

PD-ABE-165

ARAB REPUBLIC OF EGYPT
NATIONAL ORGANIZATION FOR
POTABLE WATER AND
SANITARY DRAINAGE
(NOPWASD)

ISA 77331

**CANAL CITIES
WATER AND WASTEWATER
PHASE II PROJECT
USAID CONTRACT 263-0174**



BLACK & VEATCH INTERNATIONAL
ENGINEERS-ARCHITECTS

JMM James M. Montgomery
Consulting Engineers Inc.



in association with
SABBOUR ASSOCIATES



**Black & Veatch International
Engineers-Architects**

PD-ABE-165

..... CANAL CITIES PROJECT

Consulting Engineers Inc.



In association with
Sabbour Associates

MONTHLY PROGRESS REPORT NO. 30

CANAL CITIES - PHASE II PROJECT

JANUARY 1991

ARAB REPUBLIC OF EGYPT
NATIONAL ORGANIZATION FOR
POTABLE WATER AND
SANITARY DRAINAGE
(NOPWASD)

**CANAL CITIES
WATER AND WASTEWATER
PHASE II PROJECT**

February 15, 1991

USAID CONTRACT 263-0174

United States Agency for
International Development
Cairo Center Building
106 Kasr El Aini Street
Garden City, Cairo

Attention: Mr. Herbert Feldt, Project Officer
Subject: Monthly Progress Report No. 30 - January 1991
Reference: Canal Cities
Water and Wastewater - Phase II Project
USAID Contract No. 263-0174

Gentlemen:

Submitted herewith are five copies of our Progress Report No. 30 for the month of January 1991 for the Canal Cities Water and Wastewater - Phase II Project.

If you have any comments or questions, please do not hesitate to contact us.

Very truly yours,



D.W. Williams
Field Project Coordinator



BLACK & VEATCH INTERNATIONAL
ENGINEERS-ARCHITECTS

JMM James M. Montgomery
Consulting Engineers Inc.



in association with
SABBOUR ASSOCIATES

TABLE OF CONTENTS

Section 1 - Project Overview

Section 2 - General

Section 3 - Wastewater Facilities - Three Cities

Section 4 - Institutional Development

Section 5 - Port Said - Raw Water

EXHIBITS

- A. Cost Summary of Invoiced Amounts**
- B. Cash Flow Projection**
- C. Organization Chart - Preliminary Engineering Stage**
- D. Table 1 - Scheduled vs Actual Completion - By Manmonth Format**
- E. Table 2 - Scheduled vs Actual Completion - By Bar Chart Format**
- F. Condensed Implementation Schedule - Suez**
- G. Condensed Implementation Schedule - Ismailia**
- H. Condensed Implementation Schedule - Port Said**

APPENDIX

- A. Summary of Task Orders Issued**
- B. Highlights of CPM Update**

SECTION 1. PROJECT OVERVIEW

CANAL CITIES WATER AND WASTEWATER

PHASE II PROJECT

PROJECT OVERVIEW

- PROJECT NUMBER** : USAID Project No. 263-0174
- TOTAL PROJECT COST** : US \$500 Million
- SOURCE OF FUNDS** : USAID = \$380 Million (Grant)
GOE = \$120 Million
- IMPLEMENTING AGENCIES** : National Organization for Potable Water and Sanitary
Drainage (NOPWASD)
Suez Canal Authority (SCA)
- BENEFICIARIES** : Two million residents of the three Canal Cities
- PROJECT OBJECTIVES** : To improve and upgrade the existing water and
wastewater facilities of the three Canal Cities by
providing urgently needed infrastructures.
- PROJECT DESCRIPTION** : The Phase II project is primarily designed to eliminate
the adverse environmental impact and health risks of
untreated wastewater which is presently polluting
surface water bodies adjacent to the three Canal Cities.
The project provides for the design and construction
of treatment facilities to meet the requirements of
Law 48 of the Government of Arab Republic of Egypt:
in Port Said, 190,000 m³/day; in Ismailia, 90,000 m³/day;
and in Suez, 130,000 m³/day. It also includes the
procurement of pipes, equipment, and materials for
the raw water transmission line and pumping station
for Port Said, and an Institutional Development
Program aimed at strengthening the capacity of the
wastewater departments of the three Governorates and
the water training division in the Suez Canal Authority.
- CONSTRUCTION MANAGEMENT
CONSULTANT (CMC)** : Black & Veatch International and James M.
Montgomery, Consulting Engineers, Inc., in association
with Sabbour Associates. Notice to Proceed was issued
to the CMC on July 28, 1988. Contract duration is
five years.

SECTION 2. GENERAL

CMC MONTHLY PROGRESS REPORT NO. 30
General - January 1991

SUMMARY

1. Home Office Support (Port Said, Ismailia, Suez, and Institutional Development): Activity and manpower scheduling; budgeting; invoicing; staffing; facsimile, telex, and courier pouch communications; and other administrative activities continued. Administration of contracts and contract agreement with subcontractors continued.
2. Work continued on the Basis of Design Reports (BODR). For Suez, the final IFB Documents are awaiting USAID and NOPWASD approval. For Ismailia, work continued on layouts and design calculations. The field office staff continued efforts to finalize a site commitment for a sludge storage site in Port Said. The CMC is working with the Governor of Port Said to coordinate an alternative site.
3. Work progressed on the IFB documents for Ismailia, including layouts and profiles of influent/effluent lines, and design calculations and drawings for wastewater treatment lagoons, sludge drying lagoons, and Abu Atwa pumping station.
4. Review, evaluation, and responses for information received from the subcontractor on general geotechnical investigations continued.
5. Notice was received from USAID that Task Order No. 18, concerning the evaluation of Institutional Development proposals, has been cancelled.
6. Preliminary work commenced on home office support for the co-composting demonstration project based on verbal approval from USAID.
7. Returned comments to Field Project Coordinator on January 21, 1991 regarding issues requiring additional response from the Technology Transfer meetings. All issues were resolved in a meeting with NOPWASD on January 31, 1991.
8. Review comments on draft environmental assessment supplements were forwarded to the subcontractor.
9. Addendum No. 2 for the Prequalification Documents, clarifying minimum requirements for prequalification and extending the submittal deadline to January 25, 1991, was submitted to USAID and NOPWASD, on January 8, 1991.
10. No additional prequalification information was submitted by the deadline. The CMC is evaluating the previous data based on the revised requirements. The Evaluation Report will be finalized by February 15, 1991, and contractors notified of their prequalification status by February 22, 1991.

11. Continued to work with the Suez Governate, the Suez Canal Authority, and the Egyptian Army to resolve problems with the site commitment at Suez.
12. Continued to work with the Port Said Governate and the Egyptian Army to resolve site conflicts and identify a sludge storage site.
13. Completed additional analyses for the O&M cost study based on alternative assumptions.
14. Field Office staff continued to collect data and coordinate with Home Office staff on preparation of IFB documents and BODRs.

PROJECT ADMINISTRATION

Major project administration activities during the month were as follows:

- Project Implementation Schedule (CPM)

The CPM logic diagram was updated to show progress during the reporting month for the following:

Activity	Description
03X00	Geotechnical Investigation Work
04X00	Environmental Assessment
07X00	Prequalification of Design/Build (D/B) Contractors
08X00	Basis of Design Report
09X00	Preparation of Contract Documents for D/B Contractors
11X00	Cost Estimates
RPX00	Requirements Precedent
	For Port Said Only:
02100	Survey Work
10000	Raw Water Supply to Port Said

Appendix B provides lists of project activities that have been updated. It also provides information on the progress made during the reporting month for each activity.

The CPM Logic Diagrams, updated to December 31, 1990, for all three cities and for the Institutional Development Task have been prepared and plotted for submittal. The newly revised Target Dates of several key activities will be shown in the diagrams.

- Home Office Support

Activity and manpower scheduling; budgeting; invoicing; staffing; facsimile, telex, and courier service communications; and other administrative activities continued. Administration of contracts and contract agreements with subcontractors continued.

MEETINGS

A Joint Venture technical working session was held in Pasadena on January 8 and 9, 1991, to discuss project issues and schedule.

A meeting with USAID was held January 9, 1991, to discuss the revised scope of work for the co-composting demonstration project. It was agreed that Home Office support would be included and a draft task order will be submitted to USAID for approval.

A meeting with USAID was held January 14, 1991, to discuss the Suez IFB. Some comments from USAID legal staff will be incorporated prior to issuing the IFB. Approval of the IFB documents cannot be processed until the opinion of probable construction cost is received.

Representatives from the CMC and USAID met January 15, 1991, with the Governor of Suez to discuss the wastewater treatment plant site commitment and the relocation of the Petroject Factor. USAID stressed that a firm site commitment is required prior to tendering the wastewater treatment facilities.

Representatives of the CMC attended a NOPWASD workshop on January 24, 1991. The major topics included the general progress of the work, the outstanding technical comments on the Suez IFB documents, and the project schedule.

A meeting was held on January 31, 1991, with USAID and NOPWASD to resolve the outstanding technical comment on the Suez IFB. The technical comments were resolved and approval of the Suez IFB documents was requested from USAID and NOPWASD.

STAFF MOVEMENTS

There were no arrivals or departures of key staff to/from Egypt during the reporting period.

HOME OFFICE PROFESSIONAL STAFF

Home Office professional staff of BVI and JMM assigned to the project during January included:

BVI:	Name	Position
•	L.J. Almeleh	Structural Engineer
•	D.T. Banning	Civil Engineer
•	B.W. Bickel	Institutional Development Specialist
•	K.M. Blevnis-McCosh	Geotechnical Engineer

BVI (Cont'd): Name	Position
• L.W. Chapple	BVI Home Office Project Engineer
• R.E. Ehret	Specification Writer
• W.G. Ernst	Lead Civil Engineer
• D.P. Gupta	Geotechnical Engineer
• M.A. Jorgensen	Architect
• E.A. Kobylinski	Process Engineer
• S.K. Medler	Computer Graphics
• K.D. Monter	Civil Engineer
• G.E. Montgomery	Civil Engineer
• L.D. Pittman	Mechanical Engineer
• M.A. Pool	Electrical Engineer
• M.W. Robe	Fiscal Management
• B.C. Schubert	Industrial Engineer
• R.G. Reeves	Civil Engineer
• L.H. Siekerka	Lead Civil Engineer
• W.D. Skinner	Partner-in-Charge
• F.T. Smith	Director of Field Services
• J.L. Sonderegger	BVI Home Office Project Manager
• H.E. Spindler	Specifications and Standards Department Head
• R. Stamm	President of BVI
• R.N. Starcke	Structural Head Department
• M.T. Steichen	Civil Engineer
• R.M. Vaeth	Geotechnical Engineer
• J.L. Walters	Financial Analyst
• R.D. Willis	Fiscal Management Specialist
• R.E. Zitterkopf	Project Coordination Specialist

JMM: Name	Position
• E. Arguelles	JMM Home Office Project Manager
• V. Agrawal	Associate Civil Engineer
• S.C. Atkinson	Process Engineer
• D.B. Bird	Project Coordination Specialist
• W.A. Brumm	Lead Architect
• R.M. Cass	Mechanical Engineer
• A.J. Condren	Process Engineer
• K.S. Dong	Project Engineer
• S.A. Douara	Head Mechanical Engineer
• A.O. Elhadary	Architect
• J.L. Fahey	Environmental Engineer
• T. Heinsoo	Principal-in-Charge
• F.L. Hinker	Quality Control Specialist
• P.A. Koester	Project Engineer

JMM (Cont'd): Name	Position
• M. Kundu	Process Engineer
• G.H. Lewis	Lead Civil Engineer
• W.K. Liu	Mechanical Engineer
• H.V. Mayang	Design Coordinator
• W.T. McGivney	Lead Cost Estimator
• S.T. Mouawad	Structural Engineer
• E.G. Paulson	Civil Engineer
• A.S. Rashidi	Design Services Manager
• M. Sarwar	Civil Engineer
• C.H. Thoy	Process Engineer
• Z.J. Varga	Quality Control Specialist
• F.L. Vaughan	Specification Writer
• R.W.R. Warner	Process Engineer
• R.D. Westervelt	Project Engineer
• K.H. Wiebe	Lead Hydrogeologist
• B.A. Williams	Civil Engineer
• J.A. Wojslaw	Lead Process Engineer

PROGRESS AND COSTS

A cost summary of the invoiced amounts for the Canal Cities Project is shown in Exhibit A. This cost summary includes actual costs involved to date versus the projected contract disbursements for the first three project years and for the five-year contract period.

The projected engineering and construction cost disbursement schedule for each element of the Canal Cities Project by calendar year for the period 1988-1997 is shown in Exhibit B.

An organization chart of the CMC for the preliminary engineering stage of the Canal Cities Project is shown in Exhibit C.

A table showing scheduled man-months versus actual man-months expended is shown in Exhibit D.

A bar chart showing status of time, effort and invoices is shown in Exhibit E.

1

SECTION 3. WASTEWATER FACILITIES - THREE CITIES

**CMC MONTHLY PROGRESS REPORT NO. 30
Wastewater Treatment Facilities - Port Said,
Ismailia, and Suez - January 1991**

TECHNICAL ACTIVITIES

Major technical activities during the month of January for each of the three project cities included:

- **Geotechnical Investigations (General)**
 - The CMC field and home office staffs continued to review, evaluate, and respond to information received from the geotechnical subcontractor, Dames & Moore, including preliminary data from Port Said.
- **Geotechnical Investigations (Ismailia)**
 - Received and reviewed the draft geotechnical report for the offsite pipelines. Comments were returned to the subcontractor on January 17, 1991. Continued review of the geotechnical report for the wastewater treatment plant.
- **Environmental Assessment (Suez)**
 - Completed review and returned comments to subcontractor on January 16, 1991, for incorporation into the draft environmental assessment supplement. Copies were sent to the Field Project Coordinator for distribution to USAID for review.
- **Environmental Assessment (Ismailia)**
 - Completed review and returned comments to subcontractor on January 16, 1991, for incorporation into the draft environmental assessment supplement.
 - Completed review and returned comments to subcontractor on January 22, 1991, on the receiving water monitoring program for incorporation into the draft environmental assessment supplement.
- **Basis of Design Report (Ismailia)**

Work continued on the Ismailia BODR and included the following:

- Completed editing of BODR based on input from joint venture partners and field project coordinator. Finalized all revisions to the report figures.
- Final Draft BODR assembled, printed, and bound for shipment to the Field Project Coordinator for distribution to USAID and NOPWASD.

- **Basis of Design Report (Port Said)**
 - Work continued, including compilation of existing collection system pumping station and force main information and a preliminary evaluation of influent pumping station and raw wastewater force main hydraulics.
 - Prepared preliminary site layouts of treatment plant and influent pump station facilities, coordinating with the new military facilities being constructed by others.
- **Prequalification Documents (Port Said, Ismailia, and Suez)**
 - Distributed additional copies of the prequalification application to general contractors that have indicated a renewed interest in the project based on Addendum No. 2.
 - Commenced revisions to the November 20, 1990, issue of the prequalification evaluation report.
- **Bidding Documents (Suez)**
 - Began preparation of the final Suez IFB documents, including incorporation of final review comments to the specification sections and drawings. Responded to additional review comments by NOPWASD.

The Opinion of Probable Construction Costs Report for Suez was submitted to USAID on January 27, 1991.
 - Return comments to Field Project Coordinator on January 21, 1991, regarding issues raised at the Technology Transfer Meeting that require additional response. Items addressed include standby generators, ventilation rates, corrosion in salt water environment, underground electrical cables, level measuring equipment, and reserve (standby) pumping equipment. This additional information was submitted to USAID and NOPWASD on January 28, 1991.
 - A letter describing the plans for a Ring Road across the Suez site was forwarded to USAID and NOPWASD on January 30, 1991. Work is in progress to resolve any potential conflicts between the Ring Road and the wastewater treatment facilities.
- **Bidding Documents (Ismailia)**
 - Work continued on the IFB documents, including layouts and profiles of treatment lagoons, sludge drying lagoons, operations center influent/effluent lines and headwork facilities, design calculations, and drawings for the Abu Atwa pumping station and drawing preparation for the operations center. Work continued on determining the location and availability of existing utilities.

- **Co-Composting (Port Said)**
 - Additional budget information concerning home office support was sent to the Field Project Coordinator on January 16, 1991. Preliminary work commenced on home office support based on verbal approval from USAID. A draft task order (No. 20) was submitted to USAID on January 29, 1991. An update of the ongoing work was submitted to USAID on January 30, 1991.
- **Additional Project Work (General)**
 - Tables and bar charts showing actual versus projected project completion were developed for January and are included herein.

PROBLEM AREAS

- The schedule for the Suez IFB may slip due to a lack of a site commitment. Several problems are currently being worked on to resolve. These include the relocation of the Petroject Factory, resolution of a right-of-way problem with the Egyptian Army, written clearance from the Suez Canal Authority for the outfall, and a plan to route a Ring Road through the site.
- The schedule for the Port Said Wastewater Treatment Facilities may slip due to the problem of locating sites for the offsite lift station and sludge storage.
- The review period for the environmental assessments for Port Said and the supplemental Environmental Assessment for Suez have exceeded the time scheduled.
- Travel restrictions and reduced air service are slowing deliveries and may impact the schedule for geotechnical and environmental investigations for the Port Said sludge storage site.
- The review period for the Suez IFB has been longer than scheduled and the extensive technical comments from NOPWASD may result in some slippage of the schedule.

ACTIVITIES FOR THE COMING MONTH

- Continue work on Basis of Design Reports for Ismailia and Port Said. Submit final draft of Ismailia BODR for USAID and NOPWASD review.
- Continue work on the Ismailia BODR and IFB documents, including the wastewater treatment plant layout and the pumping station, force main, and plant outfall conceptual design.
- Issue final Suez IFB documents on February 22, 1991.

- Complete review of Draft Final Geotechnical Report for Ismailia Wastewater Treatment Plant.
- Complete prequalification evaluation report and send to Field Project Coordinator for distribution.
- Receive comments from USAID on supplement to the Suez Environmental Assessment and forward to subcontractor.
- Receive and commence review of Preliminary Geotechnical Report for sheet pile wall at Port Said.
- Finalize scope of work for prefeasibility study and continue home office support for co-composting work.
- Conduct a joint venture meeting in Pasadena on February 14, 1991, to discuss project issues.
- Continue resolving site commitment problems.
- Continue updating the Project Control Manual, as required.

SECTION 4. INSTITUTIONAL DEVELOPMENT

CMC MONTHLY PROGRESS REPORT NO. 30
Institutional Development - January 1991

TECHNICAL ACTIVITIES

The major technical activity during the month was:

- Completed additional analysis of O&M cost study using alternative assumptions regarding tariff increases and power costs. The additional analyses were performed in response to comments from USAID. The update was submitted to USAID on January 17, 1991.
- Received notice that Task Order No. 18 concerning evaluation of Institution Development proposals has been cancelled.

PROBLEM AREAS

- No problem areas were identified this month.

ACTIVITIES FOR THE COMING MONTH

- Finalize O&M study after receipt of comments from USAID.

SECTION 5. PORT SAID - RAW WATER

**CMC MONTHLY PROGRESS REPORT NO. 30
Port Said-Raw Water - January 1991**

ACTIVITIES DURING MONTH

- Continued preparing design criteria and drafting the Basis of Design Report of the Qantara raw water pumping station design. This report, once reviewed and approved by USAID/NOPWASD, will be used to develop contract documents for incorporation in the IFB documents of the Port Said wastewater treatment plant.
- Task order drafted and forwarded to Field Project Coordinator.

ACTIVITIES FOR THE COMING MONTH

- Submit draft task order to USAID for approval and begin preparing contract documents.
- Receive Final Environmental Assessment on Port Said raw water from subcontractor.

EXHIBITS

- A. COST SUMMARY OF INVOICED AMOUNTS
- B. CASH FLOW PROJECTION
- C. ORGANIZATION CHART - PRELIMINARY
ENGINEERING STAGE
- D. TABLE 1 - SCHEDULED VS ACTUAL COMPLETION
BY MANMONTH FORMAT
- E. TABLE 2 - SCHEDULED VS ACTUAL COMPLETION
BY MANMONTH FORMAT
- F. CONDENSED IMPLEMENTATION SCHEDULE - SUEZ
- G. CONDENSED IMPLEMENTATION SCHEDULE - ISMAILIA
- H. CONDENSED IMPLEMENTATION SCHEDULE - PORT SAID

**CANAL CITIES
WATER AND WASTEWATER PHASE II PROJECT
COST SUMMARY OF INVOICED AMOUNTS
(US DOLLARS)**

**EXHIBIT A
AID PROJECT 263-0174**

Description	Amount this Invoice*	Total to Date**	Total for Year 1, 2 and 3	Total Contract
1. Labor Costs	\$247,968	\$5,152,017	\$4,679,000	\$7,748,000
2. Travel Costs	1,180	275,470	385,000	541,000
3. Shipping Costs	0	19,215	434,000	744,000
4. Office Costs	35,678	559,802	655,000	999,000
5. Arrival Costs	0	20,441	165,000	307,000
6. Subcontract - Dames & Moore	51,800	1,763,514	1,188,000	1,228,000
7. Subcontract - Sabbour	14,947	525,398	895,000	1,373,000
8. Subcontract - Sheladia	0	0	350,000	350,000
Subtotal	351,573	8,315,856	8,751,000	13,290,000
Fee	35,157	831,586	875,000	1,329,000
Total	386,730	9,147,442	9,626,000	14,619,000

* Billing Period: December 1990 (Invoice No. 29)

** Total to Date: Amounts are through December 1990 and reflect a billing adjustment of (\$1,112,665)

CANAL CITIES PHASE II – CASH FLOW PROJECTION

EXHIBIT B
AID Project 263-0174

CATEGORY	88				89				90				91				92				93				94				95				96				97		TOTAL																						
	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2																										
A. CAPITAL COST																																																													
PORT SAID W.W.																																																													
AID																													6.00	6.22	7.20	13.60	15.70	16.50	16.20	16.00	7.60	5.20	4.50	3.47	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	0.54	122.51
GOE																													0.16	0.17	0.20	0.35	0.43	0.50	0.50	0.40	0.20	0.18	0.14	0.08	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	3.39
ISMAILIA W.W.																																																													
AID																													4.00	4.00	4.57	5.50	6.12	7.83	11.32	10.78	6.91	5.63	4.12	3.50	3.32	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	0.20	79.20
GOE																													1.40	1.40	1.52	1.76	2.45	2.64	3.46	3.32	2.45	2.30	1.88	1.22	1.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	0.10	27.70
SUEZ																																																													
AID																													4.40	5.00	6.48	9.25	12.85	12.78	8.80	7.50	6.80	6.20	5.40	4.00	2.13	2.00	0.10	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	0.30	95.99	
GOE																													1.50	1.50	2.00	3.00	4.20	4.00	3.20	2.10	1.98	1.77	1.43	1.32	0.61	0.50	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	0.15	30.31	
P.S. RAW WATER																																																													
AID																													0.50	1.40	3.20	3.20	2.00	0.80																					10.70						
GOE																													2.20	2.50	3.20	4.60	9.60	8.75	6.35	5.60	2.50	2.00																					47.30		
B. TECH ASSIST																																																													
CMC AID	0.75	1.27	0.49	1.15	0.58	0.00	0.50	1.33	1.17	1.20	1.20	0.80	0.80	0.80	0.70	0.70	0.70	0.50	0.50	0.40	0.40	0.40	0.30	0.30	0.30	0.21	0.20	0.20	0.10	0.10	0.10	0.10	0.10	0.10	18.55																										
INST AID											0.70	0.80	0.80	0.80	0.90	0.90	1.00	1.00	1.00	1.00	0.90	0.90	0.90	0.90	0.85	0.60	0.30											15.25																							
C. AUDIT & EVALUATION																																																													
AID									0.10	0.15									0.15									0.15									0.15					0.15					0.30	1.30													
D. CONTINGENCY																																																													
AID											1.20									3.50									12.50									12.50					5.40					1.40					36.50								
GOE											1.30									1.30									1.30									1.30					1.30					0.10					11.30								
TOTALS																																																													
AID	0.75	1.27	0.49	1.15	0.58	0.00	0.50	1.33	1.17	2.00	2.00	2.95	1.60	6.10	10.60	22.33	22.74	30.25	37.20	48.38	37.42	35.08	30.31	32.48	14.47	10.94	9.29	6.79	1.14	1.14	1.14	2.69	1.14	1.14	1.44	380.00																									
GOE	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.50	2.90	7.06	7.19	9.36	11.40	20.17	14.81	12.15	10.22	10.73	5.38	1.97	1.68	1.56	0.26	0.26	0.26	0.36	0.26	0.26	0.26	120.00																									
TOTAL	0.75	1.27	0.49	1.15	0.58	0.00	0.50	1.33	1.17	2.00	2.00	2.95	1.60	7.60	13.50	29.39	29.93	39.61	48.60	68.55	52.23	47.23	40.53	43.21	19.85	12.91	10.97	8.35	1.40	1.40	1.40	3.05	1.40	1.40	1.70	500.00																									

NOTES:

1. Cash flow projections are in millions of USD for each quarter of the calendar years shown.
2. Capital costs for wastewater facilities are based on T.O.O reports submitted to AID on 17 September 1989.
3. Capital cost for Port Said Raw water facilities are based on 2-1200 dia PCCP plus one pumping station.
4. Costs for technical assistance, CMC and Institutional Development, are based on the Project Paper.
5. Contingencies represent approximately 10% of the projected costs.

17

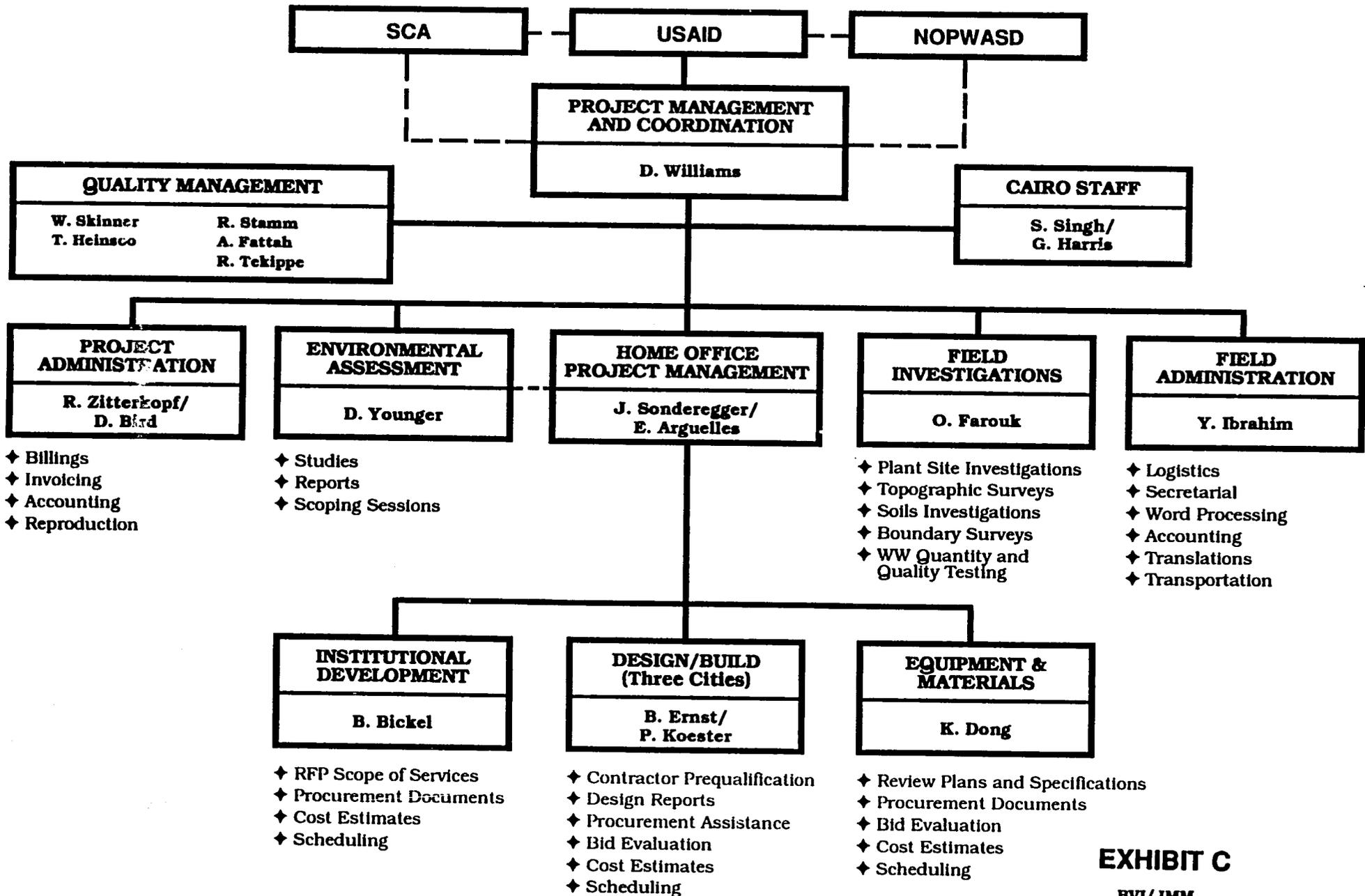


EXHIBIT C

BVI/JMM
 Sabbour Associates

ORGANIZATION CHART
 PRELIMINARY ENGINEERING STAGE
 Canal Cities Water And Wastewater
 Phase II Project

ed

EXHIBIT D
TABLE 1
SCHEDULED vs. ACTUAL COMPLETION
By Manmonth Format

TASK NO.	ORIGINAL TASK DESCRIPTION	BVI/JMM BUDGETED MANMONTHS(1)	BVI/JMM MANMONTHS REVISED BY T.O.	BVI/JMM MANMONTHS EXPENDED(2)	TASK APPROXIMATE PERCENT COMPLETE
1	Site Selection (3)	5.00	5.00	32.25	95
2	Topographic Surveys	1.00	1.00	0.43	90
3	Soils Investigation (4)	0.50	0.50	2.18	80
4	Environmental Assessment	7.50	7.50	1.70	75
5	Subcontract (Sheladia)	27.00	27.00	0.00	0
6	Institutional Development	7.00	7.00	7.68	95
7	Contractor Prequalification	5.00	5.00	4.73	100
8	Design Report (5)	65.00	76.00	71.70	75
9	IFB Preparation (6)	65.00	185.00	177.79	65
10	SCA Procurement (7)(8)	9.00	11.00	2.36	10
11	Cost Estimates	6.50	6.50	3.43	15
12	Tender Reviews	28.50	28.50	0.00	0
13	Scheduling (9)	5.00	5.00	10.77	90
14	Quality Assurance	<u>8.00</u>	<u>8.00</u>	<u>3.77</u>	25
	Subtotal	240.00	373.00	318.80	
OTHER TASKS, UNBUDGETED					
-	Law 48 Treatment Costs(10)	0.00	3.00	0.66	100
-	Alternative Treatment Study(11)	0.00	27.00	72.48	100
-	Second Prequalification(12) (15)	0.00	7.00	8.90	100
-	O & M Cost Study(13)	0.00	2.00	3.08	90
-	Port Fouad Facilities Assessment(14)	0.00	2.40	1.40	100
-	Port Said Composting(16)	0.00	0.00	0.00	0
-	Technical Training Trip(17)	<u>0.00</u>	<u>0.00</u>	<u>2.56</u>	100
	Subtotal	<u>0.00</u>	<u>41.40</u>	<u>89.08</u>	
	TOTAL	<u><u>240.00</u></u>	<u><u>414.40</u></u>	<u><u>407.87</u></u>	

PERIOD 13

020891

21

TABLE 1 (Continued)

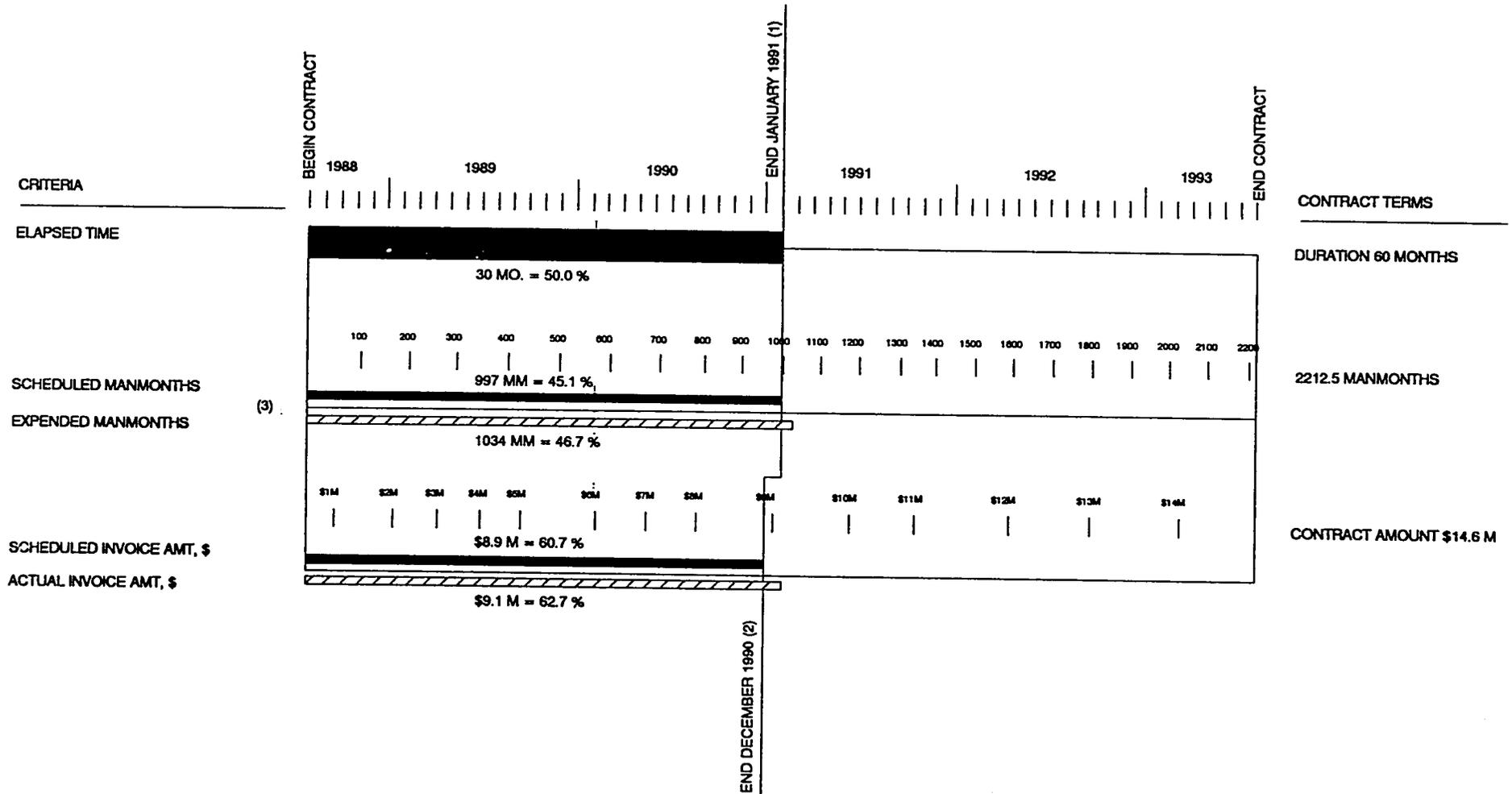
- (1) BVI and JMM home office manmonths agreed to by USAID on 15 June 1988. Previous reports incorrectly included 11 manmonths assigned to Dames & Moore.
- (2) BVI manmonths expended through 21 December 1990, JMM through 26 January 1991.
- (3) During the first 6 months on the project, much additional time was spent on an evaluation of the efficacy of the Rapid Infiltration System, the Deep Shaft Treatment Process, and the inability of the proposed sites to support such processes. The manmonths for these investigations were charged to the closest applicable contract task: Site Selection. Site selection procedures are not complete in Port Said.
- (4) As part of the evaluation of the Deep Shaft Process, it was necessary to conduct deep soil borings at each site to examine the construction techniques to be used for excavating the shafts. Although this was an unbudgeted item, it was charged to the closest applicable contract task: Soils investigation.
- (5) T.O. 12.1, 12.2 and 12.3 signed by USAID on 26 Dec 1989.
- (6) T.O. 14.1, 14.2, and 14.3 signed by USAID on 8 Mar 1990.
- (7) T.O. 3 signed by USAID ON 30 Aug 1988.
- (8) Manmonths expended is only for the work authorized by T.O. 3 and that portion is 100 percent complete.
- (9) The budgeted manmonths agreed to on 15 June 1988 were sufficient for the CMC to schedule its work using conventional CPM techniques. Additional time has been required.
- (10) T.O. 2 signed by USAID on 28 July 1988.
- (11) T.O. 9 signed by USAID on 6 Feb 1989 and the level of effort agreed to was 27 manmonths. In August 1989, the final draft of the report was delivered. After USAID's review and analysis, the CMC was requested to further revise the report to include complete project cost, a more detailed sludge handling section, and the effects on receiving water bodies of both primary treatment and Law 48 treatment. The final report was delivered in October 1989. The level of effort required to complete the report in the manner requested was approximately 73 manmonths. Previous reports incorrectly included approximately 9 manmonths of professional manpower assigned on a long-term basis to the Cairo project office.
- (12) T.O. 13 signed by USAID on 21 Jan 1990.
- (13) T.O. 15 signed by USAID on 30 May 1990.
- (14) T.O. 16 signed by USAID on 16 September 1990.
- (15) T.O. 13.1 signed by USAID on 13 September 1990.
- (16) T.O. is pending.
- (17) T.O. 19 (Rev. 1) signed by USAID on 13 November 1990.

EXHIBIT E

TABLE 2

SCHEDULED vs. ACTUAL COMPLETION

By Bar Chart Format



(1) Manmonths expended thru 12-21-90 for BVI and 01-26-91 for JMM.

(2) Invoiced amounts as of Canal No. 29 (latest invoice).

(3) Manmonths include BVI, JMM, D&M, and Sabbour; home office and expat

23

APPENDIX

A. SUMMARY OF TASK ORDERS ISSUED

**CANAL CITIES
WATER AND WASTEWATER - PHASE II PROJECT
SUMMARY OF TASK ORDERS ISSUED**

Appendix A
AID Project 263-0174

T.O. No.	Date Issued	Purpose	Name	Candidate Position	Duration Cal/days
1	28 JUL 88	- Notice to Proceed - Mobilization - Finalize Wastewater Treatment Sites	M. Moore	Field Office Coordinator	Indef.
2	29 JUL 88	Prepare estimates for treatment process to comply with Law 48	--	--	3 MM
3	30 AUG 88	- Prepare estimate to review raw water transmission design - Prepare purchase specifications for pipe	--	--	2 MM
4	15 SEP 88	Procurement of Technical Assistance for Institutional Development	J. Brown	Institutional Develop Expert	2 MM
5	16 OCT 88	- Determination of Flows - Determine Site Suitability	E. Arguelles J. Kirby R. Turnbull, Jr.	Project Engineer Project Engineer Hydrogeologist	2.75 MM

82-

**CANAL CITIES
WATER AND WASTEWATER - PHASE II PROJECT
SUMMARY OF TASK ORDERS ISSUED**

Appendix A
AID Project 263-0174

T.O. No.	Date Issued	Purpose	Name	Candidate Position	Duration Cal/days
6.1	10 JAN 89	Topographic survey of treatment site, force main and pump station at Port Said	--	Surveyors	69 days
6.2	10 JAN 89	Topographic survey of treatment site, force main and pump station at Ismailia	--	Surveyors	94 days
6.3	10 JAN 89	Topographic survey of treatment site, force main and pump station at Suez	--	Surveyors	72 days
7.1	10 JAN 89	Environmental assessment of proposed site at Port Said	--	a) Chief Environmentalist b) Environmentalist	175 days
7.2	10 JAN 89	Environmental assessment of proposed site at Ismailia	--	a) Chief Environmentalist b) Environmentalist	231 days
7.3	10 JAN 89	Environmental assessment of proposed site at Suez	--	Chief Environmentalist	281 days

**CANAL CITIES
WATER AND WASTEWATER - PHASE II PROJECT
SUMMARY OF TASK ORDERS ISSUED**

Appendix A
AID Project 263-0174

T.O. No.	Date Issued	Purpose	Name	Candidate Position	Duration Cal/days
8.1	10 JAN 89	Soils investigation at at Port Said	--	a) Prin. Geotech. Eng. b) Staff Geotech Eng.	200 days
8.2	10 JAN 89	Soils investigation at station at Ismailia	--	a) Prin. Geotech. Eng. b) Staff Geotech. Eng.	207 days
8.3	10 JAN 89	Soils investigation at Suez	--	Prin. Geotech. Eng.	174 days
9	06 FEB 89	Comparison of alternative wastewater tretament schemes for Port Said, Ismailia and Suez	--	--	142 days
10	26 MAR 89	Preparation of paper on environmental impact of wastewater in Port Said	--	--	2 mm
11	23 MAY 89	Numerical modeling study. Port Said wastewater discharge into Lake Manzala	--	--	2 mm

no.

**CANAL CITIES
WATER AND WASTEWATER - PHASE II PROJECT
SUMMARY OF TASK ORDERS ISSUED**

Appendix A
AID Project 263-0174

T.O. No.	Date Issued	Purpose	Name	Candidate Position	Duration Cal/days
12.1	26 DEC 89	Basis of Design Report for facilities at Port Said	--	--	27 mm
12.2	26 DEC 89	Basis of Design Report for facilities at Ismailia	--	--	22 mm
12.3	26 DEC 89	Basis of Design Report for facilities at Suez	--	--	27 mm
13	21 JAN 90	Revision of Prequalification Documents	--	--	5 mm
13.1	13 SEP 90	Extension of Prequalification Period Until 10 October 1990	--	--	2 mm
14.1	08 MAR 90	Preparation of Contract Documents for Port Said	--	--	65 mm
14.2	08 MAR 90	Preparation of Contract Documents for Ismailia	--	--	60 mm

CANAL CITIES
WATER AND WASTEWATER - PHASE II PROJECT
SUMMARY OF TASK ORDERS ISSUED

Appendix A
AID Project 263-0174

T.O. No.	Date Issued	Purpose	Name	Candidate Position	Duration Cal/days
14.3	08 MAR 90	Preparation of Contract Documents for Suez	--	--	60 mm
15	30 MAY 90	Preparation of Operation and Maintenance Cost Study	--	--	4.8 mm
16	16 SEP 90	Port Fouad Facilities Assessment	--	--	52 days
17.3	13 SEP 90	Suez Cost Estimates	--	--	2 mm
18	30 OCT 90	Evaluation of Institutional Development Proposals	--	--	Cancelled
19	13 NOV 90	Technology Transfer Trip to USA	--	--	12 days

22

APPENDIX

B. HIGHLIGHTS OF CPM UPDATE

CPM UPDATE AS OF 31 JANUARY 1991

Progress made during the reporting month and compared to the previous month is shown below.

Name of Project City: SUEZ

<u>Activity No.</u>	<u>Description</u>	<u>Percent Completion</u>	
		<u>Last Month</u> (31 Dec. '90)	<u>Reporting Month</u> (31 Jan. '90)
01300	<u>Selection of the Wastewater Treatment Plant Sites</u> (Activity Completed)		
02300	<u>Topographic Surveys</u> (Activity Completed)		
03300	<u>Soil Investigations</u>		
03378/80	Review & Approval - USAID/NOPWASD	90	90
04300	<u>Environmental Assessments</u>		
04378/79	Review and Approval of Supplement to Final E.A. Report USAID/NOPWASD	-	0
07300	<u>Prequalification of Design/Build Contractors</u> Addendum No. 2*		
07390	Prepare Prequal. Application	-	100
07391	Receive Additional Prequal. Application	-	100
07392	Evaluate Prequal. Application	-	100
07393	Submit Prequal. Evaluation Report	-	75
07394/95	Review and Approval USAID/NOPWASD	-	0
08300	<u>Basis of Design Reports</u> (Activity Completed)		

* Newly added activities

CPM UPDATE AS OF 31 JANUARY 1991 (Cont'd)

Progress made during the reporting month and compared to the previous month is shown below.

Name of Project City: SUEZ

<u>Activity No.</u>	<u>Description</u>	<u>Percent Completion</u>	
		<u>Last Month</u> (31 Dec. '90)	<u>Reporting Month</u> (31 Jan. '90)
09300	<u>Preparation of Contract Documents for Design/Build Contractors</u>		
	Finalize Contract Documents		100
11300	<u>Develop Cost Estimates</u>		
11362	Submit Report to USAID/NOPWASD	0	100
11364/66	Review & Approval - USAID/NOPWASD	0	20
13300	<u>Task Order No. 9: Alternative Treatment Study</u>		
	(Activity Completed)		
RP	<u>Requirements Precedent</u>		
RP300	Requirements Precedent - Construction	90	90

75

CPM UPDATE AS OF 31 JANUARY 1991

Progress made during the reporting month and compared to the previous month is shown below.

Name of Project City: ISMAILIA

<u>Activity No.</u>	<u>Description</u>	<u>Percent Completion</u>	
		<u>Last Month</u>	<u>Reporting Month</u>
		(31 Dec. '90)	(31 Jan. '90)
01200	<u>Selection of the Wastewater Treatment Plant Sites</u> (Activity Completed)		
02200	<u>Topographic Surveys</u> (Activity Completed)		
03200	<u>Soil Investigations</u>		
03274	Prepare Draft Soils Report	90	100
03276	Submit Report to USAID/NOPWASD	-	20
04200	<u>Environmental Assessments</u>		
04276	Supplement to Final E.A. Report	20	80
07200	<u>Prequalification of Design/Build Contractors</u> Addendum No. 2*		
07290	Prepare Prequal. Application	-	100
07291	Receive Additional Prequal. Application	-	100
07292	Evaluate Prequal. Application	-	100
07293	Submit Prequal. Appl. Evaluation Report	-	75
07294/95	Review and Approval USAID/NOPWASD	-	0

* Newly added activities

726

CPM UPDATE AS OF 31 JANUARY 1991 (Cont'd)

Progress made during the reporting month and compared to the previous month is shown below.

Name of Project City: ISMAILIA

<u>Activity No.</u>	<u>Description</u>	<u>Percent Completion</u>	
		<u>Last Month</u>	<u>Reporting Month</u>
		(31 Dec. '90)	(31 Jan. '90)
08200	<u>Basis of Design Reports</u>		
08240	Facilities Design	95	100
08242	Controls & Support Facilities	95	100
08244	Prepare Draft Design Report	95	100
08246	QA/QC Review	50	60
08260	Finalize Draft Basis of Design Report	50	100
09200	<u>Preparation of Contract Documents for Design/Build Contractors</u>		
09206	Prepare Narrative for Invitations for Bid	80	90
09208	Prepare General Conditions and IFB	80	90
09240	Prepare Technical Specifications	80	90
09242	Prepare Preliminary Drawings	80	85
09244	Prepare Bid Schedule	80	85
09246	Draft Bid Documents	80	85
11200	<u>Develop Cost Estimates</u>		
11202	Draft Task Order	50	50
11206	List Material, Equipment, Labor Requirements	40	40
11208	Develop Unit Costs	80	80
13200	<u>Task Order No. 9: Alternative Treatment Study</u> (Activity Completed)		
RP	<u>Requirements Precedent</u>		
RP200	Requirements Precedent - Construction	90	90

CPM UPDATE AS OF 31 JANUARY 1991

Progress made during the reporting month and compared to the previous month is shown below.

Name of Project City: PORT SAID

<u>Activity No.</u>	<u>Description</u>	<u>Percent Completion</u>	
		<u>Last Month</u>	<u>Reporting Month</u>
		(31 Dec. '90)	(31 Jan. '90)
01100	<u>Selection of the Wastewater Treatment Plant Sites</u> (Activity Completed)		
02100	<u>Topographic Surveys</u>		
02150	Submit Maps/Data to USAID/NOPWASD	95	95
02152/54	Review and Approval USAID and NOPWASD	90	90
03100	<u>Soil Investigations</u>		
03166	Laboratory Soil Testing	90	100
03168	Preliminary Assessment of Soil Data	90	100
03170	Assess Field & Laboratory Test Data	70	100
03172	Establish Geotechnical Design Parameters	70	80
03174	Prepare Draft Soils Report	30	40
04100	<u>Environmental Assessments</u>		
04196/97	Review & Approval of Environmental Assessment Report USAID/NOPWASD	-	0
07100	<u>Prequalification of Design/Build Contractors</u>		
	Addendum No. 2*		
07190	Prepare Prequal. Application	-	100
07191	Receive Additional Prequal. Application	-	100
07192	Evaluate Prequal. Application	-	100
07193	Submit Prequal. Application Report	-	75
07194/95	Review and Approval USAID/NOPWASD	-	0

*Newly added activities

CPM UPDATE AS OF 31 JANUARY 1991 (Cont'd)

Progress made during the reporting month and compared to the previous month is shown below.

Name of Project City: PORT SAID

<u>Activity No.</u>	<u>Description</u>	<u>Percent Completion</u>	
		<u>Last Month</u>	<u>Reporting Month</u>
		(31 Dec. '90)	(31 Jan. '90)
08100	<u>Basis of Design Reports</u>		
08108	Establish Design Criteria	95	95
08140	Facilities Design	20	30
09100	<u>Preparation of Contract Documents for Design/Build Contractors</u>	0	0
10000	<u>Raw Water Supply to Port Said</u>		
10059	Preliminary Design of Pump Station	20	20
10061	Prepare Preliminary Specifications	5	5
11100	<u>Develop Cost Estimates</u>		
11102	Draft Task Order	50	50
11108	Develop Unit Costs	40	40
13100	<u>Task Order No. 9: Alternative Treatment Study</u>		
	(Activity Completed)		
14100	<u>Inclusion of Port Fouad Sewage</u>		
	(Activity Completed)		
RP	<u>Requirements Precedent</u>		
RP100	Requirements Precedent - Construction	90	90