

**Agreement #2**  
**Terms of reference for**  
**Monitoring and Data Sharing**

For sustainable development and proper management of the Nubian Sandstone Aquifer System, continuous monitoring of the aquifer should be maintained. In order to observe the regional behavior of the NSAS, monitored parameters of the aquifer should be shared between the concerned countries.

Hence, it is herewith agreed between the four countries sharing the Nubian Sandstone Aquifer System, namely Chad, Egypt, Libya and Sudan, represented by their National Coordinators to monitor and share among them the following information:

- Yearly extraction in every extraction site, specifying geographical location and number of producing wells and springs in each site.
- Representative Electrical Conductivity measurements (EC), taken once a year in each extraction site, followed by a complete chemical analysis if drastic changes in salinity is observed.
- Water level measurements taken twice a year in the locations shown in the attached maps and tables. The proposed monitoring network is subject to changes upon the feedback of the National Coordinators of the concerned countries.

These measurements should be undertaken within the Nubian Aquifer System and the Post Nubian aquifer System.

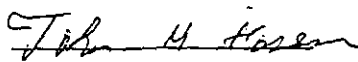
Dr. Omar Salem



Date: 5/10/2000

Director, General Water Authority,  
Libya.

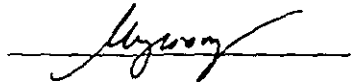
Dr. Taher Hassan



Date: 5/10/2000

Research Institute for  
Groundwater,  
Egypt

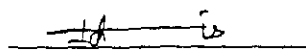
Mr. Moussa Terap



Date: 05 October 2000

Directeur de l'Hydraulique,  
Chad

Dr. Idris Mohamed Idris



Date: 05 October 2000

Director, Groundwater and Wadis  
Directorate,  
Sudan

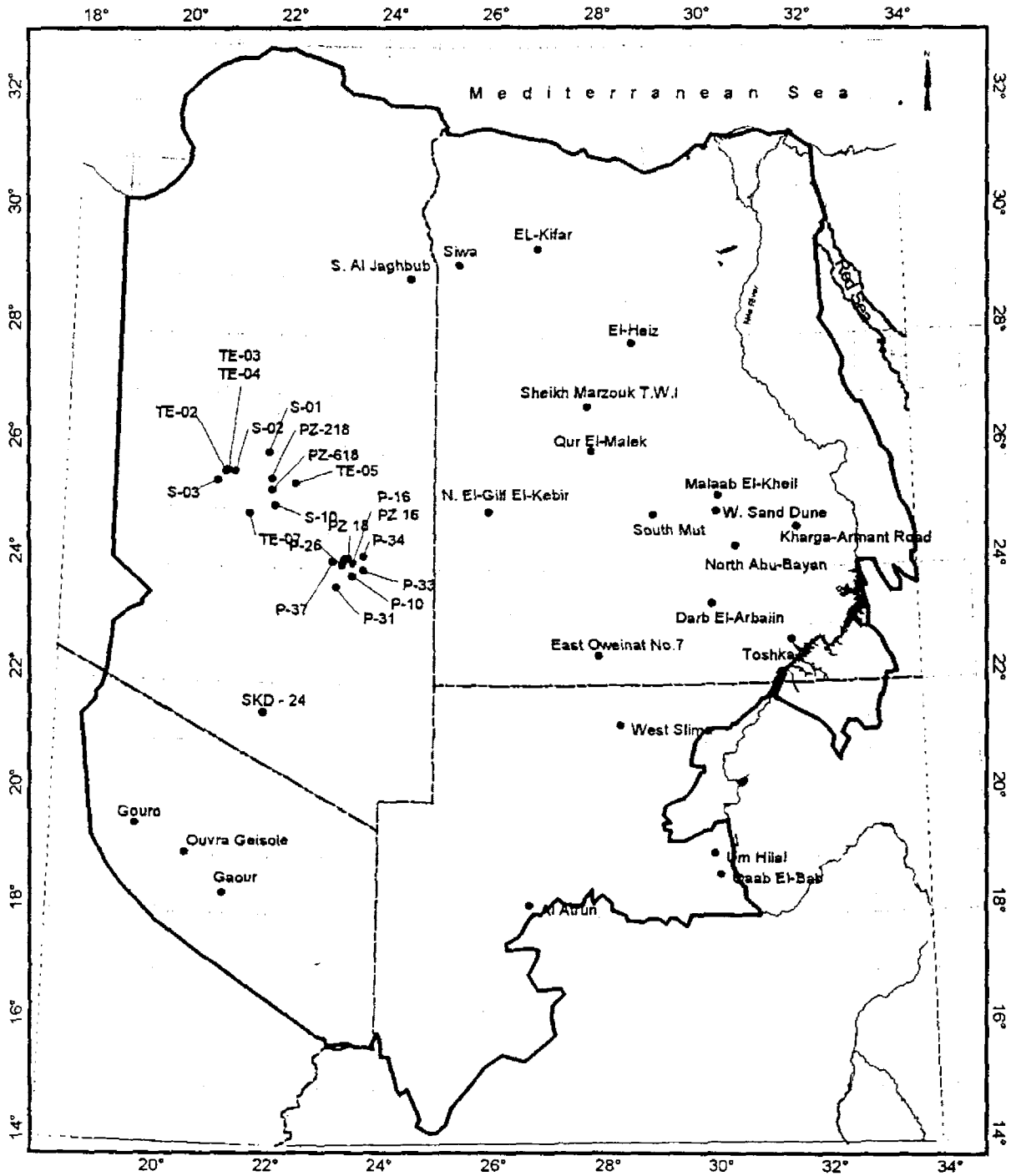
Dr. Mohamed Bakhbaki



Date: 5/10/2000

Regional Coordinator,  
NSAS Programme,  
CEDARE.

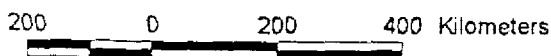
# Nubian Sandstone Aquifer System Programme



Regional monitoring network in the Nubian Aquifer

LEGEND

- Existing Wells
- Recommended Wells





## Proposed Regional Well Monitoring Network

### (A) NUBIAN SYSTEM AQUIFER

#### I. Egypt

##### 1.1. Existing Wells

#	Well Name	Location Coordinates	
		long.	lat.
1	EL-Kifar	26.936	29.531
2	El-Heiz	28.720	27.900
3	Sheikh Marzouk T.W.I	27.856	26.824
4	Qur El-Malek	27.925	26.062
5	South Mut	29.096	24.946
6	Malaab El-Kheil	30.321	25.270
7	West Sand Dune	30.279	24.989
8	North Abu-Bayan	30.626	24.386
9	Toshka Observation No. 4	31.643	22.739
10	East Oweinat No.7	28.033	22.500
11	One of Siwa Observation Wells	25.430	29.250

##### 1.2. Recommended New Observation Wells

#	Well Name	Location Coordinates	
		long.	lat.
1	Darb El-Arbain	30.170	23.400
2	Kharga-Armant Road	31.800	24.700
3	North El-Gilf El-Kebir	26.000	25.000

#### II. Libya

##### 2.1. Existing Wells

#	Well Name	Location Coordinates	
		long.	lat.
	<b>Kufra</b>		
1	P-6	23.277	24.135
2	P-10	23.451	23.890
3	P-16	23.463	24.109
4	P-20	23.322	24.179
5	P-26	23.256	24.073
6	P-31	23.153	23.690
7	P-33	23.670	23.977
8	P-34	23.657	24.215
9	P-37	23.084	24.116
10	PZ-6	28.033	22.500
11	PZ 10	25.430	29.250
12	PZ 16	23.463	24.109
13	PZ 18	23.374	24.193

## II. Libya

### 2.1. Exiting Wells

#	Well Name	Location Coordinates	
		long.	lat.
	<b>Tazerbo</b>		
1	TE-02	21.034	25.663
2	TE-03	21.064	25.681
3	TE-04	21.070	25.688
4	TE-05	22.363	25.466
5	TE-07	21.500	24.931
6	S-01	21.839	26.007
7	S-02	21.195	25.680
8	S-03	20.875	25.503
9	S-10	21.965	25.076
10	PZ-218	21.910	25.550
11	PZ-618	21.910	25.360

### 2.2. Recommended New Observation wells

#	Well Name	Location Coordinates	
		long.	lat.
1	South Al Jaghbub	24.500	29.000
2	SKD - 24 (El Kufra Basin)	21.850	21.500

## III. Sudan

### 3.1. Exiting Observation Wells

#	Well Name	Location Coordinates	
		long.	lat.
1	Al Atrun	26.750	18.200
2	Qaab El-Bab	30.225	18.717
3	West Slima	28.420	21.320
4	Um Hilal	30.133	19.092

## IV. Chad

### 4.1. Exiting Observation Wells

#	Well Name	Location Coordinates	
		long.	lat.
1	Gouro	19.570	19.530
2	Ouvra Geisole	20.492	19.050
3	Gaour	21.186	18.356

## **(B) POST NUBIAN AQUIFER SYSTEMS**

### **I. Egypt**

#### **1.1. Existing Wells**

#	Well Name	Location Coordinates	
		long.	lat.
1	One of Siwa Observation Wells	25.430	29.250

#### **1.2. Recommended New Observation Wells**

#	Well Name	Location Coordinates	
		long.	lat.
1	El-Diffa Western Plateau	26.300	30.250
2	South Qattara Sitra Area	29.000	27.500
3	Wadi El-Moweileh (South Wadi El-Rayar)	29.000	30.500
4	Kharga - Armant Road	31.800	24.700
5	Wadi El-Fareigh	30.500	30.450

### **II. Libya**

#### **2.1. Existing Wells**

#	Well Name	Location Coordinates	
		long.	lat.
	<b><u>Sarir North</u></b>		
1	PZ-3	22.310	27.675
2	PZ-6	22.046	27.533
3	PZ-9	22.090	27.948
4	PZ-15	21.652	27.770
	<b><u>Sarir South</u></b>		
1	PZ-33DP	22.008	27.344
2	PZ-35DP	22.016	26.450
3	PZ-39DP	21.606	26.786
4	PZ-41DP	22.250	26.836
5	PZA130/01	21.863	26.980
	<b><u>Sarir West</u></b>		
1	54d	21.340	27.228
2	55d	21.456	27.460
3	59d	21.340	27.717
4	62d	21.035	27.550
5	64d	20.910	27.380
	<b><u>Jalu/Awjilah</u></b>		
1	A-01-A		
	<b><u>Jabal Al Akhdar</u></b>		
1	PZ-3389 (El-Hawari)	20.200	32.000
2	PZ-3489 (El-Marj)	20.900	32.500

## 2.2. Recommended New Observation Wells

#	Well Name	Location Coordinates	
		long.	lat.
1	El Bayda	21.750	32.800
2	Al Makhili	22.260	32.200
3	Darnah	22.630	32.875
4	South Ajdabia	20.220	32.733