

Annex 3-8:

Presentation Materials for Final Seminar

3.8.11 Rakka DFEA

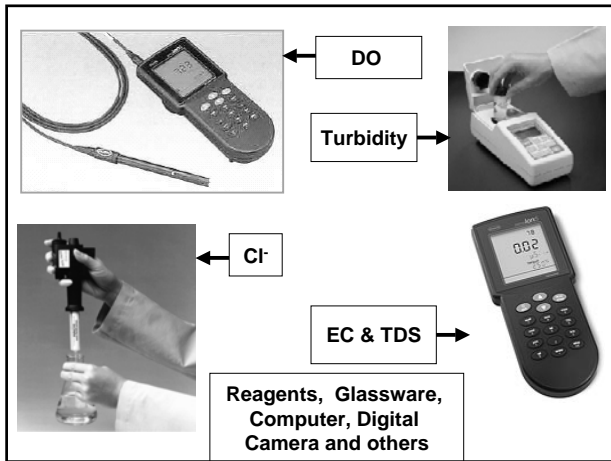
DFEA lab



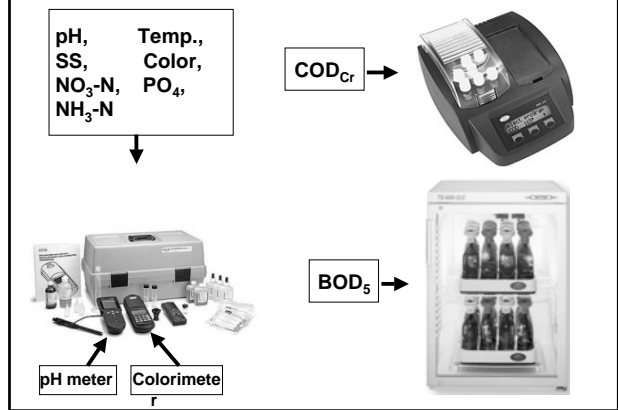
Environmental Monitoring Project

Rakka DFEA

2007/12/5



Equipments provided to our DFEA



Collecting samples, field measurements



EMP

Rakka DFEA (2007)

1. Logical basis:

Rakka DFEA prepared this EMP according to the law No. 50. Rakka DFEA has the right to implement this plan under the authorization by Minister of MOLAE and Rakka Governor

2. Objectives of Environmental Monitoring:

- 1) monitoring industrial wastewater
- 2) monitoring domestic wastewater and compare the results with Syrian Standards, and identifying pollution status
- 3) monitoring rivers to identify the pollution effects
- 4) monitoring wells
- 5) complaints and emergencies

Environmental issues with priority

The most important issue for our DFEA is monitoring Euphrates River and working in protecting it from pollution sources, we monitor this river from the point of entrance to the Governorate until leaving it

In addition to monitoring Alasad lake and natural springs (AL Arous spring)

Week 4	Week 3	Week 2	Week 1	Month	2007 EMP
Euphrates where leaving Rakka	Euphrates at Rakka entrance	Alba'th lake	Alasad lake	February	
Euphrates after discharging wastewater of Al-Thawra	Euphrates after discharging wastewater of Rakka	Domestic wastewater in Al-Thawra	Domestic wastewater in Rakka	March	
Agricultural wastewater canal before the governorate	Agricultural wastewater Jallab	Agricultural wastewater Shu'aib Alzikr	Euphrates after Jallab	April	
Drinking water	Alkaram TSP	Slaughter discharge	Ain Alarous spring	May	
Alna'eem factory	Diary factory industrial wastewater	Al'ojaili Est. industrial wastewater	Wells water	June	
Alba'th lake	Alasad lake	Sugar factory	Soft drink factory	July	
Domestic wastewater in Al-Thawra	Domestic wastewater in Rakka	Euphrates where leaving Rakka	Euphrates at Rakka entrance	August	
Sugar factory	Euphrates after Jallab	Euphrates after discharging wastewater of Al-Thawra	Euphrates after discharging wastewater of Rakka	September	
Ain Alarous spring	Agricultural wastewater canal before the governorate	Agricultural wastewater Jallab	Agricultural wastewater Shu'aib Alzikr	October	
Drinking water	Alkaram TSP	olive press	Slaughter discharge	November	
olive press	Diary factory industrial wastewater	Al'ojaili Est. industrial wastewater	Wells water	December	

Sampling stations			
Water body	No. of stations	location	remarks
1. Industrial wastewater	5	1) Sugar factory 2) Olive presses 3) Al'ojaili. Est. 4) Small factories in city 5) Soft drink factory	
2. Domestic wastewater	3	1) Domestic wastewater outlet 2) TSP in Sabkha	
3. Rivers and lakes	4	1) Alasad lake 2) Alba'th dam lake 3) Euphrates River 4) Aljallab	
4. Seas and costal regions			
5. Others		1) Agricultural wastewater, Sho'aib Aldekr – canal 2) Wells 3) complaints	

CL	NO3-N	PO4	DO	NH3	BOD	COD	Alasad lake
30	0.4	0.54	8.30	<0.08	3	8	Max
16	0.1	<0.05	7.50	<0.08	1	2	Min

CL	NO3-N	PO4	DO	NH3	BOD	COD	Euphrates River
17	0.7	0.8	9.70	<0.08	6	12	Max
45	0.1	<0.05	7.50	<0.08	2	<4	Min

Maximum and minimum data obtained

CL	NO3-N	PO4	DO	NH3	BOD	COD	Alba'th lake
40	0.4	0.27	8.40	<0.08	6	10	Max
20	0.2	0.12	7.79	<0.08	2	4	Min

CL	NO3-N	PO4	DO	NH3	BOD	COD	Domestic wastewater
250	8.5	18.93	5.03	40	300	590	Max
85	6.0	17.50	2.14	15	260	400	Min

CL	NO3-N	PO4	DO	NH3	BOD	COD	Sugar factory
210	2.5	17	4.50	40	3000	6500	Max
100	1.5	2	3.84	18	1400	2600	Min

CL	NO3-N	PO4	DO	NH3	BOD	COD	Shu'aib Alzizr
671	40.0	0.39	8.50	<1	60	150	Max
350	20.9	<0.14	7.50	<1	20	45	Min

CL	NO3-N	PO4	DO	NH3	BOD	COD	Jallab
440	10.5	2.03	8.50	4	20	44	Max
65	1.7	1.07	7.72	0.14	8	25	Min

Water problems

Overstepping on the Euphrates River

- 1- many pollutants reach Euphrates River:
- > Domestic wastewater (7 outlets of residential areas -over 10000 inhabitants-discharge into the river, TSPs has been established for 5 of them (Sabkha, Ma'dan, Alkarama, Aldibsi, Almansoura) but they haven't been operated properly up till now; another 2 TSPs are under preparation (Al Rakka, Al Thawra).
 - > 4 outlets of agricultural wastewater (containing fertilizers and pesticides), (Shu'aib Alzizr, Khatouniye, North of Rakka, east of Rakka).
 - > Wastes coming from human touristic activities on the river banks, because there are no specific places to throw garbage in.
 - > Chemical substances used for fishing in Euphrates River
 - > Wastes of sugar factories during operation time.
 - > Municipal slaughter which discharges wastes without treatment.

DO	NH3	BOD	COD	Olive oil press
1.8	500	25800	39500	Max
1.25	487	25000	39000	Min

Future plan

Monitoring stations which will be monitored in EMP 2008 are the same as EMP 2007 in addition to monitor wastes of the National Hospital in Rakka

- > Not paying enough attention of the lake and Euphrates River banks.
- > The problem of Shu'aib Alzizr outlet discharging to the Asad Lake with high percentage of salinity (more than 14 ms/cm)
- > None rationalized usage of water consumption by using traditional irrigation methods, the high price of modern irrigation networks, and shortage of number of specialized technicians.
- > Some wells become out of use because of high ratio of pollutants (NO₃, NO₂) which are caused by increasing amount of fertilizers.
- > The problem of Al Jallab River which comes from Turkey carrying industrial and agricultural pollutants.
- > Pollution of Al Arous Spring because of sewage and garbage.

Information and facts to be shared
with other DFEAs

We will share with Der Ezzor DFEA about Euphrates River Monitoring and checking the pollution rates which must be under the maximum limits of the Standards

QA/QC

We make inventory to lab materials periodically, in addition to continuous calibration to the equipments and using standard solutions when making analysis

thanks for listening

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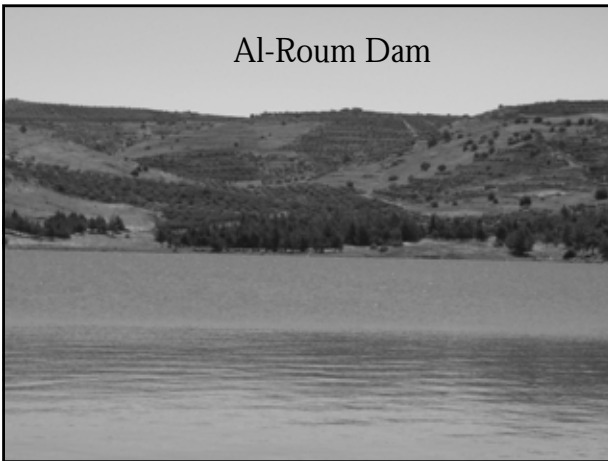
3.8.12 Sweida DFEA

Objectives of Environmental Monitoring

- ❖ Protection the mankind hygiene to identify the pollution
- ❖ Checking the water quality existed in the governorate
- ❖ Responding to any emergency case
- ❖ Experience increase in EIA for the establishments and complaints
- ❖ Getting accurate digital results for the pollution and comparing the result with the standards .

Sweida DFEA Laboratory

Al-Roum Dam



Plan of 2007

- ❖ Total number of Monitoring stations 33 and the frequencies is 75
- ❖ nine dams with frequency of two times of each /year.
- ❖ four springs with frequency twice/year.
- ❖ Eight ground water wells with frequency twice/year
- ❖ Four factories with five frequency/ year taking in consideration the production time.
 - ❖ Distillation Factory (Arak)
 - ❖ Juice Factory (beverage)
 - ❖ Plastic factory
 - ❖ Shaba Dairy Factory
- ❖ Five olive extracting mills with five frequency/ year for each
- ❖ Three locations for sewerage with twice frequency/ year

Maximum and Minimum data

Location	PH	Water temp	EC	TDS	SS	COD	BOD	NO3	PO4	CL	NH3-N	DO	COLOR	TURBIDITY	
Standards	8.5	25-5	1500	500	-	2	0	10	0.5	200	0.3	-	15	5	
Al-Roum Dam	MIN	8.3	9.7	156	74	11	18	2	0.3	0.37	20	0.08	8.2	116	8.85
	MAX	9.3	24.2	203	97	59	22	4	1.3	1.5	46	0.15	14	570	33.2
	AVE		16.95	180	85.5	35	20	3	0.8	0.935	33	0.115	11	343	21.025

Maximum and Minimum data

Location	PH	Water temp	EC	TDS	SS	COD	BOD	NO3	PO4	CL	NH3-N	DO	
Standards	9-6	5-25	1500	800	30	30	20	30	1	250	5	4	
Beverage Factory	MIN	5.5	22.5	245	117	26	1188	800	1.7	3.4	-	0.4	-
	MAX	9.6	28	638	310	394	6105	5000	7.5	7.95	-	5	-
	AVE	7.55	25.3	442	214	210	3647	2900	4.6	5.675	-	2.7	-
Arak Factory	MIN	3.5	31.2	1590	750	270	16500	6000	1	195	63	10	1.4
	MAX	3.6	50.8	4820	2525	9890	31620	6500	16.5	319	135	15.1	2.5
	AVE		41	3205	1638	5080	24060	6250	8.75	257	99	12.55	2
Shaba Sewer age	MIN	8.2	22.6	1488	739	-	760	190	2.4	77	74	80	-
	MAX	9.2	23.3	1509	750	-	1310	400	11.8	78	124	83	-
	AVE	8.7	22.95	1499	745	-	1035	295	7.1	77.5	99	81.5	-
Sweida Sewer age	MIN	8.1	20.4	1560	784	-	1050	480	9.3	6.85	19	10	-
	MAX	8.3	23.9	1766	883	-	1058	505	24.7	86.5	52	90	-
	AVE	8.2	22.15	1663	834	-	1054	493	17	46.68	35.5	50	-

Analyzing the Environmental conditions depending on the environmental monitoring
❖ Shortage of public awareness which caused the waste discharging around the dams area and caused some liquid wastes which pollute the water resources.
❖ Discharging the liquid wastes (industrial and municipal) to the valleys without treatment leading to bad odor.
❖ High content ratio of Nitrite and phosphate in the dams and wells within the agricultural land due to the extra usage of chemical fertilizers and pesticides.

شروط التوافق مع مواصفة المنصرفات الوطنية
❖ Construction of Sewerage treatment plants
❖ construction of industrial waste water plants to treat the effluents
❖ Rationalization of the usage of pesticides .
❖ Rationalization in the usage of chemical fertilizers
❖ Completion of Sewerage networks



Public Awareness Action plan
❖ The activities of the public awareness was concentrating on the activation of the role of the branch public awareness committee on the governorate level.
❖ Cooperation with the youth union for the environmental work and local development
❖ Lectures at schools, summer camps and related authorities
❖ Discussion with the owners of the industrial activities directly
❖ Meetings and seminars for public awareness to protect the water resources

Problems and obstacles should be solved to keep the Environment
❖ The DFEA building is very small and the new building will be finished 2009
❖ No enough budget for maintenance
❖ No enough financial compensations for the staff those who work in water and air quality
❖ DFEA has no clear organization chart and job description
❖ Activation of the Environmental law
❖ Biodiversity degradation
❖ air pollution of the cities and noise
❖ Accumulation of solid wastes

Quality Control

- ❖ Participation in the National program for QA/QC with AEC.
- ❖ Starting application of ISO 17025
- ❖ Continues training for standards and monitoring samples
- ❖ Continuation in training and developing the capacity of the staff
- ❖ Continues support for the DFEA with qualified staff

Information and facts to be shared

- ❖ Sampling results
- ❖ Cooperation with DAM and Dara DFEAs for heavy metal analysis
- ❖ Results discussions and interpretation
- ❖ Types of defects affecting the equipment and how to treat them
- ❖ Discussions of Monitoring plan
- ❖ exchanging experience and training

Future Plan

- ❖ Continue monitoring old and new pollution sources and coping with complaints
- ❖ Total sampling stations is 26 with frequency of 56 times as follow
 - ❖ four springs
 - ❖ ten ground water well
 - ❖ 9 factories
 - ❖ Four Dams
 - ❖ Three sewerage locations
- ❖ Expansion in the field of Environmental Monitoring
- ❖ Coordination with the related agencies to interpret the monitoring results

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3.8.13 Dara'a DFEA

Introduction of the DFEA

- The DFEA was established in 1997
- The number of staff increased from 2-19
- 4 administrative and 15 technical staff

Industrial security	Civil Engineer	Agricultural	Electrical	Chemistry	Environmental Engineer
1	1	2	3	4	4

Final Seminar for the Capacity Development for Environmental Monitoring project

Darra DFEA

Training on Sampling analysis and calibration 2005



In 2005 we received the following equipment from JICA



Environmental Monitoring Plan 2006



- The EMP was prepared by assistance of JET
 - Number of sampling stations is 29
 - Type of monitoring stations are as follow
1. Industrial waste water
 2. lakes
 3. Ground water
 4. complaints

In 2006 training and laboratory work was continued



Sampling



Environmental Monitoring Plan 2007

- The Environmental Monitoring Plan was prepared by the DFEA staff
- **Objectives of the Environmental Monitoring**
 - Monitoring the Industrial waste water and comparing it with the Syrian Standards.
 - Monitoring of water bodies and dams used for irrigation
 - Monitoring the springs used for drinking water and checking if they still good for drinking
 - Evaluation of the results

Reading, storage and interpretation of the Data

- Through the network our DFEA results are available for GCEA.
- Depending on the analysis results a lot of violators were penalty
 1. Stopping some ground water wells due to the high rate of Nitrite content in their water.
 2. Some companies installed treatment plant for their waste such as the Syrian Jordanian company .

Analysis



Quality Control



Utilizing the Monitoring Data in Public Awareness

- The results of the analysis gave the DFEA staff a clear idea on the water quality in the water bodies and they started to use this data for public awareness.
- As an example we noticed that the Nitrite content is increasing in the water bodies and water resources and we discovered that it was due to the sewerage which lead us to ask the government to treat the sewerage water and aware the people through seminars about the hazard coming from.

Future Vision

- The DFEA is seeking to continue cooperation with JICA and to receive training on the equipment the DFEA procured
- The DFEA requests to train its staff especially for Environmental Inspection

Installation of Soil Laboratory

Atomic Absorption Spectrophotometer



Gas Chromatograph



Thanks for your attention

Lets work together to keep Mzirieb lake clean from all kinds of pollution

Annex 3-8:

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3.8.14 Tartous DFEA

Monitoring plan

- Purposes:
- monitor and control the pollution recourses
- enforce the environmental education
- support the environmental inspection and use the monitoring data.

2

The capacity development of environmental monitoring of IATAKIA DFEA

1

Sampling activities



Monitoring stations

- number of monitoring stations is 26 including:
- industrial wastes 3
- rivers 12
- springs 7
- lakes 2
- dams 2
- Accidental states

3



5

مصادر التلوث

The allowed limit (Syrian standard)	parameter (COD)		Pollution resources
	MAX	MIN	
mg/1100	673		Cooking fat factory
	431	74	Vegetable oil refining factory

8



The current environmental state

- olive mills: the current instructions is to use ooww for irrigation(continued by special committee)
- this year :there aren't any problems because of no olive

10



9

The faced difficulties

- The poor environmental education
- activate the environmental inspection widely.

12

The problems should be solved at governorate

- The drainage
- Solid wastes
- air pollution(thermal electric power station ,cement factory ,Banyas oil refinery)

11

the environmental education work plan

- making the environmental education plan by coordination with manufactory Directorate using the monitoring data.
- activities: doing environmental education seminars by coordination with NGO .

14

cooperation with other DFEA'S

- DAM DFEA: sent samples for analyzing the heavy metals
 - prepare the monitoring plan of the current and next year

13

The future plan

- making the monitoring plan of 2008 .
- buying new devices for the next year: (soil analysis devices–bacteria analysis laboratory)

16

The quality control

- participation in the quality control program decided within 2008
- the quality control operations: at laboratory by using the standard solution.

15

***thank you for
kind attention***

17

Annex 3-8:

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3.8.15 Quneitra DFEA



The environmental monitoring guidelines for Quneitra DFEA
1-The objective of environmental monitoring:
a-Establishing a periodical environmental monitoring related to water and air quality .
b-pollution recourses control for water and air quality.
c-Using and managing the environmental data in order to publish and develop the public awareness about environment.
2- Choosing the coverage area and monitoring stations :
a-All Quneitra territories.
b- Monitoring stations :Some monitoring stations have changed as Gadeer Albustan dam due to the maintenance so that leads to empty the dam .
3-Staffing in charge for Environmental Monitoring :
 -Mr. Majed Zaitoon :lab chief (basic water quality and data management)
 -Mr. Ali Ibraheem :Basic water quality

- I want to say at the beginning that we don't consider the pollution as we consider who will be afflicted in case pollution occurs, then it will be a big disaster .
- The Japanese experience is a clear proof of what we said ,since the cost of pollution treatment is more than applying environmental conditions in that time .
- Quneitra DFEA has as all DFEAs the equipments for basic water quality , which produced by JICA.
- The lab staff consists of tow persons work in analysis and data management ,in addition to the director who follows up and ensures the required equipments and supervises the work.
- The lab of Quneitra DFEA makes environmental monitoring and inspection for water recourses in the governorate ,especially the sewerage of some establishments and dams .
- According to the results of water analysis ,the DFEA publishes special environmental awareness brochures and holds scientific seminars related to basic water quality and pollution indicators in cooperation with public organizations .

Monitoring period and frequency for EMP 2007

Notes	Location	Number of stations	Body water
	1)Olive press (Ahsafa) 2) Factory of starch. 3) Factory of biological fertilizers. 4) Factory of milk pasteurization	3 stations	Industrial waste water
	Abwadi ,Altekad	One station	Domestic waste water
	1)Rwiyehna.1 2)Kodna 3)Kadher Albustan.	3 stations	Lakes, dams
	1)Farmers union 2)Nabeh Abkher well 3)Alfwar well	3 stations	wells

Number of samples (Jan-Dec)	Frequency	Stations	Body water
4 times 3 times 3 times 4 times	Once/4months Once/3months Once/3months Once/4months	1)Olive press(Ahsafa) 2) Factory of starch. 3) Factory of biological fertilizers. 4) Factory of milk pasteurization	Industrial waste water
4 times	Once/3months	Abwadi ,Altekad	Domestic waste water
9 times	Once/4months	1)Rwiyehna. 2)Kodna. 3)Kadher Albustan.	Lakes.
12 times	Once/3months	1) Farmers union. 2)Nabeh Abkher well. 3)Alfwar well	Wells
39 times			Number of samples

1:Environmental monitoring plan for 2007

1-Logical base:
 This EMP is prepared by Quneitra DFEA according to law /50/. Quneitra DFEA has the right to execute the EMP by delegation from ministry of MOLAE and the governor of Quneitra .

2-Objective of environmental monitoring
 -Identifying the water quality of chosen water recourses.
 -Monitoring the body water existed in the governorate periodically.
 -Pollution recourses monitoring and control.
 -Increasing the environmental awareness by using monitoring data
3-Monitoring period and frequency :
 From Jan1,2007 till Dec31,2007 .
 The EMP frequency and monitoring stations are summarized in the table below .

Opinions and activities to sustain QC/QA and sustainability of the project

- Recording all steps from entering the lab till finishing analysis
- Periodical review for the result and comparison with concerned labs.
- Making important analysis by more than one and comparing results.
- Making periodical calibration for the equipments.
- Storing the reagents in suitable conditions.
- Seeking the help by asking experts to discuss the results and find suitable solution

Demarcation and Collaboration with other concerned Ministries and Agencies

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

Maximum and minimum data for sewerage

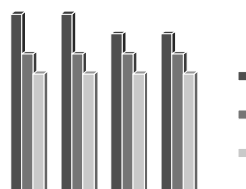
values	PH	EC	TDS	DO	color	SS	COD	BOD	NO3	PO4	NH3	CL	Turbidity
Max	9.2	610	296	5.17	65		39	18		1.6	7	43	11
Min	7.3	233	248	3.2	53		22	4	1	1.2	3	30	3

Maximum and minimum data for industrial waste

Values	P H	EC	TDS	DO	اللون	SS	COD	BOD	NO3	PO 4	NH3	CL	Turbidity
Max		41319	20900	3.5		3700	94200		111	90	14	82	
Min		849		0.5	5900	2620	3800	2550	15	5	0.6	880	

- We direct the press olive to make isolated hole ,transfer produced water and advantage of it in land fertilizing .
- As for starch factory ,the PH value was modified before discharging into sewerage

Chart shows work way in the lab Type 2007



Current situation in Quneitra DFEA

- Firstly :After moving to the new building ,DFEA has prepared and furnished the lab with lab tables ,shelves ,equipments and others .the lab is divided into three (organic ,inorganic and biological)
- Secondly :
 - 1) According to situation of the new lab ,the three mentioned labs were prepared with suitable equipments at the end of 2006 (Spectrophotometer for ions and ammonia-biological lab-gas meter in open air-dust jar in work environment)
 - 2) We had trained by suppliers on the lab equipments which are produced by the private sector since June1,2007.
 - 3) The networking with GCEA was activated.
 - 4) The networking was ensured to transfer data to the new building ..



Notes and requirements

- Intensifying tours to developed countries in environmental monitoring .
- Lab accreditation in governorates to carry out their duty .
- Asking GCEA to ensure technical staff .
- Budget related to the lab should include all required obligations as (Gasoline, transportation and movement etc.....)
- Supporting DFEAs by ensuring ISDL service in addition to networking in order to update programs permanently .

Obstacles and advantages

Obstacles :

- Lack in lab staff which is not related to JICA.

Advantages :

- The lab is big and divided into sections .there is a storage for reagents in addition to the room for lab chief .
- Quneitra DFEA has received the complaints and treated them ,in addition to a periodical maintenance for equipments .
- JICA Expert team who helps us when we need .

Monitoring period and frequency for EMP 2008

Notes	Location	Number of stations	Body water
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:Environmental monitoring plan for 2008

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2-Objective of environmental monitoring

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- Monitoring the body water existed in the governorate periodically.
- Pollution recourses monitoring and control.
- Increasing the environmental awareness by using monitoring data

3-Monitoring period and frequency :

From Jan1,2008 till Dec31,2008 .

The EMP frequency and monitoring stations are summarized in the table below .

Quneitra DFEA thanks JICA and
GCEA for their efforts

