51	Beaker plastic 1 liter with hand	14	Alba	Aug.-Oct. 2005	450	6,300
52	water tank 5 litre w/2 hoses	28	Alba	Aug.-Oct. 2005	100	2,800
53	water tank 25 litre w/2 hoses	28	Alba	Aug.-Oct. 2005	125	3,500
54	Distilled water tank 10 litre with tape	14	Alba	Aug.-Oct. 2005	1,250	17,500
55	Sciso	28	Alba	Aug.-Oct. 2005	50	1,400
56	Carton cutter	28	Alba	Aug.-Oct. 2005	70	1,960
57	Meter (5 meters)	28	Alba	Aug.-Oct. 2005	100	2,800
58	Pipette filler 2 ml	14	Alba	Aug.-Oct. 2005	425	5,950
59	Pipette filler 10 ml	14	Alba	Aug.-Oct. 2005	425	5,950
60	Pipette filler 25 ml	14	Alba	Aug.-Oct. 2005	475	6,650
61	Cylinder plastic 1000 ml	14	Alba	Aug.-Oct. 2005	600	8,400
62	Cylinder plastic 500 ml	14	Alba	Aug.-Oct. 2005	450	6,300
63	Beaker plastic 500 ml	14	Alba	Aug.-Oct. 2005	200	2,800
64	Beaker Glass 1 liter	28	Alba	Aug.-Oct. 2005	300	8,400
65	Beaker Glass 600 ml	28	Alba	Aug.-Oct. 2005	200	5,600
66	Pipetting ball w/2 valves	28	Alba	Aug.-Oct. 2005	400	11,200
67	Battery ligh field plastic	14	Alba	Aug.-Oct. 2005	125	1,750
68	Forcep	28	Alba	Aug.-Oct. 2005	250	7,000
69	Rope 27 meters	14	Alba	Aug.-Oct. 2005	300	4,200
70	Cotton hat	56	Alba	Aug.-Oct. 2005	60	3,360
71	Spatul spoon	28	Alba	Aug.-Oct. 2005	80	2,240
72	Half Mask with filter for gases	14	Alba	Aug.-Oct. 2005	1,500	21,000
73	Oil pen	42	Alba	Aug.-Oct. 2005	50	2,100
74	Vinyl tape	70	Alba	Aug.-Oct. 2005	50	3,500
75	Sampler 3 meters split hand	14	Alba	Aug.-Oct. 2005	550	7,700
76	Trays 270 x 270 x 120 mm	14	Alba	Aug.-Oct. 2005	160	2,240
77	Trays 450 x 320 x 150 mm	14	Alba	Aug.-Oct. 2005	200	2,800
78	Rechargeable battery (30*14DFEAs)	420	Alba	Aug.-Oct. 2005	160	67,200
79	Battery charger (1*14DFEAs)	14	Alba	Aug.-Oct. 2005	200	2,800
80	Sulfuric acid, 1 liter (1*14DFEAs)	14	Alba	Aug.-Oct. 2005	650	9,100
81	Formic acid, 1 liter (1*14DFEAs)	14	Alba	Aug.-Oct. 2005	1000	14,000
82	Acetic acid, 1 liter (1*14DFEAs)	14	Alba	Aug.-Oct. 2005	650	9,100
83	Paper filter, 15cm dia. (box/100)	28	Alba	Aug.-Oct. 2005		10,000
Total						749,715

Additional Instrument Purchased by JET for Laboratories in 14 DFEAs (2006)

No.	Name	Number (for 14 DFEAs)	Supplier	Date of Delivery	Price S.P	
					Unit	Total
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	30	MIMOSA	Jun. 2006	4,180	125,400
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	20	MIMOSA	Jun. 2006	2,850	57,000
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	20	MIMOSA	Jun. 2006	3,420	68,400
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	20	MIMOSA	Jun. 2006	8,455	169,100
5	COD standard, 300 mg/l	14	MIMOSA	Jun. 2006	1,710	23,940
6	COD standard, 1,000 mg/l	14	MIMOSA	Jun. 2006	2,280	31,920
7	NO ₃ ⁻ -N standard, 1.0 mg/l	14	MIMOSA	Jun. 2006	1,615	22,610
	NO ₃ ⁻ -N standard, 10.0 mg/l	14	MIMOSA	Jun. 2006	1,615	22,610
8	NO ₃ ⁻ -N standard, 100 mg/l	14	MIMOSA	Jun. 2006	1,900	26,600
9	PO ₄ ³⁻ standard, 50 mg/l	14	MIMOSA	Jun. 2006	1,805	25,270
10	NH ₃ -N standard, 10 mg/l	14	MIMOSA	Jun. 2006	1,615	22,610
11	NH ₃ -N standard, 50 mg/l	14	MIMOSA	Jun. 2006	2,470	34,580
12	BOD standard, 300 mg/l	14	MIMOSA	Jun. 2006	2,470	34,580
13	BOD standard, 3,000 mg/l	14	MIMOSA	Jun. 2006	2,850	39,900
14	Cl ⁻ standard, 1,000 mg/l	14	MIMOSA	Jun. 2006	2,660	37,240
15	Bromine Water 30g/L	14	MIMOSA	Jun. 2006	855	11,970
16	Phenol Solution	14	MIMOSA	Jun. 2006	950	13,300
17	Sulfamic acid	14	MIMOSA	Jun. 2006	1,520	21,280
18	Phosphate Pretreatment Powder Pillows	14	MIMOSA	Jun. 2006	5,510	77,140
19	Hydrochloric Acid, ACS	14	MIMOSA	Jun. 2006	2,090	29,260
20	Sulfide Inhibitor Powder Pillows	14	MIMOSA	Jun. 2006	4,465	62,510
21	Mercuric Sulfate	14	MIMOSA	Jun. 2006	1,900	26,600
22	Hydrogen Peroxide, 30% ACS	14	MIMOSA	Jun. 2006	4,465	62,510
23	Generator	7	JUNDA	Mar. 2006	80,000	560,000
Total						1,606,330

List of Equipment Provided by JICA in GCEA

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks
1	Desktop Computer+UPS	CMAX	PC1	3	Paid by JICA	Paid by JICA	○*	○*	JICA, Jul. 2005 (<u>One of them was stolen in Mar. 2006.</u> One is installed in Dr. Yasin's room. One is installed in Ms. Fathia's room.)
2	Printer (Laser)	Hewlett-Packard	2300 N	2			○	○	JICA, Jul. 2005 (One of them is installed in the room of Dr. Akram's secretary. Another one is installed in Ms. Fathia's room.)
3	Printer (Color Laser)	Hewlett-Packard	2550 L	2			○	○	JICA, Jul. 2005 (One of them is installed in Mr. Shaka's room. Another one is installed in Dr. Yasin's room.)
4	Projector	Acer	PD 110	1			○	○	JICA, Jul. 2005 (Installed in Dr. Yasin's room.)
5	Note PC for the Project	Asus	A45L	1			○	○	JICA, Jul. 2005 (Installed in Dr. Yasin's room.)

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Equipment List in Damascus DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Damascus DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Damascus DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 µs/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 µs/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 µs/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Damascus, DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
<p align="center">Total price paid by JET (approximately) 60,000 S.P.</p>							

Equipment List in Damascus Countryside DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Damascus Countryside DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Damascus Countryside DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 µs/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 µs/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 µs/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Damascus Countryside DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M L XL	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
		5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
		0	JET, Jun. 2005	3	Calulator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Aleppo DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Aleppo DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Aleppo DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Aleppo DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	0	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	3	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
Total price paid by JET (approximately)				60,000 S.P.			

Equipment List in Homs DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Homs DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Homs DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET					68,000 S.P.		

Additional Instrument List for Laboratory in Homs DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	4	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	2	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Hama DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Hama DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Hama DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET					68,000 S.P.		

Additional Instrument List for Laboratory in Hama DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	4	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	2	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
Total price paid by JET (approximately)				60,000 S.P.			

Equipment List in Lattakia DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Lattakia DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Lattakia DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 µs/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 µs/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 µs/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Lattakia DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Deir Zor DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Deir Zor DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Deir Zor DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 µs/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 µs/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 µs/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET					68,000 S.P.		

Additional Instrument List for Laboratory in Deir Zor DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Idle DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Idleb DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Idleb DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Idleb DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
Total price paid by JET (approximately)				60,000 S.P.			

Equipment List in Hasakeh DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Hasakeh DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Hasakeh DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 $\mu\text{s}/\text{cm}$	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 $\mu\text{s}/\text{cm}$		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 $\mu\text{s}/\text{cm}$		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD_{Cr}	COD_{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO_3^- -N (High range, 0-30.0 mg/l)	NO_3^- -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO_4^{3-} (High range, 0-30.00 mg/l)	PO_4^{3-}	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl^- (0-10,000 mg/l)	Cl^-	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH_3 -N (High range, 0-50 mg/l)	NH_3 -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD_{Cr}	COD_{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO_3^- -N (Mid range, 0-5.0 mg/l)	NO_3^- -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO_4^{3-} (Low range, 0-2.50 mg/l)	PO_4^{3-}	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH_3 -N (low range, 0-2.50 mg/l)	NH_3 -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO_3^- -N standard, 1.0 mg/l	Check NO_3^- -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO_3^- -N standard, 10.0 mg/l	Check NO_3^- -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO_3^- -N standard, 100 mg/l	Check NO_3^- -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO_4^{3-} standard, 50 mg/l	Check PO_4^{3-}	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH_3 -N standard, 10 mg/l	Check NH_3 -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH_3 -N standard, 50 mg/l	Check NH_3 -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl^- standard, 1,000 mg/l	Check Cl^-	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO_2 interfering (NO_3 testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO_2 interfering (NO_3 testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO_2 interfering (PO_4 testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH_3 -N, PO_4 etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl^- , NH_3 -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl^- interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl^- testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Hasakeh DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
Total price paid by JET (approximately)				60,000 S.P.			

Equipment List in Rakka DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Rakka DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Rakka DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET					68,000 S.P.		

Additional Instrument List for Laboratory in Rakka DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Sweida DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Sweida DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Sweida DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 µs/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 µs/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 µs/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET					68,000 S.P.		

Additional Instrument List for Laboratory in Swida DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Dara DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Dara DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Dara DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET					68,000 S.P.		

Additional Instrument List for Laboratory in Dara DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
Total price paid by JET (approximately)				60,000 S.P.			

Equipment List in Tartous DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Tartous DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		NALGENE, IDL (250ml)	3			JICA, Jun. 2005
		NALGENE, IDL (500ml)	2			JICA, Jun. 2005
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2			JICA, Jun. 2005
		Rettberg (200ml)	2			JICA, Jun. 2005
		Rettberg (300ml)	2			JICA, Jun. 2005
9	Stopper		6			JICA, Jun. 2005
10	Graduated Cylinders	Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (250ml)	2			JICA, Jun. 2005
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3			JICA, Jun. 2005
12	Graduated Beakers	VIT-LAB	1			JICA, Jun. 2005
13	Funnels	Soda-Lime, IDL	3			JICA, Jun. 2005
		Soda-Lime, IDL	3			JICA, Jun. 2005
14	Packing Bottle	NALGENE, IDL	60			JICA, Jun. 2005
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3			JICA, Jun. 2005
		Deutsch & Neumann	3			JICA, Jun. 2005
		Deutsch & Neumann	3			JICA, Jun. 2005
16	Sealing Film		2			JICA, Jun. 2005
17	Cleaning Tissue	KIMWIPES	2			JICA, Jun. 2005
18	Gloves	MANUFIX	2			JICA, Jun. 2005
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Tartous DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 µs/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 µs/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 µs/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Tartous DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
18	Generator	1	JET, Mar. 2006				
Total price paid by JET (approximately)				140,000 S.P.			

Equipment List in Quneitra DFEA (Basic Water Quality Analysis)

Name of Equipment		Manufacture	Model	Quantity	Unit Price (SP)	Price (SP)	Use State	O/M State	Remarks (Delivered Data)
1	Portable Colorimeter Kit	HACH	CEL/890	1	Paid by JICA	Paid by JICA	○	○	JICA, Jun. 2005
2	Portable pH and Temp. Meter	HACH	sensION 1	1			○	○	JICA, Jun. 2005
3	Portable EC and TDS Meter	HACH	sensION 5	1			○	○	JICA, Jun. 2005
4	Portable DO Meter	HACH	sensION 6	1			○	○	JICA, Jun. 2005
5	Portable Turbidity Meter	HACH	2100P	1			○	○	JICA, Jun. 2005
6	COD Reactor	HACH	DRB 200-1	1			○	○	JICA, Jun. 2005
7	Digital Titrator	HACH	16900	1			○	○	JICA, Jun. 2005
8	Stirring platform for BOD Analysis	WTW	OxiTop IS12	2			○	○	JICA, Jun. 2005
9	BOD bottle with OxiTop measuring head	WTW	-	24			○	○	JICA, Jun. 2005
10	Incubator	WTW	TS 606/2i	1			○	○	JICA, Jun. 2005
11	Analytical Balance	Sartorius	CP324S	1			○	○	JICA, Jun. 2005
12	Table for Balance	Sartorius	YWT03	1			○	○	JICA, Jun. 2005
13	Pure Water Unit	GFL	2001/4	1			○	○	JICA, Jun. 2005
14	Desktop Computer+UPS	Mall Tech	CMAX PC1	1			○	○	JICA, Jun. 2005
15	Printer	Hewlett-Packard	1010	1			○	○	JICA, Jun. 2005
16	Digital Camera	Kodak	CX7330	1			○	○	JICA, Jun. 2005
17	Special Pipette Containers	-	-	1			○	○	JICA, Jun. 2005
18	Tank for Liquid Wastes	-	-	2			○	○	JICA, Jun. 2005
19	Ice Box for sampling	-	-	2			○	○	JICA, Jun. 2005
20	Refrigerator	Local	-	1			○	○	JICA, Apr. 2006

○: Being used well

△: Being used to a certain extent

X: Having not been used or others

Glassware List for Laboratory in Quneitra DFEA (Basic Water Quality Analysis)

Name of Glassware		Model	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	Whole Pipettes	BRAND (1ml)	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
		BRAND (2ml)	2			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
		BRAND (20ml)	2			JICA, Jun. 2005
		BRAND (50ml)	2			JICA, Jun. 2005
		BRAND (100ml)	1			JICA, Jun. 2005
2	Graduated pipettes	BRAND (1ml)	3			JICA, Jun. 2005
		BRAND (5ml)	3			JICA, Jun. 2005
		BRAND (10ml)	3			JICA, Jun. 2005
3	Pipette Fillers	Micro Pipette Filler	2			JICA, Jun. 2005
		Pipette Filler	2			JICA, Jun. 2005
4	Graduated beakers	PMP (50ml)	2			JICA, Jun. 2005
		PMP (100ml)	2			JICA, Jun. 2005
		PMP (150ml)	2			JICA, Jun. 2005
		PMP (250ml)	2			JICA, Jun. 2005
5	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2			JICA, Jun. 2005
		Hirschman (100ml)	2			JICA, Jun. 2005
		Hirschman (200ml)	2			JICA, Jun. 2005
6	Volumetric Flasks	Hirschman (25ml)	2			JICA, Jun. 2005
		Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (200ml)	2	JICA, Jun. 2005		
7	Erlenmeyer Flasks	NALGENE, IDL (125ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (250ml)	3	JICA, Jun. 2005		
		NALGENE, IDL (500ml)	2	JICA, Jun. 2005		
8	Erlenmeyer Flasks with Ground Joints	Rettberg (100ml)	2	JICA, Jun. 2005		
		Rettberg (200ml)	2	JICA, Jun. 2005		
		Rettberg (300ml)	2	JICA, Jun. 2005		
9	Stopper		6	JICA, Jun. 2005		
10	Graduated Cylinders	Hirschman (50ml)	2	JICA, Jun. 2005		
		Hirschman (100ml)	2	JICA, Jun. 2005		
		Hirschman (250ml)	2	JICA, Jun. 2005		
11	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	NALGENE, IDL	3	JICA, Jun. 2005		
12	Graduated Beakers	VIT-LAB	1	JICA, Jun. 2005		
13	Funnels	Soda-Lime, IDL	3	JICA, Jun. 2005		
		Soda-Lime, IDL	3	JICA, Jun. 2005		
14	Packing Bottle	NALGENE, IDL	60	JICA, Jun. 2005		
15	Rubber Bulb for Small Pipette	Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
		Deutsch & Neumann	3	JICA, Jun. 2005		
16	Sealing Film		2	JICA, Jun. 2005		
17	Cleaning Tissue	KIMWIPES	2	JICA, Jun. 2005		
18	Gloves	MANUFIX	2	JICA, Jun. 2005		
19	Goggles		2	JICA, Jun. 2005		
20	Stand and Clamp	DIN 12892, BOCHEM	2	JICA, Jun. 2005		
		IDL, Bosshead	4	JICA, Jun. 2005		
		IDL	4	JICA, Jun. 2005		
			2	JICA, Jun. 2005		
21	Cleaning Agent		1	JICA, Jun. 2005		

Reagents List for Laboratory in Quneitra DFEA (Basic Water Quality Analysis)

Name of Reagent		Usage	Unit	Quantity	Unit Price (SP)	Price (SP)	Remarks
1	pH standards, pH 4.01	pH calibration	500 ml	2	Paid by JICA	Paid by JICA	JICA, Jun. 2005
	pH standards, pH 7.00		500 ml	2			JICA, Jun. 2005
	pH standards, pH 10.00		500 ml	2			JICA, Jun. 2005
2	Conductivity standards, 180 μ s/cm	EC&TDS calibration	100ml	1			JICA, Jun. 2005
	Conductivity standards, 1,000 μ s/cm		100ml	1			JICA, Jun. 2005
	Conductivity standards, 18,000 μ s/cm		100ml	1			JICA, Jun. 2005
3	Turbidity Standards Kit for 2100 P Turbidity Meter (0.1, 20, 100, 800 NTU)	Turbidity calibration	500 ml for each	1			JICA, Jun. 2005
4	Reagents (High range 0-1,500 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	31			JICA, Jun. 2005
5	Reagents for NO ₃ ⁻ -N (High range, 0-30.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	8			JICA, Jun. 2005
6	Reagents for PO ₄ ³⁻ (High range, 0-30.00 mg/l)	PO ₄ ³⁻	100 tests/PK	8			JICA, Jun. 2005
7	Reagents for Cl ⁻ (0-10,000 mg/l)	Cl ⁻	100 tests/set	8			JICA, Jun. 2005
8	Reagents for NH ₃ -N (High range, 0-50 mg/l)	NH ₃ -N	50 tests/PK	15			JICA, Jun. 2005
9	Nitrification Inhibitor	BOD	500g	1	JICA, Jun. 2005		
10	BOD Nutrient Buffer Pillows	BOD	50 pillows/PK	15	JICA, Jun. 2005		
11	BOD Seed Inoculum	BOD	50 capsules/bottle	7	JICA, Jun. 2005		
12	NaOH Pack	BOD	1000g/PK	1	JICA, Jun. 2005		
1	Reagents (Low range 0-150 mg/l) for COD _{Cr}	COD _{Cr}	25 tests/PK	2	4,180	8,360	JET, Jun. 2006
2	Reagents for NO ₃ ⁻ -N (Mid range, 0-5.0 mg/l)	NO ₃ ⁻ -N	100 tests/PK	1	2,850	2,850	JET, Jun. 2006
3	Reagents for PO ₄ ³⁻ (Low range, 0-2.50 mg/l)	PO ₄ ³⁻	100 tests/PK	1	3,420	3,420	JET, Jun. 2006
4	Reagents for NH ₃ -N (low range, 0-2.50 mg/l)	NH ₃ -N	50 tests/PK	1	8,455	8,455	JET, Jun. 2006
5	COD standard, 300 mg/l	Check COD	200 ml	1	1,710	1,710	JET, Jun. 2006
6	COD standard, 1,000 mg/l	Check COD	200 ml	1	2,280	2,280	JET, Jun. 2006
7	NO ₃ ⁻ -N standard, 1.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
8	NO ₃ ⁻ -N standard, 10.0 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
9	NO ₃ ⁻ -N standard, 100 mg/l	Check NO ₃ ⁻ -N	500 ml	1	1,900	1,900	JET, Jun. 2006
10	PO ₄ ³⁻ standard, 50 mg/l	Check PO ₄ ³⁻	500 ml	1	1,805	1,805	JET, Jun. 2006
11	NH ₃ -N standard, 10 mg/l	Check NH ₃ -N	500 ml	1	1,615	1,615	JET, Jun. 2006
12	NH ₃ -N standard, 50 mg/l	Check NH ₃ -N	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
13	BOD standard, 300 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,470	2,470	JET, Jun. 2006
14	BOD standard, 3,000 mg/l	Check BOD	10 ml/16 Voluette Amples	1	2,850	2,850	JET, Jun. 2006
15	Cl ⁻ standard, 1,000 mg/l	Check Cl ⁻	500 ml	1	2,660	2,660	JET, Jun. 2006
16	Bromine Water 30g/L	NO ₂ interfering (NO ₃ testing)	29 mL	1	855	855	JET, Jun. 2006
17	Phenol Solution	NO ₂ interfering (NO ₃ testing)	29 mL	1	950	950	JET, Jun. 2006
18	Sulfamic acid	NO ₂ interfering (PO ₄ testing)	113 g	1	1,520	1,520	JET, Jun. 2006
19	Phosphate Pretreatment Powder Pillows	Turbidity and color interfering	100/pkg	1	5,510	5,510	JET, Jun. 2006
20	Hydrochloric Acid, ACS	pH adjusting (NH ₃ -N, PO ₄ etc.)	500 mL	1	2,090	2,090	JET, Jun. 2006
21	Sulfide Inhibitor Powder Pillows	S interfering (Cl ⁻ , NH ₃ -N testing)	100/pkg	1	4,465	4,465	JET, Jun. 2006
22	Mercuric Sulfate	Cl ⁻ interfering (COD testing)	28.3 g	1	1,900	1,900	JET, Jun. 2006
23	Hydrogen Peroxide, 30% ACS	Sulfite interfering (Cl ⁻ testing)	500 mL	1	4,465	4,465	JET, Jun. 2006
Total price paid by JET						68,000	S.P.

Additional Instrument List for Laboratory in Quneitra DFEA (Basic Water Quality Analysis)

Name of Instrument		Quantity	Remarks	Name of Instrument		Quantity	Remarks
1	White cloth, M	2	JET, Jun. 2005	1	Plastic funnel, 12cm dia	2	JET, Aug.-Oct. 2005
	L	5	JET, Jun. 2005	2	Safety glove	1	JET, Aug.-Oct. 2005
	XL	0	JET, Jun. 2005	3	Calculator	2	JET, Aug.-Oct. 2005
2	Brush	2	JET, Jun. 2005	4	Electronic timer	2	JET, Aug.-Oct. 2005
		2	JET, Jun. 2005	5	Cooling box, round shape	1	JET, Aug.-Oct. 2005
		1	JET, Jun. 2005	6	Water-proof boot	2	JET, Aug.-Oct. 2005
3	pH paper	2	JET, Jun. 2005	7	Gloves disposable (box/100)	5	JET, Aug.-Oct. 2005
4	Tube support rack	1	JET, Jun. 2005	8	Plastic beaker, 1 liter with hand	1	JET, Aug.-Oct. 2005
5	Drying rack	1	JET, Jun. 2005	9	Water tank, 5 liter w/2 hoses	2	JET, Aug.-Oct. 2005
6	Temp., humidity and barometric pressure meter	1	JET, Jun. 2005	10	Water tank, 20 liter w/2 hoses	2	JET, Aug.-Oct. 2005
7	Temperature meter	2	JET, Jun. 2005	11	Distilled water tank, 10 liter with tape	1	JET, Aug.-Oct. 2005
8	Long-handled dipper	1	JET, Jun. 2005	12	Scissors	2	JET, Aug.-Oct. 2005
9	Weight boats	18 sheet	JET, Jun. 2005	13	Carton cutter	2	JET, Aug.-Oct. 2005
		18 sheet	JET, Jun. 2005	14	Meter (5 meters)	2	JET, Aug.-Oct. 2005
10	Spatula-spoon	2	JET, Jun. 2005	15	Pipette filler 2ml	1	JET, Aug.-Oct. 2005
11	Trays	1	JET, Jun. 2005	16	Pipette filler 10ml	1	JET, Aug.-Oct. 2005
12	Bucket with spout	2	JET, Jun. 2005	17	Pipette filler 25ml	1	JET, Aug.-Oct. 2005
13	Rope	1	JET, Jun. 2005	18	Plastic cylinder 1000ml	1	JET, Aug.-Oct. 2005
14	Vinyl tape	5	JET, Jun. 2005	19	Plastic cylinder 500ml	1	JET, Aug.-Oct. 2005
15	Oil pen	2	JET, Jun. 2005	20	Plastic beaker 500ml	1	JET, Aug.-Oct. 2005
16	Safety gloves	1	JET, Jun. 2005	21	Glass beaker 1 liter	2	JET, Aug.-Oct. 2005
17	Cotton work gloves	5	JET, Jun. 2005	22	Glass beaker 600ml	2	JET, Aug.-Oct. 2005
18	Waterproof boots	1	JET, Jun. 2005	23	Pipetting ball w/2 valves	2	JET, Aug.-Oct. 2005
19	Cold reserving material	12	JET, Jun. 2005	24	Field battery light, plastic	1	JET, Aug.-Oct. 2005
20	File with clip	2	JET, Jun. 2005	25	Forceps	2	JET, Aug.-Oct. 2005
1	Micropipette 100 ul	1	JET, Jul. 2005	26	Rope 27 meters	1	JET, Aug.-Oct. 2005
2	Yellow tips (bag/1000)	1	JET, Jul. 2005	27	Cotton cap	4	JET, Aug.-Oct. 2005
3	Pipette filler 2 ml	1	JET, Jul. 2005	28	Spatula spoon	2	JET, Aug.-Oct. 2005
4	Pipette filler 10 ml	1	JET, Jul. 2005	29	Half mask with filter for gases	1	JET, Aug.-Oct. 2005
5	Pipette filler 25 ml	1	JET, Jul. 2005	30	Yellow tips for micro pipette	70	JET, Aug.-Oct. 2005
6	Carton cutter	1	JET, Jul. 2005	31	Oil pen	3	JET, Aug.-Oct. 2005
7	Pipette holder	1	JET, Jul. 2005	32	Vinyl tape	5	JET, Aug.-Oct. 2005
8	Sciso	1	JET, Jul. 2005	33	Sampler 3 meters split h	1	JET, Aug.-Oct. 2005
9	Meter 5 m	1	JET, Jul. 2005	34	Trays 270 x 270 x 120 mm	1	JET, Aug.-Oct. 2005
10	Screw driver set	1	JET, Jul. 2005	35	Trays 450 x 320 x 150 mm	1	JET, Aug.-Oct. 2005
11	Paper mask (set/100)	1	JET, Jul. 2005	36	Rechargeable battery	30	JET, Aug.-Oct. 2005
12	Beaker plastic 100 ml	1	JET, Jul. 2005	37	Battery charger	1	JET, Aug.-Oct. 2005
13	Plastic cup with lid	1	JET, Jul. 2005	38	Sulfuric acid, 1 liter	1	JET, Aug.-Oct. 2005
14	Water tank 5 litre	1	JET, Jul. 2005	39	Formic acid, 1 liter	1	JET, Aug.-Oct. 2005
15	Stainless tube holer	1	JET, Jul. 2005	40	Acetic acid, 1 liter	1	JET, Aug.-Oct. 2005
16	Distilled water tank 10 litre with tape	1	JET, Jul. 2005	41	Paper filter, 15cm dia. (box/100)	2	JET, Aug.-Oct. 2005
17	Glass rods	1	JET, Jul. 2005	42	Cell for DR/890	10	JET, Aug.-Oct. 2005
Total price paid by JET (approximately)				60,000 S.P.			

Annex 3-1:

Equipment List

3.1.2 Chemical and Biological Quality (1)

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Instrument/Equipment

Equipment etc.	Usage	Specifications	Q'ty	Manufacturer/Model	Supplier	Date of Delivery	Check by JICA	Installation	Status of usage	Status of O/M
1-011	UV/VIS spectrophotometer	<p>Determination of concentration of PO₄³⁻, NH₃-N, Surfactant, chromium in water</p> <p>Operating modes: Absorbance ($\pm 3A$), transmittance (%), concentration Wavelength range: 190 - 1,100 nm Wavelength accuracy: ± 1nm in the range 200 - 900 nm Wavelength reproducibility: <0.5 nm Wavelength resolution: 0.1 nm Scan rate: 1,200 nm/min in 1 nm step Spectral width: 2 nm Photometric accuracy: 5mAbs at 0.0 - 0.5 Abs; 1% at 0.5 - 2.0 Abs Photometric linearity: <0.5% at 2 Abs; $\leq 1\%$ at > 2Abs Stray light: <0.05% Reference beam technology: To compensate for lamp ageing and network fluctuations IBR barcode reading system: For automatic recognition of LANGE cuvette tests, incl. 10- fold rotary measurement and error elimination Cell module: Standard: Multi-cell holder for rectangular cells (10 nm, 20 nm, 50 nm, 1-inch) and round cells (1-inch) Display: Backlit, high-resolution LCD display (320 x240 pixcell), touchscreen Data storage: Up to 1,000 measured values, 20 wavelength scans, 20 times scans Dimentions: 20 x 50 x 45 cm (H x D x W) Weight: 15.5 kg</p>	1	DR5000 UV-VIS Spectrophotometer, HACH	MIMOSA	Mar. 28, '06	Mar. 28, '06	May 29, '06	○	○
1-012	Reagent for UV/VIS spectrophotometer	Reagents for UV/VIS spectrophotometer use only.	(5 kinds)	(HACH)	MIMOSA					
		Reagent for determination of PO ₄ ³⁻ : 1,000 times analysis	1	Cat. No. 69-21060		May 15, '06	May 15, '06	May 29, '06	○	○
		Reagent for determination of NH ₃ -N: 1,000 times analysis	1	Cat. No. 00-24582		May 15, '06	May 15, '06	May 29, '06	○	○
		Reagent for determination of surfactant (anion surfactant): 1,000 times analysis	1	Cat. No. 49-00452		May 15, '06	May 15, '06	May 29, '06	○	○
		Reagent for determination of hexavalent chromium (Cr(VI)): 1,000 times analysis	1	Cat. No. 68-01008		May 15, '06	May 15, '06	May 29, '06	○	○
		Benzene	1	Cat. No. 99-12710		May 22, '06	May 22, '06	-	○	○
		Reagent for determination of total chromium (T-Cr): 1,000 times analysis	1	Cat. No. 2126-99		May 15, '06	May 15, '06	May 29, '06	○	○
				Cat. No. 12066-99		May 15, '06	May 15, '06	May 29, '06	○	○
		Cat. No. 2043-99	May 15, '06	May 15, '06	May 29, '06	○	○			
		Cat. No. 2044-99	May 15, '06	May 15, '06	May 29, '06	○	○			
1-021	Micro analysis balance	Weighing	1	BBC22, Boeco/Germany	ALBA	May 30, '06	May 30, '06	May 31, '06	○	○
1-031	Balance (6kg)	Weighing	1	BBL71, Boeco/Germany	ALBA	May 30, '06	May 30, '06	May 31, '06	○	○

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Instrument/Equipment

Equipment etc.		Usage	Specifications	Q'ty	Manufacturer/Model	Supplier	Date of Delivery	Check by JICA	Installation	Status of usage	Status of O/M
1-041	Water Quality Analyzer	pH, EC, NO ₃ ⁻ , Cl ⁻ , F ⁻ , S ²⁻ , CN ⁻	Laboratory type analyzer for measuring pH, EC, DO, Temp., Nitrate ion (NO ₃ ⁻), Chloride ion (Cl ⁻), Fluoride ion (F ⁻), Sulfide ion (S ²⁻), and Cyanide CN ⁻ . Large color touch screen microprocessor apparatus, 4 channel display, auto range, auto Temp. compensation, memory of 10,000 data sets. RS-232. Measurement range/accuracy: pH: -2.000 to +20.000/0.1 0.01 - 0.001 (5points calibration) EC: 0.0μS/cm to 300μS/cm/±5% DO: 0 - 60 mg/L Ion: 1×10 to 9.99×10/0.1 - 0.01 - 0.001 ppm mv: -1,800 to +1,800 mV/±0.1 mV Temp: -5.0°C to 105.0°C/±0.2°C TDS: 0 ppm to 200 ppt/0.1 - 0.01 - 0.001 Ω Salinity: 2 to 42 ppt Includes electrodes: pH, Temp., EC, DO and electrode holder	1	CyberScan PCD6500, Eutech Instruments	ALBA	Apr. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-042	Electrode for pH	pH	Electrode for Water Quality Analyzer for measuring pH. Glass electrode	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-043	Electrode for EC	EC	Electrode for Water Quality Analyzer for measuring EC. Immersion type.	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-044	Electrode for NO3-	NO3-	Electrode for Water Quality Analyzer for measuring NO3-.	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-045	Electrode for Cl-	Cl-	Electrode for Water Quality Analyzer for measuring Cl-.	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-046	Electrode for F-	F-	Electrode for Water Quality Analyzer for measuring F-. Combination type.	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-047	Electrode for S2-	S2-	Electrode for Water Quality Analyzer for measuring Sulfide-S.	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-048	Electrode for CN-	CN-	Electrode for Water Quality Analyzer for measuring CN-.	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
		DO	Electrode for Water Quality Analyzer for measuring DO	1	Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-051	Turbidimeter	Determination of turbidity	Laboratory type Turbidity meter. Digital display, with RS-232 Range: 0.00 to 9.99/10.0 to 99.9/100 to 1,000 NTU Accuracy: ±2% of reading Auto ranging Accessories included: Spare 6 sample cells, Calibration standard kit: 0.02, 10.0, 1,000 NTU	1	TB 1000 White light, Eutech Instruments	ALBA	Mar. 24, '06	Apr. 24, '06	May 31, '06	○	○
1-061	Draft chamber with gas cleaning device	Lab. Ventilation	Draft chamber with Filter Dimensions: Approx. 1,500 x 900 x 2,400 mm Double layer design Epoxy powder coated superstructure 2 nos 13 amp switch socket outlets 1 no pre plumbed cold water remote 1 no pre plumbed gas remote 1 fan switch Chemical resistant exhaust fan, 3 phase, 1,450 rpm Scrubber: Activated carbon filter, generak type, non palletized type, Dimensions: 600 x 400 x 400 mm	1	Advancelab, Singapore	ALBA	Apr. 24, '06	Apr. 24, '06	Apr. 25, '06	○	○

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Instrument/Equipment

Equipment etc.		Usage	Specifications	Q'ty	Manufacturer/Model	Supplier	Date of Delivery	Check by JICA	Installation	Status of usage	Status of O/M
1-071	Refrigerator	Preservation of samples	Electric refrigerator, Cold room: +4 to +10°C Freezer room 0 to -10°C Size: 210 liter	14	Local	ALBA	Feb., Mar., '06	Apr. 24, '06	May 31, '06	○	○
1-081	Locker for reagent	Storage of reagents/chemicals	Storage cabinet for reagents and chemicals. Glass sliding doors (upper row), Steel sliding doors (lower row) Dimension (approx.): 1200W x 400D x 1800H, Material: Steel	4	Local	ALBA	Jan. 23, '06	Feb. 02, '06	May 31, '07	○	○
1-091	Water Purifier	Water supply	Consisting of Ion exchanger + Water Still Ion exchanger: Capacity: 50 liter /hr., Accessories: 2 replacement cartridges Water still: Glass still with metal holder, cap. 4 liter/hr. Complete apparatus consisting of Boiler: super hard glass, Condenser: super hard glass, Heater: metal.	1	Ion Exchanger: TKA Germany, DI 425 Water Still:	ALBA	Jan. 23, '06	Feb. 02, '06	June 7, '06	○	○
1-101	Ultrasonic cleaner	For cleaning of glasswears	Ultrasonic cleaning bath with timer Int. dimensions of tank: 240 x 137 x 100 (mm) Content: 2.75 liter Weight: 3.2 kg Frequency: 35 kHz Connected Poer: 40 Watts Casting: Satainless steel	1	ELMA, LC30	TBC	Feb. 14, '06	Feb. 14, '06	June 12, '06	○	○
1-111	Middle temperature oven	For drying of glassware	Free convection type. Operating temp. range: Room temp.+5°C to 80°C Heater: 330W Dimension: 740W x 590D x 700H Capacity: 80 liter Digital display with timer, Operation function: Fixed temp. operation, auto stop, auto start, AC 220V	1	Selecta, Spain	ALBA	Jan. 23, '06	Feb. 02, '06	June 1, '06	○	○
1-121	Muffle furnace	For organic	Electric furnace Operating temp. range: 100 to 1,100°C Capacity liters: 3.8 liters Temp. control: Digital control with timer Accessories: Exhaust unit, exhaust port. AC 220V	1	Hobersal, Spain	ALBA	Jan. 23, '06	Feb. 02, '06	June 1, '06	△	○
1-131	Autoclave (vertical type)	Sterilization, Drying	Automatic high pressure steam sterilizer Temp. setting range: Up to 132°C Max. operation pressure: 2 atm Material: Interior and exterior; stainless steel Effective capacity: 17 liters Supplied withstainless steel basket. AC 220V	1	pbi, Italy, Mini-Matic	ALBA	Jan. 23, '06	Feb. 02, '06	June 7, '06	△	○

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Instrument/Equipment

Equipment etc.	Usage	Specifications	Q'ty	Manufacturer/Model	Supplier	Date of Delivery	Check by JICA	Installation	Status of usage	Status of O/M
1-141	Centrifuge	Sample preparation Table top bench centrifuge Speed range: 500 to 6000 rpm Max. rcf: 4,186 Supplied with Angle rotor 6 to 12 places x 15 ml tubes	1	C-28, Boeco	ALBA	Mar. 30, '06	Mar. 30, '06	May 31, '06	○	○
1-151	Shaker	For separation funnel Shaking mode: Orbital or reciprocal motion Shaking speed: 30 to 250 rpm Digital display with timer Accessories: Tube holder (2), erlenmyer flask holder (16), separating funnel holder (4) AC 220V	1	Orbital Multi-Shaker, PSU-20, Boeco	ALBA	Mar. 30, '06	Mar. 30, '06	May 31, '06	○	○
1-161	Hot plate	Sample preparation Plate size: approx. 150 dia, Heater: 1000W, AC 220V	2	Local	ALBA	Mar. 30, '06	Mar. 30, '06	May 31, '06	○	○
1-171	Multi magnetic stirrer	Sample preparation 10 points stirres, without heating Stirring capacity: Up to 4 liters Speed range: 80 to 1,200 rpm Supplied with 10 stirring bars, AC 220V	1	IKA, Ikamag RO 10 power	ALBA	Mar. 30, '06	Mar. 30, '06	May 31, '06	○	○
1-181	Rotary evaporator	Sample preparation Rotational number control range: 10 to 240 rpm Temp. range: Room temp. to 220 °C (water bath) Glassware: Standard Diagonal, evaporating/receiving flask: 1 liter Bath capacity: 4 liters AC 220V, with water vacuume device	1	IKA/Germany	ALBA	Mar. 30, '06	Mar. 30, '06	June 7, '06	△	○
1-191	Constant temperature water bath	Sample preparation Stirring method: Stirring by pump Operating temp. range: Ambient temp. + 5°C to 100°C Interior: Stainless steel Temp. controller: PID control Temp. sensor: Pt 100 resistance thermometer Temp. setting method: Digital setting Heater: 1,060W Tank capacity: 20 liter AC 220V, with rack top cover.	2	Digiterm-100, Selecta/Spain	ALBA	Mar. 30, '06	Mar. 30, '06	May 31, '06	○	○
1-201	Vacuum filtration unit	Sample preparation Consisting of: Bottles (filtering flask), Buchner filter, rubber stopper with one hole, Water jet pump and conection tubes. Materials: bottle (borosilicate glass), Buchner filter (porcelain), Water jet Supplied with number of bottles: 250ml, 500ml, 1000ml, 1 each, and number of Buchner filter: Dia. 55mm (2), 110mm (2), 125mm (2)	1	Local	ALBA	Jan. 23, '06	Feb. 02, '06		○	○
1-221	Water sampler	Water sampling Hyroht type water sampler. Capacity: 1000ml.	1	Local	ALBA				○	○
1-231	Colony counter	Detection of bacteria colonies For colony counting by pushbutton and/or marking pen Accommodates petri dishes up to 150mm dia. Glare free fluorescent illumination, adjustable magnifier, digital audible counting signal, LCD display 0 to 99999 (5 digit), AC 220V	1	Funke-Gerber, Germany, ColonyStar	ALBA	Jan. 23, '06	Feb. 02, '06	May 31, '06	△	○

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Instrument/Equipment

Equipment etc.		Usage	Specifications	Q'ty	Manufacturer/ Model	Supplier	Date of Delivery	Check by JICA	Installation	Status of usage	Status of O/M
1-251	Oil content analyzer	Determination of oil content in water	Application: Oil contamination of fresh and salt water Principle: Solventextraction, NDIR analysis (Infrared spectroscopy) Detector: Pyroelectric sensor Measuring range: 0 to 200 mg/L Resolution: 0 to 99.9 mg/L; 1 mg/L, 100 to 200 mg/L; 1 mg/L Reapitability: 0 to 9.9 mg/L; ±0.2 mg/L ±1 digit, 10.0 to 99.9 mg/L; ±2.0 mg/L ±1 digit, 100 to 200 mg/L; ±4 mg/L ±1 digit Measurement: Manually controlled Calibration: One touch calibration after the calibration standard is introduced to the instrument Extraction solvent: HORIBA S-316 solvent Sample solvent volume: 20 ml, ratio of sample to solvent is 2 : 1 Extraction method: Build-in extractor for oily water sample Display: Measured value; 3 digits LCD with backlit Dimensions: 200 x 315 x 342 mm (W x D x H) Weight: Approx. 7kg	1	OCMA-310/HORIBA	MIMOSA	Mar. 28, '06	Mar. 28, '06	May 29, '06	○	○
1-261	Solvent for Oil content analyzer	For Oil content analyzer	Solvent: S-316, Approx. 1.5 kg/bottle	7	S-316/DAIKIN	MIMOSA	Mar. 28, '06	Mar. 28, '06	May 29, '06	○	○
1-271	Solvent recovery unit	For recovery of solvent	Designed especially for relaiming S-316 solvent. Double column of activated carbon and activated aluminium	1	SR-300/HORIBA	MIMOSA	Mar. 28, '06	Mar. 28, '06	May 29, '06	○	○

Installation

Unit price (SP) Total price (sp)

2 - 1	High temperature oven	Measurement of Total coliform		1		ALBA	Dec., 2006			54,000	54,000
2 - 2	Heating Mantle with magnetic stirrer	Measurement of COD		2	Selecta, Spain	MAN	Feb., 2007			15,000	30,000

(Note1): Purchased by JET

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Glassware

No.	Name	Specifications	Model	Q'ty			Supplier	Date of Delivery
2) Package 2								
2 - 01	Whole Pipettes	Glass, 1 ml; Tolerance: ± 0.007 ml or better	BRAND (1)	5	3	2	ALBA	June 12, '06
		Glass, 2 ml; Tolerance: ± 0.010 ml or better	BRAND (2)	10	3	5	ALBA	June 12, '06
		Glass, 5 ml; Tolerance: ± 0.015 ml or better	BRAND (5)	15	5	5	ALBA	June 12, '06
		Glass, 10 ml; Tolerance: ± 0.020 ml or better	BRAND (1)	15	5	5	ALBA	June 11, '06
		Glass, 20 ml; Tolerance: ± 0.030 ml or better	BRAND (2)	10	3	5	ALBA	June 11, '06
		Glass, 50 ml; Tolerance: ± 0.050 ml or better	BRAND (5)	4	2	2	ALBA	June 11, '06
2 - 02	Graduated pipettes	Glass, 1 ml; Graduation: 0.01 ml; Tolerance: ± 0.007 ml or better	BRAND (1)	4	2	2	ALBA	June 12, '06
		Glass, 5 ml Graduation: 0.05 ml; Tolerance: ± 0.030 ml or better	BRAND (5)	8	3	2	ALBA	June 12, '06
2 - 03	Pipette Fillers	Applicable pipette's capacity: 2mL	Micro Pipet	3	1	1	ALBA	June 11, '06
		Capacity: 25mL	Pipette Filler	3	2	1	ALBA	June 11, '06
2 - 04	Ceramic mortar	Diameter: 11-13cm		2	1	1	ALBA	
2 - 05	Graduated beakers	50 ml, Glass, Color: clear; Graduation: 10 ml or smaller	PMP (50ml)	18	2	8	ALBA	June 11, '06
		100 ml, Glass, Color: clear; Graduation: 25 ml or smaller	PMP (100ml)	20	10	5	ALBA	June 11, '06
		250 ml, Glass, Color: clear; Graduation: 50 ml or smaller	PMP (150ml)	20	10	5	ALBA	June 11, '06
		400 ml, Glass, Color: clear; Graduation: 50 ml or smaller		15	2	8	ALBA	June 11, '06
		600 ml, Glass, Color: clear; Graduation: 50 ml or smaller		10	5	5	ALBA	June 12, '06
		1000 ml, Glass, Color: clear; Graduation: 200 ml or smaller		5	2	2	ALBA	June 12, '06
		2000 ml, Glass, Color: clear; Graduation: 50 ml or smaller	PMP (250ml)	3	1	1	ALBA	June 12, '06
2 - 06	Volumetric Flasks	25 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.04 mL or better, Accessory (standard ground joint and poly stopper)	Hirschman	12	2	8	ALBA	June 12, '06
		50 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.06 mL or better, Accessory (standard ground joint and poly stopper)	Hirschman	12	2	8	ALBA	June 12, '06
		100 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.1 mL or better, Accessory (standard ground joint and poly stopper)	Hirschman	12	10	5	ALBA	June 12, '06
		200 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.15 mL or better, Accessory (standard ground joint and poly stopper)		12	2	8	ALBA	June 12, '06
		500 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.15 mL or better, Accessory (standard ground joint and poly stopper)		5	2	3	ALBA	June 12, '06
		1000 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.15 mL or better, Accessory (standard ground joint and poly stopper)	Hirschman	3	1	1	ALBA	June 12, '06
2 - 07	Volumetric Flasks	Borosilicate glass, A class, Color: amber, 25 ml, Tolerance: ± 0.04 mL or better, Accessory (standard ground joint and poly stopper)	Hirschman	8	2	2	ALBA	June 12, '06
		Borosilicate glass, A class, Color: amber, 200 ml, Tolerance: ± 0.15 mL or better, Accessory (standard ground joint and poly stopper)		8	2	2	ALBA	June 12, '06
2 - 08	Round bottom Flasks	250 ml, Glass, Color: clear, Short neck		20	0	20	ALBA	June 12, '06
		500 ml, Glass, Color: clear, Short neck		20	0	20	ALBA	June 12, '06
2 - 09	Kjeldahl Flasks	250 ml, Glass, Color: clear; Short neck		10	0	10	ALBA	June 11, '06
		500 ml, Glass, Color: clear; Short neck		5	0	5	ALBA	June 11, '06
2 - 10	Pear shape Flasks	100 ml, Glass, Color: clear; Short neck		10	0	10	ALBA	June 12, '06
		250 ml, Glass, Color: clear; Short neck		10	0	10	ALBA	June 12, '06
2 - 11	Erlenmeyer Flasks	100 ml, Borosilicate glass, color: clear	NALGENE	20	5	10	ALBA	June 11, '06
		250 ml, Borosilicate glass, color: clear	NALGENE	20	5	10	ALBA	June 12, '06
		300 ml, Borosilicate glass, color: clear		10	5	10	ALBA	June 11, '06
		500 ml, Borosilicate glass, color: clear		10	2	8	ALBA	June 12, '06
		1000 ml, Borosilicate glass, color: clear	NALGENE	4	1	2	ALBA	June 11, '06
2 - 12	Erlenmeyer Flasks with Ground Joints	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29/32	Rettberg (1)	15	5	5	ALBA	June 11, '06
		250 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29/32	Rettberg (2)	15	5	5	ALBA	June 12, '06
		300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29/32		10	5	5	ALBA	June 12, '06
		500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29/32	Rettberg (3)	10	2	8	ALBA	June 11, '06
2 - 13	Stopper	Plastic, Joint type: standard ground joint NS size: 29/32				23	ALBA	June 11, '06
2 - 14	Graduated Cylinders	50 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ± 0.5 ml or better	Hirschman	5	2	3	ALBA	June 11, '06
		100 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ± 0.5 ml or better	Hirschman	8	2	3	ALBA	June 11, '06
		250 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ± 1.0 ml or better		5	2	3	ALBA	June 12, '06
		500 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ± 0.5 ml or better		5	2	3	ALBA	June 12, '06
		1000 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ± 1.0 ml or better	Hirschman	2	1	1	ALBA	June 12, '06
2 - 15	Komagome Pipe, (Spoint)	Plastic, graduated 1 to 3 ml				30	ALBA	June 11, '06
2 - 16	Watch Dish	Dia. 65 - 75 mm		10	2	8	ALBA	June 11, '06
		Dia. 90 - 95 mm		10	2	8	ALBA	June 11, '06
		Dia. 125 mm		10	2	8	ALBA	June 11, '06
2 - 17	Separatory funnels	ø100ml, glass graduated		10	0	10	ALBA	June 11, '06
		ø250ml, glass graduated		10	0	10	ALBA	June 11, '06
		ø500ml, glass graduated		5	0	5	ALBA	June 11, '06
2 - 18	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	Capacity: 500 ml, Type of raiser tube: leek-proof type Bottle and riser tube: low-density polyethylene; Screw cap and tube holder: Polypropylene	NALGENE	10	3	5	ALBA	June 11, '06
		Capacity: 1000 ml, Type of raiser tube: leek-proof type Bottle and riser tube: low-density polyethylene; Screw cap and tube holder: Polypropylene		10	3	5	ALBA	June 11, '06
2 - 19	Beaker with handle	Capacity: 1000 ml, Polypropylene		3	1	1	ALBA	

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Glassware

No.	Name	Specifications	Model	Q'ty			Supplier	Date of Delivery
2 - 20	Automatic buret	Automatic buret 25 ml w/1L. Reservoir, Color: clear		2	0	2	ALBA	June 11, '06
		Automatic buret 50 ml w/2L. Reservoir, Color: clear		2	0	2	ALBA	June 11, '06
2 - 21	Rubber of two ball reams	Injection of air, general use		2	0	2	ALBA	June 11, '06
2 - 22	Test Tube with stopper	Test tube, 18(dia.) x 180 (L) mm \$16, 100 pcs/case		1	1	1	ALBA	June 11, '06
2 - 23	Stainless Spoon	Stainless Spoon (middle size: 180 mm)5pc/box		2	1	5	ALBA	June 11, '06
2 - 24	Glass rods	Glass rods, 1500 (L) x 8(dia.)mm		2	2	1	ALBA	June 12, '06
2 - 25	Funnels	Soda-lime glass, Angle: 60°, with short stem, ϕ 70 mm	Soda-Lime	15	5	5	ALBA	June 12, '06
		Soda-lime glass, Angle: 60°, with short stem, ϕ 100 mm	Soda-Lime	10	5	5	ALBA	June 12, '06
2 - 26	Glass tube	Glass tube, 1500 (L) x ϕ 6 \times ϕ 8mm		4	2	2	ALBA	June 12, '06
2 - 27	Stopcock	Stopcock, ϕ 6 \times ϕ 10mm, Fluoroplastic (PTFE) or equivalent, Temperature resistant: -200 to +200 C or		2	1	1	ALBA	June 12, '06
2 - 28	Pinchcock	Pinchcock (Size M), Stainless steel		15	5	5	ALBA	June 11, '06
2 - 29	Screw Cock	Screw Cock (Size M), Stainless steel		15	5	5	ALBA	June 11, '06
2 - 30	Stopwatch	1/100 sec stopwatch, Electronic (battery)		1	1	1	ALBA	June 11, '06
2 - 31	Micro pipet	2~20 μ l		1	1	1	ALBA	June 11, '06
		10~100 μ l		1	1	1	ALBA	June 11, '06
2 - 32	Chip for micro pipet	0.5~10 μ l, 1000 pcs/package		2	1	1	ALBA	June 11, '06
		2~200 μ l, 1000 pcs/package		2	1	1	ALBA	June 11, '06
2 - 34	Heating mantles	For Soxhlet extraction, 4-Place heaters (200W x 4), Applied capacity of flask: 300ml		1	0	2	ALBA	June 11, '06
2 - 35	Fat extractor (soxhlet)	Soxhlet extraction apparatus, 300ml type, SPC joints		5	0	5	ALBA	June 12, '06
2 - 36	Thermometer	Mercury type cylinder shape thermometer, -20-100°C		2	2	1	ALBA	June 11, '06
2 - 37	Beaker tongs	Tongs for flask		3	1	2	ALBA	June 12, '06
2 - 38	Lab jack	Lab jack, 150 \times 150mm, Range of expansion and contraction: 75-245 mm, An upper and lower board is made of the stainless steel.		4	1	1	ALBA	June 11, '06
2 - 39	Unit stand	Support stand set: 1 m \times 1 m, Assembly stick (stainless pipe)		2	1	1	ALBA	June 12, '06
		Support stand set: 1.5 m \times 1 m, Assembly stick (stainless pipe)		1	0	1	ALBA	June 12, '06
		Support stand set: 2.0 m \times 1 m, Assembly stick (stainless pipe)		1	0	1	ALBA	June 12, '06
2 - 40	Cork borer	Cork borer sets saw-shaped edge (No. of borers, 12)		1	1	1	ALBA	June 11, '06
2 - 41	Muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: ϕ 7mm~13mm,		20	10	10	ALBA	June 11, '06
2 - 42	Jumbo muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: ϕ 13mm~21mm,		10	5	5	ALBA	June 11, '06
2 - 43	Clamps	Open diameter: 5~50 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 304		10	5	5	ALBA	June 11, '06
		Open diameter: 5~80 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 305		10	5	5	ALBA	June 11, '06
2 - 44	Tweezers	Odontology department tweezers		10	2	8	ALBA	June 11, '06
2 - 45	Vacuum hose	Vacuum hose ϕ 8 \times ϕ 21mm (5 m/ Unit)		3	1	1	ALBA	June 11, '06
2 - 46	Rubber tube	Rubber tube ϕ 6 \times ϕ 13mm (10 m/ Unit)		2	1	1	ALBA	June 11, '06
2 - 47	Silicon rubber tube	Silicon rubber tube ϕ 6 \times ϕ 8mm, (10m/ Unit)		1	1	1	ALBA	June 11, '06
2 - 48	Micro line tube	TEF 2mm dia. (unit/180 cm)		3	0	3	ALBA	June 11, '06
2 - 49	Tube joint	Straight, plastic		1	1	1	ALBA	June 11, '06
		T type, plastic		1	1	1	ALBA	June 11, '06
		Y type, plastic		1	1	1	ALBA	June 11, '06
2 - 50	Support for test tubes	for 18(dia.) x 180 (L) test tube, Number of partitions: 40		2	1	1	ALBA	June 12, '06
2 - 51	Stopper (silicon rubber)	ϕ 15mm		10	2	8	ALBA	June 11, '06
		ϕ 20mm		10	2	8	ALBA	June 11, '06
		ϕ 25mm		10	2	8	ALBA	June 11, '06
		ϕ 30mm		5	2	3	ALBA	June 11, '06
		ϕ 35mm		5	2	3	ALBA	June 11, '06
		ϕ 40mm		5	2	3	ALBA	June 11, '06
2 - 52	Octagon rotator	Teflon coating, ϕ 6.0 \times 20 mm		10	5	5	ALBA	June 12, '06
		Teflon coating, ϕ 6.0 \times 25 mm		10	5	5	ALBA	June 12, '06
		Teflon coating, ϕ 7.0 \times 30 mm		10	5	5	ALBA	June 12, '06
		Teflon coating, ϕ 7.0 \times 40 mm		10	5	5	ALBA	June 12, '06
2 - 53	Rotator taking out stick	Teflon coating, ϕ 8.0 \times 310 mm		1	1	1	ALBA	June 11, '06
2 - 54	Weighing boat Plastic	Weighing boats 500 pcs/box, Large (Size: approx. 140 x 140 mm)				1	ALBA	June 11, '06
2 - 55	Vacuum Pump	Capacity : Max. 13 liter/mini., Ultimate vacuum: Approx. 600 mmHg, Suitable pressure gauge, oil free pump		1	1	1	ALBA	June 12, '06
2 - 56	Circulating aspirators	Scrubber, Air flow 35 liter/min., Power: 100W, Residual pressure: 35 mmHg		1	0	1	ALBA	June 12, '06
2 - 57	Micro-syringe	Micro-syringe: 10 μ l		1	0	1	ALBA	June 11, '06
		Micro-syringe: 50 μ l		1	0	1	ALBA	June 11, '06
2 - 58	Membrane filter	0.45 μ m, ϕ 47 mm, 100 pcs		10	2	4	ALBA	June 11, '06
2 - 59	pH Paper	Roll type (case/1pcs.)		3	2	1	ALBA	June 12, '06
2 - 60	Quartz wool	5~9 μ m, 10g		2	1	1	ALBA	June 12, '06
2 - 61	Gastigt syringe	Glass		2	0	2	ALBA	June 12, '06
2 - 62	Tweezers for cell	Type that can be strongly pinched by power of spring		1	1	1	ALBA	June 12, '06
2 - 63	Pipet container	Stainless steel, 64mm dia. X 407 mm L		1	1	1	ALBA	June 11, '06
2 - 64	Pipet support	Plastic, rotation type		1	1	1	ALBA	June 11, '06
2 - 65	Stand for micro pipet	Number of sets of syringes : 5 - 6 pcs		1	1	1	ALBA	June 11, '06
2 - 66	Waste water container	Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 20 L, Color: White, Stopper: Two		8	8	4	ALBA	June 12, '06
		Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 5 L, Color: White, Stopper: One		8	8	4	ALBA	June 12, '06
2 - 67	Boiling stone	Boiling stone: 1 kg/case		1	0	1	ALBA	June 11, '06
2 - 68	Flask filtering	1000 ml, Borosilicate glass		1	1	1	ALBA	June 12, '06
2 - 69	Stand for Separatory funnels	For 100 ml separatory funnels, 2 pcs		2	0	5	ALBA	June 11, '06
		For 200 ml to 300 ml separatory funnels, 2 pcs		2	0	10	ALBA	June 11, '06
		For 500 ml separatory funnels, 1 pcs set		1	0	5	ALBA	June 11, '06
2 - 70	Seal tape	Teflon made, Applox. 10mm \times 15 m		2	2	1	ALBA	June 11, '06
2 - 71	Paraffin film	4" \times 125 feet		3	2	2	ALBA	June 11, '06
2 - 72	Wiping Tissue (Kimwipe)	Size 20 x 12 cm (piece)		1	1	72	ALBA	June 11, '06
2 - 73	Pipet cleaner	Inside size of basket: Approx. 500 ϕ 136 mm, Material: Vinyl chloride with Jar and basket, Kartel Italy		1	1	1	ALBA	June 11, '06
2 - 74	Brush	For bottle washing (small)		5	2	3	ALBA	June 11, '06
		For bottle washing (middle)		5	2	3	ALBA	June 11, '06
		For bottle washing (large)		5	2	3	ALBA	June 11, '06
		For Pipettes and buret		5	2	6	ALBA	June 11, '06

Equipment for Chemical and Biological Analysis in DFEA of Damascus

Glassware

No.	Name	Specifications	Model	Q'ty			Supplier	Date of Delivery
2 - 76	Color comparison tubes	100 ml, 2 ring marks, cylinder tall form, Germany		10	10	5	ALBA	June 11, '06
2 - 77	Tube support	For 100ml color comparator, capacity 6 - 12 pcs.		1	1	1	ALBA	June 12, '06
2 - 78	Pasteur Pipette	150 mm, 1000 pcs, Borosilicate		1	1	1	ALBA	June 11, '06
2 - 79	Teflon tube	3 - 4 mm dia. (6m)		2	1	1	ALBA	June 11, '06
2 - 80	Dropping Bottle	50 ml, brown		3	2	1	ALBA	June 11, '06
		100 ml, brown		2	1	1	ALBA	June 11, '06
2 - 81	Crucible	Crucible, porcelain, 30 ml		10	10	5	ALBA	June 11, '06
		Crucible, porcelain, 50ml		10	10	5	ALBA	June 12, '06
2 - 82	Dish tongs	Stainless steel		2	1	1	ALBA	June 11, '06
2 - 83	Jumbo crucible tongs	Stainless steel tongs for use with muffle furnace		1	0	1	ALBA	June 11, '06
2 - 84	Standard Sieve	Dia. 200 mm, mesh: 2mm		1	1	1	ALBA	June 11, '06
2 - 85	Weighing Bottle	Aluminium 65 mm, 14 mm Height		10	5	5	ALBA	June 11, '06
2 - 86	Conical beaker	Glass, 250 ml		20	10	5	ALBA	June 12, '06
2 - 87	Petri dishes	50 - 60 mm diameter (plastic, pasteurized)		100	0	100	ALBA	June 11, '06
		90 - 100 mm diameter (plastic, pasteurized)		10	0	20	ALBA	June 11, '06
2 - 88	Bottle for sample collection	1000 ml, Polypropylene, with screw closure, Wide-mouth bottle,		100	20	30	ALBA	June 12, '06
2 - 89	Rubber Bulb for Small Pipette	Rubber for graduated pipettes 1 ml		10	2	8	ALBA	June 11, '06
		Rubber for graduated pipettes 5 ml - 10 ml		15	2	18	ALBA	June 11, '06
2 - 90	Cleaning Tissue	Paper tissue, box of 200 tissues		1	1	45	ALBA	June 11, '06
2 - 91	Gloves	Disposable type, Seamless latex, Solvent-proof, Powdered fit both right and left hands, Size: medium, Packs of 100		1	0	1	ALBA	June 12, '06
2 - 92	Goggles	Plastic, with side guard		2	2	2	ALBA	June 11, '06
2 - 93	Cleaning Agent	For removing grease, oil, wax, dye residue, silicone, etc Disinfectant action: by active chorine Dosing: 2 to 10 % in demineralized water PH-Value: approx. 7 - 9 Volume: 2 liters		1	1	1	ALBA	June 12, '06

			Unit price (sn)	Total price (sp)	Q'ty	Supplier	Installation
3 - 1	Sample cell for Spectrophotometer (Square with stopper)	25 mL Pair	14,600	14,600	1 set	MIMOSA	July, 2006
3 - 2	Paper filter	Dia. 11cm, 100/carton × 3 cartons	350	1,050	300	ALBA	July, 2006
3 - 3	Volumetric flask	1,000 mL	1,000	2,000	2	ALBA	Aug., 2006
		500 mL	1,000	2,000	2	ALBA	Aug., 2006
3 - 4	Wide-Mouth glass bottle	For water sampling	294	1,470	5	Local	Aug., 2006
3 - 5	Glass micro fiber filter	For measurement of SS	12,700	12,700	300 sheets	Local	Dec. 2006
3 - 6	Desiccator and silica gel	For drying filter, etc.	8,500	8,500	1 set	MAN	Jan., 2007
3 - 7	Glass cylinders	Dia. 100mm×H 400mm, For measurement of Settleable solids measurement	9,750	19,500	2	MAN	Jan., 2007
3 - 8	Microsyringe	50 µl	6,500	6,500	1	MAN	Jan., 2007
3 - 9	Volumetric Flasks	250 mL	540	5,400	10	ALBA	Jan., 2007
3 - 10	Syringe and Filter for Oil Content Meter	For measurement of oil in water	31,000	31,000	1 set	MIMOSA	Jan., 2007
3 - 11	Volumetric Flask with cap	25 mL	650	1,950	3	ALBA	Feb., 2007
3 - 12	Micropipette	300 µl, Adjustable	11,000	11,000	1	ALBA	Feb., 2007
3 - 13	Liebig condenser, 29/32	For measurement of COD	4,500	18,000	4	MAN	Feb., 2007
3 - 14	Flask, round bottom 500 ml	500 mL, For measurement of COD	650	3,250	5	MAN	Feb., 2007
3 - 15	Flask, round bottom 250 ml	250 mL, For measurement of COD	650	3,250	5	MAN	Feb., 2007
3 - 16	Separation funnel with glass tap	For measurement of COD	1,000	2,000	2	MAN	Feb., 2007

(Note): Item 3-1 to 3-16, purchased by JET

Equipment for Chemical and Biological Analysis in DFEA of Damascus
Reagents/Chemicals

	Name	Specification	Unit	Q'ty	Supplier	Date of Delivery
3) Package 3						
3 - 1	2,2,4-Trimethyl-Pentane	(mixture of isomeres) for sythesis	1L	1	ALBA	Mar. 29, '06
3 - 2	2,4-Dinitrophenol	α -Dinitrophenol, Use as pH indicator	25g	8	ALBA	Mar. 29, '06
3 - 3	3', 3'', 5', 5''-tetrabromo-pgenolsulfonephthalein (bromophenol blue)	Use as pH indicator (pH 3.0 - 4.6)	25g	2	ALBA	Mar. 29, '06
3 - 4	Acetic acid CH ₃ COOH	Assay (acidimetric): min.96.0 %	2.5L	1	ALBA	Mar. 29, '06
3 - 5	Acetone CH ₃ COCH ₃	Purity (GC): min 99.0%	2.5L	2	ALBA	Mar. 29, '06
3 - 6	Ammonia	25% ammonia solution, Assay (acidimetric, NH3): min 25.0 %	2.5L	1	ALBA	Mar. 29, '06
3 - 7	Ammonium Iron (III) citrate about 18% Fe DAC	Assay (iodometric, Fe calculated on dried substance): 17.1 - 18.9%	1kg	1	M.A.N	Feb. 9, '06
3 - 8	Ammonium amidosulfonate GR for analysis, ACS, Reag. Ph Eur	Assay (acidimetric): \geq 99.0%	100g	2	M.A.N	Feb. 9, '06
3 - 9	Boric acid H ₃ BO ₃	For analysis, Assay (acidimetric): 99.8 = 100.3 %	1Kg	1	ALBA	Mar. 29, '06
3 - 10	Chloro-benzene C ₆ H ₅ Cl	For synthesis, Assay (GC, area%): \geq 99%	1L	1	ALBA	Mar. 29, '06
3 - 11	Chloroform CHCl ₃	Purity (GC): 99.0-99.4%	2.5L	2	ALBA	Mar. 29, '06
3 - 12	Dichloromethane CH ₂ Cl ₂	Purity (GC): min 99.5%	2.5L	2	ALBA	Mar. 29, '06
3 - 13	Dodecyl sulfate sodium salt C ₁₂ H ₂₅ NaO ₄ S	For biochemistry and surfactant tests, Assay (two-phase titration): \geq 99.0%	1Kg	1	ALBA	Mar. 29, '06
3 - 14	Ether (C ₂ H ₅) ₂ O	Diethyl ether, Purity (GC): \geq 99.7%	2.5L	3	ALBA	Mar. 29, '06
3 - 15	Ethylenediaminetetraacetic acid, dipotassium salt dihydrate (EDTA·K ₂) C ₁₀ H ₁₄ K ₂ N ₂ O ₈ ·2H ₂ O	Assay (by complexometry): 98%	100g	1	ALBA	Mar. 29, '06
3 - 16	Hexaammonium heptamolybdate tetra hydrate		250g	1	ALBA	Mar. 29, '06
3 - 17	Hydrochloric acid HCl	32% GR for analysis, Assay (acidimetric): min. 32.0%	2.5L	1	ALBA	Mar. 29, '06
3 - 18	Hydroxylamine hydrochloride NH ₂ OH + HCl	Assay (manganometric): \geq 99.0 %	1Kg	3	ALBA	Mar. 29, '06
3 - 19	Hydroxylamine sulfate (HONH ₂) ₂ SO ₄	Reducing agent, reagent for the preparation of oximes. Assay (manganometric): mini 99%	250g	4	ALBA	Mar. 29, '06
3 - 20	Iron(III) chloride hexahydrate FeCl ₃ ·6H ₂ O	Assay (iodometric): \geq 99.0%	1Kg	1	ALBA	Mar. 29, '06
3 - 21	Lactose monohydrate C ₁₂ H ₂₂ O ₁₁ ·H ₂ O	Milk sugar, Use for microbiology	1 kg	1	ALBA	Mar. 29, '06
3 - 22	L-Ascorbic acid C ₉ H ₁₂ O ₆	Assay (iodometric): \geq 98%	250g	2	ALBA	Mar. 29, '06
3 - 23	Lead(II) carbonate, basic PbCO ₃	Assay (complexometric): mini99.0%	500g	1	ALBA	Mar. 29, '06
3 - 24	Magnesium per chlorate Mg(ClO ₄) ₂ ·xH ₂ O	Drying agent (Desiccant), Hydrate (about 83% Mg(ClO ₄) ₂)	500g	1	ALBA	Mar. 29, '06
3 - 25	Magnesium sulfate heptahydrate MgSO ₄ ·7H ₂ O	For analysis	1Kg	1	ALBA	Mar. 29, '06
3 - 27	Manganese (II) sulfate monohydrate MnSO ₄ ·H ₂ O	Assay (complexometric): 98 %	1Kg	2	ALBA	Mar. 29, '06
3 - 28	Neutral red C ₁₃ H ₁₇ ClN ₄	Indicator and microbiology, Assay (spectrophotometrically): \geq 75%	25g	4	ALBA	Mar. 29, '06
3 - 29	n-Hexadecane for synthesis	Assay (GC, area%): \geq 99 %	250ml	1	M.A.N	Feb. 9, '06
3 - 30	n-Hexane C ₆ H ₁₄	For analysis, Purity \geq 99.0 %	2.5L	3	ALBA	Mar. 29, '06
3 - 31	Peptone	For microbiology	500g	4	ALBA	Mar. 29, '06
3 - 32	Potassium bromate KBrO ₄	For analysis, Assay (iodometric): \geq 99.8	1Kg	1	ALBA	Mar. 29, '06
3 - 33	Potassium carbonate K ₂ CO ₃	Assay (acidimetric, calculated on dried substance): \geq 99.0 %	1Kg	2	ALBA	Mar. 29, '06
3 - 34	Potassium chloride KCl	For electrolyte solutions, buffer solutions, Assay (argentometric): min. 99 %	1Kg	1	ALBA	Mar. 29, '06
3 - 35	Potassium chromate K ₂ CrO ₄	Assay (iodometric): \geq 99.5 %	1Kg	1	ALBA	Mar. 29, '06
3 - 36	Potassium cyanide KCN	Assay (argentometric): min. 97.0%	1Kg	1	ALBA	Mar. 29, '06
3 - 37	Potassium dichromate K ₂ Cr ₂ O ₇	Oxidizing agent, Assay (iodometric, cal. On dried substance): \geq 99.9 %	1Kg	3	ALBA	Mar. 29, '06
3 - 38	Potassium dihydrogen phosphate KH ₂ PO ₄	Buffer solution, pH value (20 °C): 6.98 - 7.02	1L	1	ALBA	Mar. 29, '06
3 - 39	Potassium fluoride dihydrate KF	For analysis, Assay (precipitative titration): min. 99 %	500g	1	ALBA	Mar. 29, '06
3 - 40	Di-Potassium hydrogenphosphate	Assay: 98%	500g	1	ALBA	Mar. 29, '06
3 - 41	Potassium hydroxide KOH	Pellets, Assay (acidimetric): min. 85 %	1Kg	3	ALBA	Mar. 29, '06
3 - 42	Potassium iodide KI	Reagent for the preparation of iodine solution in iodometry, starch paper	1Kg	3	ALBA	Mar. 29, '06
3 - 43	Potassium nitrate KNO ₃	Reagent for oxidative dissolution of organic and inorganic samples. Assay (acidimetric):	1Kg	1	ALBA	Mar. 29, '06
3 - 44	Potassium permanganate KMnO ₄	Oxidizing agent, Assay (iodometric): 99%	1Kg	3	ALBA	Mar. 29, '06
3 - 45	Selenium dioxide (sublimed) for synthesis = Selenious anhydridem SeO ₂		250g	1	M.A.N	Feb. 9, '06

	Name	Specification	Unit	Q'ty	Supplier	Date of Delivery		
3 - 46	Silicic acid $\text{SiO}_2 \cdot x\text{H}_2\text{O}$	Assay (gravimetric): $\geq 99.8\%$	250g	2	ALBA	Mar. 29, '06		
3 - 47	Silver nitrate AgNO_3	Catalyst in the COD determination, Assay (argentometric): 99.8%	100g	2	ALBA	Mar. 29, '06		
3 - 48	Silver sulfate Ag_2SO_4	Catalyst in the COD determination, Assay (argentometric): 99.5%	100g	1	ALBA	Mar. 29, '06		
3 - 49	Sodium azide NaN_3	Assay (cerimetric): $\geq 99.0\%$	1Kg	1	ALBA	Mar. 29, '06		
3 - 50	Sodium chloride NaCl	Assay (argentometric): $\geq 99.5\%$	1Kg	1	ALBA	Mar. 29, '06		
3 - 51	Sodium deoxycholate $\text{C}_{24}\text{H}_{39}\text{NaO}_4$	For microbiology	250g	2	M.A.N	Feb. 9, '06		
3 - 52	Sodium deoxycholate $\text{C}_{24}\text{H}_{39}\text{NaO}_4$	For microbiology	250g	2	Same as 3-51	Mar. 29, '06		
3 - 53	Sodium fluoride GR for analysis ACS, ISO, Rea. Ph Eur, Assay (precipitative titration): min. 99%	Assay (precipitative titration): min. 99%	500g	1	M.A.N	Feb. 9, '06		
3 - 54	Sodium hydroxide NaOH	Assay (acidimetric): min. 99%	1Kg	5	ALBA	Mar. 29, '06		
3 - 55	Sodium hypochlorite	Soda bleaching lye, 6- 14% active chlorine	2.5L	2	ALBA	Mar. 29, '06		
3 - 56	Sodium iodide NaI	Assay (argentometric): min. 99.5%	100g	5	ALBA	Mar. 29, '06		
3 - 57	Sodium nitrate NaNO_3	Assay (acidimetric): $\geq 99.5\%$	1Kg	1	ALBA	Mar. 29, '06		
3 - 58	Sodium oxalate $(\text{CNaO}_2)_2$	Assay (manganometric): mini. 99.8%	1Kg	1	ALBA	Mar. 29, '06		
3 - 59	Sodium Salicylate $\text{HOc}_6\text{H}_4\text{COONa}$	Assay (perchloric acid titration, calculated on dried substance): $\geq 99.5\%$	250g	10	ALBA	Mar. 29, '06		
3 - 60	Sodium sulfate Na_2SO_4	Anhydrous, Assay (acidimetric): $\geq 99.0\%$	500g	8	ALBA	Mar. 29, '06		
3 - 61	Sodium sulfide Na_2S	Assay (iodometric Na2S): $32.0 - 38.0\%$	1kg	3	M.A.N	Feb. 9, '06		
3 - 63	Sodium sulfite Na_2SO_3	Assay (iodometric): $98.0 - 100.5\%$	1Kg	1	ALBA	Mar. 29, '06		
3 - 64	Sodium tetraborate decahydrate $\text{Na}_2\text{B}_4\text{O}_7 \cdot 10\text{H}_2\text{O}$	For the calibration of pH meters	250g	1	ALBA	Mar. 29, '06		
3 - 65	Sodium thiosulfate pentahydrate $\text{Na}_2\text{S}_2\text{O}_3 \cdot 5\text{H}_2\text{O}$	Assay (iodometric): 99%	1Kg	3	ALBA	Mar. 29, '06		
3 - 66	Stearic acid $\text{C}_{18}\text{H}_{36}\text{O}_2$	Assay (GC, area%): $\geq 90\%$	500g	1	ALBA	Mar. 29, '06		
3 - 67	Sulfamic acid (aminosulfonic acid) $\text{H}_2\text{NSO}_3\text{H}$	Assay (acidimetric): $\geq 99\%$	1Kg	2	ALBA	Mar. 29, '06		
3 - 68	Sulfuric acid H_2SO_4	98% GR for analysis, Assay (acidimetric): min. 98.0%	2.5L	1	ALBA	Mar. 29, '06		
3 - 69	Sulfuric acid H_2SO_4	$c(\text{H}_2\text{SO}_4) = 0.5 \text{ mol/L (1N)}$	1L	1	ALBA	Mar. 29, '06		
3 - 70	Tetrachloroethylene C_2Cl_4	Purity (GC): $\geq 99.0\%$	2.5L	1	M.A.N	Feb. 9, '06		
3 - 71	Trans-1,2-Diaminocyclohexane-N, N, N', N'-tetraacetic acid monohydrate $\text{C}_{14}\text{H}_{22}\text{N}_2\text{O}_8 \cdot \text{H}_2\text{O}$	For synthesis, Assay (by acidimetry): $>98\%$	25g	4	M.A.N	Feb. 9, '06		
							Unit price (sp)	Total price (sp)
4 - 1	Ionic strength adjuster	For measurement using ISE	500 mL	3	ALBA	Aug., 2006	9,500	28,500
4 - 2	Glacial acetic acid	Preparation of standard solution	2.5 L	1	M.A.N	Aug., 2006	2,500	2,500
4 - 3	Zinc acetic acid	Sample preservation	500g	1	M.A.N	Jan., 2007	4,500	4,500
4 - 4	Ammonia iron(II) sulfate hexahydrate GR for analysis	For measurement using ISE	100g	1	M.A.N	Jan., 2007	8,500	8,500
4 - 5	Iron(II) sulfate heptahydrate GR for analysis ACS	For COD measurement	100g	1	M.A.N	Jan., 2007	4,800	4,800
4 - 6	Potassium hydrogen phthalate	For COD measurement	500g	1	M.A.N	Jan., 2007	6,500	6,500
4 - 7	M-End agar	For measurement of total coliform	set	1	M.A.N	Jan., 2007	17,850	17,850
4 - 8	Lauryl sulfate broth	For measurement of total coliform	set	1	M.A.N	Jan., 2007	11,150	11,150
4 - 9	1,10-Phenanthroline monohydrate	Preparation of Ferrou indicator	100g	1	M.A.N	Jan., 2007	25,000	25,000
4 - #	Mercuric sulfate	For COD measurement	100g	1	M.A.N	June, 2007	7,500	7,500
4 - #	Sulfuric acid H_2SO_4	Reagent grade, For measurement of COD	2.5 L	2	M.A.N	June, 2007	1,700	3,400

(Note): Item 4-1 to 4-11, purchased by JET

List of Equipment/Instrument, Apparatus and Reagents/Chemicals
In
DFEA of Damascus
(For Chemical & Biological Water Quality Analysis-1)

**The Capacity Development of
Environmental Monitoring at Directorates
for Environmental Affairs
in Governorates in the Syrian Arab Republic**

icals

Annex 3-1:

Equipment List

3.1.3 Chemical and Biological Water Quality (2)

**List of Reagents, Standards, Glasware for Additional Training for the Use of Spectrophotometer and Oil Content Meter
For Chemical and Biological Water Quality Analysis-2**

Reagents/Chemicals

No.	Reagents/Chemicals for the Analysis of:	Method	Measuring range(mg/L)	Type of Reagents /Chemicals	Cat. No. (HACH)	Unit	Q'ty	Unit Price (US\$)
1	Chromium, Hexavalent	1,5-Diphenylcarbohydrazide method	0.01 - 0.70 mg/L Cr ⁶⁺	Chromium Reagent Powder Pillows	12710-99	100/pkg	6	49.4
2	Chromium, Total	AlkalineHydrobromite Oxidation method	0.01 - 0.70 mg/L	Total Chromium Reagent Set	22425-00	100 Tests	6	446.2
3	Hardness	Calmagite Colorimetric method	0.07 - 4.00 mg/L	Hardness Reagent Set	23199-00	100 Tests	3	146.1
4	Ammonia, Nitrogen	Nessler method	0.02 -2.50 mg/L NH ₃ -N	Ammonia Nitrogen Reagent Set	24582-00		6	185.6
5	Nitrate	Cadmium Reduction method	0.1 - 10.0 mg/L NO ₃ -N	Nitrate Reagent Powder Pillows	21061-69	100/pkg	6	67.1
6	Nitrite	Ziazotization method	0.002 - 0.300 mg/L NO ₂ -N	Nitrite Reagent Powder Pillows	21071-69	100/pkg	6	59.2
7	Orthophosphate	Ascorbic Acid method	0.02 - 2.50 mg/L PO ₄	Phosphate Reagent Powder Pillows	21060-69	100/pkg	6	80.9
8	Sulfide	Methylene Blue method	5 - 800 μ g/L	Sulfide Reagent Set	22445-00	100 tests	6	161.9
9	Surfactants, Anionic	Crystal Violet method	0.002 - 0.275 gg/L LAS	Detergents Reagent Set	24468-00		3	586.4
10	Oil and Grease	Partition-Infrared	Up to 200 mg/L	Solvent (S-316)	HORIBA	1 L	12	710.8
								Total

Standard Solution

	Standard solutions for:	Concentration	Unit	Cat. No.	Q'ty	Unit Price (US\$)	Total Price (US\$)
1	Chromium, Hexavalent	12.5 mg/L Cr ⁶⁺ /10 mL Ampule	16/pkg	14256-10	3	79.0	237
2	Chromium, Hexavalent	50.0 mg/L Cr ⁶⁺	100 mL	810-42H	3	25.7	77.0
3	Chromium, Total	50.0 mg/L Cr ³⁺ /10 mL Ampule	16/pkg	14257-10	3	77.0	231.0
4	Chromium, Total	50 mg/L Cr ³⁺	100 mL	14151-42	3	35.5	106.6
5	Nitrogen, Ammonia	1 mg/L NH ₃ -N	500 mL	1891-49	3	35.5	106.6
6	Nitrogen, Ammonia	50 mg/L NH ₃ -N/10 mL Ampule	16/pkg	14791-10	3	59.2	177.7
7	Nitrite	Sodium Nitrite, ACS	454 g	2452-01	3	114.5	343.5
8	Phosphate	50 mg/L PO ₄ /10 mL Ampule	16/pkg	171-10	3	59.2	177.7
9	Detergent Standards	60 mg/L LAS/10 mL Ampule	16/pkg	14271-10	3	59.2	177.7
						Total	1,635

Apparatus/Consumables

	Item	Unit	Cat. No.	Required unit	Unit Price (US\$)	Total Price (US\$)	
1	Sample Cells, 10-mL, w/cap	6/pkg	24276-06	3	71.1	213.2	
2	Hot plate, 4 inch dia., 240VAC	each	12067-02	3	394.9	1,184.6	
3	Sample Cells, 10-20-25 mL, w/cap	6/pkg	24019-06	3	73.1	219.2	
4	Water bath abd rack	each	1955-55	3	157.9	473.8	
5	Micropipette(100 μ L - 1,000μL, Adjustable)	each	(HACH)	3	236.9	710.8	
6	Cylinder, 500-mL, graduated mixing	each	508-49	3	104.6	313.9	
7	Cylinder, 100-mL, graduated mixing	each	1896-42	3	86.9	260.6	
8	Cylinder, 25-mL, graduated mixing	each	21190-40	3	43.4	130.3	
9	Cylinder, 50-mL, graduated mixing	each	508-41	3	45.4	136.2	
10	Stopper for 18-mm tube	25/pkgf	25080-25	3	17.8	53.3	
16	Solvent reclaimr for Oil Content Meter	each	SR-300	3	3,455.1	10,365.3	
17	Activated Charcoal (Oil Absorbent Coal)(Additional)	500g/can	(HORIBA)	3	108.6	325.8	
18	Activated Alminiumoxide(Al ₂ O ₃)(Additional)	1 kg	(HORIBA)	3	236.9	710.8	
19	Water separation filter(Additional)	6pc/set	(HORIBA)	3	69.1	207.3	
						Total	15,305

Miscellaneous

	Item	Unit	Manufacturer	Required unit	Unit Price (SP)	Total Price (SP)
1	Mercury sulfate	500g	MERCK	1	7,500	7,500
2	Sulfuric acid (Reagent grade)	2.5 L	MERCK	2	1,700	3,400
3	Silicon grease	50g	MERCK	1	4,500	4,500
4	Potassium persulfate	500 g	MERCK	1	3,600	3,600
5	Glass beads	1 kg	Local	1	2,000	2,000
6	Washing bottles (250 mL, 500 mL each one), Lab. glove (2 boxes)	set	Local	1	3,900	3,900
7	Glass vacuum filter holder	set	Sartorius (Model16307)	1	20,000	20,000
8	Ethanol	2.5 L	MERCK	1	1500	1500
9	Alcoholic lamp	set	Local	1	250	250
					Total (SP)	46,650
					Total (US\$)	933

(50 SP = 1 US\$)

(Payment in

Total Price (US\$)
296.2
2,677.2
438.3
1,113.5
402.8
355.4
485.7
971.4
1,759.1
8,529.1
17,029

n US\$)

Annex 3-1:

Equipment List

3.1.4

Heavy Metal

**Reagent, Consumables and Spare Parts List for Laboratory in Damascus DFEA
procured by JICA Expert Team (Heavy Metal Analysis)**

No.	Items	Unit	Unit Price (S.P)	Total Price (S.P)
1	Potassium persulfate, K ₂ S ₂ O ₈	500g	3,600	3,600
2	Vapor Separator	1	44,000	44,000
3	AAReaction Coil Assembly	1	4,250	4,250
4	Tube, Fluor., 1000mm	2	2,000	4,000
5	Graphite Cap	1	11,800	11,800
6	Graphite Holder	1	7,200	7,200
7	Nebulixer Assembly	1	37,000	37,000
8	Stabilizer 10KVA	1	30,000	30,000
9	Graphite Tube (Pyro)	10	5,000	50,000
10	Graphite Tube (HD)	2	2,300	4,600
11	Duetrium Lamp	1	35,000	35,000
12	Acetylene Gas Cylinder	40L	8,000	8,000
Grand Total (S.P)				239,450
Grand Total (USD)				4,587

*** Equipment procured by JICA Syria is mentioned in the main report.**

Quotation Table for Atomic Absorption Spectrophotometer for JICA

Agency : _____ Name of AAS : _____

Additional information should be attached separately. Do not change the format.

Item No.	Name of equipment	Required technical specifications (Alternatives are not admitted)	Quantity	Unit Price US Dollars (DDU)	Sub Total Price
1	Atomic Absorption Spectrophotometer	<p>◇ A complete atomic absorption spectrophotometer set</p> <ul style="list-style-type: none"> Flame – flameless atomizer unit switching : automatic (semi or fully) or not necessary to switch at all Beam quantity : single / double Wavelength range : 190–900nm or wider Background correction : Deuterium / Self Reverse / Zeeman •Lamp Lamp for correction should be equipped Number of Hollow Cathode Lamps set in the main machine : 6 or more •Software Measurement mode : both of flame and furnace Method : calibration curve method standard addition method Drift correction : automatic (PC controlled) Calculation : final concentrations from sample volumes and other factors •Burner unit Burner head : standard head for C2H2–air, Qty (1) Burner head : high temperature head for N2O–C2H2, Qty (1) Nebulizer : Pt–Ir capillary with Teflon orifice, Qty (1) Chamber : polypropylene / polyethylene / Teflon, Qty (1) Positioning : Automatic (fully or semi) flame – furnace switching and searching optimum alignment of burner or beam (if necessary to switch flame – furnace atomizer unit) •Gas flow rate / pressure control Automatic (PC controlled) 	1 set		
	(to be continued)				

Item No.	Name of equipment	Required technical specifications	Quantity	Unit Price	Sub Total
(1)	Atomic Absorption Spectrophotometer (continued)	<ul style="list-style-type: none"> ▪ Graphite furnace unit Drying : digital current control and/or infrared Ashing and atomization : digital temperature control Heating temperature : ambient to 2000°C or more Inner gas flow rate : 0 to 1.5 L/min or more Graphite tube : High-density / high-density pyro-coated graphite tube, Qty (15) Platform tube, Qty (15) ▪ Operating manual in English ▪ Power source : AC220V 50Hz (single phase) C-type plug 			
2	Spare parts	<ul style="list-style-type: none"> ◇ Spare parts and consumables provided initially (<u>attach a breakdown</u>) Required by measurement for more than 1 year Required by measurement for more than 1000 samples 	1 set		
3	Auto sampler	<ul style="list-style-type: none"> ◇ Automatic sampler Automatic sampler for flame and furnace system Functions <ul style="list-style-type: none"> Flame : auto rinse, random access Furnace : auto rinse, random access, auto dilution, auto reagent addition for calibration curve Max. positions : 60 or more positions for samples for both flame and furnace Vials or other vessels suitable for automatic samplers <ul style="list-style-type: none"> Vials for flame : Qty (more than the numbers of positions of the sampler) Vials for furnace : Qty (more than the numbers of positions of the sampler) Solvent container : more than 1000mL Sample syringe, pump or injection <ul style="list-style-type: none"> Flame : injection volume 2 to 200 μ L or wider / pump (without limit) Furnace : syringe with max. suction volume of 20 μ L or more 	1 set		
4	PC, etc	<ul style="list-style-type: none"> ◇ PC set OS : Officially licensed MS-Windows XP (English version) , Qty (1) Monitor : 15 inch-size or larger, Qty (1) Printer : A4 laser printer which is suitable to print required information, Qty (1) On-line UPS for PC : working for 10 minute or more while electrical power failure, Qty (1) 	1 set		

Item No.	Name of equipment	Required technical specifications	Quantity	Unit Price	Sub Total
5	Equipment for As, Sb and Hg	◇ Special equipment for As, Sb and Hg	1 set		
		Hydride vapor generator unit for analysis of : As (quantitation limit must be less than $1 \mu\text{g/L}$) Sb (quantitation limit must be less than $2 \mu\text{g/L}$) Hg (quantitation limit must be less than $0.5 \mu\text{g/L}$) Nozzle assembly Absorption cell, Qty (2) Cell holder Suitable bottles for reagents <u>note: quantitation limits = detection limits \times 10/3</u>			
6	Equipment for Hg	◇ Special equipment for Hg	1 set		
		<u>(if necessary besides above mentioned hydride vapor generator)</u> Mercury vaporizer unit for analysis of : Hg (quantitation limit must be less than $0.5 \mu\text{g/L}$) Nozzle assembly (including rubber stopper with a straight glass frit having a coarse porosity) Gas-flow cell Cell holder Drainage container with stopping Reaction flask suitable to the assembly (the rubber stopper), Qty (30)			
7	Air compressor	◇ Low Noise Air compressor	1 set		
		Mist (oil) separator			
8	Cooling unit	◇ Cooling water circulator	1 set		
		Nozzle assembly with connection kit for graphite furnace Suitable for operating graphite furnace method			

Item No.	Name of equipment	Required technical specifications	Quantity	Unit Price	Sub Total
9	Lamp	◇ Hollow cathode lamp for each element			
		lamp for Ag	1		
		lamp for Al	1		
		lamp for As	1		
		lamp for Ba	1		
		lamp for Be	1		
		lamp for Cd	1		
		lamp for Cr	1		
		lamp for Cu	1		
		lamp for Fe	1		
		lamp for Hg	1		
		lamp for Mn	1		
		lamp for Ni	1		
		lamp for Pb	1		
		lamp for Sb	1		
		lamp for Zn	1		
	Sub total				

Item No.	Name of equipment	Required technical specifications	Quantity	Unit Price	Sub Total
10	Freight, etc.	◇ Freight	1 set		
		◇ Customs duty (excluded) (Imported products should be delivered into the Tax-Free Zone in the airport)			
		◇ Customs clearance (Shipping from the manufacturer should be reported immediately to JICA Syria Office for quick procedure)	1 set		
		◇ Installation To the laboratory on the 2nd floor without lifts (Installation should be completed within 3 month since the order)	1 set		
		Sub total			
11	Training	◇ Training	1 set		
		Initial training on site should be provided by engineers from the manufacture or authorized dealer (supplier) for 5 consecutive or separate days set by JICA Expert Team (5 days excluding installation)			
12	Maintenance	◇ Periodical maintenance for the first year See attachment 1	1 set		
		◇ Periodical maintenance for the 2nd – 5th year (obligation) See attachment 1, The fee mentioned here can not be raised for these 4 years. The contents and frequency of the maintenance can not be increased. This fee is not going to be included in the total price for this quotation.	4 sets		excluded
13	Gas supply	◇ Gas cylinder			
		acetylene	2		
		nitrous oxide	2		
		argon	2		
		◇ Heater for nitrous oxide	1		
		◇ Regulator	3		
		◇ Gas pipe Stainless pipes including installation (see attachment 2)	1 set		
		Sub total			

Item No.	Name of equipment	Required technical specifications	Quantity	Unit Price	Sub Total
14	Fume food	◇ A stainless fume food with ventilator including installation (see attachment 3)	1 set		
15	Standard solutions	◇ Standards (1000mg/L, 500mL or more)			
		Standard solution for Ag	1		
		Standard solution for Al	1		
		Standard solution for As	1		
		Standard solution for Ba	1		
		Standard solution for Be	1		
		Standard solution for Cd	1		
		Standard solution for Cr	1		
		Standard solution for Cu	1		
		Standard solution for Fe	1		
		Standard solution for Hg	1		
		Standard solution for Mn	1		
		Standard solution for Ni	1		
		Standard solution for Pb	1		
		Standard solution for Sb	1		
Standard solution for Zn	1				
	Sub total				
16	Matrix modifier	◇ Matrix modifier (Suitable concentration, 100mL or more)			
		Pd(NO ₃) ₂	1		
		Mg(NO ₃) ₂	1		
		CaCl ₂	1		
		Sub total			
Warranty : All machineries and accessories mentioned above (excluding spare parts and consumables) must be guaranteed for 1 year after installation.					
Total Price (DDU)					

Attachment 1 : Periodical maintenance

The supplier shall be required to maintain the instrument with accessories considering analyzed results periodically within each period set by JICA Expert Team. The frequency of periodical maintenance should be 5 times per year. The specific dates should be set through consultation between the supplier and JICA Expert Team or the Damascus DFEA.

Every maintenance activity should be done with the laboratory personnel to be in attendance. The supplier should explain what they do for maintenance to the laboratory personnel and cooperate to help improving technology transfer to the laboratory personnel.

The supplier must report every maintenance activity by documents to with certain format prepared by JICA Expert Team.

Periodical maintenance does not contain extraordinary maintenance required in case of emergency.

The whole period of the periodical maintenance described here is one year. However, the periodical maintenance must be continued for 5 years in all. The conditions (frequency, contents, maintenance fee, etc.) of the periodical maintenance after one year can be decreased through consultation between the supplier and the Damascus DFEA.

The maintenance after one year should be done on the Damascus DFEA's expense.

Consumables required in all periodical maintenance should be provided at the Damascus DFEA's expense.

The supplier should provide necessary equipment, spare parts and consumables suitably for 5 years at least.

Component 1 : Regular maintenance

The supplier shall be required to check items as follows at each time of regular maintenance. The frequency of regular maintenance should be 5 times per year (every time of the periodical maintenance).

The values as criteria mentioned below should be set by JICA Expert Team in the period between the introduction of the instrument and the first periodical maintenance.

1) General maintenance

The supplier should confirm that the instrument with all accessories are in good condition available for each analysis. If they are not, the supplier should deal with the problem and report the result to the laboratory side by means of methods including the contents of the periodical inspection described in Component 2.

The supplier should provide the consumables enough for operations until the next maintenance at least.

2) Confirmation of linearity of calibration curves

The supplier should check all calibration curves obtained from analyses after the previous maintenance.

The supplier should confirm that the value of correlation coefficient of each calibration curve satisfy a certain value as a criterion. If they don't, the supplier should deal with the problem and report the result to the laboratory side.

3) Confirmation of stability of absorbance (each)

The supplier should confirm that the difference between a value of peak area or height of absorbance of an analysis and one of the previous analysis is not larger than a certain value as a criterion. If it is, the supplier should deal with the problem and report the result to the laboratory side.

The target values should be from the largest concentrations of calibration curves (standards) for different analyses of the same element.

4) Confirmation of stability of absorbance (whole)

The supplier should confirm that the %RSD (CV) of values of peak area or height of absorbance of all analyses within one year is not larger than a certain value as a criterion. If it is, the supplier should deal with the problem and report the result to the laboratory

The target values should be from the largest concentrations of calibration curves (standards) for all analyses of the same element within one year.

Component 2 : Periodical inspection

The supplier shall be required to inspect in accordance with the methods authorized by the manufacturer 2 times per year (approximately once per six months). Periodical inspection should be done with 2 out of 5 regular maintenance. The inspection should include contents as follows at least.

1) Burner maintenance

- Cleaning the burner head
- Cleaning the nebulizer and the tube (the tube should be replaced as necessary)
- Cleaning the chamber

2) Furnace maintenance

- Cleaning graphite cap, holder and other related accessories
- Cleaning the temperature sensor
- Cleaning the graphite tube (should be replaced as necessary)

3) Atomizer positioning adjustment

- Burner positioning adjustment
- Furnace positioning adjustment

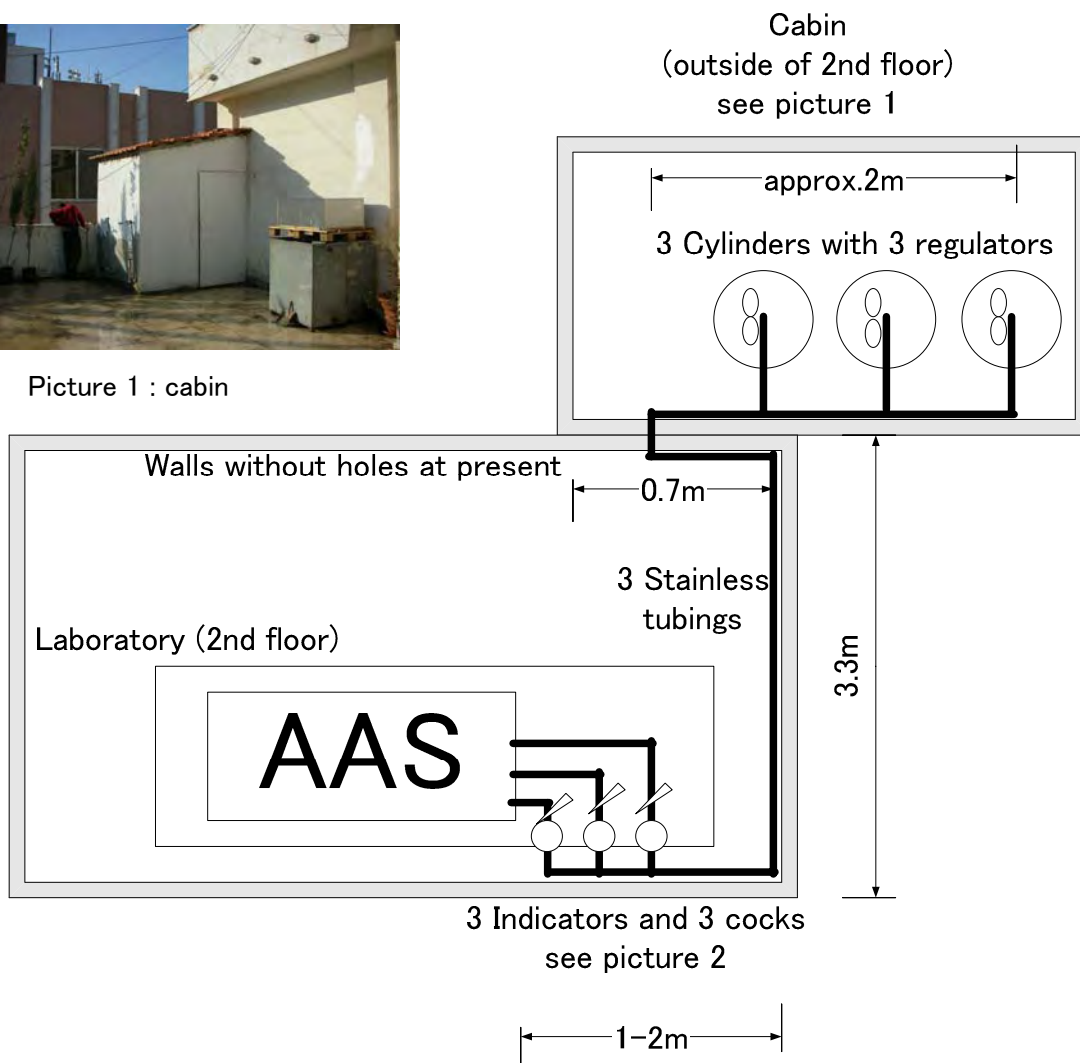
4) Replacing the deuterium lamp as necessary

5) Checking for gas leaks in tubing

Attachment 2 : Rough sketch for gas pipes



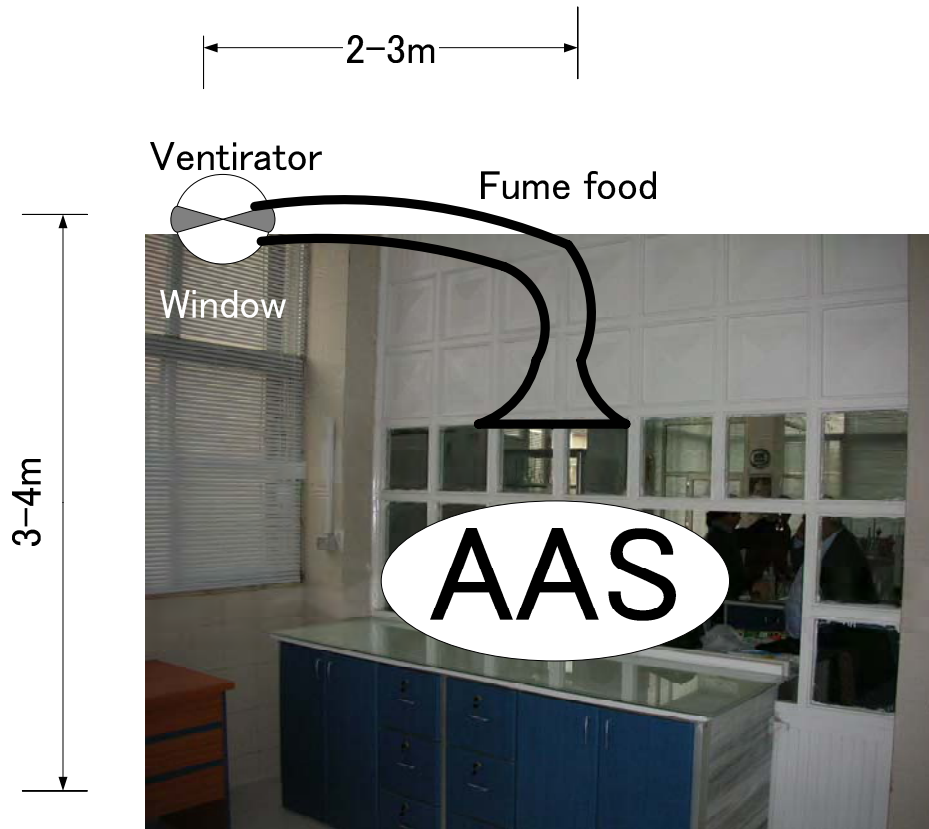
Picture 1 : cabin



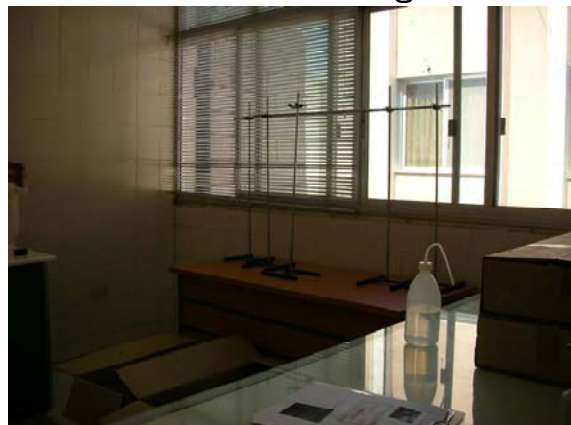
Picture 2 : Example of indicators and cocks



Attachment 3 : Rough sketch for a fume food



cabin seen through window



lab table for AAS

Picture 3 : Lab for AAS

Quotation Table for metals analysis apparatus for JICA

Agency : _____

No.	Name	Specification	Spec Note	Unit price (US\$)	Qty	Sub total
1	Beaker	Glass, Griffin squat form, 100mL			60	
		Glass, Griffin squat form, 150mL			30	
		PTFE, Griffin squat form, 100mL			40	
		Polypropylene, Griffin squat form, 500-600mL			10	
2	Bottle	Polypropylene or HDPE, white, screw closure (leak-proof), rectangle, with handle, 20L			4	
		Polypropylene or HDPE, white, screw closure (leak-proof), wide neck,			200	
		Polypropylene or HDPE, white, screw closure (leak-proof), wide neck,			30	
		Polypropylene or HDPE, white, round-shaped, screw closure (leak-proof), 1000mL			500	
		Polypropylene or HDPE, white, round-shaped, screw closure (leak-proof),			20	
3	Brush	ϕ 10 to 12 mm			10	
		ϕ 16 to 25 mm			10	
4	Bucket	Polypropylene or HDPE, with pouring spout and rigid handle			3	
		Polypropylene or HDPE, rectangular shape, 250 * 180 * 150 mm or larger in total			3	
5	Cylinder	Glass, spouted, 50mL, grads. 1mL, tolerance ± 0.25 mL			4	
		Glass, spouted, 100mL, grads. 1mL, tolerance ± 0.5 mL			4	
		Glass, joint and stopper, 100mL, grads. 1mL			30	
6	Eye protection	Polycarbonate, with clear lenses, browguard and hinged sidearms, can be worn over spectacles, large			2	
		Polycarbonate, with clear lenses, browguard and hinged sidearms, can be worn over spectacles, medium			3	
7	Face mask	Disposable, with metal nose piece, standard sized			200	
8	Filtration paper	Cellulose, pore size 2.7um or similar, ϕ 90-110mm, hardened (high wet strength and chemical resistance), ashless (<0.01%ash), 100pcs/pack			4	
		Cellulose, pore size 8um or similar, ϕ 90-110mm, hardened (high wet strength and chemical resistance), ashless (<0.01%ash), 100pcs/pack			2	
		Cellulose, pore size >10um, 460*570mm or similar, cellulose,			200	

9	Flask	Glass, Erlenmeyer, wide neck, graduated, 250mL, clear			30	
		Glass, Erlenmeyer, narrow neck, graduated, 300mL, clear, stoppered or screw cap			3	
		Glass, volumetric, 50mL, tolerance $\pm 0.06\text{mL}$ or better, clear, joint and stopper			10	
		Glass, volumetric, 100mL, tolerance $\pm 0.1\text{mL}$ or better, clear, joint and stopper			40	
		Glass, volumetric, 200mL, tolerance $\pm 0.15\text{mL}$ or better, clear, joint and stopper			6	
		Glass, volumetric, 500mL, tolerance $\pm 0.25\text{mL}$ or better, clear, joint and stopper			10	
		Glass, volumetric, 1000mL, tolerance $\pm 0.4\text{mL}$ or better, clear, joint and stopper			3	
		Polymethylpentane or polypropylene, volumetric, 100mL, limit of error 0.16mL or better, clear or half-clear, joint and stopper			20	
10	Funnel	Polypropylene, ϕ 60mm or similar			30	
		Polypropylene, ϕ 150mm or similar			5	
11	Glove	Polyethylene, disposable, textured surface, non-sterile, medium,			3	
		Latex, disposable, examination, lightly powdered or powder free, non-sterile, medium, 100pcs/pack			5	
		Neoprene, long (elbow-length), acid resistant, abrasion and puncture resistant, large			2	
12	Hot plate	Ceramic, 200-250 * 200-250mm, with temperature control (ambient to 300°C or more)			3	
13	Indicator paper (pH)	Dispenser reel, 5m long * 6mm wide or similar, with reference chart showing color changes. pH range 1-11 or wider			4	
14	Label tape	Paper, roll, self-adhesive, dimensions 24 * 12.5mm or similar, 100pcs/pack			20	

15	Pipette	Polyethylene, graduated, Pasteur, capacity 3–5mL, 500pcs/pack			1	
		Glass, graduated, 1mL, grads. 0.01mL, tolerance ± 0.006 or better			4	
		Glass, graduated, 2mL, grads. 0.02mL, tolerance ± 0.01 or better			6	
		Glass, graduated, 5mL, grads. 0.05mL, tolerance ± 0.03 or better			6	
		Glass, graduated, 10mL, grads. 0.1mL, tolerance ± 0.05 or better			6	
		Glass, graduated, 25mL, grads. 0.2mL, tolerance ± 0.1 or better			4	
		Glass, one mark (whole), 1mL, tolerance ± 0.008 mL or better			6	
		Glass, one mark (whole), 2mL, tolerance ± 0.01 mL or better			4	
		Glass, one mark (whole), 5mL, tolerance ± 0.015 mL or better			4	
		Glass, one mark (whole), 10mL, tolerance ± 0.02 mL or better			4	
		Glass, one mark (whole), 20mL, tolerance ± 0.03 mL or better			4	
16	Pipette filler	Molded rubber bulb, approx. 60mL capacity, 3 glass ball valves, suitable for pipettes of 2–25mL or wider			3	
		Plastic, capacity 0.5–2mL or wider, standard release speed			2	
		Plastic, capacity 2–10mL or wider, standard release speed			2	
		Plastic, capacity 10–25mL or wider, standard release speed			2	
17	Pipette jar	Plastic, ϕ 80 height 420 (cylinder) or larger			2	
18	Pipette stand	Plastic, horizontal, holding 6 or more			4	
		Plastic, vertical, holding 20 or more, for drying and storage			3	
19	Sealing film	width 100mm length 30m or longer, can be enlarged as much as 10 or more times the original area			2	
20	Soak jar	Plastic container, acid resistant, 50–80L			1	
21	Tray	Plastic, shallow, 450 * 350 * 30 mm or similar			20	
		Plastic, rigid, 400 * 300 * 70 mm or similar			10	
		Plastic, rigid, 600 * 350 * 150 mm or similar, suitable for the soak jar			10	
22	Trolley	Plastic or plastic coated, two or more shelves, with casters, 850(w) * 1000(d) * 850(h) mm or similar			2	
23	Wash bottle	Polyethylene, narrow neck, leak-proof, with rinser tube, imported, 1000mL			10	
24	Watch glass	Glass, rigid, 65–75mm			40	
		PTFE, 65–75mm			40	
25	Freight				1	
26	Customs	Customs duty, clearance are for imports. Delivery is to Damascus DFEA in			1	
27	Customs clearance	Jaubar. If these expenses are included in the prices mentioned above, write "0" to fill up .			1	
28	Delivery				1	
Total						

Quotation Table for metals analysis reagents for JICA

Agency : _____

No.	Name	Specification	Spec Note	Unit	Quantity	Unit price (US\$)	Sub total
1	Nitric acid, HNO ₃	solution, conc (65%), trace analysis grade		2.5L	20L		
2	Nitric acid, HNO ₃	solution, 60%, lowest grade		2.5L	30L		
3	Potassium permanganate, KMnO ₄	extra pure / trace analysis grade		500g	1,000g		
4	Potassium persulfate, K ₂ S ₂ O ₈	extra pure / trace analysis grade		500g	500g		
5	Sodium chloride, NaCl	extra pure / trace analysis grade		1,000g	2,000g		
6	Hydroxylamin sulfate (Hydroxylammonium sulfate), (NH ₂ OH) ₂ ·H ₂ SO ₄	analytical or reagent grade		250g	1,500g		
7	Stannous chloride (Tin(II) chloride), SnCl ₂	reagent or extra pure grade		1,000g	1,000g		
8	Stannous sulfate (Tin(II) sulfate), SnSO ₄	reagent or extra pure grade		1,000g	1,000g		
9	Sulfuric acid, H ₂ SO ₄	solution, conc (95–98%), extra pure or trace analysis grade		2.5L	5L		
10	Manganese perchlorate, Mg(ClO ₄) ₂	lowest grade		1,000g	1,000g		
11	Hydrochloric acid, HCl	solution, conc (37%), extra pure or trace analysis grade		2.5L	7.5L		
12	Sodium borohydride, NaBH ₄	analytical or trace metals grade		100g	100g		
13	Sodium hydroxide, NaOH	pellets, analytical or extra pure grade		1,000g	1,000g		
14	Sulfanilamide, C ₆ H ₈ N ₂ SO ₂	analytical or extra pure grade		250g	250g		
15	Freight	Customs duty, clearance are for imports. Delivery is to Damascus DFEA in Jaubar. If these expenses are included in the prices mentioned above, write "0" to fill up .		1 set	-		
16	Customs duty			1 set	-		
17	Customs clearance			1 set	-		
18	Delivery			1 set	-		
Total							

Details of Agencies for AAS

Agency	Analytik jena SY	AL-AHAHBA	MIMOSA
Manufacturer of AAS	Analytik jena	Shimadzu	Varian
(Country)	Germany	Japan	U.S.A
Personnel	Mr. Ahmad Mohamad Mr. Fayes Abed Al Razeq	Mr. Terki Rekab Mr. Hussam Nabhani	Mr. Sami BAZ
Address	Teliani, Alzahraa St., Damascus, Syria	Al Abed St., Al Buhturi Lane No.3, 3rd floor, Damascus, P.O.Box : 30236	Shakib Arslan St., Masri Bldg Abou Roummaneh, Damascus, Syria P.O.Box : 5098
Tel.	+963 11 3314408	+963 11 4441019	+963 11 3333276
Fax	+963 11 3341966	+963 11 4410364	+963 11 3332290
e-mail	ah-na@scs-net.org	teriaki@scs-net.org	mimosa@net.sy
Sales record of the newest models	7 in Damascus 1 in Daraa 1 in Homs Total 9 in Syria	2 in Damascus 2 in Homs 2 in Hama 3 in others Total 9 in Syria	1 in Tartous 1 in Lattakia Total 2 in Syria

Details of Agencies for Apparatus and Reagents for Metals Analysis

Agency	ALBA Instruments & Chemicals	MASK Scientific	Technical & Laboratory Appliances
Telephone	442 6689	333 3798 3336013	221 7390 223 3434
Facsimile	441 0305	331 3551	222 5527
Address	Azbakieh, DAM	Shukri Asali St. Agou Rhomaneh 8, Al Nejemeh Square, DAM	
Personnel	Mr. Antoun Doummar	Mr. Assaad Khaled, G. M.	Mr. Antoine B. Affaki
E-mail address	antoundoummar@mail.sy	mask@scs-net.org	a.affaki@mail.sy

Annex 3-1:

Equipment List

3.1.5

Air Quality

Equipment supplied before January 2006

(Air Quality Analysis)

Package No.	Equipment	Q'ty			Procurement
		DAM	HOM	ALP	
1	Simple air sampler (procurement in Japan)	120	120	120	Dec. 2005
2	Pararosaniline hydrochloride 25g (procurement in Japan)	1	1	1	
3	N-(1-Naphthyl) ethylenediamine dihydrochloride 25g	1	1	1	

(Note): Item 1 to 3, purchased by JICA

List of Received Equipment and Instrument in Damascus DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of Delivery	Check
Package 1 to 3 Equipment for Air Quality Analysis							
1-1	TSP High Volume Air Sampler	Collection of TSP	Type: Open face (all-weather type), Suction flow rate: flow rate: Approx. 500-1000 liter/min., Accuracy: $< \pm 2\%$ of integrated flow rate, Flow rate detection: Hot wire system or equivalent, Filter exchanger: Manual, Indication function: Date & time indicator, Instantaneous flow rate indicator, Integrated flow rate indicator, Timer operation, Power interruption measure: Automatic restoration	4	HVAS 1 Atomic Energy Commission	October 2006	Nov, 16 2006
2-1	PM10 High Volume Air Sampler	Collection of PM-10	Type: Open face (all-weather type), Cut particles less than 10um diameter by rate of 50%, Suction flow rate: flow rate: Approx. 1000 liter/min., Accuracy: $< \pm 2\%$ of integrated flow rate, Flow rate detection: Hot wire system or equivalent, Filter exchanger: Manual, Indication function(digital): Date & time indicator, Instantaneous flow rate indicator, Integrated flow rate indicator, Timer operation, Power interruption measure: Automatic restoration (time memory) Besides, prepare three Flow caibration orifice.	4	TE-6070D Pacwil Environmental	October 2006	Nov, 16 2006
2-2	Low Volume Air Sampler	Collection of PM-10	Particle size classification: Gravitational separation or equivalent, Filter size: Approx. $\phi 47$ mm, Filter holder: Exchangeable, Filter exchanger: Manual, Suction flow rate: 20 liter/min. or more	4	ISAP 1050 GG2.3 Ingenieurburo Schulze Automation	Sep. 3 2006.	
3-1	Handy Sampler	Collection of toxic gas elements	(1) Main unit: Suction flow rate: Max. 2.5 L, Suction pressure: Max. 1000 mm H2O, Flow meter: Approx. 0 to 5 L/min., Accuracy: $< \pm 2\%$ of integrated flow rate, (2) Impinger (bottle) : Volume: Applox. 30 mL (Absorbent liquid), Material	4	HS-7 Kimoto	Aug. 16, 2006	Aug. 16, 2006

List of Received Equipment and Instrument in Damascus DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of	Check
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Package 4 Meteorological instrument (A)			Qty	Model	Delivery	Check
4) Wether station			3			
4-1	Wind Direction & Speed Meter	Analysis of data	3	WD: WE 550 WV: WE 570 Data Logger: GL500 Global Water	Aug. 3, 2006	Aug. 8, 2006
4-2	Thermometer / Hygrometer	Analysis of data	3	WE 700/ WE 600 Global Water	Aug. 3, 2006	Aug. 8, 2006
4-3	Solar radiation meter	Analysis of data	3	WE 300 Global Water	Aug. 3, 2006	Aug. 8, 2006
4-4	Photovoltaic generation system	Supplies power to the meteorological instrument.	3	80 mA, 350 mA Global Water	Aug. 3, 2006	Aug. 8, 2006
Package 5 Meteorological instrument (B)						
5-1	Asman ventilation psychrometer	Proofreading of temperature and humidity	1	-10 to +60 deg. C Adolf Thies	Jul. 2006	Aug. 5, 2006

List of Received Equipment and Instrument in Damascus DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of Delivery	Check
Package 6 Equipment List for Laboratories							

6-1	Micro Balance	For the samples and the reagents	Type: Suspended pan or top loading, Weight capacity: More than 200 g, Readability: Less than 0.1 mg, Repeatability: less than 0.1 mg, Linearity: Less than + 0.2 mg, Pan diameter: Approx. 80 mm	1	Boeco BBL31 (Germany)	Aug. 3, 2006	Aug. 3, 2006
6-2	Refrigerator	For the samples and the reagents	Doors: Two, Defrosting: Automatic / frost free, Capacity: 350 liter or equivalent size, Thermostat: Step control, Temperature of refrigerator compartment: Constant 4 degreeC	1	Capacity: 350 liter (Local)	Aug. 3, 2006	Aug. 3, 2006
6-3	Auto-dry desiccators	For the samples and the reagents	Capacity: 50 liter or equivalent size, Shelf board material: SUS 430, Humidity control: Air-drying with silicagel	1	Made in Germany	Nov. 16, 2006	Nov. 19, 2006
6-4	Locker for reagents	For the reagents	Size: W1,200×D400×H1,800 (with drawer), Material: steel (Epoxy powder coating) or equivalent, Structure: Two shelves type (Upper: Double sliding doors made of glass, Lower: Double sliding doors made of steel),	1	Local	Aug. 3, 2006	Aug. 3, 2006
6-5	UV/VIS Spectrometer	Analysis of toxic substance	Photometric system: Single beam, Light source: Tungsten-Halogen and D2 lamp, Measurement range: 0 to 125%T, 0.00 to 2.500 Abs, Wavelength range: Should cover 200 to 900 nm, Wavelength accuracy: less than ±0.3 nm, Wavelength repeatability: less than ±0.3 nm, Spectral bandwidth: less than 2 nm,	1	Spectroscan 50 (UK)	Aug. 3, 2006	Aug. 3, 2006

List of Received Equipment and Instrument in Homs DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of Delivery	Check
Package 1 to 3 Equipment for Air Quality Analysis							
1-1	TSP High Volume Air Sampler	Collection of TSP	Type: Open face (all-weather type), Suction flow rate: flow rate: Approx. 500-1000 liter/min., Accuracy: $< \pm 2\%$ of integrated flow rate, Flow rate detection: Hot wire system or equivalent, Filter exchanger: Manual, Indication function: Date & time indicator, Instantaneous flow rate indicator, Integrated flow rate indicator, Timer operation, Power interruption measure: Automatic restoration	4	HVAS 1	October 2006	Jan, 28 2007
2-1	PM10 High Volume Air Sampler	Collection of PM-10	Type: Open face (all-weather type), Cut particles less than 10um diameter by rate of 50%, Suction flow rate: flow rate: Approx. 1000 liter/min., Accuracy: $< \pm 2\%$ of integrated flow rate, Flow rate detection: Hot wire system or equivalent, Filter exchanger: Manual, Indication function(digital): Date & time indicator, Instantaneous flow rate indicator, Integrated flow rate indicator, Timer operation, Power interruption measure: Automatic restoration (time memory) Besides, prepare three Flow caibration orifice.	4	TE-6070D	October 2006	Jan, 28 2007
2-2	Low Volume Air Sampler	Collection of PM-10	Particle size classification: Gravitational separation or equivalent, Filter size: Approx. $\phi 47$ mm, Filter holder: Exchangeable, Filter exchanger: Manual, Suction flow rate: 20 liter/min. or more,	4	ISAP 1050 GG2.3	Sep. 5 2006	
3-1	Handy Sampler	Collection of toxic gas elements	(1) Main unit: Suction flow rate: Max. 2.5 L, Suction pressure: Max. 1000 mm H ₂ O, Flow meter: Approx. 0 to 5 L/min., Accuracy: $< \pm 2\%$ of integrated flow rate, (2) Impinger (bottle) : Volume: Applx. 30 mL (Absorbent liquid), Material	4	HS-7 Kimoto	Aug. 20, 2006	Aug. 20, 2006

List of Received Equipment and Instrument in Homs DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of	Check
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Package 4 Meteorological instrument (A)			Q'ty	Model	Delivery	Check
4 Wether station			3			
4-1	Wind Direction & Speed Meter	Analysis of data	3	WD: WE 550 WV: WE 570 Data Logger: GL500 Global Water	Aug. 20, 2006	Aug. 22, 2006
4-2	Thermometer / Hygrometer	Analysis of data	3	WE 700/ WE 600 Global Water	Aug. 20, 2006	Aug. 22, 2006
4-3	Solar radiation meter	Analysis of data	3	WE 300 Global Water	Aug. 20, 2006	Aug. 22, 2006
4-4	Photovoltaic generation system	Supplies power to the meteorological instrument.	3	80 mA, 350 mA Global Water	Aug. 20, 2006	Aug. 22, 2006
Package 5 Meteorological instrument (B)						
5-1	Asman ventilation psychrometer	Proofreading of temperature and humidity	1	-10 to +60 deg. C	Jul. 2006	Aug. 21, 2006

List of Received Equipment and Instrument in Homs DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of Delivery	Check
Package 6 Equipment List for Laboratories							

6-1	Micro Balance	For the samples and the reagents	Type: Suspended pan or top loading, Weight capacity: More than 200 g, Readability: Less than 0.1 mg, Repeatability: less than 0.1 mg, Linearity: Less than + 0.2 mg, Pan diameter: Approx. 80 mm	1	Boeco BBL31 (Germany)	Aug. 20, 2006	Aug. 20, 2006
6-2	Refrigerator	For the samples and the reagents	Doors: Two, Defrosting: Automatic / frost free, Capacity: 350 liter or equivalent size, Thermostat: Step control, Temperature of refrigerator compartment: Constant 4 degreeC	2	Capacity: 350 liter (Local)	Aug. 20, 2007	Aug. 20, 2007
6-3	Auto-dry desiccators	For the samples and the reagents	Capacity: 50 liter or equivalent size, Shelf board material: SUS 430, Humidity control: Air-drying with silicagel	1	Made in Germany	Jan. 28, 2007	Jan. 29, 2007
6-4	Locker for reagents	For the reagents	Size: W1,200×D400×H1,800 (with drawer), Material: steel (Epoxy powder coating) or equivalent, Structure: Two shelves type (Upper: Double sliding doors made of glass, Lower: Double sliding doors made of steel),	2	Local	Aug. 20, 2006	Aug. 20, 2006
6-5	UV/VIS Spectrometer	Analysis of toxic substance	Photometric system: Single beam, Light source: Tungsten-Halogen and D2 lamp, Measurement range: 0 to 125%T, 0.00 to 2.500 Abs, Wavelength range: Should cover 200 to 900 nm, Wavelength accuracy: less than ±0.3 nm, Wavelength repeatability: less than ±0.3 nm, Spectral bandwidth: less than 2 nm,	1	Spectroscan 50 (UK)	Aug. 20, 2006	Aug. 20, 2006

List of Received Equipment and Instrument in Aleppo DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of Delivery	Check
Package 1 to 3 Equipment for Air Quality Analysis							
1-1	TSP High Volume Air Sampler	Collection of TSP	Type: Open face (all-weather type), Suction flow rate: flow rate: Approx. 500-1000 liter/min., Accuracy: < ± 2% of integrated flow rate, Flow rate detection: Hot wire system or equivalent, Filter exchanger: Manual, Indication function: Date & time indicator, Instantaneous flow rate indicator, Integrated flow rate indicator, Timer operation, Power interruption measure: Automatic restoration	4	HVAS 1	October 2006	Nov, 21 2006
2-1	PM10 High Volume Air Sampler	Collection of PM-10	Type: Open face (all-weather type), Cut particles less than 10um diameter by rate of 50%, Suction flow rate: flow rate: Approx. 1000 liter/min., Accuracy: < ± 2% of integrated flow rate, Flow rate detection: Hot wire system or equivalent, Filter exchanger: Manual, Indication function(digital): Date & time indicator, Instantaneous flow rate indicator, Integrated flow rate indicator, Timer operation, Power interruption measure: Automatic restoration (time memory) Besides, prepare three Flow caibration orifice.	4	TE-6070D	October 2006	Nov, 21 2006
2-2	Low Volume Air Sampler	Collection of PM-10	Particle size classification: Gravitational separation or equivalent, Filter size: Approx. φ47mm, Filter holder: Exchangeable, Filter exchanger: Manual, Suction flow rate: 20 liter/min. or more,	4	ISAP 1050 GG2.3	Sep. 4 2006	
3-1	Handy Sampler	Collection of toxic gas elements	(1) Main unit: Suction flow rate: Max. 2.5 L, Suction pressure: Max. 1000 mm H2O, Flow meter: Approx. 0 to 5 L/min., Accuracy: < ± 2% of integrated flow rate, (2) Impinger (bottle) : Volume: Applox. 30 mL (Absorbent liquid), Material	4	HS-7 Kimoto	Aug. 30, 2006	Aug. 30, 2006

List of Received Equipment and Instrument in Aleppo DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of	Check
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Package 4 Meteorological instrument (A)			Q'ty	Model	Delivery	Check
4 Wether station			3			
4-1	Wind Direction & Speed Meter	Analysis of data	3	WD: WE 550 WV: WE 570 Data Logger: GL500 Global Water	Aug. 13, 2006	Aug. 15, 2006
4-2	Thermometer / Hygrometer	Analysis of data	3	WE 700/ WE 600 Global Water	Aug. 13, 2006	Aug. 15, 2006
4-3	Solar radiation meter	Analysis of data	3	WE 300 Global Water	Aug. 13, 2006	Aug. 15, 2006
4-4	Photovoltaic generation system	Supplies power to the meteorological instrument.	3	80 mA, 350 mA Global Water	Aug. 13, 2006	Aug. 15, 2006
Package 5 Meteorological instrument (B)						
5-1	Asman ventilation psychrometer	Proofreading of temperature and humidity	1	-10 to +60 deg. C	Jul. 2006	Aug. 13, 2006

List of Received Equipment and Instrument in Aleppo DFEA

(Air Quality Analysis)

NO	Equipment	Usage	Specifications	Q'ty	Model	Date of Delivery	Check
Package 6 Equipment List for Laboratories							

6-1	Micro Balance	For the samples and the reagents	Type: Suspended pan or top loading, Weight capacity: More than 200 g, Readability: Less than 0.1 mg, Repeatability: less than 0.1 mg, Linearity: Less than + 0.2 mg, Pan diameter: Approx. 80 mm	1	Boeco BBL31 (Germany)	Aug. 13, 2006	Aug. 13, 2007
6-2	Refrigerator	For the samples and the reagents	Doors: Two, Defrosting: Automatic / frost free, Capacity: 350 liter or equivalent size, Thermostat: Step control, Temperature of refrigerator compartment: Constant 4 degreeC	2	Capacity: 350 liter (Local)	Aug. 13, 2006	Aug. 13, 2007
6-3	Auto-dry desiccators	For the samples and the reagents	Capacity: 50 liter or equivalent size, Shelf board material: SUS 430, Humidity control: Air-drying with silicagel	1	Made in Germany	Nov. 21, 2006	Nov. 22, 2006
6-4	Locker for reagents	For the reagents	Size: W1,200×D400×H1,800 (with drawer), Material: steel (Epoxy powder coating) or equivalent, Structure: Two shelves type (Upper: Double sliding doors made of glass, Lower: Double sliding doors made of steel),	2	Local	Aug. 13, 2006	Aug. 13, 2007
6-5	UV/VIS Spectrometer	Analysis of toxic substance	Photometric system: Single beam, Light source: Tungsten-Halogen and D2 lamp, Measurement range: 0 to 125%T, 0.00 to 2.500 Abs, Wavelength range: Should cover 200 to 900 nm, Wavelength accuracy: less than ±0.3 nm, Wavelength repeatability: less than ±0.3 nm, Spectral bandwidth: less than 2 nm,	1	Spectroscan 50 (UK)	Aug. 13, 2006	Aug. 13, 2007

Package 7 Glassware List for Laboratories in Damascus, Homs and Aleppo DFEAs (Purchased by JET)

(Air Quality Analysis)

No.	Name	Specifications	Qty				Supplier	Date of Delivery	Unit Price (SP)	Total Price (SP)	Unit Price (US\$)	Total Price (US\$)
			DAM	HOM	ALP	Total						
1	Whole Pipettes	Glass, 1 ml; Tolerance: ± 0.007 ml or better	3	3	3	9	ALBA	Aug. 2006	110	990		
		Glass, 2 ml; Tolerance: ± 0.010 ml or better	3	3	3	9	ALBA	Aug. 2006	130	1,170		
		Glass, 5 ml; Tolerance: ± 0.015 ml or better	5	5	5	15	ALBA	Aug. 2006	125	1,875		
		Glass, 10 ml; Tolerance: ± 0.020 ml or better	5	5	5	15	Tec & Lab	Aug. 2006	150	2,250		
		Glass, 20 ml; Tolerance: ± 0.030 ml or better	3	3	3	9	ALBA	Aug. 2006	220	1,980		
		Glass, 50 ml; Tolerance: ± 0.050 ml or better	2	2	2	6	Tec & Lab	Aug. 2006	290	1,740		
		Glass, 100 ml; Tolerance: ± 0.080 ml or better	2	2	2	6	Tec & Lab	Aug. 2006	360	2,160		
2	Graduated pipettes	Glass, 1 ml; Graduation: 0.01 ml; Tolerance: ± 0.007 ml or better	2	2	2	6	ALBA	Aug. 2006	50	300		
		Glass, 5 ml Graduation: 0.05 ml; Tolerance: ± 0.030 ml or better	3	3	3	9	Tec & Lab	Aug. 2006	80	720		
		Glass, 10 ml Graduation: 0.1 ml; Tolerance: ± 0.050 ml or better	4	4	4	12	ALBA	Aug. 2006	80	960		
3	Pipette Fillers (Rubber Pippeter)	Applicable pipette's capacity: not more than 2mL	1	1	1	3	ALBA	Aug. 2006	278	834		
		Capacity: 25mL	2	2	2	6	ALBA	Aug. 2006	347	2,082		
4	Porcelain mortar	Size: $\phi 180$ mm	1	1	1	3	ALBA	Aug. 2006	537	1,611		
5	Beakers	50 ml, Glass, Color: clear; Graduation: 10 ml or smaller	2	3	3	8	Tec & Lab	Aug. 2006	100	800		
		100 ml, Glass, Color: clear; Graduation: 25 ml or smaller	10	10	10	30	Tec & Lab	Aug. 2006	110	3,300		
		200 ml, Glass, Color: clear; Graduation: 50 ml or smaller	10	10	10	30	ALBA	Aug. 2006	120	3,600		
		300 ml, Glass, Color: clear; Graduation: 50 ml or smaller	2	2	2	6	ALBA	Aug. 2006	135	810		
		500 ml, Glass, Color: clear; Graduation: 50 ml or smaller	5	5	5	15	ALBA	Aug. 2006	180	2,700		
		1000 ml, Glass, Color: clear; Graduation: 100 ml or smaller	2	2	2	6	ALBA	Aug. 2006	280	1,680		
		2000 ml, Glass, Color: clear; Graduation: 200 ml or smaller	1	1	1	3	ALBA	Aug. 2006	465	1,395		
6	Volumetric Flasks	25 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.04 mL or better, joint and poly stopper	2	2	2	6	ALBA	Aug. 2006	280	1,680		
		50 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.06 mL or better, joint and poly stopper	2	4	4	10	ALBA	Aug. 2006	320	3,200		
		100 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.1 mL or better, joint and poly stopper	10	10	10	30	ALBA	Aug. 2006	350	10,500		
		200 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.15 mL or better, joint and poly stopper	2	2	2	6	ALBA	Aug. 2006	440	2,640		
		500 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.15 mL or better, joint and poly stopper	2	2	2	6	Tec & Lab	Aug. 2006	600	3,600		
		1000 ml, Borosilicate glass, A class, Color: clear, Tolerance: ± 0.15 mL or better, joint and poly stopper	1	1	1	3	Tec & Lab	Aug. 2006	880	2,640		
11-1	Erlenmeyer Flasks	100 ml, Borosilicate glass, color: clear	5	5	5	15	ALBA	Aug. 2006	108	1,620		
		200 ml, Borosilicate glass, color: clear	5	5	5	15	Tec & Lab	Aug. 2006	108	1,620		
		300 ml, Borosilicate glass, color: clear	5	5	5	15	Tec & Lab	Aug. 2006	151	2,265		
		500 ml, Borosilicate glass, color: clear	2	2	2	6	ALBA	Aug. 2006	151	906		

		1000 ml, Borosilicate glass, color: clear	1	1	1	3	ALBA	Aug. 2006	236	708			
11-2	Erlenmeyer Flasks with Ground Joints	100 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	15	ALBA	Aug. 2006	322	4,830			
		200 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	15	ALBA	Aug. 2006	333	4,995			
		300 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	5	5	5	15	ALBA	Aug. 2006	354	5,310			
		500 ml, Borosilicate glass, color: clear, with graduation, standard ground (NS) conical socket, NS size: 29	2	2	2	6	ALBA	Aug. 2006	365	2,190			
12	Graduated Cylinders	50 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ± 0.5 ml or better	✓	2	2	2	6	ALBA	Aug. 2006	232	1,392		
		100 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ± 0.5 ml or better	✓	2	2	2	6	ALBA	Aug. 2006	287	1,722		
		200 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ± 1.0 ml or better	✓	2	2	2	6	ALBA	Aug. 2006	463	2,778		
		500 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 ml or smaller, Tolerance: ± 0.5 ml or better	✓	2	2	2	6	ALBA	Aug. 2006	625	3,750		
		1000 ml, Borosilicate glass, A class, Color: clear, with guard, Graduation: 2 ml or smaller, Tolerance: ± 1.0 ml or better	1	1	1	3	ALBA	Aug. 2006	1042	3,126			
14	Watch Dish	$\phi 70$ mm	2	2	2	6	ALBA	Aug. 2006	23	138			
		$\phi 90$ mm	2	2	2	6	ALBA	Aug. 2006	54	324			
		$\phi 120$ mm	2	2	2	6	ALBA	Aug. 2006	54	324			
		$\phi 150$ mm	2	2	2	6	ALBA	Aug. 2006	65	390			
		$\phi 180$ mm	2	2	2	6	ALBA	Aug. 2006	81	486			
16	Wash Bottles with Bottle, Screw Cap, Riser Tube and Tube Holder	Capacity: 500 ml, Type of raiser tube: leek-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polypropylene	3	3	3	9	ALBA	Aug. 2006	43	387			
		Capacity: 1000 ml, Type of raiser tube: leek-proof type Bottle and riser tube; low-density polyethylene; Screw cap and tube holder: Polypropylene	3	3	3	9	ALBA	Aug. 2006	54	486			
17	Beaker with handle	Capacity: 1000 ml, Polypropylene	1	1	1	3	Tec & Lab	Aug. 2006	162	486			
20	Test Tube with stopper	Test tube, 18(dia.) x 180 (L) mm \$16, 100 pcs/case	1	1	1	3	ALBA	Aug. 2006	2683	8,049			
21	Stainless Spoon	Stainless Spoon (middle size: 180 mm)5pc/box	1	1	1	3	ALBA	Aug. 2006	537	1,611			
22	Funnels	Soda-lime glass, Angle: 60°, with short stem, $\phi 70$ mm	5	5	5	15	Tec & Lab	Aug. 2006	143	2,145			
		Soda-lime glass, Angle: 60°, with short stem, $\phi 100$ mm	5	5	5	15	Tec & Lab	Aug. 2006	203	3,045			
23	Glass rods	Glass rods, 1500 (L) x 5(dia.)mm	2	2	2	6	ALBA	Nov. 2006	1500	9,000			
		Glass rods, 1500 (L) x 8(dia.)mm	2	2	2	6	ALBA	Nov. 2006	161	966			
24	Glass tube	Glass tube, 1500 (L) x $\phi 6 \times \phi 8$ mm	2	2	2	6	ALBA	Nov. 2006	100	600			
25	Stoppcock	Stoppcock, $\phi 6 \times \phi 8$ mm, Fluoroplastic (PTFE) or equivalent, Temperature resistant: -200 to $+260^\circ\text{C}$ or more	1	1	1	3	ALBA	Aug. 2006	430	1,290			
26	Pinchcok	Pinchcok (Size M), Stainless steel	5	5	5	15	Tec & Lab	Aug. 2006	95	1,425			
27	Screw Cock	Screw Cock (Size M), Stainless steel	5	5	5	15	Tec & Lab	Aug. 2006	138	2,070			
28	Stopwatch	Manual rolling	1	1	1	3	ALBA	Nov. 2006	4250	12,750			
30	Micro pipet	2~20 μl	1	1	1	3	ALBA	Nov. 2006	7050	21,150			

30	Micro pipet	10~100 μ l	1	1	1	3	ALBA	Nov. 2006	6482	19,446		
31	Chip for micro pipet	0.5~10 μ l, 1000 pcs/package	1	1	1	3	ALBA	Nov. 2006	1073	3,219		
		2~200 μ l, 1000 pcs/package	1	1	1	3	ALBA	Nov. 2006	324	972		
35	Thermometer	Mercury type cylinder shape thermometer, -20~100°C	2	2	2	6	Tec & Lab	Nov. 2006	300	1,800		
36	Beaker tongs	Tongs for flask	1	1	1	3	Tec & Lab	Nov. 2006	325	975		
39	Cork borer	Cork borer sets saw-shaped edge (No. of borers, 12)	1	1	1	3	ALBA	Nov. 2006	1482	4,446		
40	Muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: ϕ 7mm~13mm,	10	10	10	30	ALBA	Nov. 2006	108	3,240		
41	Jumbo muff	Clamp Holders, SUS 304, Horizontal stick/Prop range: ϕ 13mm~21mm,	5	5	5	15	ALBA	Nov. 2006	269	4,035		
42	Clamps	Open diameter: 5~50 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 304	5	5	5	15	ALBA	Nov. 2006	269	4,035		
		Open diameter: 5~80 mm, Versatile, vinyl-coated jaw, 3-prong grip, SUS 305	5	5	5	15	ALBA	Nov. 2006	275	4,125		
43	Tweezers	Odontology department tweezers	2	2	2	6	ALBA	Nov. 2006	376	2,256		
44	Vacuum hose	Vacuum hose ϕ 8 \times ϕ 21mm (5 m/ Unit)	1	1	1	3	ALBA	Nov. 2006	376	1,128		
45	Rubber tube	Rubber tube ϕ 6 \times ϕ 13mm (10 m/ Unit)	1	1	1	3	Tec & Lab	Nov. 2006	1250	3,750		
46	Silicon rubber tube	Silicon rubber tube ' ϕ 6 \times ϕ 8mm, (10m/ Unit)	1	1	1	3	Tec & Lab	Nov. 2006	575	1,725		
		Silicon rubber tube ' ϕ 8 \times ϕ 10mm, (10m/ Unit)	1	1	1	3	Tec & Lab	Nov. 2006	1074	3,222		
48	Tube joint	Straight, Glass, ϕ 6 \times ϕ 8 mm, (10 pcs/ case)	1	1	1	3	ALBA	Nov. 2006	1250	3,750		
		T type, Glass, ϕ 6 \times ϕ 8 mm, (10 pcs/ case)	1	1	1	3	ALBA	Nov. 2006	1425	4,275		
		Y type, Glass, ϕ 6 \times ϕ 8 mm, (10 pcs/ case)	1	1	1	3	ALBA	Nov. 2006	1500	4,500		
49	Support for test tubes	for 18(dia.) x 180 (L) test tube, Number of partitions: 5 \times 10	1	1	1	3	ALBA	Nov. 2006	185	555		
50	Stopper (silicon rubber)	ϕ 15mm	2	2	2	6	Tec & Lab	Nov. 2006	13	78		
		ϕ 20mm	2	2	2	6	Tec & Lab	Nov. 2006	20	120		
		ϕ 25mm	2	2	2	6	Tec & Lab	Nov. 2006	38	228		
		ϕ 30mm	2	2	2	6	Tec & Lab	Nov. 2006	43	258		
		ϕ 35mm	2	2	2	6	Tec & Lab	Nov. 2006	53	318		
		ϕ 40mm	✓ 2	2	2	6	Tec & Lab	Nov. 2006	73	438		
55	Vacuum Pump	Capacity: More than 27 liter/min., Ultimate vacuum: Approx. 5 x 10-3 mmHg, Motor: More than 0.25 HP, No. of stages: Two, Suction tube: Two, approx. 1m each, Other provision: Suitable pressure gauge	✓ 1	1	1	3	ALBA	Nov. 2006	31122	93,366		
57	Micro-syringe	Micro-syringe: 10 μ l	✓ 0	0	0	0		Nov. 2006	3220	0		
58	Glass fiber filter paper*1	ϕ 47 mm, 100 pcs (Low gas absorption type)	✓ 2	2	2	6	ALBA	Nov. 2006	4294	25,764		
59	Quartz fiber filter paper*1	8 \times 10', 25 pcs	8	8	8	24	ALBA	Nov. 2006	5367	128,808		
60	Membrane filter	0.45 μ m, ϕ 47 mm, 100 pcs	2	2	2	6	ALBA	Nov. 2006	1482	8,892		
61	pH Paper	pH paper: Roll type, 4 pcs/case	2	2	2	6	Tec & Lab	Nov. 2006	950	5,700		
64	Tweezers for cell	Type that can be strongly pinched by power of spring	1	1	1	3	ALBA	Nov. 2006	500	1,500		
65	Pipet container	Plastics container or more fine quality, Approx. 450 (W) \times 300 (D) \times 70 (H) mm	1	1	1	3	Tec & Lab	Nov. 2006	925	2,775		
66	Pipet support	Plastic or more fine quality, Size: Approx. 200 \times 170 \times 250 (H) mm, H tipe	1	1	1	3	ALBA	Nov. 2006	1100	3,300		

67	Stand for micro pipet	Number of sets of syringes : 2 pcs or more	1	1	1	3	ALBA	Nov. 2006	3700	11,100		
69	Waste water container	Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 20 L, Color: White, Stopper: Two	8	8	8	24	ALBA	Nov. 2006	220	5,280		
		Type: Bottle with grip (shape: Rectangle), Material: Polyethylene, Capacity: 5 L, Color: White, Stopper: One	8	8	8	24	ALBA	Nov. 2006	110	2,640		
71	Flask filtering	2000 ml, Borosilicate glass	1	1	1	3	ALBA	Nov. 2006	1800	5,400		
73	Seal tape	Made of teflon, Approx. 10mm× 15 m	2	2	2	6	ALBA	Nov. 2006	110	660		
74	Paraffin film	4" × 125 feet	2	2	2	6	ALBA	Nov. 2006	1350	8,100		
77	Brush	For bottle washing (small: No2)	2	2	2	6	Tec & Lab	Nov. 2006	25	150		
		For bottle washing (middle: No5)	2	2	2	6	Tec & Lab	Nov. 2006	25	150		
		For bottle washing (large: No10)	2	2	2	6	Tec & Lab	Nov. 2006	25	150		
		For Pipettes	2	2	2	6	Tec & Lab	Nov. 2006	70	420		
78	Doraing Shelf (Shelf for the glass apparatus dryness)	Standard top board, Size: (W)800×(D)510×(H)1600 mm, With water receiving bat made of stainless steel., Vinyl curtain(Incombustibility), Net board (Resin coating): Mesh size 16~18 mm×2pcs ; 30~50 mm×1pc, 70~95 mm×1pc	0	1	1	2	Tec & Lab	Nov. 2006	15000	30,000		
79	Color comparition tubes	50 ml, with white graduated, With stopping	10	10	10	30	ALBA	Nov. 2006	450	13,500		
		100 ml, with white graduated, With stopping	10	10	10	30	ALBA	Nov. 2006	1100	33,000		
80	Tube support	For color comparition, For 100ml color comparition tube ×10 pcs	1	1	1	3	Tec & Lab	Nov. 2006	350	1,050		
81	Pasteur Pipette	150 mm, 1000 pcs, Borosilicate	1	1	1	3	Tec & Lab	Nov. 2006	1480	4,440		
		230 mm, 1000 pcs, Borosilicate	1	1	1	3	Tec & Lab	Nov. 2006	2600	7,800		
85	Dropping Bottle	50 ml	2	2	2	6	Tec & Lab	Nov. 2006	145	870		
		100 ml	1	1	1	3	Tec & Lab	Nov. 2006	145	435		
86	Crucible	Crucible, porcelain, 30 ml	10	10	10	30	Tec & Lab	Nov. 2006	85	2,550		
		Crucible, porcelain, 50ml	10	10	10	30	Tec & Lab	Nov. 2006	220	6,600		
87	Porcelain dish tongs	Porcelain dish tongs	1	1	1	3	Tec & Lab	Nov. 2006	35	105		
89	Standard Sieve	Approx. Φ200 mm, mesh: 2mm	1	1	1	3	Tec & Lab	Nov. 2006	8200	24,600		
91	Desiccator	Desiccator, glass, 180mm (dia.)	1	1	1	3	ALBA	Nov. 2006	3241	9,723		
92	Conical beaker	250 ml	10	10	10	30	ALBA	Nov. 2006	300	9,000		
94	Bottle for sample collection	500 ml, Polypropylene, with screw closure, Wide-mouth bottle,	20	20	20	60	ALBA	Nov. 2006	161	9,660		
95	Rubber Bulb for Small Pipette	Vinyl-methyl Silicon rubber for graduated pipettes (1ml)	2	2	2	6	ALBA	Nov. 2006	13	78		
		Vinyl-methyl Silicon rubber for graduated pipettes (5ml)	2	2	2	6	ALBA	Nov. 2006	13	78		
		Vinyl-methyl Silicon rubber for graduated pipettes (10ml)	2	2	2	6	ALBA	Nov. 2006	215	1,290		
96	Cleaning Tissue	45 boxes of 200 tissues for wipe out glass ware, etc, Lint-free fiber, Fully absorbent, Size: approx. 115 x 215 mm	1	1	1	3	ALBA	Nov. 2006	2415	7,245		
98	Goggles	Plastic, with side guard	2	2	2	6	ALBA	Nov. 2006	209	1,254		

99	Cleaning Agent	For removing grease, oil, wax, dye residue, silicone, etc. Disinfectant action: by active chlorine Dosing: 2 to 10 % in demineralized water PH-Value: approx. 9 or 8 Volume: 10 kg or more/ 1 container Cleaning agent deconex 11 universal	1	1	1	3	ALBA	Nov. 2006	4186	12,558			
100	Burret	Burret 25 ml , Color: clear	2	2	2	6	Tec & Lab	Nov. 2006	926	5,556			
		Burret 50 ml , Color: clear	2	2	2	6	Tec & Lab	Nov. 2006	1019	6,114			
101	Burret stand	Double holder	1	1	1	3	Tec & Lab	Nov. 2006	695	2,085			
102	Dust jar	Standard metrology of US (APCA) The glass cylinder: Outside diameter: ϕ 137mm, Heit: 250mm (Inside diamet: ϕ 127mm) Stand with prop: 400(W) \times 400(W) \times 1760(H) mm	8	8	8	24	ALBA	Nov. 2006	9880	237,120			
A-1	Volumetric Flasks	25 ml, Borosilicate glass, A class, Color: clear, Tolerance: \pm 0.04 mL or better, joint and poly stopper	6	6	6	18	ALBA	Nov. 2006	280	5,040			
		1000 ml , Borosilicate glass, A class, Color: clear, Tolerance: \pm 0.15 mL or better, joint and poly stopper	3	3	3	9	ALBA	Nov. 2006	880	7,920			
A-2	Filter paper	ϕ 11 cm, 5A type	1	1	1	3	ALBA	Nov. 2006	500	1,500			
		ϕ 11 cm, 5B type	1	1	1	3	ALBA	Nov. 2006	500	1,500			
A-3	Glass rods	Glass rods, 750 (L) x ϕ 8 mm	2	2	2	6	ALBA	Nov. 2006	400	2,400			
A-4	Porcelain funnels	ϕ 11 cm, Porcelain	✓	0	1	1	2	ALBA	Nov. 2006	400	800		
A-5	Silicon stopper	Silicon stopper, for ϕ 15 mm	✓	8	8	8	24	ALBA	Nov. 2006	25	600		
A-6	Graduated cylinders	50 mL, Borosilicate glass, A class, Color: clear, with guard, Graduation: 1 mL, Tolerance: \pm 0.5 mL	✓	5	5	5	15	Analytik J.	Nov. 2006			3.30	49.50
A-7	Dry oven	Capacity: 32 L, Max. temperature: 240°C	✓	0	1	1	2	Analytik J.	Jan. 2007			1,135.00	2,270.00
	Dry oven	Capacity: 32 L, Max. temperature: 240°C		1	0	0	1	ALBA	Jan. 2007	54,000	54,000		
A-8	Digital balance	Measurement range: 0 to 400 g, Sensitivity: 0.01 g		1	1	1	3	Chemical S.	Jan. 2007			580.00	1,740.00
	Total											1,039,071	4,059.50

(Note: Purchased by JET)

Package 8 Reagent List for Laboratories in Damascus, Homs and Aleppo DFEAs (Purchase

(Air Quality Analysis)

NO	Equipment	Usage	Unit	Q'ty		
				DAM	HOM	ALP
III	Reagent for air quality analysis					
1	Acetic acid (CH ₃ COOH)	NO2	2.5 L	1	1	1
2	Sulfanilic acid (H ₂ NC ₅ H ₄ SO ₃ H)	NO2	100g	1	1	1
3	N-(1-Naphthyl) ethylenediamine dihydrochloride For NOx analysis (C10H7NHCH2CH2NH2·2HCl)	NO2	25g	1	1	1
4	Potassium permanganate For NOx analysis (KMnO ₄)	NO2	1 kg	1	1	1
5	Sulfuric acid (H ₂ SO ₄)	NO2, F	2.5 L	1	1	1
6	Sodium nitrite (NaNO ₂)	NO2	500g	1	1	1
7	Chloroform, certified (CHCl ₃)	NO2	2.5 L	1	1	1
8	Barium hydroxide octahydrat (Ba(OH) ₂ · 8H ₂ O)	NO2	500g	1	1	1
9	Triethanol amine (N(CH ₂ CH ₂ OH) ₃)	NO2	500ml	1	1	1
10	Sodium azide (NaN ₃)	SO2	100g	1	1	1
11	Pararosanilin hydrochloride ((NH ₂ C ₅ H ₄) ₂ CLC ₅ H ₄):NH·HCL)	SO2	25g	1	1	1
12	Hydrocloric acid (HCL)	SO2	2.5 L	1	1	1
13	Formaldehyde	SO2	2.5 L	1	1	1
14	Sodium hydrogen sulfite (NaHSO ₃)	SO2	25g	1	1	1
15	Iodine (0.1 N)	SO2,Ox	500ml	1	1	1
16	Sodium sulfate (Na ₂ SO ₄)	SO2	500g	1	1	1
17	Mercury (II) chloride (HgCl ₂)	SO2	500g	1	1	1
18	Sodium chloride (NaCL)	SO2	1 kg	1	1	1
19	Glycerin (HOCH ₂ CHOHCH ₂ OH)	SO2	1 L	2	2	2
20	Starch, soluble ((C ₆ H ₁₀ O ₅) _n)	SO2,Ox	1 kg	1	1	1
21	Mercury (II) iodide, red (HgI ₂)	SO2	100g	1	1	1
22	Sodium thiosulfate pentahydrate (Na ₂ S ₂ O ₃ · 5H ₂ O)	SO2,Ox	500g	1	1	1
23	Potassium iodate (KIO ₃)	SO2	100g	1	1	1
24	Potassium iodide (KI)	SO2	1 kg	1	1	1
25	Hydrochloric acid (1 N) (1N-HCL)	SO2	500mL	1	1	1
26	Sodium fluorid (NaF)	F	500g	3	3	0
27	Lanthanum nitrate hexahydrate (La(NO ₃) ₃ · 6H ₂ O)	F	25g	1	1	0
28	Alizarin complexone dihidrate, indicator grade (C19H15 NO8· 2H2O)	F	1g	2	2	0
29	Silicon dioxide (SiO ₂)	F	500g	1	1	0
30	Fosphoric acid (H ₃ PO ₄)	F	500mL	1	1	0
31	Phenolphthalein (C ₂₀ H ₁₄ O ₄)	F	100g	1	1	0
32	Perchloric acid (HClO ₄)	F	1 L	1	1	0
33	Sodium hydroxide, pellets (NaOH)	F	1 kg	1	1	0
34	Ammonia solution, 28~30% (NH ₄ OH)	F	2.5 L	1	1	0
35	Ammonium acetate, >98% (CH ₃ COONH ₄)	F	500g	1	1	0
36	Sodium acetate, trihydrate (CH ₃ COONa · 3H ₂ O)	F	500g	1	1	0
37	Acetone (CH ₃ COCH ₃)	F	1 L	2	2	0
38	Potassium dihydrogenephosphat, for Ox analisis (KH ₂ PO ₄)	Ox	500g	1	1	0
39	Disodium hydrogen phosphate-12water (Na ₂ HPO ₄ · 12H ₂ O)	Ox	1 kg	1	1	0
40	Potassium iodide (KI)	Ox	1 kg	1	1	0
41	Iodine (I)	Ox, SO2	25g	1	1	0
42	Nessler's reagent	NH ₃	500ml	1	1	1
43	Methylene blue	H ₂ S	100g	1	1	1
44	Phosphoric Acid (H ₃ PO ₄)	NO2	2.5 L	1	1	1
A-1	Potassium hydroxide (KOH)	NH ₃	500g	1	1	1
A-2	Potassium sodium tartrate(COOKCHOH·CHOHCOONa·4H ₂ O)	NH ₃	500g	1	1	1
A-3	Boric acid (H ₃ BO ₃)	NH ₃	1 kg	1	1	1
A-4	Ammonium sulfate ((NH ₄) ₂ SO ₄)	NH ₃	1 kg	1	1	1
A-5	Trioxide Chromium (CrO ₃)	O _x	1 kg	1	1	1
	Total					

(Note): Item 3 and 11, purchased by JICA

ed by JET)

Total	Supplie	Date of Delivery	Unit Price (SP)	Total Price (SP)
3	ALBA	Aug. 2006	1,300	3,900
3	ALBA	Aug. 2006	1,720	5,160
3	-	Nov. 2006	-	-
3	ALBA	Aug. 2006	1,750	5,250
3	MASK	Aug. 2006	1,040	3,120
3	ALBA	Aug. 2006	1,600	4,800
3	MASK	Aug. 2006	1,740	5,220
3	Tec & Lab	Aug. 2006	1,200	3,600
3	Tec & Lab	Nov. 2006	3,270	9,810
3	MASK	Aug. 2006	2,600	7,800
3	-	Dec-07	-	-
3	ALBA	Aug. 2006	1,000	3,000
3	ALBA	Aug. 2006	1,500	4,500
3	ALBA	Aug. 2006	3,700	11,100
3	MASK	Aug. 2006	1,100	3,300
3	ALBA	Aug. 2006	600	1,800
3	ALBA	Aug. 2006	3,600	10,800
3	MASK	Aug. 2006	650	1,950
6	MASK	Aug. 2006	1,580	9,480
3	ALBA	Aug. 2006	2,100	6,300
3	MASK	Aug. 2006	2,150	6,450
3	ALBA	Aug. 2006	1,500	4,500
3	MASK	Aug. 2006	1,300	3,900
3	MASK	Aug. 2006	4,530	13,590
3	ALBA	Aug. 2006	780	2,340
6	ALBA	Aug. 2006	5,500	33,000
2	ALBA	Aug. 2006	7,000	14,000
4	ALBA	Aug. 2006	6,390	25,560
2	ALBA	Aug. 2006	2,250	4,500
2	MASK	Aug. 2006	760	1,520
2	Tec & Lab	Aug. 2006	990	1,980
2	MASK	Aug. 2006	4,400	8,800
2	ALBA	Aug. 2006	900	1,800
2	ALBA	Aug. 2006	1,500	3,000
2	MASK	Aug. 2006	1,060	2,120
2	Tec & Lab	Aug. 2006	780	1,560
4	ALBA	Aug. 2006	1,100	4,400
2	ALBA	Aug. 2006	1,300	2,600
2	ALBA	Aug. 2006	1,200	2,400
2	MASK	Aug. 2006	4,530	9,060
2	ALBA	Aug. 2006	2,900	5,800
3	MASK	Aug. 2006	2,250	6,750
3	MASK	Aug. 2006	1,850	5,550
3	ALBA	Aug. 2006	1,500	4,500
3	ALBA	Nov. 2006	1,800	5,400
3	ALBA	Nov. 2006	2,400	7,200
3	ALBA	Nov. 2006	1,670	5,010
3	ALBA	Nov. 2006	1,200	3,600
3	ALBA	Nov. 2006	3,400	10,200
				301,980

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Annex 3-1:

Equipment List

3.1.6

Networking

Equipment List of Network for GCEA and DEFA

(unit: SP)

Items		Usage	Specifications	QTY	Price
No.	Name				
1	Server UPS	Save server	Online working, Power 1 KVA, Work for at least 15 minute, Accept input between 170-260 V, Output 220 V, designed for servers	1	30,000
2	ADSL Modem	Connectivity	256Mbps, from known brand	15	103,500
3	Switches	Connection	16 port, 10/100Mbps,STP, rack design, from known brand	3	15,000
			24 port, 10/100Mbps, STP, rack design, from known brand	6	48,000
4	Patch Panel	Connection	16 port, 10/100Mbps, STP, rack design, easy to connect, from known brand	3	15,000
			24 port, 10/100Mbps, STP, rack design, from known brand	6	39,000
5	Wall Cabinet	Save equipments	9 Units, glass interface, with lock, inside electricity source, with good ventilators	5	36,000
6	Server Cabinet	Save server	glass interface, with lock, inside electricity source, soundproof, with good ventilators	1	23,000
7	Cables	Connection	Ready 0.5m, Cat 5e, STP	200	40,000
			Ready 2m, Cat 5e, STP	200	44,000
			Cat 5e, STP	15	67,500
8	Outlets	Connection	with box, STP, easy to connect, cover interfaces, more than one point	200	70,000
9	Tubes	Save cables	Capacity:4-6 network cables	700	20,300
10	VPN Subscription	Connectivity	Speed 256 MBPS	15	90,000
11	ADSL Subscription	Connectivity	Speed 256 MBPS	15	90,000
12	Database System	Manage, Store data	SQL Server 2000 Database	1	20,000
13	Antivirus System	Save data	Norton Antivirus 2004 and its update	1	5,000
Total				-	756,300

Annex 3-2:

Questionnaire Sheets for Project Evaluation

3.2.1 Project Management

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

0. Project Management (C-0-1:Self-evaluation) (This questionnaire is only for GCEA staff and Directors of DFEAs.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Management of the Project								
1.1.1	Did you check and understand the Project Design Matrix (PDM) in the Record of Discussion (R/D)?							
1.1.2	Do you understand the importance of PDM?							
1.1.3	Do you consider personal characteristics and interests to assign C/P to the Project?							
1.1.4	Can you explain your responsibility to promote and activate the Project?							
1.1.5	Do you have strong interest about the progress of the Project?							
1.1.6	Did you participate all Technical Committee (T/C) meeting?							
1.1.7	Did you check and understand the Minute of Meeting of T/C meeting?							
1.1.8	Did you check and understand the Report of the Terminal Evaluation?							
1.1.9	Did you explain the progress of the Project to the Minister and the Governor?							
1.1.10	Is it necessary to know current situation of the environment and monitoring activities of other DFEAs?							
1.1.11	Do you know the current conditions and activities of the Counterparts (C/P) of the Project in your GCEA and DFEA?							
1.2 Outcome of the Project								
1.2.1	Do you always check the progress of the activities in your GCEA and DFEA?							
1.2.2	Can you explain the environmental conditions in your Governorate based on the monitoring data?							
1.2.3	Do you provide enough support to C/P of the Project?							
1.2.4	Do you know the current problems and difficulties in your GCEA and DFEA related to the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.2.5	Did you advise to C/P to solve the problems and difficulties?							
1.2.6	Did you visit the monitoring stations with C/P?							
1.2.7	Do you check the monitoring data and report prepared by C/P?							
1.2.8	Do you have any future prospect to manage environment in your DFEA through the environmental monitoring activities?							
1.2.9	Are you satisfied the current progress of the Project?							
1.2.10	Do you want to share your environmental monitoring works with other DFEAs?							
1.2.11	Do you want to continue your environmental monitoring works?							
1.2.12	Do you have enough capability to train other staff in GCEA/ DFEA related to environmental monitoring works?							
1.2.13	Do you want to remain as a staff of GCEA/ DFEA?							
1.2.14	Do you want to continue the Phase-II of the Project?							
1.2.15	Do you have any vision and idea related to the Phase-II of the Project?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.
2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

0. Project Management (C-0-2: Evaluation by Director) (This questionnaire is only for GCEA staff and Directors of DFEAs.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Management of the Project								
1.1.1	Did you check and understand the Project Design Matrix (PDM) in the Record of Discussion (R/D)?							
1.1.2	Do you understand the importance of PDM?							
1.1.3	Do you consider personal characteristics and interests to assign C/P to the Project?							
1.1.4	Can you explain your responsibility to promote and activate the Project?							
1.1.5	Do you have strong interest about the progress of the Project?							
1.1.6	Did you participate all Technical Committee (T/C) meeting?							
1.1.7	Did you check and understand the Minute of Meeting of T/C meeting?							
1.1.8	Did you check and understand the Report of the Terminal Evaluation ?							
1.1.9	Did you explain the progress of the Project to the Governor?							
1.1.10	Do you know the current conditions and activities of the Counterparts (C/P) of the Project in your GCEA and DFEA?							
1.2 Progress of the Project								
1.2.1	Do you always check the progress of the activities in your GCEA and DFEA?							
1.2.2	Can you explain the environmental conditions in your Governorate based on the monitoring data?							
1.2.3	Do you provide enough support to C/P of the Project?							
1.2.4	Do you know the current problems and difficulties in your GCEA and DFEA related to the Project?							
1.2.5	Did you advise to C/P to solve the problems and difficulties?							
1.2.6	Did you visit the monitoring stations with C/P?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.2.7	Do you check the monitoring data and report prepared by C/P?							
1.2.8	Do you have any future prospect to manage environment in your DFEA through the environmental monitoring activities?							
1.2.9	Are you satisfied the current progress of the Project?							
1.2.10	Do you have any vision and idea related to the Second Phase of the Project?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

0. Project Management (C-0-3: Evaluation by the JICA Expert Team) (This questionnaire is only for GCEA staff and Directors of DFEAs.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Management of the Project								
1.1.1	Did you check and understand the Project Design Matrix (PDM) in the Record of Discussion (R/D)?							
1.1.2	Do you understand the importance of PDM?							
1.1.3	Do you consider personal characteristics and interests to assign C/P to the Project?							
1.1.4	Can you explain your responsibility to promote and activate the Project?							
1.1.5	Do you have strong interest about the progress of the Project?							
1.1.6	Did you participate all Technical Committee (T/C) meeting?							
1.1.7	Did you check and understand the Minute of Meeting of T/C meeting?							
1.1.8	Did you check and understand the Report of the Terminal Evaluation ?							
1.1.9	Did you explain the progress of the Project to the Governor?							
1.1.10	Do you know the current conditions and activities of the Counterparts (C/P) of the Project in your GCEA and DFEA?							
1.2 Progress of the Project								
1.2.1	Do you always check the progress of the activities in your GCEA and DFEA?							
1.2.2	Can you explain the environmental conditions in your Governorate based on the monitoring data?							
1.2.3	Do you provide enough support to C/P of the Project?							
1.2.4	Do you know the current problems and difficulties in your GCEA and DFEA related to the Project?							
1.2.5	Did you advise to C/P to solve the problems and difficulties?							
1.2.6	Did you visit the monitoring stations with C/P?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.2.7	Do you check the monitoring data and report prepared by C/P?							
1.2.8	Do you have any future prospect to manage environment in your DFEA through the environmental monitoring activities?							
1.2.9	Are you satisfied the current progress of the Project?							
1.2.10	Do you have any vision and idea related to the Second Phase of the Project?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

Annex 3-2:

Questionnaire Sheets for Project Evaluation

3.2.2 Basic Water Quality

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

1. Basic Water Quality (C-1-1:Self-evaluation) (This Questionnaire is only for C/P of DFEAs in charge for Basic Water Quality.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters depending on the type of samples?							
1.1.5	Can you prepare budget plan for EMO activities?							
1.1.6	Can you collect data and information related to target pollution sources of EMO?							
1.1.7	Can you prepare an overall EMO plan?							
1.1.8	Can you review and revise EMO plan?							
1.1.9	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you conduct preparatory works for sampling?							
1.2.2	Can you carry out calibration and O/M of equipment for field measurement?							
1.2.3	Can you conduct a field sampling appropriately by yourself, especially for industrial wastewater sampling??							
1.2.4	Can you do field measurement and recording?							
1.2.5	Can you conduct QA/QC practices in sampling?							
1.2.6	Can you conduct sample pre-treatment required for the specific parameters?							
1.3 Laboratory Analysis								
1.3.1	Do you have enough knowledge and understanding of each parameter and its analysis principle?							
1.3.2	Do you have enough practical skill level in analysis of each parameter?							
1.3.3	Do you have enough handling knowledge of common chemicals such as Sulfuric acid?							
1.3.4	Can you carry out calibration of instruments?							
1.3.5	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							
1.3.6	Do you have knowledge and skill for usage of miscellaneous tools such as Erlenmeyer flask, pipette, and so on?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.7	Can you review and revise SOPs?							
1.3.8	Do you have enough knowledge of interferences treatment?							
1.3.9	Can you conduct O/M and management of reagents in kind and stock amount?							
1.3.10	Can you handle and treat wastewater after analysis esp. Ammonia Nitrogen?							
1.3.11	Do you try to clean up and keep tidying of laboratory?							
1.3.12	Can you conduct QA/QC practices in analysis?							
1.3.13	Do you have enough knowledge and understanding of safety measures?							
1.3.14	Can you conduct reagent blank check?							
1.3.15	Can you interpret the monitoring results appropriately?							
1.3.16	Do you have enough knowledge and understanding of water and wastewater treatment?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you carry out statistical data analysis?							
1.4.5	Do you have enough knowledge and understanding of data handling such as a unit and significant figure, anomalous value, accuracy management?							
1.4.6	Can you prepare a report and data book using EMO records?							
1.4.7	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.8	Can you prepare the annual report for basic water quality monitoring?							
1.4.9	Can you make training of basic water quality monitoring to new staff?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you fully participate to the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note	
		A	B	C	D	E			
1.5.10	Do you have intention to continue and extend your roles in the Project?								
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?								
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?								
1.6 Over-all evaluation: What is your current level for basic water quality monitoring?								Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

1. Basic Water Quality (C-1-2: Evaluation by Director) (This Questionnaire is only for C/P of DFEAs in charge for Basic Water Quality.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters depending on the type of samples?							
1.1.5	Can you prepare budget plan for EMO activities?							
1.1.6	Can you collect data and information related to target pollution sources of EMO?							
1.1.7	Can you prepare an overall EMO plan?							
1.1.8	Can you review and revise EMO plan?							
1.1.9	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you conduct preparatory works for sampling?							
1.2.2	Can you carry out calibration and O/M of equipment for field measurement?							
1.2.3	Can you conduct a field sampling appropriately by yourself, especially for industrial wastewater sampling?							
1.2.4	Can you do field measurement and recording?							
1.2.5	Can you conduct QA/QC practices in sampling?							
1.2.6	Can you conduct sample pre-treatment required for the specific parameters?							
1.3 Laboratory Analysis								
1.3.1	Do you have enough knowledge and understanding of each parameter and its analysis principle?							
1.3.2	Do you have enough practical skill level in analysis of each parameter?							
1.3.3	Do you have enough handling knowledge of common chemicals such as Sulfuric acid?							
1.3.4	Can you carry out calibration of instruments?							
1.3.5	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							
1.3.6	Do you have knowledge and skill for usage of miscellaneous tools such as Erlenmeyer flask, pipette, and so on?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.7	Can you review and revise SOPs?							
1.3.8	Do you have enough knowledge of interferences treatment?							
1.3.9	Can you conduct O/M and management of reagents in kind and stock amount?							
1.3.10	Can you handle and treat wastewater after analysis esp. Ammonia Nitrogen?							
1.3.11	Do you try to clean up and keep tidying of laboratory?							
1.3.12	Can you conduct QA/QC practices in analysis?							
1.3.13	Do you have enough knowledge and understanding of safety measures?							
1.3.14	Can you conduct reagent blank check?							
1.3.15	Can you interpret the monitoring results appropriately?							
1.3.16	Do you have enough knowledge and understanding of water and wastewater treatment?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you carry out statistical data analysis?							
1.4.5	Do you have enough knowledge and understanding of data handling such as a unit and significant figure, anomalous value, accuracy management?							
1.4.6	Can you prepare a report and data book using EMO records?							
1.4.7	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.8	Can you prepare the annual report for basic water quality monitoring?							
1.4.9	Can you make training of basic water quality monitoring to new staff?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you fully participate to the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note	
		A	B	C	D	E			
1.5.10	Do you have intention to continue and extend your roles in the Project?								
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?								
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?								
1.6 Over-all evaluation: What is your current level for basic water quality monitoring?								Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions.

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by the JICA Expert Team, Mr./Ms. _____ Sign: _____

1. Basic Water Quality (C-1-3: Evaluation by the JICA Expert Team) (This Questionnaire is only for C/P of DFEAs in charge for Basic Water Quality.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters depending on the type of samples?							
1.1.5	Can you prepare budget plan for EMO activities?							
1.1.6	Can you collect data and information related to target pollution sources of EMO?							
1.1.7	Can you prepare an overall EMO plan?							
1.1.8	Can you review and revise EMO plan?							
1.1.9	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you conduct preparatory works for sampling?							
1.2.2	Can you carry out calibration and O/M of equipment for field measurement?							
1.2.3	Can you conduct a field sampling appropriately by yourself, especially for industrial wastewater sampling?							
1.2.4	Can you do field measurement and recording?							
1.2.5	Can you conduct QA/QC practices in sampling?							
1.2.6	Can you conduct sample pre-treatment required for the specific parameters?							
1.3 Laboratory Analysis								
1.3.1	Do you have enough knowledge and understanding of each parameter and its analysis principle?							
1.3.2	Do you have enough practical skill level in analysis of each parameter?							
1.3.3	Do you have enough handling knowledge of common chemicals such as Sulfuric acid?							
1.3.4	Can you carry out calibration of instruments?							
1.3.5	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							
1.3.6	Do you have knowledge and skill for usage of miscellaneous tools such as Erlenmeyer flask, pipette, and so on?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.7	Can you review and revise SOPs?							
1.3.8	Do you have enough knowledge of interferences treatment?							
1.3.9	Can you conduct O/M and management of reagents in kind and stock amount?							
1.3.10	Can you handle and treat wastewater after analysis esp. Ammonia Nitrogen?							
1.3.11	Do you try to clean up and keep tidying of laboratory?							
1.3.12	Can you conduct QA/QC practices in analysis?							
1.3.13	Do you have enough knowledge and understanding of safety measures?							
1.3.14	Can you conduct reagent blank check?							
1.3.15	Can you interpret the monitoring results appropriately?							
1.3.16	Do you have enough knowledge and understanding of water and wastewater treatment?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you carry out statistical data analysis?							
1.4.5	Do you have enough knowledge and understanding of data handling such as a unit and significant figure, anomalous value, accuracy management?							
1.4.6	Can you prepare a report and data book using EMO records?							
1.4.7	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.8	Can you prepare the annual report for basic water quality monitoring?							
1.4.9	Can you make training of basic water quality monitoring to new staff?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you fully participate to the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions.

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

Annex 3-2:

Questionnaire Sheets for Project Evaluation

3.2.3 Chemical and Biological Water Quality

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

2. Chemical and Biological Water Quality (C-2-1:Self-evaluation) (This Questionnaire is only for C/P of DFEA of DAM, ALP, HOM, and DAMC in charge for Chemical and Biological Water Quality.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters depending on the type of samples?							
1.1.5	Can you prepare budget plan for EMO activities?							
1.1.6	Can you collect data and information related to target pollution sources of EMO?							
1.1.7	Can you prepare an overall EMO plan?							
1.1.8	Can you review and revise EMO plan that included the parameters for Chemical and Biological Water Quality?							
1.1.9	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you conduct preparatory works for sampling?							
1.2.2	Can you carry out calibration and O/M of equipment for field measurement?							
1.2.3	Can you conduct a field sampling by yourself?							
1.2.4	Can you do field measurement and recording?							
1.2.5	Can you conduct QA/QC practices in sampling?							
1.2.6	Can you conduct sample pre-treatment required for the specific parameters?							
1.2.7	Can you collecte samples according to the "Sampling Guide" prepared by JET?							
1.3 Laboratory Analysis								
1.3.1	Do you have enough knowledge and understanding of each parameter and its analysis principle?							
1.3.2	Do you have enough practical skill level in analysis of each parameter?							
1.3.3	Do you have enough handling knowledge of common chemicals such as Sulfuric acid?							
1.3.4	Can you carry out calibration of instruments?							
1.3.5	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.6	Do you have knowledge and skill for usage of miscellaneous tools such as Erlenmeyer flask, pipette, and so on?							
1.3.7	Can you review and revise SOPs?							
1.3.8	Do you have enough knowledge of interferences treatment?							
1.3.9	Can you conduct O/M and management of reagents in kind and stock amount?							
1.3.10	Can you handle and treat wastewater after analysis esp. Ammonia Nitrogen?							
1.3.11	Do you try to clean up and keep tidying of laboratory?							
1.3.12	Can you conduct QA/QC practices in analysis?							
1.3.13	Do you have enough knowledge and understanding of safety measures?							
1.3.14	Do you understand the principle of analytical equipment such as spectrophotometer, oil content meter, ion selective electrode (ISE)?							
1.3.15	Do you understand the meaning of Ionic Strength Adjuster (ISA) and Total Ionic Strength Adjuster Buffer (TISAB) concerning analysis using ISE?							
1.3.16	Can you prepare standard solutions from chemicals stored in the laboratory?							
1.3.17	Can you conduct zero and span calibration for spectrophotometer and oil content meter?							
1.3.18	Can you conduct electrode slope check using the standard solution prepared?							
1.3.19	Have you ever investigated and solved the causes and the troubles of analytical equipment?							
1.3.20	Do you have enough knowledge and understanding of the wastewater treatment facility?							Only DAM DFEA
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you carry out statistical data analysis?							
1.4.5	Do you have enough knowledge and understanding of data handling such as a unit and significant figure, anomalous value, accuracy management?							
1.4.6	Can you prepare a report and data book using EMO records?							
1.4.7	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.8	Do you pay attention the meaning of parameters and their units when you get the results of analysis?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you fully participate to the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.13	Do you wear a white robe whenever you conduct laboratory activities in the laboratory?							
1.5.14	Do you wear a glove and/or safety-glass in the laboratory when needed?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

2. Chemical and Biological Water Quality (C-2-2: Evaluation by Director) (This Questionnaire is only for C/P of DFEA of DAM, ALP, HOM, and DAMC in charge for Chemical and Biological Water Quality.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters depending on the type of samples?							
1.1.5	Can you prepare budget plan for EMO activities?							
1.1.6	Can you collect data and information related to target pollution sources of EMO?							
1.1.7	Can you prepare an overall EMO plan?							
1.1.8	Can you review and revise EMO plan that included the parameters for Chemical and Biological Water Quality?							
1.1.9	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you conduct preparatory works for sampling?							
1.2.2	Can you carry out calibration and O/M of equipment for field measurement?							
1.2.3	Can you conduct a field sampling by yourself?							
1.2.4	Can you do field measurement and recording?							
1.2.5	Can you conduct QA/QC practices in sampling?							
1.2.6	Can you conduct sample pre-treatment required for the specific parameters?							
1.2.7	Can you collect samples according to the "Sampling Guide" prepared by JET?							
1.3 Laboratory Analysis								
1.3.1	Do you have enough knowledge and understanding of each parameter and its analysis principle?							
1.3.2	Do you have enough practical skill level in analysis of each parameter?							
1.3.3	Do you have enough handling knowledge of common chemicals such as Sulfuric acid?							
1.3.4	Can you carry out calibration of instruments?							
1.3.5	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	before analysis)?							
1.3.6	Do you have knowledge and skill for usage of miscellaneous tools such as Erlenmeyer flask, pipette, and so on?							
1.3.7	Can you review and revise SOPs?							
1.3.8	Do you have enough knowledge of interferences treatment?							
1.3.9	Can you conduct O/M and management of reagents in kind and stock amount?							
1.3.10	Can you handle and treat wastewater after analysis esp. Ammonia Nitrogen?							
1.3.11	Do you try to clean up and keep tidying of laboratory?							
1.3.12	Can you conduct QA/QC practices in analysis?							
1.3.13	Do you have enough knowledge and understanding of safety measures?							
1.3.14	Do you understand the principle of analytical equipment such as spectrophotometer, oil content meter, ion selective electrode (ISE)?							
1.3.15	Do you understand the meaning of Ionic Strength Adjuster (ISA) and Total Ionic Strength Adjuster Buffer (TISAB) concerning analysis using ISE?							
1.3.16	Can you prepare standard solutions from chemicals stored in the laboratory?							
1.3.17	Can you conduct zero and span calibration for spectrophotometer and oil content meter?							
1.3.18	Can you conduct electrode slope check using the standard solution prepared?							
1.3.19	Have you ever investigated and solved the causes and the troubles of analytical equipment?							
1.3.20	Do you have enough knowledge and understanding of the wastewater treatment facility?							Only DAM DFEA
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you carry out statistical data analysis?							
1.4.5	Do you have enough knowledge and understanding of data handling such as a unit and significant figure, anomalous value, accuracy management?							
1.4.6	Can you prepare a report and data book using EMO records?							
1.4.7	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.8	Do you pay attention the meaning of parameters and their units when you get the results of analysis?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you fully participate to the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.13	Do you wear a white robe whenever you conduct laboratory activities in the laboratory?							
1.5.14	Do you wear a glove and/or safety-glass in the laboratory when needed?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.
2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by the JICA Expert Team, Mr./Ms. _____ Sign: _____

2. Chemical and Biological Water Quality (C-2-3: Evaluation by the JICA Expert Team) (This Questionnaire is only for C/P of **DFEA of DAM, ALP, HOM, and DAMC** in charge for Chemical and Biological Water Quality.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters depending on the type of samples?							
1.1.5	Can you prepare budget plan for EMO activities?							
1.1.6	Can you collect data and information related to target pollution sources of EMO?							
1.1.7	Can you prepare an overall EMO plan?							
1.1.8	Can you review and revise EMO plan that included the parameters for Chemical and Biological Water Quality?							
1.1.9	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you conduct preparatory works for sampling?							
1.2.2	Can you carry out calibration and O/M of equipment for field measurement?							
1.2.3	Can you conduct a field sampling by yourself?							
1.2.4	Can you do field measurement and recording?							
1.2.5	Can you conduct QA/QC practices in sampling?							
1.2.6	Can you conduct sample pre-treatment required for the specific parameters?							
1.2.7	Can you collect samples according to the "Sampling Guide" prepared by JET?							
1.3 Laboratory Analysis								
1.3.1	Do you have enough knowledge and understanding of each parameter and its analysis principle?							
1.3.2	Do you have enough practical skill level in analysis of each parameter?							
1.3.3	Do you have enough handling knowledge of common chemicals such as Sulfuric acid?							
1.3.4	Can you carry out calibration of instruments?							
1.3.5	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	before analysis)?							
1.3.6	Do you have knowledge and skill for usage of miscellaneous tools such as Erlenmeyer flask, pipette, and so on?							
1.3.7	Can you review and revise SOPs?							
1.3.8	Do you have enough knowledge of interferences treatment?							
1.3.9	Can you conduct O/M and management of reagents in kind and stock amount?							
1.3.10	Can you handle and treat wastewater after analysis esp. Ammonia Nitrogen?							
1.3.11	Do you try to clean up and keep tidying of laboratory?							
1.3.12	Can you conduct QA/QC practices in analysis?							
1.3.13	Do you have enough knowledge and understanding of safety measures?							
1.3.14	Do you understand the principle of analytical equipment such as spectrophotometer, oil content meter, ion selective electrode (ISE)?							
1.3.15	Do you understand the meaning of Ionic Strength Adjuster (ISA) and Total Ionic Strength Adjuster Buffer (TISAB) concerning analysis using ISE?							
1.3.16	Can you prepare standard solutions from chemicals stored in the laboratory?							
1.3.17	Can you conduct zero and span calibration for spectrophotometer and oil content meter?							
1.3.18	Can you conduct electrode slope check using the standard solution prepared?							
1.3.19	Have you ever investigated and solved the causes and the troubles of analytical equipment?							
1.3.20	Do you have enough knowledge and understanding of the wastewater treatment facility?							Only DAM DFEA
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you carry out statistical data analysis?							
1.4.5	Do you have enough knowledge and understanding of data handling such as a unit and significant figure, anomalous value, accuracy management?							
1.4.6	Can you prepare a report and data book using EMO records?							
1.4.7	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.8	Do you pay attention the meaning of parameters and their units when you get the results of analysis?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you fully participate to the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.13	Do you wear a white robe whenever you conduct laboratory activities in the laboratory?							
1.5.14	Do you wear a glove and/or safety-glass in the laboratory when needed?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

Annex 3-2:

Questionnaire Sheets for Project Evaluation

3.2.4 Heavy Metal

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

3. Heavy Metal Analysis (C-3-1:Self-evaluation) (This Questionnaire is only for C/P of DAM DFEA in charge for Heavy Metal Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters?							
1.1.5	Can you collect data and information related to target pollution sources of EMO?							
1.1.6	Can you prepare an overall EMO plan?							
1.1.7	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you specify tools to be used for sampling?							
1.2.2	Can you specify the kind of acid to be used for preservation?							
1.2.3	Do you know why acid is necessary for preservation?							
1.2.4	Can you check the pH and judge to complete preservation?							
1.2.5	Can you specify the material of the sampler for samples for metal analysis?							
1.3 Laboratory Analysis								
1.3.1	Do you know why we use acid in which glassware is soaked for preparation?							
1.3.2	Do you have enough knowledge of protecting yourself from acid for glassware for metal analysis?							
1.3.3	Do you have enough knowledge of protecting yourself from toxic metals in standard solution?							
1.3.4	Can you conduct preliminary treatment for general metals?							
1.3.5	Can you carry out preparation of standard solutions for each metal?							
1.3.6	Can you operate AAS in flame method?							
1.3.7	Can you operate AAS in furnace method?							
1.3.8	Can you change burners for flame?							
1.3.9	Do you know why we have to change the flames?							
1.3.10	Do you know the kind of gas we use as fuel?							
1.3.11	Do you know what we use for checking							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	gas leakage on the lines?							
1.3.12	Do you know what we should do for purge fuel gas in the pipe after measurement?							
1.3.13	Do you know two major differences between flame and furnace methods in amount of samples and in sensitivity?							
1.3.14	Can you set graphite tube into the atomizer?							
1.3.15	Can you adjust the alignment of the autosampler to the furnace?							
1.3.16	Can you set values for amounts of standard solution and dilution liquid for calibration curves?							
1.3.17	Do you know how to confirm quantitation limits by repeated measurements?							
1.3.18	Do you know the difference between how to wash glassware used by standard solutions and samples?							
1.3.19	Can you prepare glassware from washing?							
1.3.20	Can you prepare acidified water for soaking apparatus?							
1.3.21	Can you specify waste water for the right waste water tank (heavy metal or acidified)?							
1.3.22	Do you know the relationship between the maximum limits of discharge water for each element and its toxicity?							
1.3.23	Do you try to clean up and keep tidying of laboratory?							
1.3.24	Can you conduct QA/QC practices in analysis?							
1.3.25	Do you have enough knowledge and understanding of safety measures?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you evaluate calibration curves by their correlation coefficients?							
1.4.5	Do you know how to tell quantitation limits from calibration curves?							
1.4.6	Do you know what standard deviation represents?							
1.4.7	Do you know the maximum limits of CV (%RSD) for metal analysis in Damascus DFEA?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you participate in many activities of							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 **Mr. / Ms.** _____ **(Date :** _____ **)**

Recorded by Director of _____ **DFEA, Mr./Ms.** _____ **Sign:** _____

3. Heavy Metal Analysis (C-3-2: Evaluation by Director) (This Questionnaire is only for C/P of DAM DFEA in charge for Heavy Metal Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters?							
1.1.5	Can you collect data and information related to target pollution sources of EMO?							
1.1.6	Can you prepare an overall EMO plan?							
1.1.7	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you specify tools to be used for sampling?							
1.2.2	Can you specify the kind of acid to be used for preservation?							
1.2.3	Do you know why acid is necessary for preservation?							
1.3 Laboratory Analysis								
1.3.1	Do you know why we use acid in which glassware is soaked for preparation?							
1.3.2	Do you have enough knowledge of protecting yourself from acid for glassware for metal analysis?							
1.3.3	Do you have enough knowledge of protecting yourself from toxic metals in standard solution?							
1.3.4	Can you conduct preliminary treatment for general metals?							
1.3.5	Can you carry out preparation of standard solutions for each metal?							
1.3.6	Can you operate AAS in flame method?							
1.3.7	Can you operate AAS in furnace method?							
1.3.8	Do you know how to confirm quantitation limits by repeated measurements?							
1.3.9	Can you prepare glassware from washing?							
1.3.10	Can you prepare acidified water for soaking apparatus?							
1.3.11	Can you specify waste water for the right waste water tank (heavy metal or acidified)?							
1.3.12	Do you know the relationship between							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	the maximum limits of discharge water for each element and its toxicity?							
1.3.13	Do you try to clean up and keep tidying of laboratory?							
1.3.14	Can you conduct QA/QC practices in analysis?							
1.3.15	Do you have enough knowledge and understanding of safety measures?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.5	Do you know what standard deviation represents?							
1.4.6	Do you know the maximum limits of CV (%RSD) for metal analysis in Damascus DFEA?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you participate in many activities of the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by the JICA Expert Team, Mr./Ms. _____ Sign: _____

3. Heavy Metal Analysis (C-3-3: Evaluation by the JICA Expert Team) (This Questionnaire is only for C/P of DAM DFEA in charge for Heavy Metal Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters?							
1.1.5	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you specify tools to be used for sampling?							
1.2.2	Can you specify the kind of acid to be used for preservation?							
1.2.3	Do you know why acid is necessary for preservation?							
1.2.4	Can you check the pH and judge to complete preservation?							
1.2.5	Can you specify the material of the sampler for samples for metal analysis?							
1.3 Laboratory Analysis								
1.3.1	Do you know why we use acid in which glassware is soaked for preparation?							
1.3.2	Do you have enough knowledge of protecting yourself from acid for glassware for metal analysis?							
1.3.3	Do you have enough knowledge of protecting yourself from toxic metals in standard solution?							
1.3.4	Can you conduct preliminary treatment for general metals?							
1.3.5	Can you carry out preparation of standard solutions for each metal?							
1.3.6	Can you operate AAS in flame method?							
1.3.7	Can you operate AAS in furnace method?							
1.3.8	Can you change burners for flame?							
1.3.9	Do you know why we have to change the flames?							
1.3.10	Do you know the kind of gas we use as fuel?							
1.3.10	Do you know what we use for checking gas leakage on the lines?							
1.3.11	Do you know what we should do for purge fuel gas in the pipe after mesurment?							
1.3.12	Do you know two major differences							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	between flame and furnace methods in amount of samples and in sensitivity?							
1.3.13	Can you set graphite tube into the atomizer?							
1.3.14	Can you adjust the alignment of the auto-sampler to the furnace?							
1.3.15	Can you set values for amounts of standard solution and dilution liquid for calibration curves?							
1.3.16	Do you know how to confirm quantitation limits by repeated measurements?							
1.3.17	Do you know the difference between how to wash glassware used by standard solutions and samples?							
1.3.18	Can you prepare glassware from washing?							
1.3.19	Can you prepare acidified water for soaking apparatus?							
1.3.20	Can you specify waste water for the right waste water tank (heavy metal or acidified)?							
1.3.21	Do you know the relationship between the maximum limits of discharge water for each element and its toxicity?							
1.3.22	Do you try to clean up and keep tidying of laboratory?							
1.3.23	Can you conduct QA/QC practices in analysis?							
1.3.24	Do you have enough knowledge and understanding of safety measures?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you evaluate calibration curves by their correlation coefficients?							
1.4.5	Do you know how to tell quantitation limits from calibration curves?							
1.4.6	Do you know what standard deviation represents?							
1.4.7	Do you know the maximum limits of CV (%RSD) for metal analysis in Damascus DFEA?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Did you participate in many activities of the Project?							
1.5.4	Did you receive enough time and chance to continue EMO activities?							
1.5.5	Do you have intention to continue and extend your roles in the Project?							
1.5.6	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.
2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 **Mr. / Ms.** _____ **(Date :** _____ **)**

Recorded by _____ **Sign:** _____

3. Heavy Metal Analysis (C-3-1:Self-evaluation) (This Questionnaire is only for C/P of DAM DFEA in charge for Heavy Metal Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters?							
1.1.5	Can you collect data and information related to target pollution sources of EMO?							
1.1.6	Can you prepare an overall EMO plan?							
1.1.7	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you specify tools to be used for sampling?							
1.2.2	Can you specify the kind of acid to be used for preservation?							
1.2.3	Do you know why acid is necessary for preservation?							
1.2.4	Can you check the pH and judge to complete preservation?							
1.2.5	Can you specify the material of the sampler for samples for metal analysis?							
1.3 Laboratory Analysis								
1.3.1	Do you know why we use acid in which glassware is soaked for preparation?							
1.3.2	Do you have enough knowledge of protecting yourself from acid for glassware for metal analysis?							
1.3.3	Do you have enough knowledge of protecting yourself from toxic metals in standard solution?							
1.3.4	Can you conduct preliminary treatment for general metals?							
1.3.5	Can you carry out preparation of standard solutions for each metal?							
1.3.6	Can you operate AAS in flame method?							
1.3.7	Can you operate AAS in furnace method?							
1.3.8	Can you change burners for flame?							
1.3.9	Do you know why we have to change the flames?							
1.3.10	Do you know the kind of gas we use as fuel?							
1.3.11	Do you know what we use for checking gas leakage on the lines?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.12	Do you know what we should do for purge fuel gas in the pipe after mesurment?							
1.3.13	Do you know two major differences between flame and furnace methods in amount of samples and in sensitivity?							
1.3.14	Can you set graphite tube into the atomizer?							
1.3.15	Can you adjust the alignment of the autosampler to the furnace?							
1.3.16	Can you set values for amounts of standard solution and dilution liquid for calibration curves?							
1.3.17	Do you know how to confirm quantitation limits by repeated measurements?							
1.3.18	Do you know the difference between how to wash glassware used by standard solutions and samples?							
1.3.19	Can you prepare glassware from washing?							
1.3.20	Can you prepare acidified water for soaking apparatus?							
1.3.21	Can you specify waste water for the right waste water tank (heavy metal or acidified)?							
1.3.22	Do you know the relationship between the maximum limits of discharge water for each element and its toxicity?							
1.3.23	Do you try to clean up and keep tidying of laboratory?							
1.3.24	Can you conduct QA/QC practices in analysis?							
1.3.25	Do you have enough knowledge and understanding of safety measures?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you evaluate calibration curves by their correlation coefficients?							
1.4.5	Do you know how to tell quantitation limits from calibration curves?							
1.4.6	Do you know what standard deviation represents?							
1.4.7	Do you know the maximum limits of CV (%RSD) for metal analysis in Damascus DFEA?							
1.4.8	Can you identify a level of monitoring result to be correct or abnormal?							
1.4.9	Can you prepare and explain water quality (Heavy Metal) results considering a relation between pollution source and actual monitoring data?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you participate in many activities of the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.6 Over-all evaluation: What is your current level for basic water quality monitoring?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

3. Heavy Metal Analysis (C-3-2: Evaluation by Director) (This Questionnaire is only for Director of DAM DFEA in charge for Heavy Metal Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters?							
1.1.5	Can you collect data and information related to target pollution sources of EMO?							
1.1.6	Can you prepare an overall EMO plan?							
1.1.7	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you specify tools to be used for sampling?							
1.2.2	Can you specify the kind of acid to be used for preservation?							
1.2.3	Do you know why acid is necessary for preservation?							
1.2.4	Can you check the pH and judge to complete preservation?							
1.2.5	Can you specify the material of the sampler for samples for metal analysis?							
1.3 Laboratory Analysis								
1.3.1	Do you know why we use acid in which glassware is soaked for preparation?							
1.3.2	Do you have enough knowledge of protecting yourself from acid for glassware for metal analysis?							
1.3.3	Do you have enough knowledge of protecting yourself from toxic metals in standard solution?							
1.3.4	Can you conduct preliminary treatment for general metals?							
1.3.5	Can you carry out preparation of standard solutions for each metal?							
1.3.6	Can you operate AAS in flame method?							
1.3.7	Can you operate AAS in furnace method?							
1.3.8	Can you change burners for flame?							
1.3.9	Do you know why we have to change the flames?							
1.3.10	Do you know the kind of gas we use as fuel?							
1.3.11	Do you know what we use for checking gas leakage on the lines?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.12	Do you know what we should do for purge fuel gas in the pipe after mesurment?							
1.3.13	Do you know two major differences between flame and furnace methods in amount of samples and in sensitivity?							
1.3.14	Can you set graphite tube into the atomizer?							
1.3.15	Can you adjust the alignment of the autosampler to the furnace?							
1.3.16	Can you set values for amounts of standard solution and dilution liquid for calibration curves?							
1.3.17	Do you know how to confirm quantitation limits by repeated measurements?							
1.3.18	Do you know the difference between how to wash glassware used by standard solutions and samples?							
1.3.19	Can you prepare glassware from washing?							
1.3.20	Can you prepare acidified water for soaking apparatus?							
1.3.21	Can you specify waste water for the right waste water tank (heavy metal or acidified)?							
1.3.22	Do you know the relationship between the maximum limits of discharge water for each element and its toxicity?							
1.3.23	Do you try to clean up and keep tidying of laboratory?							
1.3.24	Can you conduct QA/QC practices in analysis?							
1.3.25	Do you have enough knowledge and understanding of safety measures?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you evaluate calibration curves by their correlation coefficients?							
1.4.5	Do you know how to tell quantitation limits from calibration curves?							
1.4.6	Do you know what standard deviation represents?							
1.4.7	Do you know the maximum limits of CV (%RSD) for metal analysis in Damascus DFEA?							
1.4.8	Can you identify a level of monitoring result to be correct or abnormal?							
1.4.9	Can you prepare and explain water quality (Heavy Metal) results considering a relation between pollution source and actual monitoring data?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you participate in many activities of the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.6 Over-all evaluation: What is your current level for basic water quality monitoring?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by the JICA Expert Team, Mr./Ms. _____ Sign: _____

3. Heavy Metal Analysis (C-3-3: Evaluation by the JICA Expert Team)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Can you set objectives of EMO plan?							
1.1.2	Can you select EMO stations?							
1.1.3	Can you set frequency of EMO activities?							
1.1.4	Can you select analysis parameters?							
1.1.5	Can you collect data and information related to target pollution sources of EMO?							
1.1.6	Can you prepare an overall EMO plan?							
1.1.7	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Can you specify tools to be used for sampling?							
1.2.2	Can you specify the kind of acid to be used for preservation?							
1.2.3	Do you know why acid is necessary for preservation?							
1.2.4	Can you check the pH and judge to complete preservation?							
1.2.5	Can you specify the material of the sampler for samples for metal analysis?							
1.3 Laboratory Analysis								
1.3.1	Do you know why we use acid in which glassware is soaked for preparation?							
1.3.2	Do you have enough knowledge of protecting yourself from acid for glassware for metal analysis?							
1.3.3	Do you have enough knowledge of protecting yourself from toxic metals in standard solution?							
1.3.4	Can you conduct preliminary treatment for general metals?							
1.3.5	Can you carry out preparation of standard solutions for each metal?							
1.3.6	Can you operate AAS in flame method?							
1.3.7	Can you operate AAS in furnace method?							
1.3.8	Can you change burners for flame?							
1.3.9	Do you know why we have to change the flames?							
1.3.10	Do you know the kind of gas we use as fuel?							
1.3.11	Do you know what we use for checking gas leakage on the lines?							
1.3.12	Do you know what we should do for							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	purge fuel gas in the pipe after mesurement?							
1.3.13	Do you know two major differences between flame and furnace methods in amount of samples and in sensitivity?							
1.3.14	Can you set graphite tube into the atomizer?							
1.3.15	Can you adjust the alignment of the autosampler to the furnace?							
1.3.16	Can you set values for amounts of standard solution and dilution liquid for calibration curves?							
1.3.17	Do you know how to confirm quantitation limits by repeated measurements?							
1.3.18	Do you know the difference between how to wash glassware used by standard solutions and samples?							
1.3.19	Can you prepare glassware from washing?							
1.3.20	Can you prepare acidified water for soaking apparatus?							
1.3.21	Can you specify waste water for the right waste water tank (heavy metal or acidified)?							
1.3.22	Do you know the relationship between the maximum limits of discharge water for each element and its toxicity?							
1.3.23	Do you try to clean up and keep tidying of laboratory?							
1.3.24	Can you conduct QA/QC practices in analysis?							
1.3.25	Do you have enough knowledge and understanding of safety measures?							
1.4 Data Management								
1.4.1	Can you prepare a recording format?							
1.4.2	Can you conduct data recording and reserving?							
1.4.3	Can you conduct data management using computer?							
1.4.4	Can you evaluate calibration curves by their correlation coefficients?							
1.4.5	Do you know how to tell quantitation limits from calibration curves?							
1.4.6	Do you know what standard deviation represents?							
1.4.7	Do you know the maximum limits of CV (%RSD) for metal analysis in Damascus DFEA?							
1.4.8	Can you identify a level of monitoring result to be correct or abnormal?							
1.4.9	Can you prepare and explain water quality (Heavy Metal) results considering a relation between pollution source and actual monitoring data?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.4	Are you satisfied training of the Project?							
1.5.5	Did you participate in many activities of the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself??							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.6 Over-all evaluation: What is your current level for basic water quality monitoring?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

Annex 3-2:

Questionnaire Sheets for Project Evaluation

3.2.5

Air Quality

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

4. Air Quality (C-4-1:Self-evaluation) (This Questionnaire is only for C/P of DAM, HOM, and ALP DFEA in charge for Air Quality Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Do you know item of the environmental quality standard?							
1.1.2	Do you know the environmental quality standard value of each item?							
1.1.3	Can you set the measurement item according to the pollution sources?							
1.1.4	Can you set the measurement interval according to the measurement purpose?							
1.1.5	Do you understand the purpose of the use of simple sampler?							
1.1.6	Can you plan the measurement according to the measurement purpose?							
1.1.7	Can you prepare budget plan for EMO activities?							
1.1.8	Do you understand overall goal of EMO plan?							
1.1.9	Can you prepare an overall EMO plan?							
1.1.10	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Do you know the difference point of air pollution and water pollution?							
1.2.2	Can you appropriately set the measurement height of the ambient air quality monitoring? (gaseous matter and particulate matter)							
1.2.3	Do you understand the relation between the meteorological condition and the air quality concentration?							
1.2.4	Can you set sampling time corresponding to the measurement item?							
1.2.5	Do you understand the relation between the height of the source and the highest concentration (Cmax) point?							
1.2.6	Can you plan the measurement program to understand the influence from the arterial road?							
1.2.7	Can you select the filter paper according to the purpose?							
1.2.8	Can you do the selection of the nozzle and bubbler and the selections of the sampling tube?							
1.2.9	Do you understand the measurement purpose and the measurement element of the dust fall?							
1.2.10	Can you prepare Field Sampling and Measurement?							
1.2.11	Can you conduct a field sampling and measurement by yourself?							
1.2.12	Do you know the interfering substance							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	when sampling it and the removal?							
1.2.13	Can you make the sampling record format and record?							
1.2.14	Can you conduct QA/QC practices in sampling and Measurement?							
1.3 Laboratory Analysis								
1.3.1	Can you make an absorption liquid and colored liquid of each element by SOP?							
1.3.2	Can you analyze each element by SOP?							
1.3.3	Can you operate spectrophotometer by O/M?							
1.3.4	Can you calculate M value with making the calibration curve?							
1.3.5	Can you calculate the air quality concentration from the analytical result? (gaseous matter and particulate matter)							
1.3.6	Can you convert the volume concentration and the mass concentration?							
1.3.7	Can you judge whether the concentration level of the analytical result is abnormal or correct?							
1.3.8	Can you appropriately handle the drain of the laboratory?							
1.3.9	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							
1.3.10	Are you good at the maintenance of the glassware and the reagent?							
1.3.11	Can you conduct QA/QC practices in analysis?							
1.3.12	Can you prepare and modify SOPs?							
1.3.13	Do you have enough practical skill level in analysis of each parameter?							
1.3.14	Do you try to clean up and keep tidying of laboratory?							
1.3.15	Do you have enough knowledge and understanding of safety measures?							
1.3.16	Can you prepare and explain air quality results considering meteorological condition?							
1.3.17	Can you identify a level of monitoring result to be correct or abnormal?							
1.3.18	Can you prepare and explain air quality results considering a relation between pollution source and actual monitoring data?							
1.4 Data Management								
1.4.1	Can you master the basis of Excel?							
1.4.2	Can you prepare a recording format?							
1.4.3	Are you good at the tabulation of the measurement result?							
1.4.4	Can you draw the measurement result because of the report?							
1.4.5	Can you conduct data management using computer?							
1.4.6	Can you carry out statistical data							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note	
		A	B	C	D	E			
	analysis?								
1.4.7	Do you understand the uncertainty in sampling?								
1.4.8	Do you understand the analytical error?								
1.4.9	Do you understand the number of data of effective digits?								
1.4.10	Do you understand the standard sample and traceability?								
1.4.11	Can you judge whether the concentration level of the measurement result is abnormal or correct?								
1.4.12	Can you explain the relation between the source and the environmental concentration by using the measurement result?								
1.4.13	Can you prepare a report and data book using EMO records?								
1.4.14	Can you conduct data interpretation and management in GCEA and DFEA?								
1.4.15	Can you prepare an annual report and data book using EMO record format for air quality?								
1.4.16	Can you train air quality monitoring skills to new staff?								
1.5 Attitude to the Project									
1.5.1	Are you interested in the Project?								
1.5.2	Is the Project useful for your job and role?								
1.5.3	Are you satisfied the Project?								
1.5.4	Are you satisfied training of the Project?								
1.5.5	Do you understand the mission of environmental monitoring?								
1.5.6	Did you fully participate to the Project?								
1.5.7	Did you receive enough time and chance to continue EMO activities?								
1.5.8	Did you read and study about EMO and analysis by yourself??								
1.5.9	Did you receive enough support from Director?								
1.5.10	Did you receive enough support from GCEA?								
1.5.11	Do you have intention to continue and extend your roles in the Project?								
1.5.12	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?								
1.5.13	Do you want to prepare a document related to EMO results and to present in seminars and workshops?								
1.5.14	Can you say an environmental problem in the region?								
1.5.15	Do you know the enlightenment method the citizens of the environmental protection?								
1.8 Over-all evaluation: What is your current level for air quality monitoring?						Grade A	<input type="checkbox"/>	Grade B	<input type="checkbox"/>

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

4. Air Quality (C-4-2: Evaluation by Director) (This Questionnaire is only for C/P of DAM, HOM, and ALP DFEA in charge for Air Quality Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Do you know item of the environmental quality standard?							
1.1.2	Do you know the environmental quality standard value of each item?							
1.1.3	Can you set the measurement item according to the pollution sources?							
1.1.4	Can you set the measurement interval according to the measurement purpose?							
1.1.5	Do you understand the purpose of the use of simple sampler?							
1.1.6	Can you plan the measurement according to the measurement purpose?							
1.1.7	Can you prepare budget plan for EMO activities?							
1.1.8	Do you understand overall goal of EMO plan?							
1.1.9	Can you prepare an overall EMO plan?							
1.1.10	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Do you know the difference point of air pollution and water pollution?							
1.2.2	Can you appropriately set the measurement height of the ambient air quality monitoring? (gaseous matter and particulate matter)							
1.2.3	Do you understand the relation between the meteorological condition and the air quality concentration?							
1.2.4	Can you set sampling time corresponding to the measurement item?							
1.2.5	Do you understand the relation between the height of the source and the highest concentration (Cmax) point?							
1.2.6	Can you plan the measurement program to understand the influence from the arterial road?							
1.2.7	Can you select the filter paper according to the purpose?							
1.2.8	Can you do the selection of the nozzle and bubbler and the selections of the sampling tube?							
1.2.9	Do you understand the measurement purpose and the measurement element of the dust fall?							
1.2.10	Can you prepare Field Sampling and Measurement?							
1.2.11	Can you conduct a field sampling and measurement by yourself?							
1.2.12	Do you know the interfering substance							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	when sampling it and the removal?							
1.2.13	Can you make the sampling record format and record?							
1.2.14	Can you conduct QA/QC practices in sampling and Measurement?							
1.3 Laboratory Analysis								
1.3.1	Can you make an absorption liquid and colored liquid of each element by SOP?							
1.3.2	Can you analyze each element by SOP?							
1.3.3	Can you operate spectrophotometer by O/M?							
1.3.4	Can you calculate M value with making the calibration curve?							
1.3.5	Can you calculate the air quality concentration from the analytical result? (gaseous matter and particulate matter)							
1.3.6	Can you convert the volume concentration and the mass concentration?							
1.3.7	Can you judge whether the concentration level of the analytical result is abnormal or correct?							
1.3.8	Can you appropriately handle the drain of the laboratory?							
1.3.9	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							
1.3.10	Are you good at the maintenance of the glassware and the reagent?							
1.3.11	Can you conduct QA/QC practices in analysis?							
1.3.12	Can you prepare and modify SOPs?							
1.3.13	Do you have enough practical skill level in analysis of each parameter?							
1.3.14	Do you try to clean up and keep tidying of laboratory?							
1.3.15	Do you have enough knowledge and understanding of safety measures?							
1.3.16	Can you prepare and explain air quality results considering meteorological condition?							
1.3.17	Can you identify a level of monitoring result to be correct or abnormal?							
1.3.18	Can you prepare and explain air quality results considering a relation between pollution source and actual monitoring data?							
1.4 Data Management								
1.4.1	Can you master the basis of Excel?							
1.4.2	Can you prepare a recording format?							
1.4.3	Are you good at the tabulation of the measurement result?							
1.4.4	Can you draw the measurement result because of the report?							
1.4.5	Can you conduct data management using computer?							
1.4.6	Can you carry out statistical data							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	analysis?							
1.4.7	Do you understand the uncertainty in sampling?							
1.4.8	Do you understand the analytical error?							
1.4.9	Do you understand the number of data of effective digits?							
1.4.10	Do you understand the standard sample and traceability?							
1.4.11	Can you judge whether the concentration level of the measurement result is abnormal or correct?							
1.4.12	Can you explain the relation between the source and the environmental concentration by using the measurement result?							
1.4.13	Can you prepare a report and data book using EMO records?							
1.4.14	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.15	Can you prepare an annual report and data book using EMO record format for air quality?							
1.4.16	Can you train air quality monitoring skills to new staff?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Do you understand the mission of environmental monitoring?							
1.5.6	Did you fully participate to the Project?							
1.5.7	Did you receive enough time and chance to continue EMO activities?							
1.5.8	Did you read and study about EMO and analysis by yourself??							
1.5.9	Did you receive enough support from Director?							
1.5.10	Did you receive enough support from GCEA?							
1.5.11	Do you have intention to continue and extend your roles in the Project?							
1.5.12	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.13	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.14	Can you say an environmental problem in the region?							
1.5.15	Do you know the enlightenment method the citizens of the environmental protection?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	1.8 Over-all evaluation: What is your current level for air quality monitoring?						Grade A <input type="checkbox"/> Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by the JICA Expert Team, Mr./Ms. _____ Sign: _____

4. Air Quality (C-4-3: Evaluation by the JICA Expert Team) (This Questionnaire is only for C/P of DAM, HOM, and ALP DFEA in charge for Air Quality Analysis.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Environmental Monitoring (EMO) Plan								
1.1.1	Do you know item of the environmental quality standard?							
1.1.2	Do you know the environmental quality standard value of each item?							
1.1.3	Can you set the measurement item according to the pollution sources?							
1.1.4	Can you set the measurement interval according to the measurement purpose?							
1.1.5	Do you understand the purpose of the use of simple sampler?							
1.1.6	Can you plan the measurement according to the measurement purpose?							
1.1.7	Can you prepare budget plan for EMO activities?							
1.1.8	Do you understand overall goal of EMO plan?							
1.1.9	Can you prepare an overall EMO plan?							
1.1.10	Can you be a trainer (Grade-A) for other C/P?							
1.2 Field Sampling and Measurement								
1.2.1	Do you know the difference point of air pollution and water pollution?							
1.2.2	Can you appropriately set the measurement height of the ambient air quality monitoring? (gaseous matter and particulate matter)							
1.2.3	Do you understand the relation between the meteorological condition and the air quality concentration?							
1.2.4	Can you set sampling time corresponding to the measurement item?							
1.2.5	Do you understand the relation between the height of the source and the highest concentration (Cmax) point?							
1.2.6	Can you plan the measurement program to understand the influence from the arterial road?							
1.2.7	Can you select the filter paper according to the purpose?							
1.2.8	Can you do the selection of the nozzle and bubbler and the selections of the sampling tube?							
1.2.9	Do you understand the measurement purpose and the measurement element of the dust fall?							
1.2.10	Can you prepare Field Sampling and Measurement?							
1.2.11	Can you conduct a field sampling and measurement by yourself?							
1.2.12	Do you know the interfering substance							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	when sampling it and the removal?							
1.2.13	Can you make the sampling record format and record?							
1.2.14	Can you conduct QA/QC practices in sampling and Measurement?							
1.3 Laboratory Analysis								
1.3.1	Can you make an absorption liquid and colored liquid of each element by SOP?							
1.3.2	Can you analyze each element by SOP?							
1.3.3	Can you operate spectrophotometer by O/M?							
1.3.4	Can you calculate M value with making the calibration curve?							
1.3.5	Can you calculate the air quality concentration from the analytical result? (gaseous matter and particulate matter)							
1.3.6	Can you convert the volume concentration and the mass concentration?							
1.3.7	Can you judge whether the concentration level of the analytical result is abnormal or correct?							
1.3.8	Can you appropriately handle the drain of the laboratory?							
1.3.9	Can you conduct O/M of instruments for laboratory analysis (daily, regular, and before analysis)?							
1.3.10	Are you good at the maintenance of the glassware and the reagent?							
1.3.11	Can you conduct QA/QC practices in analysis?							
1.3.12	Can you prepare and modify SOPs?							
1.3.13	Do you have enough practical skill level in analysis of each parameter?							
1.3.14	Do you try to clean up and keep tidying of laboratory?							
1.3.15	Do you have enough knowledge and understanding of safety measures?							
1.3.16	Can you prepare and explain air quality results considering meteorological condition?							
1.3.17	Can you identify a level of monitoring result to be correct or abnormal?							
1.3.18	Can you prepare and explain air quality results considering a relation between pollution source and actual monitoring data?							
1.4 Data Management								
1.4.1	Can you master the basis of Excel?							
1.4.2	Can you prepare a recording format?							
1.4.3	Are you good at the tabulation of the measurement result?							
1.4.4	Can you draw the measurement result because of the report?							
1.4.5	Can you conduct data management using computer?							
1.4.6	Can you carry out statistical data							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	analysis?							
1.4.7	Do you understand the uncertainty in sampling?							
1.4.8	Do you understand the analytical error?							
1.4.9	Do you understand the number of data of effective digits?							
1.4.10	Do you understand the standard sample and traceability?							
1.4.11	Can you judge whether the concentration level of the measurement result is abnormal or correct?							
1.4.12	Can you explain the relation between the source and the environmental concentration by using the measurement result?							
1.4.13	Can you prepare a report and data book using EMO records?							
1.4.14	Can you conduct data interpretation and management in GCEA and DFEA?							
1.4.15	Can you prepare an annual report and data book using EMO record format for air quality?							
1.4.16	Can you train air quality monitoring skills to new staff?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							
1.5.5	Do you understand the mission of environmental monitoring?							
1.5.6	Did you fully participate to the Project?							
1.5.7	Did you receive enough time and chance to continue EMO activities?							
1.5.8	Did you read and study about EMO and analysis by yourself??							
1.5.9	Did you receive enough support from Director?							
1.5.10	Did you receive enough support from GCEA?							
1.5.11	Do you have intention to continue and extend your roles in the Project?							
1.5.12	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.13	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.14	Can you say an environmental problem in the region?							
1.5.15	Do you know the enlightenment method the citizens of the environmental protection?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	1.8 Over-all evaluation: What is your current level for air quality monitoring?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to analyze samples, evaluate the data, and determine them by yourself.

4) Grade B: be able analyze samples and work out the data, but need decision by the superior to evaluate and determine the data.

End

Annex 3-2: **Questionnaire Sheets for Project Evaluation**

3.2.6 Data Management

C- Record of Evaluation on Environment Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

5. Data Management (C-5-1:Self-evaluation) (This Questionnaire is for all C/P of GCEA and DFEAs in charge for Data Management.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Goal of Data Management								
1.1.1	Do you understand the goal of data management? 1)Accumulate data at DFEAs, GCEA, 2)Issue environmental report, 3)Identify pollutants deal with, 4)Take countermeasure							
1.1.2	With especial reference to Basic Water Quality Analysis, do you know Goal of QA/QC? (Minimize the introduction of error in every monitoring process; 1)Sampling process, 2)Analysis process, 3)Data handling process)							
1.2 Recording and Data Transmission								
1.2.1	Do you know recording format (Excel sheet)?							
1.2.2	Can you use Microsoft Excel in PC in your DFEA?							
1.2.3	Do you know file naming rule?							
1.2.4	Do you know Name of your governorate in 3 characters?							
1.2.5	Do you know abbreviation (1 character) of the type of water? (ex. Industrial Waste Water, Domestic Waste Water, Under Ground Water, etc.)							
1.2.6	Can you make data folder of monitoring data (each type of water) in your laboratory PC?							
1.2.7	Do you understand EDL (Estimated Detection Limit) for 14 parameters?							
1.2.8	Can you input analysis data, if data (result) were below EDL?							
1.2.9	Can you input data correctly, if sample were diluted 10 times?							
1.2.10	Do you know Networking and data transmission system between GCEA and DFEAs?							
1.2.11	(This Question: Except Hasakeh, Deir ez Zor, Rakka and Damascus DFEAs) Did you try to input data in data transmission system?							
1.3 Operation and Management (O/M) in Laboratory								
1.3.1	Do you record O/M Record of Reagents in laboratory quarterly period?							
1.3.2	Can you predict when reagent will finish?							
1.3.3	Do you separate toxic waste liquid waste in laboratory?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.4	Do you record the received complaints from citizens?							
1.4 Annual Environment Report								
1.4.1	Did you prepare the monitoring data for an Annual Environment Report of Basic Water Quality in 2006?							
1.4.2	(This question for Damascus, Homs and Aleppo DFEAs only.) Can you prepare the monitoring data for an Annual Environment Report of Air Quality in 2007?							
1.4.3	(This question for Damascus, Damascus Countryside, Homs and Aleppo DFEAs only.) Can you prepare the monitoring data for an Annual Environment Report of Chemical and Biological water quality in 2007?							
1.5 Others								
1.5.1	Can you make training of Data Management on Basic water quality to new staff?							
1.5.2	(This question for Damascus, Homs and Aleppo DFEAs only.) Can you make training of Data Management on Air quality to new staff?							
1.5.3	(This question for Damascus, Damascus Countryside, Homs and Aleppo DFEAs only.) Can you make training of Data Management on Chemical and Biological water to new staff?							
1.6 Attitude to the Project								
1.6.1	Are you interested in the Project?							
1.6.2	Is the Project useful for your job and role?							
1.6.3	Are you satisfied the Project?							
1.6.4	Are you satisfied training of the Project?							
1.6.5	Did you fully participate to the Project?							
1.6.6	Did you receive enough support from Director?							
1.6.7	Did you receive enough support from GCEA?							
1.6.8	Do you have intention to continue and extend your roles in the Project?							
1.6.9	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.6.10	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.7 Over-all evaluation: What is your current level for data management?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to input the analyzed data, evaluate the data, and determine them by yourself.

4) Grade B: be able to input the analyzed data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environment Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

5. Data Management (C-5-2: Evaluation by Director) (This Questionnaire is for all C/P of GCEA and DFEAs in charge for Data Management.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Goal of Data Management								
1.1.1	Do you understand the goal of data management? 1)Accumulate data at DFEAs, GCEA, 2)Issue environmental report, 3)Identify pollutants deal with, 4)Take countermeasure							
1.1.2	With especial reference to Basic Water Quality Analysis, do you know Goal of QA/QC? (Minimize the introduction of error in every monitoring process; 1)Sampling process, 2)Analysis process, 3)Data handling process)							
1.2 Recording and Data Transmission								
1.2.1	Do you know recording format (Excel sheet)?							
1.2.2	Can you use Microsoft Excel in PC in your DFEA?							
1.2.3	Do you know file naming rule?							
1.2.4	Do you know Name of your governorate in 3 characters?							
1.2.5	Do you know abbreviation (1 character) of the type of water? (ex. Industrial Waste Water, Domestic Waste Water, Under Ground Water, etc.)							
1.2.6	Can you make data folder of monitoring data (each type of water) in your laboratory PC?							
1.2.7	Do you understand EDL (Estimated Detection Limit) for 14 parameters?							
1.2.8	Can you input analysis data, if data (result) were below EDL?							
1.2.9	Can you input data correctly, if sample were diluted 10 times?							
1.2.10	Do you know Networking and data transmission system between GCEA and DFEAs?							
1.2.11	(This Question: Except Hasakeh, Deir ez Zor, Rakka and Damascus DFEAs) Did you try to input data in data transmission system?							
1.3 Operation and Management (O/M) in Laboratory								
1.3.1	Do you record O/M Record of Reagents in laboratory quarterly period?							
1.3.2	Can you predict when reagent will finish?							
1.3.3	Do you separate toxic waste liquid waste in laboratory?							
1.3.4	Do you record the received complaints							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	from citizens?							
1.4 Annual Environment Report								
1.4.1	Did you prepare the monitoring data for an Annual Environment Report of Basic Water Quality in 2006?							
1.4.2	(This question for Damascus, Homs and Aleppo DFEAs only.) Can you prepare the monitoring data for an Annual Environment Report of Air Quality in 2007?							
1.4.3	(This question for Damascus, Damascus Countryside, Homs and Aleppo DFEAs only.) Can you prepare the monitoring data for an Annual Environment Report of Chemical and Biological water quality in 2007?							
1.5 Others								
1.5.1	Can you make training of Data Management on Basic water quality to new staff?							
1.5.2	(This question for Damascus, Homs and Aleppo DFEAs only.) Can you make training of Data Management on Air quality to new staff?							
1.5.3	(This question for Damascus, Damascus Countryside, Homs and Aleppo DFEAs only.) Can you make training of Data Management on Chemical and Biological water to new staff?							
1.6 Attitude to the Project								
1.6.1	Are you interested in the Project?							
1.6.2	Is the Project useful for your job and role?							
1.6.3	Are you satisfied the Project?							
1.6.4	Are you satisfied training of the Project?							
1.6.5	Did you fully participate to the Project?							
1.6.6	Did you receive enough support from GCEA?							
1.6.7	Do you have intention to continue and extend your roles in the Project?							
1.6.8	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.6.9	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.7 Over-all evaluation: What is your current level for data management?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to input the analyzed data, evaluate the data, and determine them by yourself.

4) Grade B: be able to input the analyzed data, but need decision by the superior to evaluate and determine the data.

End

C- Record of Evaluation on Environment Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by Director of _____ DFEA, Mr./Ms. _____ Sign: _____

5. Data Management (C-5-3: Evaluation by the JICA Expert Team) (This Questionnaire is for all C/P of GCEA and DFEAs in charge for Data Management.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Goal of Data Management								
1.1.1	Do you understand the goal of data management? 1)Accumulate data at DFEAs, GCEA, 2)Issue environmental report, 3)Identify pollutants deal with, 4)Take countermeasure							
1.1.2	With especial reference to Basic Water Quality Analysis, do you know Goal of QA/QC? (Minimize the introduction of error in every monitoring process; 1)Sampling process, 2)Analysis process, 3)Data handling process)							
1.2 Recording and Data Transmission								
1.2.1	Do you know recording format (Excel sheet)?							
1.2.2	Can you use Microsoft Excel in PC in your DFEA?							
1.2.3	Do you know file naming rule?							
1.2.4	Do you know Name of your governorate in 3 characters?							
1.2.5	Do you know abbreviation (1 character) of the type of water? (ex. Industrial Waste Water, Domestic Waste Water, Under Ground Water, etc.)							
1.2.6	Can you make data folder of monitoring data (each type of water) in your laboratory PC?							
1.2.7	Do you understand EDL (Estimated Detection Limit) for 14 parameters?							
1.2.8	Can you input analysis data, if data (result) were below EDL?							
1.2.9	Can you input data correctly, if sample were diluted 10 times?							
1.2.10	Do you know Networking and data transmission system between GCEA and DFEAs?							
1.2.11	(This Question: Except Hasakeh, Deir ez Zor, Rakka and Damascus DFEAs) Did you try to input data in Data transmission system?							
1.2.12	Can you explain the environmental conditions to other person using EMO data?							
1.3 Operation and Management (O/M) in Laboratory								
1.3.1	Do you record O/M Record of Reagents in laboratory quarterly period?							
1.3.2	Can you predict when reagent will finish?							
1.3.3	Do you separate toxic waste liquid waste in laboratory?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.3.4	Do you record the received complaints from citizens?							
1.4 Annual Environment Report								
1.4.1	Did you prepare the monitoring data for an Annual Environment Report of Basic Water Quality in 2006?							
1.4.2	(This question for Damascus, Homs and Aleppo DFEAs only.) Can you prepare the monitoring data for an Annual Environment Report of Air Quality in 2007?							
1.4.3	(This question for Damascus, Damascus Countryside, Homs and Aleppo DFEAs only.) Can you prepare the monitoring data for an Annual Environment Report of Chemical and Biological water quality in 2007?							
1.5 Others								
1.5.1	Can you make training of Data Management on Basic water quality to new staff?							
1.5.2	(This question for Damascus, Homs and Aleppo DFEAs only.) Can you make training of Data Management on Air quality to new staff?							
1.5.3	(This question for Damascus, Damascus Countryside, Homs and Aleppo DFEAs only.) Can you make training of Data Management on Chemical and Biological water to new staff?							
1.6 Attitude to the Project								
1.6.1	Are you interested in the Project?							
1.6.2	Is the Project useful for your job and role?							
1.6.3	Are you satisfied the Project?							
1.6.4	Are you satisfied training of the Project?							
1.6.5	Did you fully participate to the Project?							
1.6.6	Did you receive enough support from Director?							
1.6.7	Did you receive enough support from GCEA?							
1.6.8	Do you have intention to continue and extend your roles in the Project?							
1.6.9	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.6.10	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.7 Over-all evaluation: What is your current level for data management?						Grade A <input type="checkbox"/>	Grade B <input type="checkbox"/>	

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

3) Grade A: be able to input the analyzed data, evaluate the data, and determine them by yourself.

4) Grade B: be able to input the analyzed data, but need decision by the superior to evaluate and determine the data.

End

Annex 3-2: **Questionnaire Sheets for Project Evaluation**

3.2.7 Public Awareness and **Environmental Education**

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

6. Public Awareness/ Environmental Education (C-6-1:Self-evaluation) (This Questionnaire is for all C/P of GCEA and DFEAs in charge for Public Awareness/ Environmental Education.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Management of Information on Environmental Monitoring (EMO)								
1.1.1	Do you understand importance of public awareness by using monitoring data?							
1.1.2	Do you have enough knowledge on public awareness activity by using monitoring data?							
1.1.3	Do you have enough knowledge how to use monitoring data in public awareness activity?							
1.2 Organizing Periodic Meeting with Private Sector such as Chamber of Industry (This question is only for 4 DFEAs; Damascus, Aleppo, Homs, and Lattakia)								
1.2.1	Have you established an organizational network?							
1.2.2	Do you have inter-personal negotiation skill?							
1.2.3	Do you have planning skills for the meeting?							
1.2.4	Can you coordinate the meeting?							
1.2.5	Can you be a facilitator for the meeting?							
1.3 Organizing Periodic Meeting with NGOs and Communities (This question is only for 4 DFEAs; Damascus, Aleppo, Homs, and Lattakia)								
1.3.1	Have you established an organizational network?							
1.3.2	Do you have inter-personal negotiation skill?							
1.3.3	Do you have planning skills for meeting?							
1.3.4	Can you coordinate the meeting?							
1.3.5	Can you be a facilitator for the meeting?							
1.4 Publish of an Annual Environmental Report								
1.4.1	Do you have skills for statistical analysis?							
1.4.2	Do you have basic knowledge and information on environmental problems?							
1.4.3	Do you have report writing skill?							
1.4.4	Do you accept and deal with complaints from citizens properly?							
1.5 Attitude to the Project								
1.5.1	Are you interested in the Project?							
1.5.2	Is the Project useful for your job and role?							
1.5.3	Are you satisfied the Project?							
1.5.4	Are you satisfied training of the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.5	Did you fully participate in the Project?							
1.5.6	Did you receive enough time and chance to continue EMO activities?							
1.5.7	Did you read and study about EMO and analysis by yourself?							
1.5.8	Did you receive enough support from Director?							
1.5.9	Did you receive enough support from GCEA?							
1.5.10	Do you have intention to continue and extend your roles in the Project?							
1.5.11	Do you have intention to teach and transfer skills and knowledge obtained from the Project to your colleagues and staff?							
1.5.12	Do you want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.13	Can you be a trainer (Grade-A) for other C/P?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

6. Public Awareness/ Environmental Education (C-6-2:Evaluation by the Director) (This Questionnaire is for all C/P of GCEA and DFEAs in charge for Public Awareness/ Environmental Education.)

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Management of Information on Environmental Monitoring (EMO)								
1.1.1	Does she/he understand importance of public awareness by using monitoring data?							
1.1.2	Does she/he have adequate knowledge on public awareness activity by using monitoring data?							
1.1.3	Does she/he have adequate knowledge how to use monitoring data in public awareness activity?							
1.2 Organizing Periodic Meeting with Private Sector such as Chamber of Industry (This question is only for 4 DFEAs; Damascus, Aleppo, Homs, and Lattakia)								
1.2.1	Does she/he establish an organizational network?							
1.2.2	Does she/he have inter-personal negotiation skill?							
1.2.3	Does she/he have planning skills for meeting?							
1.2.4	Can she/he coordinate the meeting?							
1.2.5	Can she/he be a facilitator for the meeting?							
1.3 Organizing Periodic Meeting with NGOs and Communities (This question is only for 4 DFEAs; Damascus, Aleppo, Homs, and Lattakia)								
1.3.1	Has she/he established an organizational network?							
1.3.2	Does she/he have inter-personal negotiation skill?							
1.3.3	Does she/he have planning skills for meeting?							
1.3.4	Can she/he coordinate the meeting?							
1.3.5	Can she/he be a facilitator for the meeting?							
1.4 Publish of an Annual Environmental Report								
1.4.1	Does she/he have skills for statistical analysis?							
1.4.2	Does she/he have basic knowledge and information on environmental problems?							
1.4.3	Does she/he have report writing skill?							
1.4.4	Does she/he accept and deal with complaints from citizens properly?							
1.5 Attitude to the Project								
1.5.1	Is she/he interested in the Project?							
1.5.2	Is the Project useful for her/his job and role?							
1.5.3	Is she/he satisfied the Project?							
1.5.4	Is she/he satisfied training of the Project?							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.5.5	Did she/he fully participate to the Project?							
1.5.6	Did she/he receive enough time and chance to continue EMO activities?							
1.5.7	Did she/he read and study about EMO and analysis by her/himself?							
1.5.8	Did she/he receive enough support from you?							
1.5.9	Did she/he receive enough support from GCEA?							
1.5.10	Does she/he have intention to continue and extend her/his roles in the Project?							
1.5.11	Does she/he have intention to teach and transfer skills and knowledge obtained from the Project to her/his colleagues and staff?							
1.5.12	Does she/he want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.13	Can you be a trainer (Grade-A) for other C/P?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

C- Record of Evaluation on Environmental Monitoring Activities

Re.No.001-01-001 Mr. / Ms. _____ (Date : _____)

Recorded by _____ Sign: _____

**6. Public Awareness/ Environmental Education (C-6-3:Evaluation by the JICA Expert Team)
(This Questionnaire is for all C/P of GCEA and DFEAs in charge for Public Awareness/
Environmental Education.)**

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
1.1 Management of Information on Environmental Monitoring (EMO)								
1.1.1	Does she/he understand importance of public awareness by using monitoring data?							
1.1.2	Does she/he have adequate knowledge on public awareness activity by using monitoring data?							
1.1.3	Does she/he have adequate knowledge how to use monitoring data in public awareness activity?							
1.2 Organization of Periodic Meeting with Private Sector such as Chamber of Industry (This question is only for 4 DFEAs; Damascus, Aleppo, Homs, and Lattakia)								
1.2.1	Does she/he establish an organizational network?							
1.2.2	Does she/he have inter-personal negotiation skill?							
1.2.3	Does she/he have planning skills for meeting?							
1.2.4	Can she/he undertake periodic meeting?							
1.3 Organization of Periodic Meeting with NGOs and Communities (This question is only for 4 DFEAs; Damascus, Aleppo, Homs, and Lattakia)								
1.3.1	Has she/he established an organizational network?							
1.3.2	Does she/he have inter-personal negotiation skill?							
1.3.3	Does she/he have planning skills for meeting?							
1.3.4	Can she/he coordinate the meeting?							
1.3.5	Can she/he be a facilitator for the meeting?							
1.4 Publish of an Annual Environmental Report								
1.4.1	Does she/he have skills for statistical analysis?							
1.4.2	Does she/he have basic knowledge and information on environmental problems?							
1.4.3	Does she/he have report writing skill?							
1.4.4	Does she/he accept and deal with complaints from citizens properly?							
1.5 Attitude to the Project								
1.5.1	Is she/he interested in the Project?							
1.5.2	Is the Project useful for her/his job and role?							
1.5.3	Is she/he satisfied the Project?							
1.5.4	Is she/he satisfied training of the Project?							
1.5.5	Did she/he fully participate to the Project?							
1.5.6	Did she/he receive enough time and							

No.	Evaluation Item	Evaluation					Key Factor for C/P	Note
		A	B	C	D	E		
	chance to continue EMO activities?							
1.5.7	Did she/he read and study about EMO and analysis by her/himself?							
1.5.8	Did she/he receive enough support from Director?							
1.5.9	Did she/he receive enough support from GCEA?							
1.5.10	Does she/he have intention to continue and extend her/his roles in the Project?							
1.5.11	Does she/he have intention to teach and transfer skills and knowledge obtained from the Project to her/his colleagues and staff?							
1.5.12	Does she/he want to prepare a document related to EMO results and to present in seminars and workshops?							
1.5.13	Can you be a trainer (Grade-A) for other C/P?							

Note: 1) Evaluation levels are A: achieving/improving more than 80%, B: 80-60%, C: 60-40%, D: 40-20%, E: less than 20%.

2) Blank columns should be marked ○: conditions of C/P before starting the Project, and ●: present conditions .

End

Annex 3-3:

Guideline for Environmental Monitoring

3.3.1 Damascus DFEA

Guideline for Environmental Monitoring in Damascus DFEA

1. Objective of Environmental Monitoring

- (1) To observe the industrial pollution sources within the borders of Damascus.
- (2) To enhancing and supporting the activities of the environmental inspection using the monitoring data.
- (3) Working for spreading the Environmental awareness and enhancing the public awareness through media.
- (4) Introduction of the Voluntary Environmental Monitoring system within the factories and enterprises

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) All areas belonging to Damascus Governorate
- (2) Priority areas

Special areas for water quality analysis	Special areas for air quality analysis
JOBAR and the area around	JOBAR and the area around
Qaboun Area	Qaboun Area
BAB Sharki Area	Dummar project area
Industrial Area Ibn Asaker	Industrial Area Ibn Asaker
Barada river branches (Daiani, Akrabani, Toura)	Bab Toma Area
Restaurants of old town of Damascus	Governorate square
Slaughter house	Zoo Area
Restaurants of Jazmatieh area	
Restaurants along Barada river in Rabweh	

2.2 Monitoring Stations

As for the stations related to water quality analysis they are as follow

Syrian Dairy company, Al-Khomasia Company, Tanneries, Al-Ehda Asharia Hayat Soap factory, Wella Factory, Jallap for beverage Factory, Zamzam Factory, metal factory in addition to Barada river branches, slaughter house, restaurants in Jazmatieh and Rabweh area.

The stations were selected as a continuation to same monitoring plan of 2006 according to the plan of the DFEA, the danger is resulting from some polluting companies such as the taineeries, Al-Khomasia company and some detergent factories.

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Prepare the following Table.

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. DAWSSA	M of Housing and construction	Samples are sent to make sure of the results of the analysis done at the DFEA Laboratory	Analysis is done in different times.
2. ESRC (Environmental Scientific Research Center)	MOLAE	Monitoring the results of the analysis resulting from the waste water treatment plant	Till now nothing is made because the WWTP is not ready yet
3. DFEAs at the Governorates	MOLAE	Heavy metals and chemical analysis	Samples are periodically sent to the Central Lab at Damascus DFEA

4. Contents and Measuring Plan

Prepare the following Table.

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Basic Water Quality Analysis)	- direct sampling or composite sampling	- six times/ Year for each establishment	- 14 parameters	- simple analysis	
2. Chemical and Biological Water quality	- direct sampling or composite sampling	- six times/ Year for each establishment	Fluoride, Chromium, Cyanide, COD and chloroform	- Chemical and Biological	Training is still on going for these analysis
3. Heavy Metal Analysis	Direct Sampling	3 samples each month	13 elements	Flame and furnace	Samples are received from other DFEAs
4. Air quality analysis	Filters and absorption solutions	4 samples each month	TSP, PM10, NOX, SO2, O3 and Pb	- simple sampler - mobile station	

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

After Sampling and conducting the required analysis to check the pollution caused by the establishment, the results are recorded both on paper and in the computer then they are discussed to identify which are above the limits according to the Syrian Standards and a copy of these results are sent to GCEA.

Note:

a) The Monitoring data are not used yet because the Lab has not been accredited officially

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

Periodically DFEA staff is making calibration for the equipment of the Lab and conducting integrated inventory for the chemical, reagents and glassware each three months. All these data are recorded in the OM manual of the Lab.

6.2 Lab Accreditation and QA/QC

The Laboratory of the DFEA participated in the program of AEC for the quality control of the Lab. In the beginning the correct result rate was about 50-60% but now it is more than 85%. In future participation will be expanded to include the heavy metal analysis.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

(1) Water basic analysis: Eng. Laila Al-Durra- Ms. Iman Soliman, Ms. Reem Sader elden, Ms. Asma Tabba- Eng. Amira Al-Hamwee, Mr. Samer Mokbel.

(2) Chemical and Biological Analysis: Eng. Rania Soliman- Ms. Inas Webby- Ms. Asma Tabba- Eng. Amira Al-Hamwee.

(3) Heavy Metal Analysis: Ms. Iman Soliman- Ms. Reem Sader elden- Eng. Talat Harb, Ms. Sohad Sida- Mr. Samer Khouri.

(4) Air Quality analysis: Eng. Omaira Younes- Eng. Feryal Al-Housaini- Eng. Heba Adra- Ms. Rafah Zaghmout- Mr. Moneer Al-Mostapha- Mr. Motaz Al-Abdallah

(5) Data Management: Dr. Mothanna Ghanem- Ms. Hanan Saman- Ms. Yara Esameil

7.2 Budget Preparation for Environmental Monitoring

1,500,000 sp was allocated as a budget for the laboratory works from Damascus Governorate.

8. Report Preparation and Submission to GCEA

At the end of each year, the annual report is prepared by the DFEA including detailed explanation to what has been achieved all over the year including sampling, analyzing, number of samples and frequency and the preparation for the next year plan.

9. Others

9.1 Current Problems and Constraints to be solved

Some existing equipment such as chloride device is not accurate because it depends mainly for the eyes of the analyzer and this leads to the differences in the results.

As for the analysis made by the DFEA which belongs to other DFEAs (chemical, biological and heavy metal analysis), Damascus DFEA should receive money for them because such analysis is consuming chemicals and reagents.

Due to high needs to use the de ionized water within the Lab, the DFEA hopes to be provided with a special water distillation unit because the existing unit is not enough for this purpose as well as the staff find difficulties in dealing with it.

Finally the DFEA requests to accelerate of the operation of the waste water treatment plant WWTP due to the delay from the Supplier who didn't apply the technical conditions mentioned by the technical committee.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.2 Damascus Countryside DFEA

<<Guideline for Environmental Monitoring in Damascus Country Side DFEA>>

1. Objective of Environmental Monitoring

The environmental monitoring in Damascus Country Side aims:

(1) To monitor the quantity and the quality of the water. The priority in monitoring the water is as follow:

- Waste water which is produced from the industrial factories and other organizations (chemical- textile- Foods...).
- Waste water which is produced from tourism organizations and especially which discharge the waste in Barada river.
- Ground water.
- Rivers (Barada river).

(2) To monitor the emitted gases from industrial organizations.

- In 2007, the emitted gases from industrial organizations were monitored depending on the complaints which had been received by Damascus Country Side DFEA. A monitoring plan for the emitted gases will be conducted in 2008.

We mention that the analysis results of the liquid wastes and the results of gases measurements are compared with the Syrian standards /2850/ and /2752/.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

Initiatory Damascus Country Side DFEA is covering all of the areas in the governorate, and the priority is given to the most polluted areas and which have the most number of the polluting companies such as (Speneh, Sehnaya, Al Keswa, Adra...ext) because the high consuming of water in the manufacturing.

We have concentrated on the on the organizations and the companies which do not have treatment stations to treat their industrial wastes, and whose wastes are high. We have also monitored the organizations which have treatment stations to control the work quality of these stations and their activity.

The branches of Barada river which have high rate of pollution were specified such as Al Mleha.

Concerning the air, air monitoring station was activated, and the following areas will be monitored:

- Adra (Factories – Habitations – Beside the cement factory – Brokers)
- Haran Al Awamid (Beside Teshreen thermal stations)
- Jeroud and Yabroud (The cement factories – Concrete mixers)
- Speneh, Mleha, Jaramna, Tal Kedri...ext.

2.2 Monitoring Stations

Water surface	Number of stations	Area	Remarks
Industrial waste water	124	1. Ashrafiyet	
		Sohnaya	
		2. Sohnaya	
		3. Daraiah	
		4. Khyart Danoon	
		5. Al Keswa	
		6. Der Ali	
		7. Speneh	
		8. Akraba	
		9. Bayt Saham	
		10. Babylah	
		11. Sede Mekdad	
		12. Al Adlieah	
		13. Tal Kerdi	
		14. Adra	
		15. Al Rehan	
		16. Maydaa	
		17. Al Sabourah	
		18. Al Gasouleh	
		19. Karahta	
		20. Al Gezlanieh	
		21. Masraba	
		22. Hoshblas	
		23. Al Hameh	
24. Yabroud			

		25. Al Dower	
		26. Doumah	
		27. Hajerah	
		28. Airpot Road	
		29. Al Syadeh Zainab	
Ground water	8	30. Al Nashabieh	

2.3 Sampling frequency:

The period of the EMP starts from 2 January 2008 up to 31 December 2008. The frequency of the EMP is summarized in the following table:

	Monitoring station name	Manufacturing category	Location	Frequency Once each	Number
1.	Ahmad Burghli factory for paintings	Paintings	Ashrafiyet Sohna	6 months	2
2.	Abdeen Co. for printing inks	Printing ink	Al Hameh square	6 months	2
3.	Al Rawas for heaters	Heaters	Al Hameh	6 months	2
4.	Nestle	Foods/Milk	Khan El Shih	6 months	2
5.	Al Aksa Co.	Oils	Al Mleha	6 months	2
6.	Al Kasas for paintings	Paintings	Tal Kerdi	6 months	2
7.	The New Organization for appetizers manufacturing	Foods	Adra	6 months	2
8.	Daboul & Sadat for sulfa chemicals	Chemicals	Deir Ali	6 months	2
9.	Middle East for chemicals	Chemicals	Adra	6 months	2
10.	Bell company	Dairy	Behind the Conferences palace	6 months	2
11.	Hajar glycerin	Glycerin	Khyart Danoon	6 months	2
12.	Al Areek for manufacturing foods substances	Oils	Ashrafiyet Sohna	6 months	2
13.	Animalism Medicines and Chicken Injections factory	Animalism Medicines	Al Dwair	6 months	2
14.	Zanoubia ceramic	Ceramic	Khyart Danoon	6 months	2
15.	The Syrian company for chemical manufacturing	Chemicals	Khyart Danoon	6 months	2
16.	Al Reef ceramic	Ceramic	Khyart Danoon	6 months	2
17.	Yobica company for paintings	Paintings	Khyart Danoon	6 months	2
18.	Al Malaki ceramic	Ceramic	Khyart Danoon	6 months	2
19.	Al Sham ceramic	Ceramic	Khyart Danoon	6 months	2
20.	Fenland and Syrian company for dairy	Dairy	Ashrafiyet Sohna	6 months	2
21.	Al Gawlan for meat	Meat	Ashrafiyet Sohna	6 months	2

	manufacturing				
22.	Al Alamiah strings	Strings	Ashrafiyet Sohnaya	6 months	2
23.	Mawlawi detergents	Detergents	Ashrafiyet Sohnaya	Year	1
24.	Norbak for covering	Printing and Covering	Ashrafiyet Sohnaya	6 months	2
25.	Al Sham for batteries manufacturing	Batteries	Ashrafiyet Sohnaya	Year	1
26.	Obied for tailoring	Tailoring	Ashrafiyet Sohnaya	Year	1
27.	Al Debs for carton	Carton	Ashrafiyet Sohnaya	6 months	2
28.	Al Ahliah for printing	Printing and Covering	Ashrafiyet Sohnaya	6 months	2
29.	Ziad for animalism and agricultural medicines	Animalism Medicines	Deir Khaybah	6 months	2
30.	Al Namaa company (Modhesh)	Detergents	Speneh	6 months	2
31.	Al Waszeer detergents	Detergents	Speneh	4 months	3
32.	Al Mojahed Tex	Strings dying	Tal Kerdi	6 months	2
33.	Hajjar for texturing	Strings dying	Tal Kerdi	6 months	2
34.	Ayash for carton	Carton	Tal Kerdi	6 months	2
35.	Halak for manufacturing and business	Soap + Fat	Tal Kerdi	6 months	2
36.	The Syrian company for carton	Carton	Al Rihan	Year	1
37.	Abood for Adhering bars	Adhering bars	Tal Kerdi	6 months	2
38.	Salsabeel for soda juice	Soda juice	Al Saboura	Year	
39.	Al Faniah for printing and covering	Printing and Covering	Al Saboura	6 months	2
40.	Iblea for manufacturing and business	Foods/ Pizza	Al Saboura	Year	1
41.	Samiramis sweets	Foods/Sweets	Al Saboura	Year	1
42.	Midfarm medicines company	Human medicines	Akraba	6 months	2
43.	Kemeh chocolate	Chocolate	Akraba	Year	1
44.	Al Rihawi dying factory	Dying	Akraba	6 months	2
45.	Abo Mishel waning color factory	Dying	Akraba	Year	1
46.	Loubna workshop for cream	Cream manufacturing	Al Bzeneh	Year	1
47.	The Syrian and Spain company for agricultural manufacturing	Pickle	Al Gezlanieh	Year	1

48.	Al Sham soap	Soap	Al Gasouleh	6 months	2
49.	Yonochima for medicines manufacturing	Human medicines	Karahta	6 months	2
50.	Al Arabi paintings	Paintings	Al Gezlanieh	6 months	2
51.	Al Bahri for Medical company	Medicines	Al Gasouleh	6 months	2
52.	Al Mankoush for dairy	Dairy	Mesraba	Year	1
53.	Al Sawas for dairy	Dairy	Mesraba	Year	1
54.	Tarabein for dairy	Dairy	Mesraba	Year	1
55.	Al Haditha company for milk and canning	Milk	Bayt Saham	Year	1
56.	Rebal company	Juice	Akraba	6 months	2
57.	Al Doha organization for foods substances	Chocolate	Babilah	Year	1
58.	Al Saadeh Chocolate	Chocolate	Babilah	Year	1
59.	Dianah detergents	Detergents	Speneh	6 months	2
60.	Matiz company	Detergents	Speneh	Year	1
61.	Sheikh and Sharaf for dairy	Dairy	Speneh	6 months	2
62.	Al Fayhaa for animalism medicines	Animalism Medicines	Speneh	6 months	2
63.	Al Shaer for chemicals	Detergents	Speneh	6 months	2
64.	Al Twafeek for annihilators	Annihilators	Al Nashabiah	6 months	2
65.	Al Seyofi for iron	Metals	Al Gasouleh	6 months	2
66.	Amowaj for cosmetics	Cosmetics	Al Gasouleh	6 months	2
67.	Al Wataniah for farms protection	Annihilators	Maydaa	6 months	2
68.	Sar for detergents	Detergents	Adra	6 months	2
69.	Bofalu detergents	Detergents	Bayt Saham	Year	1
70.	Monzer and Abdul Karim dying factory	Dying	Bayt Saham	6 months	2
71.	Kaderi and Kasem factory	Dying	Bayt Saham	6 months	2
72.	Regents factory	Reagents	Sidi Mekdak	6 months	2
73.	Mami chocolate	Chocolate	Sidi Mekdak	Year	1
74.	Al Horih for strings dying	Dying	Sidi Mekdak	6 months	2
75.	Yasen Abo Laban organization	Soap	Al Adliah	6 months	2
76.	Tabrek dying factory	Dying	Al Adliah	6 months	2
77.	Liberos company for	Oil mixing	Yabroud	6 months	2

	vegetarian oils mixing				
78.	Al Ameriah for metals	Metals	Yabroud	6 months	2
79.	Tarek Ben Ziad for printing	Printing	Babilah	6 months	2
80.	Al Rahawange for printing	Printing	Babilah	Year	1
81.	Al Bader Organization	Chocolate	Babilah	Year	1
82.	Al Kanawati for medicals	Cosmetics	Al Adliah	6 months	2
83.	Beta for medicines manufacturing	Medicines	Al Adliah	6 months	2
84.	Al Haditha for farmes protection	Annihilators	Al Adliah	6 months	2
85.	Al Dour chocolate	Chocolate	Airport road	Year	1
86.	Al Kaed company for principal substances	Principal substances	Al Adliah	Year	1
87.	Al Shark for raw paper manufacturing	Paper	Airport road	6 months	2
88.	Ansag company for strings manufacturing	Dying	Airport road	6 months	2
89.	Al Noor for appetizers	Appetizers	Al Birakdar	Year	1
90.	Rankous for sheets	Sheets	Hajirah	Year	1
91.	Al Watanieh for animalism medicines	Animalism medicines	Hajirah	6 months	2
92.	Kashkool for chocolate and biscuits manufacturing	Chocolate	Hajirah	Year	1
93.	Mayas for foods manufacturing	Foods	Hajirah	Year	1
94.	Madar detergents	Detergents	Daraa road	Year	1
95.	Lala candies	Candies	Hosh Al Shaer	Year	1
96.	Nazek for gum manufacturing	Gum	Akraba	Year	1
97.	Kozbaree for metal coating	Metal coating	Hoshblas	Year	1
98.	Al Homsii paintings	Paintings	Speneh	Year	1
99.	Hana meat	Foods/Meats	Al Keswa	6 months	2
100.	Biodima for fertilizers	Fertilizers	Gbaadin	6 months	2
101.	Al Admeh paintings	Paintings	Tal Kerdi	6 months	2
102.	Animalism medicines factory	Animalism medicines	Tal Kerdi	6 months	2
103.	Handwork organization	Meat and fat manufacturing	Douma	6 months	2
104.	The Syrian and Saudi company		Hosh El Zarah	Year	1

	for investments				
105.	Nadeel Hamzeh for foods development	Bread and pastry	Daria	Year	1
106.	Iceman	Ice cream	Daria	Year	1
107.	Mohana sweets	Sweets	Al Soboura	Year	1
108.	Akadima for animalism medicines	Animalism medicines	Al Soboura	Year	1
109.	Patchi chocolate	Chocolate	Al Soboura	Year	1
110.	Al Samah socks	Socks	Al Soboura	Year	1
111.	Al Rawas for chemicals	Chemicals	Ashrafiyet Sohnaya	6 months	2
112.	Al Kobtan for dairy	Dairy	Ashrafiyet Sohnaya	6 months	2
113.	The International company for medicines manufacturing	Human medicines	Ashrafiyet Sohnaya	6 months	2
114.	Al Motawast for foods manufacturing	Human medicines	Al Dwair	6 months	2
115.	Freemont juice	Juice	Al Keswa	Year	1
116.	Al Khalat for foods manufacturing	Foods	Al Keswa	6 months	2
117.	Al Arabia for salt rectification	Salt rectification	Maidaa	6 months	2
118.	Master cola company	Cola	Al Dwair	Year	1
119.	Rooboo Al Jazerah for foods	Foods	Al Mleha	Year	1
120.	Hansel company for foods	Foods	Al Keswa	Year	1
121.	Al Markaziah for covering	Covering	Al Keswa	6 months	2
122.	Madar for printing inks	Printing ink	Al Keswa	6 months	2
123.	Formest company for ice cream	Ice cream	Sergaya	Year	1
124.	Ishpilia company for ceramic	Ceramic	Al Keswa	6 months	2
125.	Al Wehda well		Al Nashabieh	Year	1
126.	Tal Al Nashabiah well		Al Nashabieh	Year	1
127.	Hazrma well (Al Tahoon)		Al Nashabieh	Year	1
128.	Hazrma well (Yousef Shahin)		Al Nashabieh	Year	1
129.	Police Station well		Al Nashabieh	Year	1
130.	Cattle shops well		Al Nashabieh	Year	1
131.	The Deep well		Al Nashabieh	Year	1
132.	Well in the back of the area directorate		Al Nashabieh	Year	1

The total number of the stations which we are going to monitor, is 132 stations. And considering the frequencies, the total number will be 212 stations, in addition to the complaints.

Considering the air in the work environment, samples will be taken from the factories and the organizations which emit polluted gases.

3. Contents and Measuring Plan

Related to sending samples to Damascus DFEA lab for measuring parameters we do not have in our DFEA, we have not needed to send any samples because we have all of the equipment to make the required analysis and measurements such as GC, and AAS.

4. Arrangement, Interpretation, and Usage of Monitoring Data

We receive the report which is not authenticated, after finishing the lab measurements and finishing filling the report, then we scrutinize the results to check if they are logical or not, and to check the relation between each other because of the possibility of having mistakes in the results such as (BOD > COD). In this cases we remove the wrong result, or we repeat the analysis another time to find the accurate and the correspondent results. After that we input the results in two ways:

- We type a special report for our DFEA as Word file.
- We type an accredited report from GCEA as Excel file.

In both cases the results are recorded as JET method. We send the results on CD to GCEA in the end of each year, like what happened in 2006. In the future results will be sent periodically through the local network.

The companies can see the results of their waste water, if they ask to. And we introduce to them the measured parameters and their relation with the Syrian standard values.

In the end of each year, and after applying the yearly EMP, we prepare tables that have the rate of the factories and the organizations which discharge their waste to the sewers and which discharge their waste to the agricultural lands. We also specify the discordant, the accordant organizations, the organizations which have treatment stations and settlement tanks, and the organizations which do not have any treatment facility.

In the future we will make reports for the air measurements, we will input the results in the computer, and corroborate them with the help of JET to prepare this kind of reports.

5. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

1. O/M of Facilities, Equipment, Instruments: We need ACs – ventilation system – Electrical equipment. O/M the equipment needs periodical maintenance for the equipment in order to guarantee the continuation and the work quality.

We manage the spare parts and the consumables, and we concentrate on the parts which need electrical wires in the lab, and which should be monitored well, and which deal with high pressure gases in order to guarantee safety operation.

2. O/M of Reagents and Chemicals: Notebooks and computer are used to prepare the management records as reagents consuming record which includes (reagent name – name of analysis – used amount – remind amount.) Everything related to the stored chemicals and reagents is recorded (reagent name – reagent number - used amount – remind amount.) in the reagent inventory record.

A notebook was prepared to show the expiring date for the reagents and the chemicals to prevent the bad use. Expired reagents and reagents which are not stored well are discharged.

About the current situation of the reagents and the chemicals that we have now, they are not stored properly or in suitable conditions because we do not have enough budget to build a special room for storing this reagents, but we are preparing a future plan to devote these requirements by storing the dangerous chemicals and reagents in suitable storing conditions.

Note: The analysis is done according the SOP which is some unified written instructions. The SOP describes the technical and managing elements in the working plan, or in the QC plan.

3. QA/QC: The reason of QA/QC is to eliminate and avoid any mistake in the monitoring operations by applying the right method, or a standard method for all of the monitoring operations such as (sampling – analyzing – dealing with data – preparing report)

QA/QC is an important part of the quality management, and it concentrates on attaining all of its requirements, and attaining the confidence that all of its requirements will be attained.

Required components of QA are:

- Prepare SOP and new methods.
- Maintaining the equipment especially periodically calibration and prepare consumables (standards – reagents)
- Attaining the accuracy of the analysis by preparing valid reagents, and which are stored well. And doing the right measurements by following SOP, and confirming the cleanness of the glassware, and tools used in sampling and analysis.

7. Staffing and Budget Preparation

The staff which is responsible on environmental monitoring is:

Name	Title	Responsible on	Notes
Eng. Muna Jumaa	Chemical Engineer	Lab chief	
Eng. Nadir Taim	Petrochemical Engineer	Assistant of lab chief	
Eng. Ammar Hasan	Agronomist	Sampling and analysis	
Eng. Lina yousef	Agronomist	Sampling and analysis and reagent management	
Eng. Hana Bayrouti	Chemical Engineer	Sampling and analysis	
Eng. Ali Shawish	Textile Engineer	Data management	
Eng. Assistant Dana Tahhan	Chemist	Data management	
Eng. Assistant Malek Suleiman	Chemist	Sampling and analysis	
Eng. Assistant Rania Kara'awi	Chemist	Sampling and analysis and reagent management	

End

Annex 3-3:

Guideline for Environmental Monitoring

3.3.3 Allepo DFEA

Guideline for Environmental Monitoring in Aleppo DFEA

1. Objective of Environmental Monitoring

- (1) To identify the pollution sources in the governorate and giving priorities to the most important issues.**
- (2) Setting a schedule to get ride of pollution.**
- (3) Establishing a database depending on the monitoring data to support the environmental inspection**
- (4) Periodical Monitoring for the water resources (ground water, springs).**
- (5) Monitoring the recipient water bodies for the sewerage (rivers, dams) and comparing it with the standards.**
- (6) Spreading of the public awareness through the preparation of the reports and showing them to governmental organization and non governmental organizations.**

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

The coverage area will be taken in consideration to include all the areas which are taking big share of pollution.

Example

- (1) Al-Shokaief**
- (2) Kafr Hamra**
- (3) Ballermoon**
- (4) Khan Al-Asal**
- (5) Azzarbeh**
- (6) Al-Sheikh Saeid**
- (7) Torab Al-Malek**
- (8) City Center of Aleppo City**

The Above mentioned Areas have different industries such as factories for dyeing, tanneries, cement, agro food products (Tahina). Also olive extracting mills and beerin factories can be found as well. Water bodies which receive the pollutants as Efrin river and some nearby wells from the pollution sources.

2.2 Monitoring Stations

It is considered during the establishment of the Monitoring stations in Aleppo the main following principals:

In Aleppo several industries are concentrated which produce many pollutants and it is difficult to monitor all these industries, so the priority is given to most polluting industries.

- It is noted that water and air quality for the above mentioned establishment is monitored where these establishments are discharging their liquid wastes and their process is depending on Fuel which causes air pollution.
- Monitoring the water quality of the treated waste water after coming out of the waste water treatment plant in Sheikh Saeid before discharging it in Quiq River and used for irrigation.
- Monitoring the rivers and main dams in Aleppo Governorate such as Efrin river which receives waste water from the olive oil extracting mills.
- Monitoring the ground water in the nearby wells for the industrial activities.

Fixed Monitoring Stations:

6 locations were chosen in Aleppo city to monitor the air quality and these locations are the city center and around Aleppo city. These areas were chosen because they give good idea about the air pollution for Aleppo city starting from the center.

Almost all the polluting industries are located at the borders of Aleppo city.

After receiving the results of the air quality monitoring and understanding how they spread depending on the weather indicators which are received from the metrological stations installed in the city center, Shokaief and Shiekh Saeid, the results are analyzed and the solutions are put due to them

As for the Monitoring of water pollution the following:

- Location of big scale and polluting industries
- Outlet of the sewerage treatment plant in Sheikh Saeid
- Water of rivers and Dams
- Seasonal Industries, ground water and springs.

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. General Company for Sewerage	M of Housing and Construction	Exchanging data and results of site visits	1) meeting one time/ year 2) sampling same time one time/ month
2. Directorate of water resources	Ministry of Irrigation	Exchanging the quality assurance information because they have authorized Lab	
3. Aleppo University	Ministry of Higher Education	Seminars, Workshops and training courses	
4. Directorate of Education	Ministry of Education	Meetings, Lectures and seminars	
5. Aleppo Governorate	MOLAE	Submission of the DFEA proposals to be adopted	
6. Aleppo City Council	MOLAE	Cooperation in granting the licenses	
7. Industrial city	MOLAE	Cooperation in granting the licenses	
8. Directorate of Industry	Ministry of Industry	Exchanging ideas about the production lines.	
9. Chamber of industry		Seminar Preparation and workshops	
10. Engineering Syndicate	Ministry of Housing and construction	Exchanging information about quality assurance because they have lab	
11- Directorate of weather forecast	Ministry of Defense	Exchanging information for the weather forecast	

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

a special recording format was adopted to record the results of the analysis taking in consideration the accuracy of each equipment and the possibility of inserting correction factors. The results are saved to a folder in the computer and then the data is interpreted and compared with the allowed limits, then the record is printed and files are saved.

5.2 Usage of Monitoring Data

a plan was put to eliminate the pollution in each establishment according to the agreement with the owners, then periodical monitoring are done and the results are compared with the Syrian standards to check the compliance. Same matter is done when monitoring the municipal waste water, water bodies, springs and rivers.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

- (1) The equipment are operated and calibrated periodically according to the SOP
- (2) Equipment and Glassware are cleaned well after each analysis.
- (3) Daily check for the safety of the utilities (water, Electricity, etc.)
- (4) Special records for the reagents will be filled.

6.2 O/M of Reagents and Chemicals

- (1) Special records will be used for the reagents to clarify the existing quantities of the reagents.
- (2) Reagents are stored according to the storage conditions for each reagent.
- (3) The liquid waste water of the laboratory are stored in special containers to be sent to the WWTP at the central laboratory in DAM DFEA.

6.3 Lab Accreditation and QA/QC

correspondence were made with the Atomic Energy Commission to accredit the laboratory of the DFEA in conducting some types of analysis. We assure repeating same procedures with the same accuracy to ensure the quality then they are fixed due to adopted standards and criteria.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) The laboratory staff**
- (2) The DFEA staff who can conduct the Environmental Monitoring and Inspection.**

7.2 Budget Preparation for Environmental Monitoring

The budget is prepared depending on the monitoring plan which will put in details taking in consideration dealing with the complaints of the residences and the consumables.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

The report will show the implementation ratio of the plan as well as the obstacles if found in addition to the analysis results for monitoring stations and the interpretation of the data.

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

The GCEA will receive hard copy and electric file of the report
The related authorities in the Governorate will receive a copy of the report.

9. Others

9.1 Current Problems and Constraints to be solved

- Shortage in the Technical staff for the Laboratory work (Chemists, Laboratory analyzers)
- Shortage in some equipment which affects the work negatively such as Electric generator.
- The medical and other types of allowance are not found for the workers in the Laboratory.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.4 Homs DFEA

Guideline for Environmental Monitoring in Homs DFEA

1. Objective of Environmental Monitoring

- (1) Establishment of Environmental Monitoring system related water and air quality and establishing the activities for the implementation of the integrated environmental monitoring.
- (2) Preliminary pollution source survey and identifying the monitoring stations.
- (3) Setting an action plan for public awareness and environmental education with the participation of all environmental NGOs activities.

Note:

- a) Consider both air and water if you have capability.
- b) Principal function of monitoring in MOLAE is pollution source control especially for water quality monitoring.
- c) When your objective includes a monitoring in public water bodies (inc. spring, reservoir, groundwater), you should refer collaboration with other concerned ministries and agencies in this Guideline.
- d) Remind that Syria has discharge standard for water and ambient and emission standard in air.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) The existing industry in all areas of Homs Governorate including the industrial area and the industrial area in Hesia.
- (2) Orantes River bed starting from the entrance to the Syrian borders till Rastan Lake.
- (3) Ground water all over the Governorate

note:

- a) All territory of your Governorate in principle.
- b) You should specify the prioritized areas/ fields to be monitored considering peculiarity of your Governorate, such as AAA industrial zone, BBB river basin, etc.
- c) Attach general map showing location of the prioritized are in this Guideline.

2.2 Monitoring Stations

- (1) The outlets of the industrial public and private companies
- (2) Air pollutants resulting in Homs city and the areas around.
- (3) Air Pollutants resulting from the industrial activities.

note:

- a) Describe principles to set monitoring station in your Governorate, such as individual pollution source and/ or area base, type and scale of pollution sources, priority on discharge/ emission quality, etc.
- b) Specify fix and mobile monitoring stations with their main purposes.
- b) Not necessary to show specific monitoring stations in this Guideline. These should be decided in the Environmental Monitoring Plan.

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Directorate of water resources	M of Irrigation	1) monitoring plan preparation 2) monitoring of reservoir	1) meeting one time/ year 2) sampling same time one time/ month
2. Directorate of water resources	M of Irrigation	- Monitoring the pollution of Orantes River - Monitoring the Lakes and Reservoirs - Monitoring the Industrial discharged to Orantes river and to the soil.	
3- Directorate of Industry in Homs, Traffic Police and Directorate of Transport	Ministry of Industry Ministry of Interior Ministry of Transport	Monitoring Air pollution sources	

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source)	- direct sampling - composite sampling	- one time/ month	- 14 parameters (BOD, ...)	- simple analysis - chemical and bio - *AAS	- *sending sample to DAM DFEA for analysis
2. Water quality (public water body)			NH ₄ , SO ₄ , PO ₄ , NO ₃ , NO ₂ , CL, Cr, NI, Pb		
3. Air quality (pollution source)			TSP, PM10, NO _x , NH ₃ , SO ₃ , SO ₂ , O ₃ , F	Equipment are presented from JICA and MOLAE	
4. Ambient air quality				- simple sampler - mobile station	

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

(1) Data interpretation for water pollution monitoring is done due to the Syrian Standards adopted either for the discharging to the public sewerage or to the land and soil or to the general water bodies.

(2) The Experience at the DFEA staff is still insufficient in the field of Data interpretation for the odd results and in removing the interferences that might happened through the analysis.

note:

- a) Describe principle procedure for collection, input, arrangement, and interpretation.
- b) Training materials for SOP, O/M manual, data management should be used.

5.2 Usage of Monitoring Data: the usage of the monitoring data acquired within the plan of 2008 should be in the public awareness of the citizens and environmental education and this requires:

(1) Preparation of public awareness and environmental education network through the participation of NGOs, media and directorate of education.

(2) Coordination with the chamber of industry to raise and enhance the capacity of the environmental awareness at the industrial activities through the workshops and seminars for different environmental issues within the plan of 2008.

note:

- a) Describe your plan how to use monitoring data obtained considering your objectives described in Chapter 1.
- b) Refer to the Action Plan of Public Awareness.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

(1) Training was conducted to operate all equipment provided by JICA and there was no training regarding the maintenance and we are still facing shortage in this experience because the Japanese side didn't teach us how to do it.

(2) The Japanese side presented only the OM only.

6.2 O/M of Reagents and Chemicals

(1) Training was made on the administration of the chemicals by the JICA while we didn't receive any training for safety and how to handle these materials and the Japanese didn't submit enough information in this field.

note:

- a) Describe principle procedures and activities based on SOP and O/M manual including safety.

6.3 Lab Accreditation and QA/QC

(1) The Japanese side presented some preliminary about QA/QC and it is not enough at all to work in this field.

(2) This subject is still needs to enhance the training for QA/QC and currently GCEA in coordination with AEC are conducting training in this field to reach to the accreditation of the lab.

Note:

- a) Describe your plan and activity for Lab Accreditation and QA/QC.

QA/QC is one of the most important matters for the capacity development project, the training was conducted only in water lab only using the standard solutions for some Parameters such as COD and some chemical ions, but as for air quality we didn't receive any training regarding this matter and we hope to receive soon.

The DFEA of Homs will participate in the quality control program for AEC for air quality in 2008 to receive more concentrated training.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) **The laboratory for water analysis:** preliminary survey was conducted for the inventory of the pollution source and identification of the monitoring stations and parameters.
- (2) **The Laboratory for Monitoring the Air Quality:** the laboratory of reagents preparation and standards solutions to prepare all standard solutions related to the environmental monitoring of air quality.

7.2 Budget Preparation for Environmental Monitoring

- (1) The cost of the environmental monitoring for the polluted water for 2008 about 1 million sp and the monitoring stations are as follow 13 stations for Orantes river, 4 station s for Qatina lake and 30 stations for the discharges of the industrial activities.
- (2) The estimated cost for air monitoring according to the plan of 2008 by 1.25 millions sp and the number of the monitoring stations are 15.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

- (1) The monthly report will be prepared and submitted to GCEA by e-mail through the website.

9. Others

9.1 Current Problems and Constraints to be solved

- (1) The effective and successful implementation of the environmental plan requires the increase of the allocated budget required for each laboratory (water, air) as well the allocations in the budget for the sampling needs to increase the allocations for petrol which helps in the access of the monitoring stations mentioned in the plan.
- (2) Budget allocation for the maintenance of the equipment and supplying the spare parts and preliminary the maintenance is conducted at the supplier or at the branches of the companies existed in Damascus.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.5 Hama DFEA

Guideline for Environmental Monitoring in Hama DFEA

1. Objective of Environmental Monitoring

- (1) Control factory wastes which cause pollution.
- (2) Pollution monitoring of surface and underground water and reducing pollution as possible
- (3) Publish public awareness.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) The governorate and its countryside, taking into consideration industrial areas

2.2 Monitoring Stations

- (1) Treatment station –Orantuse river
- (2)Sali factory for children's food
- (3) Cheese factory
- (3)Salora factory for cheese and milk
- (4)Robana factory for cheese and milk
- (5)Alhani factory for cheeses
- (6)Nada factory for beverage
- (7)Carnazi factory for oils
- (8)Abd Alrazak factory for oils
- (9)Alzohor factory for oils
- (10)Alnawaeer factory for oils
- (11)Alnoor factory for oils
- (12)Alumarra factory for oils
- (13)Alahlia factory for oils
- (14) Alfadel factory for oils
- (15)Hama Oils Company.
- (16)Onion factory
- (17)Ceramic factory
- (18)Wool factory
- (19)Shezar factory for beverage
- (20)Steel factory
- (21)Cement factory
- (22)Alzara station
- (23)Mehardeh station
- (24)Almajed factory for beverage

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Water Resources	M of Irrigation	1) monitoring plan preparation 2) monitoring of reservoir 3)Environmental inspection &EIA	1) meeting one time/ year 2) sampling same time one time/ month
2. Technical Services	MOLAE	Environmental inspection	
3.Waste water	M of Housing	Environmental inspection	

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source)	- direct sampling - composite sampling	- one time/ month - one time/2 months	- 14 parameters (BOD, ...)	- simple analysis - chemical and bio - AAS	- sending sample to DAM DFEA for analysis
2. Water quality (public water body)					
3. Air quality (pollution source)					
4. Ambient air quality				- simple sampler - mobile station	

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

(1) We take samples according to the action plan, analysis the samples, record results in a special report then compare the results with Syrian standard specification to know pollution percentage.

5.2 Usage of Monitoring Data

(1) According to monitoring data, we take the suitable procedures to control pollution in the mentioned stations by informing the factory owners about existed pollution and how to active their treatment stations

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

(1) We depend on SOP when we conduct experiments and operate equipments; in case of any fault in any equipment, we send it to maintenance section, record the kind of fault and how to mend in a special record.

(2) To ...

6.2 O/M of Reagents and Chemicals

(1) There are special records for reagents to know the quantity of consumed reagents .At the beginning of New Year We count the amount of required reagents to be purchased according to action plan.

6.3 Lab Accreditation and QA/QC

(1) We submitted an application to GCEA showing our desire to participate in national program for evaluating chemical analysis quality in APC for Lab Accreditation.

-We compare the taken results with each other's periodically, and compare them with limited values, in addition to use Standard solution for QC.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

(1) We are training new engineers.

(2) We have 6 engineers, only two are working full-time in lab.

7.2 Budget Preparation for Environmental Monitoring

(1) At the beginning of New Year, we will coordinate with GCEA and MOLAE for allocating a particular amount for lab equipments maintenance.

(2) We count the lack in glass wares and required reagents to be insured by a purchasing committee.

(3) We work to ensure special budge for public awareness.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

(1) At the end of year, a report is prepared showing the current situation of the lab, samples taken during the year and analysis's results.

(2) The report contains the following:

-Introduction.

-Executive summary

-Targets

-Related monitoring activity

-Details

-Lab O/M

-Cleaning and arranging the lab

-Data management and QA/QC

-EMP for next year

-Annex

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

(1) EMP Data is submitted to GCEA by network.

9. Others

9.1 Current Problems and Constraints to be solved

(1) We need a driver dedicated to the lab.

9.2 Provision of Environmental Monitoring

(1) We aim to have ability to analysis wastes discharged by oils factories according to the plenty of these factories, and insure special equipments for such analysis.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.6 Lattakia DFEA

Guideline for Environmental Monitoring in Lattakia DFEA

1. Objective of Environmental Monitoring

- (1) To identify and survey the pollution sources.
 - (2) To analyze the industrial and municipal waste water.
 - (3) To monitor the discharges of the municipal waste water for the main cities in the governorate to search for any sensible change
 - (4) To identify the pollution indicators in the samples.
 - (5) Cooperation with the Costal Basin Directorate, Directorate of Technical services and water establishment at the Governorate to search for any sensible change in any polluted location in the Governorate.
 - (6) Utilizing the Syrian Standards for liquid discharges to evaluate the pollution indicators in the samples.
- c) When your objective includes a monitoring in public water bodies (inc. spring, reservoir, groundwater), you should refer collaboration with other concerned ministries and agencies in this Guideline.
- d) Remind that Syria has discharge standard for water and ambient and emission standard in air.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) Jableh Area
- (2) Qardaha Area
- (3) Al-Haffeh Area
- (4) Lattakia Area

All pollution sources are shown in the attached map.

2.2 Monitoring Stations

Water Body	No. of stations	Locations	Note
Industrial Waste water	8 stations	Joud for Beverage Al-Motawaset for Tissues Ugarit Iron Profile Al-Rabie for perform oils Shamsi Factory Joud for Wood Arjoum Factory	
Municipal Waste water	4 stations	Al-Azhari Seaport Southern Kornish Al-Fayd	
Rivers and Lakes	8 stations	Al-Shamali River Al-Qash Al-Sharshir Al-Sanaobar Al-Rmileh River Balloran Lake 16 th November Lake Al-Safarkieh Dam	

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Prepare the following Table.

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. General Commission for water resources	Ministry of Irrigation	Chemical analysis	Sampling same time with the directorate of costal basin for the quality control of the Lab
2.. Chamber of Commerce and Industry	Ministry of Economy	Public Awareness	
3. Water Establishment	Ministry of Housing and Utilities	Capacity Development of the DFEA Staff	

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality	-composite sampling	one time/3 months	Heavy Metals	ASS	Cooperation with Atomic Energy Commission AEC
2. Water quality (public water body)	Direct Sampling	One time/ month	PH, NO3, PO4, COD, BOD, color	Chemical and biological analysis	Sampling from water bodies
3. Water quality (industrial waste water before discharging to water bodies)	Direct Sampling	One time/ month	PH, NO3, PO4, COD, BOD, color	Chemical and biological analysis	Sampling from industrial waste water for the industrial establishments

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

(1) After sampling and analyzing at the DFEA Laboratory, the data are input by the data management staff and the site is monitored all over the year then it is evaluated from the technical point of view through the comparison of the environmental indicators with the Syrian standards.

(2) Data interpretation is done according to the sample (river, sea, industrial waste water, municipal waste water) as well as the interpretation for the industrial waste water samples is done on the basis of the raw materials used in the industrial process.

(3) S.O.P and OM are used for all parameters during the analysis.

5.2 Usage of Monitoring Data

(1) Environmental monitoring data are used to evaluate the site from the environmental point of view through the comparison of the environmental indicators for the site with the Syrian Standards.

(2) Within the activities of the DFEA in the Public Awareness in conducting meetings with the members of Chamber of industry and explaining the objectives of the Environmental Monitoring. As well as coordination with Directorate of Education to conduct public awareness at schools.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 Existing Equipment and Instrument at the Lab

1) ASS with all accessories, 2) Gas chromatograph GC with all accessories, 3) Spectrophotometer with computer, 4) Balance, 5) COD Reactor and BOD incubator 6) DR890, 7)TUR meter 8)PH meter, 9) DO Meter, 10)TDS meter, 11) Glassware, 12) Microscope, Auto calve, 13) water distillation unit, 14) refrigerators.

6.2 O/M of Reagents and Chemicals

The equipment which were presented by JICA are operated using the SOP and OM. The administration of the chemicals is done by a special staff assigned for this purpose and informs the director in case of expiry or shortage.

6.3 Lab Accreditation and QA/QC

The Laboratory is under accreditation for the analysis quality control through:

1- Participation in the National Program for the Quality Control of the Laboratory Analysis in the field of water quality and the concentration of heavy metals in water.

2. Dense self training for the laboratory analysis through the periodical monitoring and sampling and the implementation of the DFEA action Plan.

3. The joined sampling with the water establishment and the directorate of the costal basin and conduct analysis for the samples taken and achieve good results.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring is headed by Eng. Ghaida Younes

Division	Staff names
Water safety	Eng. Amal Alo- Eng. Asma Ali
Land safety	Eng. Ruba Ahmad- Eng. Mayada Eskandar
Chemical Safety and waste management	Eng. Mohammed Radwan- Eng. Tawfeek Badr
Air Safety	Eng. Thaer Mohammed
Biodiversity and protected area	Eng. Mania Mahmoud- Eng. Abeer Atik

7.2 Budget Preparation for Environmental Monitoring

- (1) To prepare the required budget for the needed equipment for the activation of the environment monitoring works.
- (2) To allocate stable budget for chemical materials and required reagents.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

The report is prepared after checking all analysis results for the pollution locations in the governorate and setting action plan for the DFEA matching the pollution situation in the governorate containing the pollution sources and the sampling frequency in addition to the present condition of the lab (equipment, staff and difficulties).

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

The DFEA is sending Environmental Inspection Committees to the industrial establishment in the governorate note:

- a) Describe your principle procedures and activities to send monitoring data and submit reports to GCEA and to prepare environmental report about the situation of the pollution in these establishments in the governorate and submit to the Governor in addition to GCEA.

9. Others

9.1 Current Problems and Constraints to be solved

The random distribution of the industrial establishments in the Governorate and not being in one area (industrial area) which caused difficulties to the environmental monitoring for these establishments.

9.2 Provision of Environmental Monitoring

The DFEA in Lattakia is preparing an annual monitoring plan adding new pollution sources to the previous one if founded with all the proposal to activate the environmental monitoring to all pollution sources in the Governorate.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.7 Deir ez Zor DFEA

<<Guideline for Environmental Monitoring in Der Ezzor DFEA>>

1. Objective of Environmental Monitoring

Monitoring locations of pollution on Euphrates River to achieve the main goal of monitoring which is: pollution sources control for water quality, and developing industrial, agricultural, and domestic pollution control using actual monitoring data, and estimating pollutants quantity to establish Treatment station plants (TSP) in order to get along with accredited Syrian Standards and comply with the 10th 5-year plan of the Syrian Arab Republic, the Environmental Monitoring in Der Ezzor is as shown below:

- (1) Monitoring industrial wastes water in order to check water quality and correspond with the approved Syrian standards.
- 2) Monitoring the water quality of the sewage and comparing with the approved Syrian standards
- 3) Monitoring the water quality of agricultural waste canals and comparing with the approved Syrian standards
- 4) Check the raw water of Euphrates River in specific points to measure the level of pollution
- 5) Emergencies (complaints) , from citizens, public and private bodies in the Governorate.

From what mentioned above, Der Ezzor DFEA is trying to achieve the following:

- publishing Environmental Awareness and the results of pollution monitoring, enhancing cooperation with the other concerned bodies to achieve Environmental Monitoring objectives

2. Selection of Coverage Area and Monitoring Stations

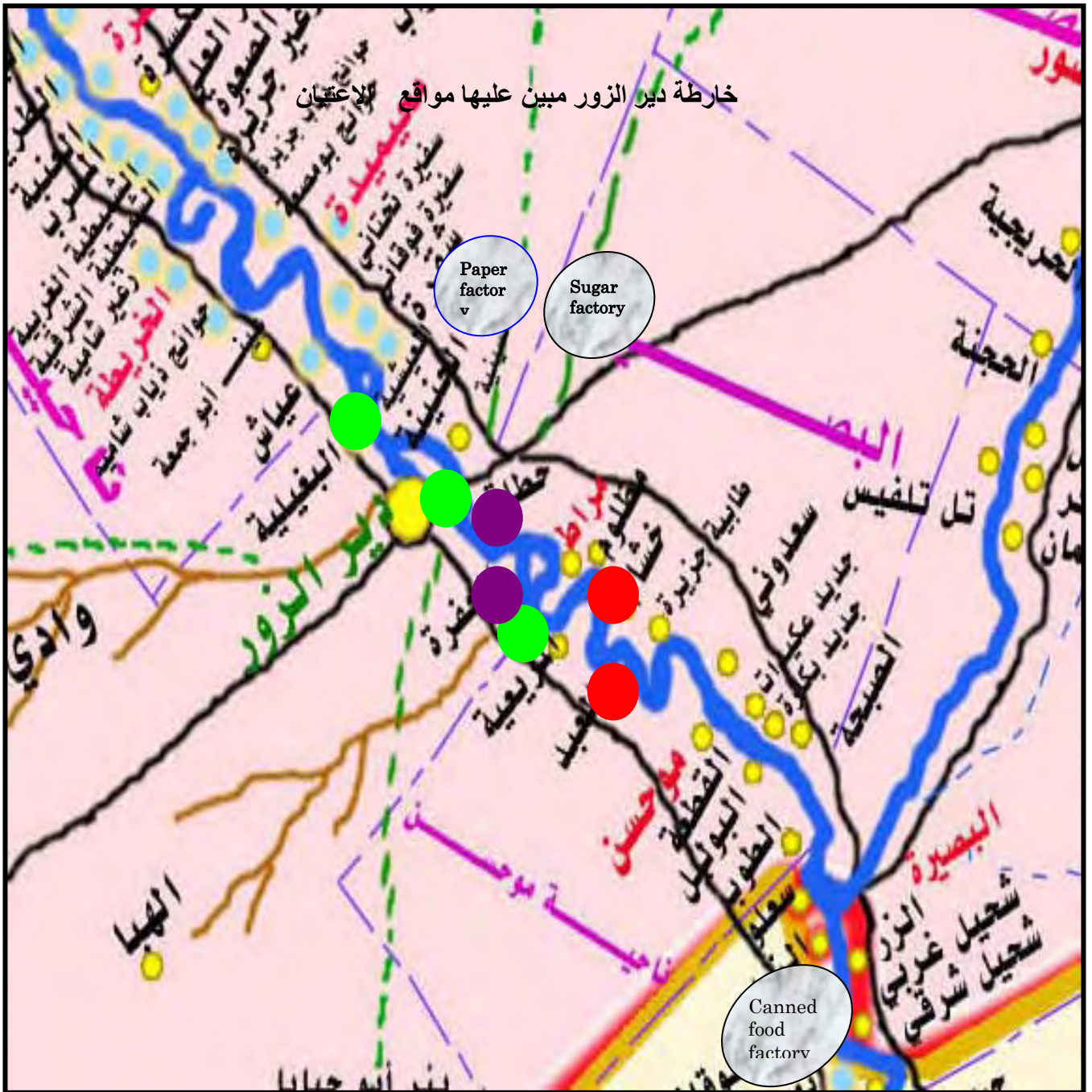
We are looking forward to cover all areas in Der Ezzor Governorate, but because it is considered the second largest governorate in Syria, and Euphrates River is the main source of water (continuous flowing, through 200 km within

Der Ezzor Governorate lands from Ma'dan to Alboukamal with depths up to 4 meters in some places and 300-2000 m³/sec depending on the season and the average rainfall There was a priority in choosing sampling stations, because Euphrates River is polluted by several kinds of untreated wastewater (industrial, agricultural , and domestic)

Salty lands spread in Der Ezzor Governorate in different ratios, from Al-Tibni to the end of Alboukamal approaching from Iraqi borders, in order to limit this phenomenon. The government made lands reclamation, main agricultural wastewater canals, in which branch canals discharge; agricultural wastewater is the main pollution source of Euphrates River because of unfair usage of fertilizers and pesticides, besides, farmers basically depend on economic harvests (wheat/cotton) without applying agricultural circles system, and using these canals -by some residents- for discharging domestic wastewater.

Industrial wastewater: there are several public factories in Der Ezzor; they discharged their wastewater into uncovered canals or concrete pipes, then to Euphrates River without treatment

Domestic wastewater: there is no TSP in Der Ezzor Governorate, all kinds of wastewater discharge (residences, hospitals, slaughters, Der Ezzor cow farm)



Deir Ezzor Map with Sampling Stations

Sampling stations for agriculture waste water



Sampling stations for raw water



Sampling stations for sewage



Monitoring stations:

The main sampling stations of liquid pollution sources on Euphrates River in Der Ezzor Governorate are considered as fixed pollution sources as shown in the following table:

Location	Type	No. of Stations	Water body
- Deir Ezzor 7 km area - Deir Ezzor Alhosainieh - Deir Ezzor Almiadien - Deir Ezzor 7 km area	- Sugar factory - Paper factory - Canned food factory - Yarns and textile factory	4	1- industrial waste water
- Deir Ezzor Harabesh - Deir Ezzor	- main sewerage outlet - Hawika area outlet	2	2- Municipal waste water
- Dier Ezzor Almrchieh - Dier Ezzor Al abed	- Agricultural waste water canal - Agricultural waste water canal	5	3- Rivers
- before the entrance of the city - inside the city - after the city	- Raw water from the river directly		
			4- Emergencies

As mentioned above, Der Ezzor DFEA is working on:

- growing up spirit of cooperation with industrial establishments managers, chamber of industry, and other concerned bodies
- establishing database about the volume of pollution resulted
- forcing all polluting establishments to set treatment station plants according to the environmental law No. 50 and the 10th 5-year plan of the Syrian Arab Republic
- Capacity development of environmental inspection and industrial pollution control for DFEA staff
- holding training courses and environmental awareness for the technicians of industrial establishments about pollution control
- Continuous connection and periodical meetings with the owners and the managers of industrial establishments to follow up and discuss all new issues
- establishing voluntary environmental monitoring and reports submitting system by industrial establishments
- activating public awareness of the citizens
- following up the establishing of Treatment station plant with other concerned bodies in the Governorate
- rationalization and monitoring of using pesticides and bactericides by the farmers, especially in the season of planting economical harvests to reduce pollution of agricultural wastewater with cooperation with Agriculture and Rehabilitation Directorate
- Activation the roll of the media and environmental awareness through the activation the usage and management of monitoring data to increase and spread the environmental awareness among

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Sugar factory	M of Industry	1) discussing matters related to pollution 2) monitoring plan preparation	1) meeting one time/ year 2) sampling 3 times / month
2. Paper factory	M of Industry	1) discussing matters related to pollution 2) monitoring plan preparation	1) meeting one time/ year 2) sampling 3 times / month
3 Textile factory	M of Industry	1) discussing matters related to pollution 2) monitoring plan preparation	1) meeting one time/ year 2) sampling 3 times / month
4. conserves factory	M of Industry	1) discussing matters related to pollution 2) monitoring plan preparation	1) meeting one time/ year 2) sampling 3 times / month
5. drinking water company and Der Ezzor City Council	M of Housing	1) discussing matters related to pollution 2) monitoring plan preparation	1) meeting one time/ year 2) sampling 3 times / month
6. Alfurat Al-Adna basin	M of Irrigation	1) discussing matters related to pollution 2) monitoring plan preparation	1) meeting one time/ year 2) sampling 3 times / month

4. Activities and Responsible and Implementation Organizations by Activity

Activity	Major Components	Responsible/ Implementation Organization	Duration of Implementation Period
Sugar factory TSP		- M. of Industry - company management	
Paper factory TSP		- M. of Industry - company management	
Domestic wastewater TSP		- M. of Housing - Water Company - Der Ezzor City Council	
Agricultural wastewater TSP		- M. of Irrigation - Alfurat Al-Adna basin	

5. Implementation Schedule (up to 2015)

Activity item	Sub-item	Implementation Period								
		2007	2008	2009	2010	2011	2012	2013	2014	2015
- Industrial wastewater TSP	1) Sugar		■	■						
	2) Paper		■	■						
- Domestic wastewater TSP	3) Harabes			■	■	■				
	4) Hwayka			■	■	■				
- Agricultural wastewater TSP	5) Discharging canals				■	■	■	■		
- Networking					■	■	■	■		
- Automatic monitoring					■	■	■	■	■	■

6. Contents and measurement plans:

Der Ezzor lab is carrying out basic water quality analysis (14 parameters) are shown below:

Others	Rivers & lakes	Domestics waste water	Industrial waste water	Parameter	No
	0	0	0	PH	1
	0	0	0	Water temperature	2
				Air temperature	
	0	0	0	EC	3
	0	0	0	TDS	4
	0		0	DO	5
	0		0	Color	6
	0	0	0	SS	7
	0	0	0	BOD	8
	0	0	0	COD	9
	0	0	0	NO3	10
	0	0	0	NH3	11
	0	0	0	PO4	12
	0	0	0	CL-	13
	0		0	Turbidity	14

Analyses methods for parameters are as the followings:

Notes	Analysis method	Parameter
	Electrode method	PH
	Thermometer	Water Temp
		Air Temperature
	Electrode method	EC
	Electrode method	TDS
	Membrane electrode method	DO
	Platinum -cobalt APHA	Color
	Photometric method	SS
	Pressure sensor method	BOD
	Reactor digesting method	COD
	Cadmium reduction method	NO3
	Salicilate method	NH3
	Amino acid method	PO4
	Silver nitrate method	CL-
	Niphilometric method	Turbidity

7. Contents and Measuring Plan

Sampling station	Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Sugar factory	1. Water quality (pollution source)	- direct sampling	- 4 times/ year	- 14 parameters (BOD, ...)	- simple analysis	- sending sample to DAM DFEA for analysis
2. Paper factory	1. Water quality (pollution source)	- direct sampling	- 8 times/ year	- 14 parameters (BOD, ...)	- simple analysis	- sending sample to DAM DFEA for analysis
3 Textile factory	1. Water quality (pollution source)	- direct sampling	- 3 times/ year	- 14 parameters (BOD, ...)	- simple analysis	
4. conserves factory	1. Water quality (pollution source)	- direct sampling	- 2 times/ year	- 14 parameters (BOD, ...)	- simple analysis	
5. Domestic wastewater	1. Water quality (pollution source)	- direct sampling	-10 times/ year	- 14 parameters (BOD, ...)	- simple analysis	
6. Agricultural wastewater	1. Water quality (pollution source)	- direct sampling	- 9times/ year	- 14 parameters (BOD, ...)	- simple analysis	
7. Raw water	1. Water quality (pollution source)	- direct sampling	- 6 times/ year	- 14 parameters (BOD, ...)	- simple analysis	
8. Complaints						

Arrangements, data interpretation, using monitoring data:

Lab staff carries out these steps for sampling:

- identifying sampling location on the map
- calibrating all field and lab equipments if needed
- making sure that all equipments are ready for measuring, (charging, requirements ...)
- preparing all tools that are necessary for sampling (list of all requirements for sampling)
- preparing documents and tables for recording data
- carrying out all lab and field measurements according to the SOPs prepared by JICA experts
- Field measurements: (PH, air and water temperature, EC, TDS, DO)
- Lab measurements: (color, SS, COD, BOD, NO3, NH3, PO4, CL, turbidity)
- comparing results with Syrian Standards
- Results interpretation depending on this comparison
- Data management
- informing GCEA, the Governor, and related bodies about this data
- introducing solutions and proposals to get rid of all kinds of pollution
- activating the role of media and public awareness by spreading monitoring data via seminars, local and central newspapers

O/M equipments, tools...:

We make the following steps every 3 months:

No.	equipment	usage	number	Problems (date, time)	remarks

For glassware, tools, and others we make the following steps to identify the number of damaged ones, and the number to be purchased:

No.	name	Specifications	Number		remarks
			total	Current	

For reagents (high range, low range), chemicals, and standard solutions, we prepare inventory records to know the expired, consumed ones; and what we need to purchase in the next stage

Calibrating equipments as follows:

Name of equipment	Calibration frequency
890 device	No calibration
PH device	Every measurement
EC-TDS device	Every month
DO device	Every measurement
Turbidity device	Every measurement
COD device	No calibration

We analyze standards once every 10 samples to test the accuracy of the equipments and reach a high level in QA/QC, we informed GCEA about our will to participate the national program of AEC for evaluating lab analyses quality, which will help us to accredit our lab in measuring the following parameters:

parameter	method
PH	Electrode method
EC	Electrode method
COD	Reactor digesting method
BOD	Pressure sensor method
TDS	Electrode method
NO3-N	Cadmium reduction method
PO4	Amino acid method
NH3-N	Salicilate method

Preparing staff and budget:

The staff in charge with Environmental Monitoring:

Name	In charge with	Phone number	Remarks
Saher Abdullah	Lab chief, Data Management	0944-769753 / 051-359950	
Fathiyeh Moaine'e	Lab Safety	0947-253459 / 051-212624	
Rasha Ezzawi	Equipments and spare parts management	051-364154	
Abdullah Al-Abed	Reagents and Glassware management	0932-848217 / 051-712348	
Amani Allujji	Liquid and solid wastes treatment	0933-593724 / 051-222614	

Preparing Environmental monitoring budget:

We can estimate our needs for the next year by taking into account our needs of reagents, glassware, chemicals, and O/M procedures, and then we send a letter to the DFEA director to ask for the money

Preparing annual report and handle it to GCEA:

Our lab prepares an annual report at the end of every year about what has implemented in that year and the EMP for the next year as follows:

<u>Contents</u>	
Introduction	
Summary about lab of Deir Ezzor DFEA	
General information about Deir Ezzor city	
Main Environmental problems in Deir Ezzor Governorate	
EMP of Deir Ezzor DFEA for the previous year	
Objectives of EMP	
Monitoring stations	
Locations map	
Monitoring duration and frequency	
Parameters to be analyzed and monitored	
Analysis's methods	
Location's samples for EMP	

(Location-Discharging-results-Photos)	
First: Industrial wastewater	
Public Paper Company.	
Deir Ezzor Sugar Company.	
Conserves, (food factory).	
Second: Domestic wastewater.	
The main outlet in Deir Ezzor.	
Third: Rivers	
Agricultural wastewater.	
Raw water	
Fourth: Complaints	
Materials for the lab (in the previous year)	
Table shows the required	
Table shows reagents consumption for the previous year	
The EMP of the lab for the previous year	
Objectives of EMP	
Monitoring stations	
Locations map	
Monitoring duration and frequency	
Parameters to be analyzed and monitored	
Analysis's methods	
Table shows the required materials for lab in the next year	
Obstacles and difficulties faced the Lab in Deir Ezzor DFEA	
Recommendations and suggestions	
Annexes	

Current problems and obstacles to be solved:

1. continuous change of the laboratory staff
2. difficulty in sending dangerous chemicals wastes to the central lab in Damascus because of the big distance between our DFEA and Damascus DFEA
3. Difficulties in data interpretation that is done by the laboratory staff in addition to the shortage in the scientific references, which can help in this field.
4. Special uniform for the laboratory staff during the sampling is not available.
5. Shortage of the laboratory staff knowledge. About the objectives of the environmental monitoring and inspection.
6. There is no network connection between DFEA and GCEA, the matter which causes difficulties in data exchange and analysis results.
7. law No. 50 is not applied effectively, especially in the public sector

Suggestions and recommendations

1. Increasing the number of technicians in the laboratory and try to stabilize the existing staff.
2. More training for data interpretation in the project and increasing the number of references and knowledge.
3. Supplying the data transfer system and database using the networking through the STE branch in Deir Ezzor between the DFEA in Deir Ezzor and GCEA.
4. Training the laboratory staff on the environmental inspection procedures for the industrial establishments and others.
5. Activating the role of public awareness though using the results of the analysis to increase the awareness of the citizens.
6. The necessity of building the wastewater treatment facilities for the industrial activities to stop all kinds of industrial pollution and it should be matching the Syrian standards.
7. The necessity of establishing the sewerage treatment plants for all the outlets of the sewerage along the Euphrates River, and not to establish any future sewerage network without any treatment plant.
8. Rationalizing and monitoring the usage of the fertilizers and pesticides by the farmers especially during the economical crops season to reduce the impact of the pollution of agricultural wastewater and soil sanitation.
9. assuring the implementation of law No. 50

Annex 3-3:

Guideline for Environmental Monitoring

3.3.8 Idleb DFEA

Part-I: Guidance for Preparation of the Environmental Monitoring Guideline

<<Guideline for Environmental Monitoring in Idleb DFEA>>

1. Objective of Environmental Monitoring

- (1) To monitor the waste of the industrial organizations in order to boost the environmental inspection in the DFEA.
- (2) To monitor the sewage waste of the principal cities in order to find out the reason for any touchable change (new pollution source...). And in the future, to monitor the waste of the sewage treatment stations.
- (3) To monitor the quality of the ground water (wells, springs...) near the possible pollution sources, or after a request from decision makers, or after a complaint from people.
- (4) To monitor the quality of the natural water resources (rivers – dams) in some important places.
- (5) To gain sufficient practical and scientific experiences in the fields of samples analysis, interpreting the results, and the environmental monitoring.
- (6) To monitor some air pollution parameters, and to measure the noise in the work environment during the monitoring and inspection operations.
- (7) To compare the monitoring results with the national standards for air quality, and the national standards for waste water which allowed to be discharged to the environment and others.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

The coverage area includes all of the areas in the governorate in order to serve the purposes of the environmental monitoring which mentioned above. Some of these areas are:

- (1) Areas where there are industrial organizations (factories- olive pressers...)
- (2) Areas where there are natural resources of water (springs- rivers- dams...)
- (3) Areas where there is ground water near the pollution sources (dump sides- sewers...)
- (4) For air samples: Areas where there are organizations like stone brokers, and asphalt mixers.

2.2 Monitoring Stations

A- The principles of establishing monitoring stations depend on:

- (1) All of the industrial organizations which have waste water in the governorate are put in the plan.
- (2) The sewage stations of the principal cities which end in the rivers.
- (3) The monitoring stations on the rivers and the lakes: The stations areas are chosen before and after the pollution sources.
- (4) The monitoring stations of the springs and the wells in the governorate which are chosen depending on the complaints of the people or other organizations, or in case of pollution possibility in their water for any reason.

B-

- (1) Fixed monitoring stations for big organizations (vegetarian oil factories- sugar factory...), the monitoring stations of the sewage treatment station, and monitoring stations for rivers.
- (2) Mobile monitoring stations which are small industrial organizations, and monitoring stations for springs and wells.

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
Water Resources Directorate in Idleb	M of Irrigation	Exchanging information and analysis results, and corporate committees to protect the water resources.	
General Institute for Drinking Water and Sewage	M of Housing	Exchanging information and corporate committees related to sewage treatment stations	
Governorate	MOLEA	Reviving complaints and instructions to execute the solutions which are suggested by DFEA	
Local boards	MOLEA	Coordinating to follow up executing the solutions which	

		are suggested to protect the water resources.	
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4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source-industrial waste)	- Direct sampling -Composite sampling	- usually 2 times/year	- 14 parameters (pH- Tem- EC- TDS- SS- COD- BOD- NO ₃ ⁻ - Cl ⁻ PO ₄ ⁻ - NH ₃ -N)	- Simple analysis - Chemical and biological analysis - AAS analysis	- Sending sample to DAM DFEA for analysis
2. Water quality (general aqueous bodies)	- Direct sampling	-2 times/ year	14 parameters	- Simple analysis - Chemical and biological analysis - AAS analysis	-Sending sample to DAM DFEA for analysis
3. Air quality (pollution source)	- Direct sampling	During environmental inspection operations	CO-NOX-Cl ₂ -SO ₂ -H ₂ S-NH ₃ -VOC)		

5. Arrangement, Interpretation, and Usage of Monitoring Data

Arrangement and Interpretation

(1) The analysis results are recorded in the special data sheets in an accurate way, and then they are input in the computer as the accredited form of the data page. The data files are ordered in a folder in the computer. A unified rule is used to name the files.

The results are interpreted and brought in a simple way, and then the records and the folders are printed. The records are archived systematically.

(2) The plan involve almost all of the water surfaces in the governorate, most of the pollutions sources, and sewage water in order to collect completed data continuously, and in order to use this data to protect the natural resources monitoring data in environmental planning for the environmental reformation, and in the environmental awareness for all of the society activities.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

(1) The equipment are operated and calibrated periodically according to the SOP. We confirm the readiness of all of the equipment before each analysis.

(2) The cleaning operations for the equipment and the instruments are done completely after each complete analysis.

(3) The safety and the readiness of the faculties are confirmed daily.

(4) The reagents inventory record, the instruments O/M record, and others are filled

6.2 O/M of Reagents and Chemicals

(1) Reagents O/M record is filled to know the current amount of the reagents, the expired reagents, and others.

(2) Storing reagents is done in appropriate way as mentioned in the manual of reagent.

(3) The used reagents are collected in special tanks in order to send it to the central treatment station in Damascus DFEA.

6.3 Lab Accreditation and QA/QC

(1) All of the data related to the lab and to the staff of the lab have been saved.

(2) Training on QA/QC, and on applying QA/QC during work has been done.

(3) Coordinating with the management in order to request the required budget for the lab, and in order to use in the best way, has been done.

(4) Participation in the national program to evaluate the quality of the chemical analysis will be done in 2008 in coordination with AEC.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) Lab chief, and lab staff.
- (2) DFEA staff for monitoring operations which do not need sampling.

7.2 Budget Preparation for Environmental Monitoring

- (1) Budget is calculated depending on the requirements of the lab (reagents, maintenance...ext), considering what was consumed in the previous budgets.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

- (1) The report includes the working plan what was done, the analysis results of all sampling stations, information about the sampling stations, obstacles, and the plan and the requirements of the next year and .

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

- (1) An electronic version, and printed version of the annual report are submitted to the GCEA.
- (2) A copy of the report is submitted to the concerned bodies.

9. Others

9.1 Current Problems and Constraints to be solved

- (1) The lab staff is not devoted for the lab work, and technicians are not available in the lab.
- (2) We do not have some necessary lab equipment to help in the lab (stabilizer- dryer...)
- (3) The budget for the new labs is week.

9.2 Provision of Environmental Monitoring

- (1)The new plan will be submitted with the annual report.
- (2)The lab has been provided with the necessary equipment and materials conceding the available budget.
- (3)A plan to provide the lab of the DFEA with a lab to measure the soil pollution in 2008 was put.

End

Annex 3-3:

Guideline for Environmental Monitoring

3.3.9 Hasakeh DFEA

<<Guideline for Environmental Monitoring in Hasakeh DFEA>>

1. Objective of Environmental Monitoring

- (1) Monitor the main water bodies in the governorate, (rivers, dams, and underground water), and that in collaboration with the general directorate of Dejala and Alkhaboor basin and general establishment of drinking water and domestic in Hasakeh governorate.
- (2) Control the pollution source for water quality depending on Syrian standard specifications for drinking water and liquid wastes.
- (3) Enhance the role of environmental inspection in the directorate, within industrial activity monitoring, as we monitor the industrial wastes liquid and correspond them with Syrian standard specifications.
- (4) Gaining the lab staff of the directorate a sufficient experience, so by the time they can deal with any emergency concerned to water quality control.
- (5) Since we do not have an air lab so the air quality control becomes a future target. We aim to achieve it when we have required abilities.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

(1) Alhaskeh territory since it contains the most important water resources and their pollution resources (Alkhaboor and Algagag river, Basel Al Assad and Whestren dams, Daban spring, Alkhatonia lake, Aljibsa fuel field).

(2) Alkamishli, which considered the entrance gate of Algagag River to Syria. Alkamishli depends on underground wells to supply the citizens with drinking water (more than 40 wells in Alhilalia basin), in addition to there is a big industrial activity which its liquid wastes poured into Algagag River.

(3) Almalkeia territory since it has water resources and their pollution's resources (Maashook dam-Almansora dam-Bab Alhadeed dam—Alsffan spring-Alrmelan fuel field and waterway accompanied to fuel product)

(4) Raas Alaen territory to be monitored according to emergency item since it contains sources of Alkhaboor River.

2.2 Monitoring Stations

According to mentioned territories in previous item, we choose steady monitoring station because of current work circumstances. The monitoring station as following:

- (1) HSK-R1-001(Alkhaboor1): Sampling place of Alkhaboor river before getting together with Algagag river in Hasakeh city.
- (2) HSK-R2-002(Alkhaboor2): Sampling place of Alkhaboor river before getting together with Algagag river in Hasakeh city.
- (3) HSK-R2-001(Algagag1): Sampling place of Algagag river before getting together with Alkhaboor river in Hasakeh city.
- (4) HSK-R2-002 (Algagag2): Sampling place of Algagag river in Alkamishli city.
- (5) HSK-L-001(Lake): Sampling place of Basel Al Assad Lake located in south of Hasakeh.

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Directorate of public irrigation for Dejala and Euphrates basin.	M of Irrigation	1) Monitoring plan preparation 2) Dams monitoring. 3) Taking samples	1) Meeting one time before plan preparation. or when it is necessary . 2) sampling is when we take samples
2. The general establishment for drinking water and domestic	M of Housing	1) Monitoring plan preparation. 2) Drinking water monitoring . -Taking composite samples.	1) Meeting one time before plan preparation. Or when it is necessary.

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source)	- direct sampling	- one time/ year, and in emergency.	- 14 parameters (BOD, ...)	- simple analysis - chemical and bio - AAS	- sending sample to DAM DFEA for analysis
2. Water quality (public water body)	- direct sampling	- one time/ year, and in emergency.	- 14 parameters (BOD, ...)	- simple analysis - chemical and bio - AAS	- sending sample to DAM DFEA for analysis

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

- (1) Depending on checklist for sampling, we prepare equipments and tools for field sampling
- (2) Calibrating the equipments (if there is a need to) before sampling
- (3) Field sampling according to trained rules.
- (4) Using SOP as a reference.
- (5) Recording the field measurements and notes in the measurements and observation record
- (6) After finishing of fieldwork, we continue the rest analysis in the lab and record the result in the water quality results sheet.
- (7) Keeping the results in the paper archive record
- (8) Input data into the computer by data chief.
- (9) Interpreting the result according to what we have trained and got from our readings depending on Syrian standard specifications

5.2 Usage of Monitoring Data

- (1) To monitor water specifications of the mentioned monitoring stations.
- (2) To monitor industrial wastes specifications for some mentioned factories in environmental inspection plan comparing with Syrian standard specifications.
- (3) To monitor drinking water according to available standard we have (emergency item) Syrian standard specifications.
- (4) Publish data among citizens through the action Plan of public awareness by holding presentations and seminars.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

- (1) We depend on SOP during our work, up till now we haven't faced any problem in equipments due to our care and applying SOP.
- (2) Calibrating the equipments before using, (if there is need to)
- (3) Cleaning and washing equipments and tools after each usage.
- (4)Precaution when we deal with glassware.

6.2 O/M of Reagents and Chemicals

- (1) A table was organized for detergent management including purchasing date, expiry time, and reagents quantity and inventory results.
- (2) Depending on reagents and chemicals table, we ask for purchasing new items that are finished, or about to finish.
- (3)Following up the safety rules when handle with reagents and chemicals.

6.3 Lab Accreditation and QA/QC

- (1) We consider QA/QC as basic in our work. We have standard solution we use them to measure QA/QC, as we got accurate results. The last test we made it, we got accuracy 2% as for COD.
- (2)When there are differences in our results and other miniseries' lab, we turn to QA/QC principle. As it happened when we measured (NH₃-N) of drinking water in Alkamishli during August/2006, Our result was (0.07mg/l), while the result of water establishment was (0.215mg/l), so we measured standard solution of (NH₃-N); the error percentage was 50% as for water establishment.
- (3)We aim to achieve a lab accreditation within GCEA plan. We have received a type of required analysis to be accredited by Atomic power commission; we submitted our desire to GCEA that will coordinate with AEC the way of accreditation.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) Eng. Nawaf Othman (lab chief)
- (2) Eng. Aysar beniamdeen (analyst)
- (3) Eng. Gorge shabo (analyst)
- (4) Eng. Emad Meslet (Data management)
- (5) Eng. Janet Kivergies (public awareness)

We are training three new engineers in order to support our lab staff.

7.2 Budget Preparation for Environmental Monitoring

- (1) We have a good experience in budget preparation, as it was known the quantity of used reagents, consumed materials and damaged materials as glassware etc.
- (2) We prepare the budget for the next year before the end of the current year, that after defining our lab requirements in a chart with mentioning the cost for each item.
- (3) Submitting the budget to the directorate in order to ensure it by purchasing committee

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

(1) **After executing the whole plan at the end of year, we study the results of every station including emergency, we make the statistic, draw diagrams attached to the results, and interpret the result to be as a reference.**

(2) The report contains the following:

- Introduction.
- Executive summary
- Targets
- Related monitoring activity
- Details
- Lab O/M
- Cleaning and arranging the lab
- Data management and QA/QC
- EMP for next year
- Annex

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

- (1) After finishing the report, we make many copies to supply the following bodies:
- GCEA
 - The governor's office
 - Directorate of Irrigation
 - Establishment of water
 - Directorate of health
 - Lab archive

(2) Publishing the report by holding seminars and presentation in cultural centers

9. Others

9.1 Current Problems and Constraints to be solved

- (1) The current temporary lab is very small, but this problem to be solved by receiving the new building of the directorate by 2008
- (2) The lab staff is not dedicated in lab work, but this problem is going to be solved by coming three new engineers.
- (3) the lab staff needs more training at analysis related to drinking water quality according to received complaints especially Alkasawat.

9.2 Provision of Environmental Monitoring

- (1) The new EMP is submitted to the directorate by the beginning of New Year, to be accredited by lab work.
- (2) This EMP does not modify unless it is necessary.
- (3) This EMP is sent with lab report to the authorized bodies.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.10 Rakka DFEA

Guideline for Environmental Monitoring in Rakka DFEA

1. Objective of Environmental Monitoring

- (1) Monitoring water resources and confirming of water quality.
- (2) Periodical monitoring of pollution resources (Industrial –agricultural -Domestic)
- (3) Collaboration with directorate of water resources and general establishment for water concerning to monitoring Euphrates River .
- (4)Correspondence the gained results with Syrian standard specification of water resources.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1)We cover all territories in the governorate as (factories-waste water –agricultural waste)
- (2)We specified the priority as for Euphrates River monitoring; we took samples from many positions of Euphrates River since there are no big industries (chemical industries) in the governorate. .

2.2 Monitoring Stations

- (1)Each factory or establishment causes pollution
- (2) Euphrates River
- (3)Al Assad lake-Albaath dam-Nabeh Alaroos spring-Aljalab river.

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1.General establishment of water and waste water	M of housing	1)Water quality monitoring	The Sampling is in the same position .once/ month

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source)	- direct sampling	- one time/ month	- 14 parameters (BOD, ...)	- simple analysis	A table was set for Sending samples to Dam DFEA

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

- (1) Equipments calibration before going to sampling station
- (2) Lab and field measurements
- (3) Input the gained results and storing them in computer.

5.2 Usage of Monitoring Data

- (1)After getting steady measurements results for the same sampling station, these results are accredited so we should make aware people to reduce the emitted pollutants in order to remain within safety limits.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

(1) Taking care of lab instruments and equipments, making sure of their security and maintenance, and calibrating them regularly

6.2 O/M of Reagents and Chemicals

(1) Making lab chemicals inventory regularly to make sure of the expiry of these chemicals and limit the consumed amount in order to define lab budget.

a) Describe principle procedures and activities based on SOP and O/M manual including safety.

6.3 Lab Accreditation and QA/QC

(1) We are working on QA/QC by taking measurement for more than one sample.

(2) Measuring standard from time to time

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

(1) We have a lack in lab staff, but we are doing our best to monitor all pollution recourses and continue action plan.

7.2 Budget Preparation for Environmental Monitoring

(1) The special budget is prepared based on priority regarding to chemicals according to the available accreditation.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

(1) The report is prepared based on annual work, gained result and sampling map.

(2) An annual sampling plan is prepared with a proposal of sampling plan for next year.

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

(1) Data is submitted as an annual report to GCEA by using fax, or sending it with CD by mail.

9. Others

9.1 Current Problems and Constraints to be solved

(1) The lab staff is not enough,

(2) Inability of taking samples from the lakes or Euphrates river since there is no available boat.

9.2 Provision of Environmental Monitoring

(1) We cover all-important points, monitor and know the pollutant's percentage.

(2) We work to stop and limit the pollutants turned to the riverbed.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.11 Sweida DFEA

<<Guideline for Environmental Monitoring in Sweida DFEA>>

1. Objective of Environmental Monitoring

- (1) To monitor Water Quality of the natural resources –like dams, springs, and wells, with cooperation with Ministry of housing
- (2) To implement several lab analyses to identify pollution volume, its reasons, and to reduce it
- (3) To identify and monitor places of pollution, its percentage, and how to treat it
- (4) To monitor Air Quality in Sweida City, Salkhad City, Shahba City, and industrial areas
- (5) Dealing with complaints related to these subjects

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) All water resources in the Governorate –dams distributed all over the Governorate area, wells for different usages
- (2) Industrial wastewater discharged from some establishments (mentioned in the plan)
- (3) Several industrial areas (especially, central industrial area to the west of Sweida city)
- (4) Within the centers of the Governorate cities –concentration of gases and suspended particulate matters (SPM), noise
- (5) Existence of Asphalt-mixers, and rock-breakers area

2.2 Monitoring Stations

- (1) One fixed station for Air Quality Monitoring in Sweida City, and another mobile one for monitoring within the Governorate
- (2) One mobile station for monitoring Water Quality of dams and valleys periodically, and defining pollution concentrations
- (3) One mobile station for monitoring industrial wastewater and determining its validity for drinking and irrigation
- (4) One mobile station for monitoring noise

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Water Resources Directorate in Sweida	M. of Irrigation	1) monitoring plan preparation 2) monitoring of reservoir	meeting one time/ 3 months, with the capability of carrying out common sampling process
2. General Company for drinking water in Sweida	M. of housing	1) monitoring plan preparation 2) monitoring wells and springs	meeting one time/ 3 months, with the capability of carrying out common sampling process

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source)	- direct sampling	- one time/ 6 months	Different heavy metals	- AAS	- sending sample to DAM DFEA for analysis
2. Air quality (pollution source)	- direct sampling	- one time/ month	SPM + gases oxides	Direct air measurements	To be collected by mobile station
3. Air quality	- direct sampling	- one time/ month	SPM + gases oxides	- Simple samplers - mobile station	To be collected by mobile station
4. soil pollution ratio	- direct sampling	- one time/ 6 months	remaining impact of pesticides and heavy metals	Accumulation of heavy metals and remaining impact of pesticides	Sending samples to be analyzed

5. Arrangement, Interpretation, and Usage of Monitoring Data

F 5.1 Arrangements and Interpretation

- (1) Collecting measurements and analyses compare them with standards. Moreover, record them
- (2) Insert them within a database and recording the parameters

5.2 Usage of Monitoring Data

- (1) Defining pollution volume, how much it is over the allowed limits, and how to treat it
- (2) Concentrating on seminars and publications to increasing public awareness in the society
- (3) Collaboration with domestic societies in this field to present information treats the problem

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

- (1) O/M of Facilities, Equipment, and instruments is done by staff trained by JET, with the necessity of training new staff on all equipments for measuring water and air

6.2 O/M of Reagents and Chemicals

- (1) Some of our staff has been trained to deal with chemicals and reagents. It is important to secure them on time

6.3 Lab Accreditation and QA/QC

- (1) We are now participating with the QC program of AEC in order to achieve Accreditation of our lab
- (2) Continuing to apply QC while using our equipments

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) A training program has to be set to increase experience for our staff and qualifying substitute staff

7.2 Budget Preparation for Environmental Monitoring

- (1) Depending on number of sampling during the year

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

- (1) Containing number of sampling for every kind of natural and industrial water, frequency and timing of sampling, and number and frequency of sampling for air monitoring

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

- (1) An annual report is submitted to GCEA about implementation of the EMP, what was not implemented, and the reasons
- (2) A report is submitted to the Governorate every two months about air quality and noise monitoring
- (3) Informing related bodies (via the Governor) about pollution sources

9. Others

9.1 Current Problems and Constraints to be solved

- (1) No transportation means enough for carrying out monitoring, sampling and environmental inspection
- (2) No integrated plan with all concerned bodies securing continuous monitoring and effective treatment
- (3) There are no motivations for DFEA staff that carry out monitoring and inspection

9.2 Provision of Environmental Monitoring

- (1) Provision of annual Environmental Monitoring plan for water quality and water resources monitoring
- (2) Provision of annual Environmental Monitoring plan for air quality and noise monitoring

a) Describe your future provisions on Environmental Monitoring, if any.

End

Annex 3-3:

Guideline for Environmental Monitoring

3.3.12 Dara'a DFEA

<<Guideline for Environmental Monitoring in Daraa DFEA>>

General introduction:

Dara'a is an agriculture Governorate and witnesses industrial growth currently, so that, Dara'a DFEA takes into account all these factors, and prepares the monitoring plan depending on the actual concept

1. Objective of Environmental Monitoring

- (1) Monitoring wells, dams, surface water, and underground water, defining the volume of pollution affected them, comparing with Syrian Standards
- (2) Monitoring industrial and domestic water, the volume of pollution affected them comparing with Syrian Standards
- (3) Finding suitable solutions to limit pollutants discharge

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) Industrial activity areas within the Governorate borders
- (2) Dams, surface water, and underground water areas

2.2 Monitoring Stations

- (1) Dams and lakes
- (2) Underground water
- (3) Industrial wastewater
- (4) Domestic water and treatment station plants (TSP)

Remark: Monitoring Stations have been chosen taking into account pollution sources which may affect the water resources in the near or the far future

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Prepare the following Table.

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Awqaf Directorate	M of Awqaf	1) publishing awareness about water pollution and preventing water loss	
2. Health Directorate	M of Health	Detection of biological pollution	
3. Irrigation Directorate	M of Irrigation	Collaboration in monitoring dams and springs	
4. Agriculture Directorate	M of Agriculture	monitoring Olive oil pressing factories	
5. NGOs		Public Awareness Spreading	
6. water company		Drinking water and underground water monitoring	

4. Contents and Measuring Plan

Prepare the following Table.

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. olive oil pressing wastewater	direct sampling	- one time/ season	- 14 parameters (BOD, ...)	- simple analysis - AAS	- sending sample to DAM DFEA for heavy metals analysis
2. preserves wastewater	composite sampling	- two times/ season	- 14 parameters	- simple analysis+ remaining impact for pesticides and fertilizers	sending sample to DAM DFEA for remaining impact investigating
3. washing cars	direct sampling	- two time/year	- 14 parameters	- simple analysis - AAS	- sending sample to DAM DFEA for heavy metals analysis
4. surface water and dams	composite sampling	- two time/year	- 14 parameters	- simple analysis	
5. industrial wastewater	composite sampling	- two time/year	- 14 parameters	- simple analysis	
6. underground water	direct sampling	- two time/year	- 14 parameters	- simple analysis	

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

- (1) Lab staff work: collecting samples, analyzing, dealing with the results by realizing changes (if existed) in the 14 parameters
- (2) To submit reports and suggestions to the concerned bodies for taking necessary countermeasures, (Dara'a Governor, GCEA...)

5.2 Usage of Monitoring Data

- (1) Holding lectures and seminars with NGOs and inform them with the changes on water quality due to exposing to pollutants
- (2) To submit suggestions of countermeasures which should be taken to limit pollution phenomenon
- (3) Informing bodies, which cause pollution to water to take necessary countermeasures to limit the pollution

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

- (1) It is done by lab staff within the limits of their capabilities, and asking for technicians help from other bodies
- (2) Recording failures in the maintenance record
- (3) To secure reagents and necessary materials for the lab, and checking the validity every 3 months
- (4) Dara'a DFEA will participate in the National Program for evaluating chemical analysis quality by AEC for accreditation of the lab

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) Following internal course for the lab staff to raise their skills and levels
- (2) Training course in computer skills and networking, and dealing with the results

7.2 Budget Preparation for Environmental Monitoring

- (1) Our DFEA needs in 2008 are 250,000 s p

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

- (1) General introduction**
- (2) General situation of the Environment in the Governorate**
- (3) Presenting lab analyses Data**
- (4) Recommendations and suggestions**

9. Others

9.1 Current Problems and Constraints to be solved

- (1) Reagents and spare parts for the equipments are available only in the agent's company, the matter which causes some troubles where some reagents sometimes are not available because there is no other alternative company**
- (2) Lab staff do not work full time in the lab because they have other duties within the DFEA**
- (3) There are no motivations for DFEA staff to encourage them**

End

Annex 3-3:

Guideline for Environmental Monitoring

3.3.13 Tartous DFEA

Guideline for Environmental Monitoring in Tartous DFEA

1. Objective of Environmental Monitoring

- (1) To control the pollution sources
- (2) To enhance the environmental awareness regarding the pollution sources
- (3) To activate the inspection by using the monitoring data.
- (4) To monitor the water bodies due to their importance in the governorate.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) All the governorate Area
- (2) Concentration on the water bodies especially during the production of olive oil due o its impact and pollution
- (3) Concentrating the water resources which are used in a random way by the residence for the drinking and irrigation purposes.

2.2 Monitoring Stations

- (1) 26 monitoring stations were set varied between rivers, lakes, dams, springs and industrial waste water and they were chosen due to the following criteria
 - The continuous exposure for the pollution either direct or indirect way by the residue of the Municipal waste water or olive oil.
 - The purpose of using them by the residence in a random way for drinking or irrigation.

2.2.2 Fixed Monitoring stations

Station	Number	Type	Purpose
Springs	5	Fixed	Drinking
Rivers	10	Fixed	Irrigation and Swimming
Dams and Lakes	2	Fixed	Irrigation and drinking
Industrial waste water	2	Fixed	-

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Directorate of Irrigation	Ministry of Irrigation	- Getting information and maps for the water resources	1) meeting one time/ year 2) sampling same time one time/ month
2. Directorate of Industry	Ministry of Industry	Classification of the polluting industries	Polluting industries are not so much in the governorate

4. Contents and Measuring Plan

Monitoring Type	Sampling Method	Frequency	Parameters	Analysis Method	Remarks
1. Water quality (pollution source)	-composite sampling	- 3 time/ year	- 14 parameters	- simple analysis - chemical and bio - AAS (Al, CU, ZN, Fe)	- sending sample to DAM DFEA for analysis
2. Water quality (public water body)	Direct Sampling	Rivers 3 times/year Springs 3 times/year Dams and lakes 3 times /year Industrial waste 3 times /year	14 Parameters	- simple analysis - chemical and bio - AAS (Al, CU, ZN, Fe)	- sending sample to DAM DFEA for analysis

5. Arrangement, Interpretation, and Usage of Monitoring Data

5.1 Arrangement and Interpretation

- (1) The approved SOP is used in conducting the analysis
- (2) Data input according to the unified recording format
- (3) Data interpretation is done due to the Syrian standards for the waste water and drinking water.

5.2 Usage of Monitoring Data

- (1) Monitoring data is used for enhancing the periodical inspection for the industrial establishments and cooperating with the owners of this establishment for the pollution source control.
- (2) In the stations which are used for irrigation and swimming some warning signals will be installed in the case that the source is still polluted in cooperation with the related agencies.

6. O/M of Facilities, Equipment, Instruments, Reagents, and Chemicals including QA/QC

6.1 O/M of Facilities, Equipment, and instruments

- (1) Continues calibration of the equipment.
- (2) Using the special format for the OM

6.2 O/M of Reagents and Chemicals

- (1) Usage of the special format of the reagents and chemicals
- (2) Periodical revision for the reagents and using the old reagents as well as storing the hazardous reagents separately and putting stickers on them.

6.3 Lab Accreditation and QA/QC

- (1) Using standard solutions according to the laboratory analysis
- (2) Participating in the national program for the quality of the chemical analysis for 2008 by AEC.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

(1) The Laboratory staff

Number	Job description- responsibility	Note
1	Chemical Engineer: Lab chief	
2	Chemist: Data management, water analysis	
3	Chemist: safety, water analysis	
4	Chemical engineer : Reagents administration, water analysis	
5	Chemical engineer : OM equipment, water analysis	
6	Chemical engineer: water analysis	Recently joined
7	Chemist assistant: water analysis, management of lab wastes	

7.2 Budget Preparation for Environmental Monitoring

- (1) Special budget including (fuel, reagents)
- (2) Procurement of new equipment to support the environmental monitoring.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

- (1) Sending the monitoring data to GCEA and other related agencies periodically
- (2) Sending the monitoring data for the governorate and especially in the emergency cases.

9. Others

9.1 Current Problems and Constraints to be solved

- (1) The environmental inspection is not activated yet
- (2) The necessity of providing the staff who is conducting the environmental monitoring at the industrial activities by special ID

9.2 Provision of Environmental Monitoring

- (1) Setting the environmental monitoring plan for the next year
- (2) Setting the implementation schedule for the plan.

Annex 3-3:

Guideline for Environmental Monitoring

3.3.14 Quneitra DFEA

Guideline for Environmental Monitoring in Quneitra DFEA

1. Objective of Environmental Monitoring

- (1) To establish a regular environmental monitoring system related to the air and water quality.
- (2) Pollution sources control for air and water quality.
- (3) Using and managing the environmental data in order to publish and develop the public awareness about environment.

2. Selection of Coverage Area and Monitoring Stations

2.1 Coverage Area

- (1) All Qunaeitra territories.

2.2 Monitoring Stations as the priority.

Body water	Number of stations	Station	Notes
Industrial waste water	3 stations	1)Olive press(Alsafa) 2) Factory of starch. 3) Factory of biological fertilizers. 4)factory of milk pasteurization	
Domestic waste water	One station	Alwadi ,Alrekad	
Lakes /dams	3 stations	1)Rwayhena. 2)Kodna. 3)Gadeer Albustan.	
Wells	3 stations.	1) Farmers union. 2)Nabeh Alskher well. 3)Alfwar well	

2.3 Sampling frequency:

Body water	Number of stations	Frequency	Samples number (Jan-Dec)
Industrial waste water	1)Olive press(Alsafa) 2) Factory of starch. 3) Factory of biological fertilizers. 4) Factory of milk pasteurization	1time/ 4months 1time /3months 1time /3months 1time /4months	3times 4times 4times 3times
Domestic waste water	Alwadi ,Alrekad	1time /3months	4times
Lakes	1)Rwayhena. 2) Kodna. 3)Gadeer Albustan.	1time /4months	9times
Wells	1) Farmers union. 2)Nabeh Alskher well. 3)Alfwar well	1time /3months	12times
Total samples			39times

Principles taken into consideration when choosing sampling stations:

1-The importance of sampling territory as the intensity of pollution impact regarding to its location as:

- Residential areas.
- Surrounding agricultural lands.
- Strategic location

3. Demarcation and Collaboration with other concerned Ministries and Agencies

Name of Agency	Ministry	Contents of Collaboration	Remarks
1. Directorate of water resources.	M of Irrigation	1) Monitoring plan preparation for pollution resources. 2) Monitoring of dams and the kind of analysis should taken.	1) Meeting according to the Public benefits (2/3 times a year) 2) Discussing the results of analysis.
2. General establishment for drinking water	M of Housing	Monitoring well and discussing the analysis's results with their own analysis results.	Meeting twice a year.

7. Staffing and Budget Preparation

7.1 Staffing in charge for Environmental Monitoring

- (1) Mr. Majed Zaytoon in charge of Lab chief
- (2) Eng. Ali Ibraheem in charge of water basic quality.

8. Report Preparation and Submission to GCEA

8.1 Report Preparation

- (1) The report is prepared yearly after finishing the annual monitoring plan in a unified type which sent by GCEA within a limit time.
- (2) The report contains all kind of data (analysis –maps of location –data interpretation-budget preparation for reagents, equipments maintenance and other materials)

8.2 Submission of Monitoring Data and Report to GCEA and other concerned agencies

- (1) Data are submitted to GCEA by using fax or network.
- (2) When the data sent to the governor office, it is according to tow reasons:
-The first is a complaint sent by citizens.

The second is when there is a suspicion by DFEA that there is unusual pollution resource in this case, the governorate is addressed, informed about the reason of pollution and a solution should be introduced to control the pollution.

9. Others

9.1 Current Problems and Constraints to be solved

- (1) There is no problem during the sampling but the main problem:
- Lab staff is not sufficient.

- Insuring (financial +medical) compensation comparing with other labs such as fuel, Purveyance Company.

End

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.1 Damascus DFEA

Action Plan for Industrial Pollution Source Control by Using Monitoring Data in Damascus DFEA

1. Objectives

- 1- Benefiting the scientific research centers to conduct the studies and researches to develop the technologies used in the industrial establishments to get cleaner production.
- 2- Cooperation with the chamber of industry and formulation of joint committee to set a program and action plan to aware the industrial activities.
- 3- Qualifying and building the capacity of the DFEA staff in the field of Environmental Monitoring and inspection within the DFEA.
- 4- Motivation of the industrial activities to apply the law No.50 and the environmental conditions through helping them to get soft loans.
- 5- Publishing magazine, newsletters and other environmental public awareness materials to be distributed for the industrial activities in addition for the allocation of an environmental page within the magazine of the chamber of industry of Damascus to aware the industrial activities with the environmental laws and regulations and the list of the adopted experts to conduct the EIA studies.

2. Strategy

- 1- Enhancing the public awareness of the industrial activities for the industrial pollution sources and methods of treatment.
- 2- Setting priorities to move the hazardous and polluting industries to the industrial area.
- 3- Setting integrated environmental monitoring and inspection system for all the industries in Damascus Governorate and inputting it to the computer.
- 4- Accreditation of the environmental laboratory of the DFEA as well as developing the equipment and staff to conduct an integrated monitoring plan covering all the industrial activities in Damascus.
- 5- Application of law No.50 for the year 2002 by all industrial activities.
- 6- The DFEA Central lab should have the ISO 17025
- 7- The industrial activities should have a voluntary environmental monitoring system at their establishments.

3. Activities and Responsible and Implementation Organizations by Activity

Activity	Major Components	Responsible/ Implementation Organization	Duration of Implementation Period
Enhancing the public awareness of the industrial activities for the industrial pollution sources and methods of treatment	Seminars, workshops, public awareness publications, site visits and meetings	GCEA, DAM DFEA, Chamber of Industry in Damascus and Directorate of Industry.	2007-2015
Setting priorities to move the hazardous and polluting industries to the industrial area	Inventory of the establishments by the service departments and the related committees should set the priorities and allocation of the required industrial area	Damascus Governorate, Damascus Chamber of industry, Directorate of Industry	2007-2015
Setting integrated environmental monitoring and inspection system for all the industries in Damascus Governorate and inputting it to the computer.	Special programming system, formulation of special committees for monitoring and inspection	Damascus DFEA	2007-2015
Accreditation of the environmental laboratory of the DFEA as well as developing the equipment and staff to conduct an integrated monitoring plan covering all the industrial activities in Damascus.	Participation in the laboratory quality control program	AEC, Damascus DFEA	2007-2010
Application of law No.50 for the year 2002 by all industrial activities	Setting slides of penalties mentioned in law No.50 and formulation of the environmental court	GCEA, Damascus DFEA, Damascus Governorate and Ministry of Justice	2007-2015
The DFEA Central lab should have the ISO 17025	Receiving grants and foreign technical assistance	SPC, AEC, DAM DFEA	2010-2015
The industrial activities should have a voluntary environmental monitoring system at their establishments	Seminars and workshops	Damascus Chamber of Industry, Directorate of Industry in Damascus	2007-2015

4. Implementation Schedule (up to 2015)

Activity item	Sub-item	Implementation Period				
		2007	2008	2009	2010	2011
1. Enhancing the public awareness of the industrial activities for the industrial pollution sources and methods of treatment	1- Seminars, workshops, public awareness publications					
	2- Site visits, Meetings					
2- Setting priorities to move the hazardous and polluting industries to the industrial area	1- Establishment Inventory by the service departments					
	2- Setting the priorities by the related committee					
	3- Allocation of the required industrial area					
3- Setting integrated environmental monitoring and inspection system for all the industries in Damascus Governorate and inputting it to the computer	1- Special Atomization Program					
	2- Formulation of special committees for Inspection and Monitoring					
4- Accreditation of the environmental laboratory of the DFEA as well as developing the equipment and staff to conduct an integrated monitoring plan covering all the industrial activities in Damascus.	1- At present the DFEA is participation in some parameters for QC program					
	2- Later on the DFEA will participate in additional parameters					
5- Application of law No.50 for the year 2002 by all industrial activities	1- Setting slide for penalties issued by Law No.50					
	2- Formulation of the Environmental court					
	3- Application of the Environmental Law No.50					
6- The DFEA Central lab should have the ISO 17025	Receiving grants and foreign technical assistance					
7- The industrial activities should have a voluntary environmental monitoring system at their establishments	Seminars and Workshops					

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.2 Damascus Countryside DFEA

**Action Plan
for
Industrial Pollution Source Control by Using Monitoring Data
in Damascus Countryside DFEA**

1. Objectives

1. Implementing and activating the sustainable development concept by merging the environmental criteria with the policies, the programs, the plans, and the developing projects because caring of the environment became one of the nooks of the sustainable development.
2. Reducing the pollution of the industrial activities in the societies.
3. Activating inspection programs and periodical visits to the organizations.
4. Promoting the environmental awareness of the industrial pollution sources.
5. Encouraging projects which aim to eliminate the emissions from different sources.

2. Strategy

1. Cooperating with Chamber of industry in Damascus Country Side by holding periodical meetings with it 4 times a year. During these meetings, communication and cooperation with factories owners and industrial company owners is done in order to increase their environmental awareness, and in order to define their roles in stopping the damages of the industrial pollution, and attaining the sustainable development. Cooperation with the environment section in the ministry of industry in order to spread the environmental awareness.
2. Develop and capacity building in order to manage all of tasks which are required by the environmental work and the good environmental management.
3. Long term planning to achieve the integrated environmental management to convoy the challenges in the sustainable development field.
4. Activating the cooperation with ministry of housing and ministry of industry to assure of inserting of the environmental dimension in the different plans, projects, and programs.
5. Activate developing plan of the industrial cities to be a friend to the environment.
6. Increasing the censorship on the polluting factories, and monitoring them.
7. Activating native organizations role in the service fields and in increasing the environmental awareness for people and for NGOs. Moreover, issuing more than one environmental newspaper and magazine which reach out environmental matters and which aim to diffuse the environmental awareness between the society cutters.
8. Preparing environmental inspection plans to visit the organizations to insure their compatibility with the environmental law/50/date/2002/.
9. Expand implementing the environmental management systems and the environmental revision.

3. Activities

1. Staff in Damascus Country Side DFEA are trained on the environmental monitoring in the industrial organizations, and on specifying the kind of pollution and its quantity, but they are not qualified to control the industrial pollution. For that we hope that GCEA in cooperation with JET qualify the staff in this field.
2. Forming working teams which include lab staff to monitor the organizations and to make environmental inspection for these organizations, and aware the owners and the technicians about the importance of protecting the environment and how to reduce the harms of the industrial pollutants on the environment by treating the liquid, the solid, and the gas wastes by the pretreatment or by installing treatment stations and other ways.
3. Encourage expanding the technologies of the cleanest manufacturing which help in increasing the work action and the quality of products, and prohibiting the pollution and its impacts. It is a preventive step for managing the wastes and the treatment stations. It is a practical way to apply the sustainable development. Implementing the sustainable development requires appointing the capitals for cleaner production by guiding funding organizations and institutions to invest in implementing the technologies of the cleanest manufacturing, instead of the old polluting technologies which are not guided and not economical.

The Government can encourage the cleanest production by implementing environmental policies such as:

- Exempting and reducing taxes.

- Imposing taxes and penalties.
- Giving loans for environmental projects (and for the cleanest production.)
- Giving helps and financial boosting.
- Well pricing for the sources (energy- water- raw materials)
- Putting environmental criteria for products, wastes, and bottling.

These policies will encourage the cleanest production instead of treatment stations, and this will require coordinating and cooperating between many organizations and ministries (Industrial-Environment- Custom- Planning- Trading)

4. Activating the right management of the quality of the water, and coordinating environmental monitoring activities for water quality with ministry of irrigation and ministry of health.
5. Working on managing the waste water by forestation projects which use treated waste water in coordinating with ministry of irrigation and ministry of housing. Stop discharging domestic and industrial waste water to Barada River in coordinating with ministry of tourism and the mattered ministries. Working on preparing data base for domestic waste water treatment stations and the sources of domestic waste water on Barada River, and take the necessary countermeasures.
6. Improving a network for monitoring air pollutants to make the number of the pollution stations in Damascus Country Side four.
7. Prepare an electronic network to monitor cements factories and big factories which pollute the air.
8. Establishing a committee to limit the noise and to stop its sources, to prepare indicators for noise measurement results, to carry out inspection visits to the hotels and wedding auditoriums weekly in a specific plan to limit the noise, and to measure and monitor the noise levels in the airports.
9. Preparing a full study for the very polluted areas in the governorate.
10. Environmental impact assessment for all of the new projects which are carried out with coordinating with all of the ministries and different organizations.
11. Cooperating with the national committee for the environmental awareness and the environmental media in the GCEA.

End

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.3 Aleppo DFEA

**Action Plan
for
Industrial Pollution Source Control by Using Monitoring Data
in Aleppo DFEA**

1. Objectives

- 1- To control the environmental pollution through spreading the environmental awareness at the industrial activities.
- 2- Supporting the Environmental Inspection by using monitoring results.
- 3- Encouraging the Voluntary Environmental Monitoring at the establishments.
- 4- Setting a schedule to eliminate the pollution to the minimum levels according to the 10th five year plan.

2. Strategy

- 1- Cooperation with the chamber of industry and the related agencies.
- 2- Cooperation with the owners of the establishments to eliminate the pollution.
- 3- Prioritizing the pollution sources.
- 4- Conducting researches for the pollution combat.
- 5- Capacity development for the environmental inspection.

3. Activities

- 1- Public Awareness seminars for the industrial activities about the industrial pollution sources
- 2- Training the DFEA Staff for the control of the industrial pollution.
- 3- DFEA staff will train the directors of the factories and their staff to control the pollution such as cleaner production methods.
- 4- Periodical meetings between the DFEA and the industrial pollution resources to exchange the technical information about identified issues.
- 5- Presentation of the registration system for the enterprises.
- 6- Establishment of the Environmental funding system at the factories to support the construction of the environmental facilities especially at the small and medium scale factories.
- 7- Activities of Public Awareness for the citizens through the efforts of the DFEA and the industrial activities about the control of the pollution.

4. Responsible and Implementation Organizations by Activity

- 1- Chamber of industry in Aleppo.
- 2- Engineering Syndicate.
- 3- Directorate of industry, directorate of Agriculture, Technical service directorate and Aleppo city council.
- 4- Youth Union, Pioneer Union and Women union
- 5- Aleppo University.
- 6- Directorate of education.

5. Implementation Schedule (up to 2015)

Activity item	Implementation Period					
	2007	2008	2009	2010	2011	2012
1. Public Awareness seminars for the industrial activities about the industrial pollution sources						
2. Training the DFEA Staff for the control of the industrial pollution						
3. DFEA staff will train the directors of the factories and their staff to control the pollution						
4. Setting a schedule for the monitoring for all targeted activities						
5. Environmental Monitoring and Inspection						
6. Communications between the DFEA and the industrial pollution resources to exchange the technical information						
7. Presentation of the registration system for the enterprises						
8. Working to establish Voluntary Environmental Monitoring system at the establishments						
9- Activation of Public Awareness at the citizens and NGOs for the Industrial Pollution Control						

5. Others

- 1- The implementation of the Action plan will be the DFEA and industrial pollution sources.
- 2- The progress of implementation will be mentioned in the plan periodically.
- 3- An Annual report will be prepared describing the action plan then submitted to GCEA.
- 4- The action plan will be reviewed annually and updated in order to ensure the progress of the work.

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.4 Homs DFEA

**Action Plan
for
Industrial Pollution Source Control by Using Monitoring Data
in Homs DFEA**

1. Objectives

- 1- Enhancement of the public awareness resulted from the industrial pollution especially at the industrial activities in both private and public sector and especially in the industrial city in Hesia.
- 2- Strengthening and Enhancement of the role of the environmental inspection by using the monitoring data.
- 3- Proposing the voluntary environmental monitoring system at the factories and enterprises through the establishment of the Environmental Management System (EMS) at the companies or enhancing the cooperation with the environmental administration and enforcing them to apply ISO 14001.

2. Strategy

- 1- Continuous cooperation with the chamber of industry because it is the most capable authority to coordinate with the industrial activities through the training courses and workshops in the field of the technologies of pollution treatment.
- 2- The joint monitoring between the DFEA and the newly established environmental administrations at the factories and enterprises.
- 3- Prioritizing the pollution sources according to their danger and impact to the environment, hygiene and safety and putting plans for treatment and studies to evaluate the environmental degradation and searching for new resources for financing to install the treatment plants.
- 4- Partnership with the Industrial pollution sources and working together with the DFEA and the administrations of these factories in order to present solutions for the pollution problems.
- 5- Following the methods of the scientific research in order to develop the countermeasures to control the pollution through the cooperation with the universities and research centers.
- 6- Developing the Capacity of the DFEA staff through the out country training and allocating the required budget for this training which should be at least 3 months for each trainee.

3. Activities

- 1- Training of the DFEA staff for the industrial pollution control: since most of the DFEA staff are new and they were assigned in the DFEA directly after graduation from the university (petrochemical engineers, engineers) or assistant engineers from the institutes, so we propose to start training those staff at the factories and the enterprises for one year at least before assigning them in the DFEA and should be trained on production process and the industrial pollution and methods of treatment as well as building their capacity in English to prepare them for the out country training which should not be less than 6 months.
To achieve the requested goals of the in country and out country training, the staff should be motivated through increasing their salary 5-9% of the monthly salary during the training period.
- 2- Coordination and Cooperation with the industrial activities in both private and public sector to be trained either in Syria or outside for applying new concepts and methods and especially the cleaner production and the trainers should be specialists coming from outside Syria.
- 3- Holding periodical meetings between the DFEA and the industrial pollution sources to exchange the technical information in specific environmental issues each three months.
- 4- Enforcing the industrial companies to apply the Environmental Management System EMS and the ISO 14000 and ISO 18000 related to the safety and the environmental administration person could be a board member and belonging directly to the general manager.
- 5- Inventing the environmental fund system and facilitating it through the industrial banks to finance all environmental projects at both private and public sector, the recipient will have grace period with zero interest and in addition the taxes will be reduced for the coming five years after getting the loan.
- 6- Cooperation and coordination among DFEA, Chamber of Industry and NGOs to increase the public awareness and the industrial pollution control with its treatment.

4. Implementation Schedule (up to 2015)

Activity item	Implementation Period				
	2007	2008	2009	2010	2011
Activity 1					
Activity 2					
Activity 3					
Activity 4					
Activity 5					
Activity 6					

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.5 Hama DFEA

Action Plan for Industrial Pollution Source Control by Using Monitoring Data in Hama DFEA

1. Objectives

- 1- Enhancing environmental awareness to the industrial pollution sources,
- 2- Strengthening inspection using monitoring data,
- 3- Introduction of voluntary environmental monitoring in factories and enterprises

2. Strategy

- 1- Collaboration with the Chamber of Industry (COI),
- 2- Joint monitoring with target factories and enterprises,
- 3- Prioritization of target industrial pollution sources,
- 4- Partnership with industrial pollution sources,
- 5- Research and development of countermeasures against pollution
- 6- Development of inspection capability of the DFEA staff

3. Activities and Responsible and Implementation Organizations by Activity

Activity	Major Components	Responsible/ Implementation Organization	Duration of Implementation Period
Training for DFEA staff	Training team& training materials	GCEA & Governorate	According to training schedule
Training by DFEA for factory managers	factory managers, Training team& training materials	GCEA & COI	According to training schedule
Periodical meeting between DFEA and industrial pollution sources	DFEA& industrial pollution factories	DFEA & COI	Continuous action
Establishment of voluntary environmental monitoring	Environmental records	industrial pollution factories in coordinating with DFEA	Continuous action
Public awareness activity	DFEA, industrial sector& awareness materials	DFEA, industrial sector & NO	Continuous action

4. Implementation Schedule (up to 2015)

Activity item	Implementation Period								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Training for DFEA staff	■	■	■	■	■	■	■	■	■
Training by DFEA for factory managers		■	■	■	■	■	■	■	■
Periodical meeting between DFEA and industrial pollution sources	■	■	■	■	■	■	■	■	■
Establishment of voluntary environmental monitoring	■	■	■	■	■	■	■	■	■
Public awareness activity	■	■	■	■	■	■	■	■	■

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.6 Lattakia DFEA

**Action Plan
for
Industrial Pollution Source Control by Using Monitoring Data
in Lattakia DFEA**

1. Objectives

- 1- Identification of main sources for the industrial pollution.
- 2- Integrated Public Awareness for the industrial pollution sources and the danger resulting from.
- 3- Making periodical inspection visits and monitoring the industrial pollution.
- 4- Setting special monitoring system in each company or factory related to the industrial pollution
- 5- Eliminating the hazards of the industrial pollution.

2. Strategy

1. Coordination and Cooperation with all related agencies for the industrial pollution (governmental and non governmental)
2. Cooperation and coordination with the chamber of industry to communicate with the factories and the industrial enterprises to spread the environmental awareness at them and show their important role to stop the industrial pollution and achievement of the sustainable development.
3. Classification of the industrial pollution sources and classifying the targeted resources.
4. Conducting continuous researches and improvement of the pollution countermeasures.
5. Capacity development at the DFEA regarding the Environmental Inspection.

3. Activities

- 1- Training and qualifying the staff of the DFEA to monitor and control the industrial pollution.
- 2- Coordination with the factories and Enterprises to train their staff how to control the industrial pollution.
- 3- Holding periodical meetings between the DFEA and the related activities to exchange the experience and technical information regarding the industrial pollution.
- 4- Setting the environmental record system at the factories and enterprises to facilitate the monitoring of industrial pollution.
- 5- Setting the Monitoring and environment administration system through assigning environmental officers at the companies and managing the environmental information there and reporting.
- 6- Setting the environmental fund system for small and medium scale enterprises to support the establishment of the environmental utilities.
- 7- Making integrated and periodical public awareness for the citizens through the cooperation and coordination among the DFEA and the industrial sector and related agencies.

4. Responsible and implementing agencies

- 1- Lattakia Governorate Council
- 2- Chamber of Commerce and Industry.
- 3- Directorate of Industry
- 4- Related Municipalities.
- 5- NGOs related to the industrial pollution (Environmental NGOs or Associations). Coordination is done with the above mentioned agencies through the DFEA through the supervision and coordination with the related agencies to put the required activities in implementation.

5. Implementation Schedule (up to 2015)

Activity item	Implementation Period								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Training and building the capacity of the DFEA public awareness staff		■	■						
Coordination with the factories and Enterprises		■	■						
Holding periodical meetings between DFEA and the industrial activities		■	■	■					
Setting the Environmental Record System at the Factories and Enterprises			■	■	■				
Setting the Environmental Monitoring and Administration system at the companies and enterprises				■	■	■	■	■	
Setting the environmental fund system					■	■	■	■	■

6. Others

- 1- The DFEA will conduct periodical inspection visits to the industrial pollution sources.
- 2- Samples are taken from the sources and analyzed in the laboratory of the DFEA to set the database for the industrial pollution sources and to activate the environmental monitoring system.
- 3- Identification of the procedures to be done in the factories and enterprises to eliminate the danger of the industrial pollution and giving grace period to conduct them.
- 4- Implementing the Environmental Records to achieve the biggest possibility for the Environmental Monitoring.
- 5- Holding continuous and periodical meetings with the owners of the factories and enterprises to explain the importance of the treatment to the industrial pollution sources.

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.7 Idleb DFEA

Action Plan for Industrial Pollution Source Control by Using Monitoring Data in Idleb DFEA

1. Objectives

- 1- Boosting the environmental awareness for the owners of the industrial activities in the governorate about the industrial pollution sources and the dangerous of the pollution on the environment and the public health.
- 2- Boosting the inspection by using the monitoring action.
- 3- Encouraging the voluntary environmental monitoring system in factories and companies.
- 4- Working on executing the strategic points of the tenth five-year plan, in the sides which are related to the environment. They are eight points, and all of them need an active role for the environmental work. They concentrated on the sustainable development which is parallel with conserving the resources by implementing the right management to the environment, and by renewing the public and the private organizations.

2. Strategy

- 1- Cooperating with the Chamber of Industry to specify the target actions, and to hold awareness seminars.
- 2- Conducting joint monitoring among the DFEA, the specialists in the factories, and the target companies.
- 3- Ordering and tabling the priorities of the industrial pollution sources.
- 4- Researching and developing the countermeasure for the pollution.
- 5- Developing the inspection capacities for the staff of the DFEA.

3. Activities

(1) How can we reach the target?

- A. Awareness seminars for the owners of the industrial activities in the governorate. And specifying the specialist in each activity to join the inspection staff.
- B. Train the DFEA staff on controlling the industrial pollution.
- C. Train the owners of the factories and their special staff on controlling the pollution by the DFEA staff which is already trained.
- D. Putting a schedule for monitoring all of the target activities, and stressing on monitoring the very polluted points and the activities which have sensitive places in the residential areas.
- E. The inspection and the monitoring.
- F. The continuous communication between the DFEA and the owners of the industrial organizations to exchange the technical information about specific matters.
- G. Putting a system to record the factories, and the companies.
- H. Working on creating a voluntary environmental monitoring by the owners of the organizations, and putting a good system for reporting.
- I. Activating the environmental awareness for people, NGOs, organizations, and syndicates in order to increase the efforts which aim to control the industrial pollution.

4. Responsible and Implementation Organizations by Activity

Our DFEA can take the actions, and cooperating with:

- Chamber of Industry in Idleb.
- Engineers Association.
- Contractors Association.
- Workers Association.
- The Directorates of Industry, Agriculture, Technical services, Tourism, Water resources, and Awqaf...ext.
- The Boards of the cities, of the country sides, and of the municipalities.
- Youth Union.
- Al Baath Pioneers
- Women Union.

- NGOs.

5. Implementation Schedule (up to 2015)

Activity item	Implementation Period									
	Sub-item	2007	2008	2009	2010	2011	2012	2013	2014	2015
Awareness seminars for the owners of the industrial activities in the governorate. And specifying the specialist in each activity to join the inspection staff.			→							
Train the DFEA staff on controlling the industrial pollution.		→								
Train the owners of the factories and their special staff on controlling the pollution by the DFEA staff which is already trained.			→							
Putting a schedule for monitoring all of the target activities, and stressing on monitoring the very polluted points and the activities which have sensitive places in the residential areas.		→								
The inspection and the monitoring.		→								
The continuous communication between the DFEA and the owners of the industrial organizations to exchange the technical information about specific matters.		→								
Encouraging the voluntary environmental monitoring system in factories and companies.			→							
Working on creating a voluntary environmental monitoring by the owners of the organizations, and putting a good system for reporting.			→							
Activating the environmental awareness for people, NGOs, organizations, and syndicates in order to increase the efforts which aim to control the industrial pollution.		→								

6. Others

- 1- Accomplishing the action plan will be by the DFEA and the owners of the pollution.
- 2- The annual report will be prepared, and it will describe the results of the action plan. It will be submitted to the GCEA.
- 3- The action plan will be reviewed and modified in order to develop the work.

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.8 Hasakeh DFEA

**Action Plan
for
Industrial Pollution Source Control by Using Monitoring Data
in Hasakeh DFEA**

1. Objectives

- 1- Statistic all industrial pollution sources in the governorate.
- 2- Introduction a practical solution, which could be applied by factory manager and illegal establishments (taking into consideration to encourage removing illegal establishments, and applying legal sanctions later)
- 3- Enhancing the environmental awareness to the industrial pollution sources,
- 4- Strengthening environmental inspection by using data monitoring
- 5- Introduction of voluntary environmental monitoring system in factories and enterprises
- 6- Preparing a national staff that has sufficient experience to manage the industrial pollution.

2. Strategy

- 1- Collaboration with Chamber of Industry and Directorate of industry in order to count all factories and industrial establishments to be included within EMP of DFEA
- 2- Making a priorities list for target industrials pollution sources
- 3- Collaboration with scientific research center to develop the countermeasures against pollution
- 4- Development of inspection capability of the DFEA staff
- 5- Finding special center of industrial pollution sources for pollution self- monitoring
- 6- Motivating the owners of industrial pollution sources to get environmental quality certificate, this Procedure is very important for the owners as they can market their products, and get rid of industrial pollution.

3. Activities

- 1- Training for DFEA staff on pollution source control
- 2- Training by DFEA for factory managers and staff in charge of pollution control such as cleaner production technology.
- 3- Regular meeting between DFEA and industrial pollution sources to exchange technical information on industrial pollution issues and technology to get rid of pollution.
- 4- Establishment of voluntary environmental monitoring by industrial pollution source and reporting system,
- 5- Establishment of environmental fund to support to install environmental facility to the factory, especially small/medium scale factories,
- 6- Public awareness activity for the citizens by introducing effort by DFEA and industrial firms on pollution control,

4 .Responsible and Implementation Organizations by Activity

- 1- Chamber of Industry
- 2- Directorate of Industry
- 3- A member of executive office in charge of industry sector
- 4- Manager and staffs of industrial pollution sources
- 5- Cultural centers.
- 6- NGO as environment friends club and environment protection society
- 7- Of course DFEA will take the initiative in all activities

5 Implementation Schedule (up to 2015)

Activity item	Implementation Period								
	2007	2008	2009	2010	2011	2012	2013	2014	2015
Training lab staff		██████████							
Training factory managers and staff				██████████					
Periodical meeting		████████████████████							
Establishment of voluntary environmental monitoring				████████████████████					
Establishment of environmental fund				████████████████████					
Public awareness for the citizens		████████████████████							

6 Others

- 1- Joint implementation of the action plan by DFEA and industrial pollution sources.
- 2- Progress of the action plan should be monitored periodically.
- 3- Annual report describing progress and result of the Action Plan should be prepared and submitted to GCEA.
- 4- The Action Plan should be reviewed and modified every year based on the progress.

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.9 Sweida DFEA

**Action Plan
for
Industrial Pollution Source Control by Using Monitoring Data
in Sweida DFEA**

1. Objectives

- 1- Reducing emission of oxides pollutants and quantity of suspended particulate matters resulted from establishments to be under the standards limits
- 2- Improving air quality in general, the matter which will reflect on human health
- 3- Taking in account all procedures corresponding to the national environmental strategy and the 10th 5-year plan of the Syrian Arab Republic
- 4- Applying the executive instructions of the Environmental Law No. 50, and imposing penalties to those who break this law
 - 1) Describe your own objectives in your DFEA for promotion of industrial pollution control by using actual monitoring data. The target year is around 2015.
 - 2) Objectives could be around five sentences with simple and clear description.
 - 3) Objectives must correspond to the national strategy on public awareness decided by the National Committee for Public Awareness.
 - 4) Refer to the 10th 5-year plan of the Syrian Arab Republic, if any.

2. Strategy

- 1- Forcing all developing and industrial establishments to follow the environmental conditions for every kind of industry, (as setting filters for purifying emission gases, treatment station plants for industrial wastewater, which is discharged to the surrounding medium or the sewage network, the correspondence of parameters to the national standards
- 2- Holding environmental awareness courses for the workers in the industrial establishments to help them taking their role in conserving the environment and reduce pollution
- 3- Granting motivations for factories to encourage them for applying voluntary procedures in parallel with the public ones
- 4- Developing procedures that help in finding means for reducing pollution
- 5- Using indicators and measurements to make environmental revision for some projects and Applying EIA for projects needed
- 6- Defining the priorities for preserving surface water resources
- 7- Continuing training and developing skills for the DFEA staff

3. Activities

- 1- Applying continuous monitoring through making rounds and taking measurements in all industrial establishments which discharge pollutants
- 2- Applying environmental inspection and environmental revision for establishments if needed
- 3- Give training to the DFEA staff in how to control industrial pollution
- 4- Training by DFEA for factory managers and staff in charge of pollution control such as cleaner production technology,
- 5- Periodical meetings between DFEA and related bodies to exchange technical information about all issues to unify the work
- 6- Establishment of voluntary environmental monitoring by industrial pollution source and reporting system,
- 7- Establishment of environmental fund to support to install environmental facility to the factory, especially small/medium scale factories
- 8- Public awareness activity for the citizens by introducing effort by DFEA and industrial firms on pollution control

4. Related bodies

- 1- Sweida Governorate, General Company for Drinking Water, Water Resources Directorate, Agriculture Directorate, Industry Directorate, NGOs, Public Organizations, and Municipalities
- 2- DFEA must take an initiative in all activities.

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.10 Dara'a DFEA

Action Plan for Industrial Pollution Source Control by Using Monitoring Data in Dara'a DFEA

1. Objectives

- 1- Enhancing environmental awareness of the workers in the establishments which affect the surrounding environment negatively
- 2- Strengthening inspection for the DFEA staff using monitoring data
- 3- Put curbs to prevent pollution spreading
- 4- Enhancing Factories and companies to participate in voluntary environmental monitoring

2. Strategy

- 1- Collaboration with NGOs, associations, and all public establishments for common environmental monitoring
- 2- Collecting data and making database for the priority of pollution sources
- 3- Economical activities have to participate in achieving the objectives for pollution limitation

3. Activities

- 1- Training for DFEA staff on pollution source control
- 2- Holding seminars and lectures by DFEA for factory managers and staff in charge of pollution control, with cooperation with Engineers Association, Doctors Association, Vocational Associations.
- 3- Forming common committees with other commissions and bodies, holding periodical meetings to exchange technical information about all environmental issues in the Governorate (olive oil pressing wastes, air safety, limitation of smoking,)

4. Responsible and Implementation Organizations by Activity

- 1- Awqaf Directorate (via mosques speakers) give awareness to the citizens to avoid harming the environment
- 2- Cleaning campaigns by NGOs (Youth Union, Women Union, Alba'th Pioneers) in some are which will be identified later by DFEA
- 3- Planting trees (by Agriculture Directorate) on the roads sides, cities entrances, and secure plants for industrial establishments owners to plant them around their factories
- 4- Irrigation Directorate [in cooperation with Our DFEA, Agriculture and Health Directorates in Dara'a] is restraining penalties of irrigating plants with domestic and industrial wastewater

5. Implementation Schedule (up to 2015)

Activity item	Implementation Period		
	2007	2008	2009
1. training for DFEA staff			
2. Forming common committees			

Annex 3-4:

Action Plan for Industrial Pollution Source Control by Using Monitoring Data

3.4.11 Tartous DFEA

Action Plan for Industrial Pollution Source Control by Using Monitoring Data in Tartous DFEA

1. Objectives

- 1- Enhancing the public awareness at the industrial pollution sources
- 2- Enhancing the Environmental inspection using the monitoring data.
- 3- Monitoring the pollution sources and controlling them in cooperation with their owners.
- 4- Monitoring the water bodies for their importance in this governorate.

2. Strategy

- 1- Coordination with Directorate of industry and directorate of irrigation.
- 2- Joined monitoring with the Factories.
- 3- The priority pollution sources are olive oil mills
- 4- Procedures improvement to control the pollution in cooperation with the factories.
- 5- Capacity development for the DFEA staff for the environmental inspection.

3. Activities and Responsible and Implementation Organizations by Activity

Activity	Major Components	Responsible/ Implementation Organization	Duration of Implementation Period
1-Training the DFEA staff for the control of the industrial pollution sources	1-1 Priority establishments	DFEA, Directorate of Industry, University	
	1-2 Periodical meetings between DFEA and the pollution sources	DFEA, Directorate of industry	
2- Establishment of Voluntary environmental monitoring system	2-1 Training the Factory staff to control the pollution	DFEA with the related agencies, University	
	2-2 Recording system for the factories and enterprises	DFEA, directorate of industry, other related agencies	
	2-3 Supporting the construction of environmental facilities	DFEA, Environmental concerned NGOs	
3- Public Awareness for the citizens	3-1 Using the monitoring data	DFEA, Media	

4. Implementation Schedule (up to 2015)

Activity Item	Sub-item	Implementation Period								
		2007	2008	2009	2010	2011	2012	2013	2014	2015
Activity 1	1-1									
	1-2									
Activity 2	2-1									
	2-2									
	2-3									
Activity 3	3-1									

5. Others

- 1- Industries with polluting liquid wastes are not existed.
- 2- The priority problem in the governorate is treating the matter of the wastes of the olive oil mills.
- 3- Concentrating for the Environmental Monitoring Plan on the water bodies (Lakes, Springs, Rivers, etc.) due to their importance for the irrigation and swimming purposes