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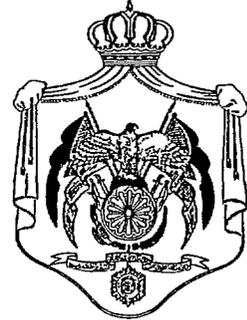
Report 3114-95-00-12

Water Quality Improvement and Conservation Project

1995 Annual Progress Report

The WQIC Team

The Hashemite Kingdom of Jordan



Ministry of Water and Irrigation



The Technical Assistance Team Includes

Development Alternatives, Inc
Science Applications International Corp
Harza Environmental Services, Inc
Development Associates, Inc



United States Agency for International Development
Contract No 278-0288-00-C-4026-00

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List of Acronyms

Artificial Recharge	AR
Best and Final Offer	BAFO
Canadian International Development Agency	CIDA
Central Laboratory	CL
Concept of Operations Plan	COP
Development Associates, Inc	DA
Development Alternatives, Inc	DAI
Feasibility Studies	FS
Geographical Information Systems	GIS
Deutsche Gessellschaft Fur Technische Zusammenarbeit	GTZ
Human Resources Development	HRD
Irrigation Management Services	IMS
Irrigation Support Project for Asia and the Near East	ISPAN
Jordan Environmental Society	JES
Jordan Valley Authority	JVA
Management Information Systems	MIS
Monitoring Network	MN
Ministry of Water and Irrigation	MWI
Non-Governmental Organization	NGO
Operations and Maintenance	O&M
Planning Development and Information	PD&I
Pollution Prevention/Waste Minimization	PP/WM
Quality Assessment/Quality Control	QA/QC
Request for Proposals	RFP
Royal Scientific Society	RSS
Science Applications International Corporation	SAIC
Secretary General	SG
Scope of Work	SOW
Short-Term Technical Assistance	STTA
Temporary Duty	TDY
Training Needs Assessment	TNA
United Nations Development Program	UNDP
United States Agency for International Development	USAID
Volunteers in Overseas Cooperative Assistance	VOCA
Water Authority of Jordan	WAJ
World Bank	WB
Water Environment and AgriBusiness	WEA
World Environment Center	WEC
Water and Environment Research and Study Center	WERSC
Working Group	WG
Water Users Organization	WUO
Water Quality Improvement and Conservation	WQIC

1995 PROGRESS REPORT

PROJECT MANAGEMENT

Objective

Unlike the technical staff the management staff members have no key indicators to follow or technical goals to fulfill. The main purpose of management is to ensure that those who have goals follow and fulfill them correctly and in a timely manner. Management tracks all project activities and coordinates and oversees general project progress. It also provides a link between the MWI counterparts, the DAI team, and the USAID mission, as well as acts as a liaison with the DAI and subcontractor home offices. By handling contract negotiations, controlling finances, and overseeing administrative personnel, management provides the framework on which the project is assembled.

Plans and Actual Progress for 1995

The following provides the exact plans for 1995 by task and subtask which were developed in late 1994. After each section, there is a brief summary of actual accomplishments shown in bold and italic.

Meetings to Expedite Implementation

The following are the key scheduled meetings that were planned to expedite implementation and provide a forum for the exchange of ideas beneficial to the project. In addition, there were numerous individual and group meetings planned between the project staff and senior MWI and USAID staff on a day-to-day basis to ensure the smooth implementation of all project activities.

Management Meetings Will be held every other week on Wednesday. These meetings allow the DAI Team, MWI officials, and USAID representatives to discuss current activities and plans, and to clarify issues on all sides. All major constraints to project implementation will be reviewed on a monthly basis, plans will be made to address the constraints, and commitments will be obtained on action items to be carried out by all parties.

In addition, weekly management meetings have been established with each of the three Secretaries General of the Ministry to brief them on the project activities and request assistance when needed.

These meetings were held approximately every three weeks. They allowed the DAI Team, MWI officials, and USAID representatives to discuss current activities and plans, and to clarify issues on all sides. All major constraints to project implementation were reviewed, plans were made to address the constraints, and commitments were obtained on action items to be carried out by all parties.

In addition, weekly and at times daily management meetings were held with the Secretary General of MWI. The weekly meetings with the other two Secretaries General were phased out in the last half of the year and need to be re-established.

WQIC Staff Meetings Will be held every other week on Tuesdays. These meetings will allow each component to bring the WQIC members up to date on component activities and will be an open forum to discuss project issues. Significant accomplishments will be identified for inclusion in the WQIC monthly newsletter and brought to the attention of MWI and USAID management. Constraints that require USAID or MWI management intervention will also be identified and agreement made as to a course of action for resolution.

These meetings were held essentially every three months rather than every two weeks. MWI did not feel that the meetings were required. Near the end of the year, changes in the MWI management caused renewed interest in holding the WQIC meetings which were then reinstated. However, the general consensus is that monthly meetings suffice to keep everyone informed.

DAI Staff Meetings Will be held every other week on Mondays. During these meetings the COP will brief DAI Team staff members on administrative matters and events. The meetings will provide a forum for the DAI staff to advise management of the problems that they feel are affecting the implementation of the project.

The DAI Staff Meetings were held essentially once every two weeks or whenever needed. During these meetings, the COP briefed the DAI Team staff members on administrative matters and events. The meetings provided a forum for the DAI staff to discuss current activities and advise management of any issues which arose and which they felt were affecting the implementation of the Project.

Working Group Meetings Held at least monthly at the discretion of the component head. These meetings will focus on component activities, detailed implementation schedules, setting individual assignments and deadlines, identify significant findings that should be called to the attention of management, and identify unresolved implementation constraints requiring the assistance of management.

Most of the working groups meet at least once a month to discuss status of current activities and plans for the following month. Some components were more effective than others in using the working group to implement project activities.

Meetings with Other Projects and Donors To be held intermittently, these meetings will keep WQIC in tune with activities on other projects in the region in order to coordinate WQIC activities and goals wherever possible. With the signing of the Peace Accord it is anticipated that there will be an influx of donor teams in Jordan during 1995 investigating project funding possibilities. Through these and other meetings opportunities will be defined where the WQIC project can carry out joint activities to improve the implementation efficiency of the water resource related projects in Jordan. There are currently plans to carry out a series of policy studies in association with GTZ during 1995 with the possible involvement of CIDA. As proposals are developed to implement the development activities under the Peace Accord, more opportunities may emerge for WQIC coordination and cooperation.

Such meetings were held intermittently and proved to be very useful. These meetings kept the WQIC team informed of activities on other projects in the region, in order to coordinate WQIC activities and goals wherever possible, thus attempting to avoid duplication of effort. The signing of the Jordanian-Israeli Peace Treaty has stimulated regional thinking about water policy and the Amman Economic Summit (MENA) has further encouraged interest in providing project funding possibilities. Through meetings with other projects and donors, opportunities were defined where the WQIC project could carry out joint activities to improve the implementation efficiency of the water resources related projects in Jordan.

Home Office Support

The DAI Home Office will provide administrative and technical support to the project. DAI will continue to provide administrative support for contractual and financial matters, procurement coordination, and mobilization of short-term technical assistance. DAI has created¹ a WQIC Project Committee which will meet at least once a month to discuss ideas and issues related to the project. Prior to each meeting, DAI and WQIC staff will jointly prepare an agenda for the monthly meetings and DAI will provide required follow-up on decisions and recommendations coming out of the meetings.

The DAI Home Office has provided administrative and technical support to the project throughout the year. DAI has provided administrative support for contractual and financial matters, procurement coordination, coordination of STTA from the US-based subcontractors, and identification and mobilization of DAI STTA. The DAI Home Office WQIC Project Committee met several times to discuss ideas and issues related to the project. However, there was insufficient feedback from Amman to justify continuing the meetings.

Management Trip

Coordinate Timing with Home Office, Write Action Memo During the summer of 1995, we will begin to plan for the yearly DAI management visit. Max Goldensohn or his designee will visit the project for approximately ten days to meet with project officials and the team.

Finalize Meeting Schedules, Interviews, Field Trips Once the management trip is approved and the dates are set, we will arrange meetings with USAID, MWI, and team members so that DAI management can gather information on project issues, carry out an in-depth review of each component and project Home Office backstopping needs, and give advice on project management to improve implementation efficiency. Field trips to project sites will also be carried out.

Brief Chief of Party, Write Report After DAI management has completed its tour of the project and spoken with the major players, a brief report of the findings will be written and presented to the Chief of Party. A briefing will be made to USAID and MWI management.

Two short visits were provided by DAI senior management in lieu of one visit by Dr. Goldensohn. When the DAI President, Tony Barclay, visited the West Bank in May, the Project received permission to take advantage of his presence in the region and arranged a Project visit on May 23 and May 24. Dr. Barclay visited MWI and USAID officials and local DAI Staff. In meetings with USAID, it was agreed that the DAI contract should be revised and that the Home Office support issue should be resolved.

Dr. Max Goldensohn, DAI Senior Vice President for Operations, visited the Project in June for a couple of days at no cost to the project and he visited again in December. The Project arranged for meetings with USAID, MWI, and team members so that DAI management could gather information on project issues, carry out an in-depth review of each component, project Home Office backstopping needs, and offer advice on project management to improve implementation efficiency. Field trips to project sites were also carried out.

Both DAI visitors wrote short reports for the Chief of Party. Briefings were also held for USAID and MWI management.

¹ Based on a request of the Project Coordinator, the committee was formed in December 1994.

Finalize Contract SOW and Budget Revisions

This task will finalize the SOW and negotiate a revised budget to accurately reflect the needs of MWI and USAID. As part of the task of developing the 1995 Work Plan, a draft contract SOW was prepared to accurately reflect the current level of knowledge of the project and its needs. The SOW included the relevant sections of the DAI proposal and BAFO. Although some of the revised SOW reflects findings and lessons learned to date on the project which have financial implications to the project if taken as a whole, DAI will work with MWI to determine which activities to consider as priority during project planning, and which to defer to a later date. In this way, the bottom line of the project budget will not need to be increased at this time.

The DAI SOW was revised to accurately reflect the needs of MWI and USAID with regard to the current activities being carried out. The budget was also realigned. A contract amendment was approved and executed in October 1995.

Personnel Reviews

As part of DAI's management responsibility, employee/employer reviews are held once a year to review expectations, performance and relationships. Areas of needed improvement will be identified and training plans developed where needed. Interim performance reviews will also be conducted in July of each year. For each review, both the employee and the supervisor will note what the employee has accomplished during the year, what the employee hopes to achieve and general working conditions on the project. After the review meeting, the supervisor will write a memo summarizing the meeting, which will go into the employee's personnel file.

As prescribed, personnel reviews were held for the expatriate as well as for local staff. Areas of needed improvement were identified and training plans developed where needed. Interim performance reviews will also be carried out to follow up on any issues identified in the previous performance review. For each review, both the employee and the supervisor noted what the employee had accomplished during the year, what the employee hoped to achieve during the year, and general working conditions on the project. After the review meeting, the supervisor wrote a memorandum summarizing the meeting, which then went into the employee's personnel file and formed the basis of the annual salary increases.

Information Highway

Information Highway/Network Operation

Management Training The DAI Computer Management System (CMS) Expert will provide overall management of the WQIC network for the first five months of 1995. He will provide day-to-day management and debugging of the network and provide individual training to those working on the network. He will manage and maintain the software and computer manual library for the project.

The DAI Computer Management System (CMS) Expert provided overall management of the WQIC network. He provided day-to-day management and troubleshooting of the network and offered individual training to those using the network. He established and maintains the software and computer manual library for the project. The activity proved to be more demanding than expected and the time anticipated for MWI staff to take over the function was under-estimated. As such, the CMS expert was retained for the full year.

Lotus Notes The CMS expert will supervise the installation of the Lotus Notes system and initial training that is provided by the vendor. He will then help modify the system as needed to include all the attributes needed by WQIC and the DAI Home Office. He will provide individual training to the WQIC project team on an intermittent basis.

Lotus Notes was installed and is currently being used for internal email communications among the project staff and for WQICP database applications which have been partially developed. The databases developed include the WQICP Information System, a Discussion database, a To-Do database, a Policy Profile database, a Policy Reference, a DAI/WQICP Operating Guidelines database, and a Monitoring Stations reference database. After installation, the CMS expert helped modify the system, as needed, to include all the attributes needed by WQICP and the DAI Home Office. He provided individual training to the WQIC project team on an intermittent basis.

Interfacing With Other Networks The CMS expert will work with other network managers in MWI, WAJ and JVA to determine the need and feasibility of interfacing with their networks. Once the determination of need and feasibility is approved by MWI, the necessary hardware and software will be procured and installed.

The CMS expert worked with other network managers in MWI, UNDP project, and GTZ to determine the need and feasibility of interfacing with their networks. As a result of that effort, GTZ agreed to the procurement and provide one unified heavy duty File Server to serve the three projects and WQIC.

Train Network Managers MWI will be asked to nominate two persons to be trained as network and Lotus Notes managers for WQIC to take over the management duties from the CMS expert.

MWI has nominated two persons to be trained as network and Lotus Notes managers for WQICP. They were trained on various Network and software trouble-shooting techniques. Additional training needs were identified in the areas of hardware, Multi-protocol networking, hardware-software integration and configuration, overall system design and procurement decision making.

Information Highway/Automation Plan

Draft Automation Plan The CMS expert with the assistance of the DAI and MWI staff will develop a detailed plan for all automation equipment being used and needed by WQIC. The draft will follow the requirements as laid out by the appropriate USAID handbooks.

The CMS expert, with the assistance of the DAI and MWI staff, developed a detailed plan for all automation equipment being used and needed by WQICP. The Plan followed the requirements laid out by the appropriate USAID handbooks.

Write Scope of Work Receive MWI USAID Approvals While the CMS expert is drafting the automation plan, we will write a scope of work for one of the staff of DAI's Information Management Services Division (IMS) to visit the project to work with him on the computer communications system and to finalize the automation plan. The DAI staff will work with the CMS expert to fully integrate the Lotus Notes program with that of DAI and to ensure that technological procurement for WQIC is appropriate and follows USAID regulations and format. He/she will also build and finalize linkages between the home office, the project, INTERNET, and other stops along the information highway and DAI's electronic mail system.

Based on recommendations of the DAI Office of Information Management, the project concluded that it would be more effective to use two specialists with complementary sets of expertise. A scope of work was developed and approved for two of staff members from DAI's Office of Information Management (OIM) to visit the project.

Coordinate with Home Office, STTA Arrives and Completes Work Once the Scope of Work has been agreed upon, DAI will coordinate with the Home Office to mobilize the Information Management Services (IMS) expert. The expert will arrive in March 1995.

The DAI staff arrived in March 95 and started working with the CMS expert to fully integrate the Lotus Notes program with that of DAI and to ensure that technological procurement for WQIC was appropriate and follows USAID regulations and format. They also helped build and finalize linkages between the home office, the project, and USAID, and DAI's electronic mail system through an x.28 line (data transfer line) with a local provider.

Debriefing Report Is Written The IMS expert will debrief MWI and USAID, submit the automation plan, and draft a report on the work and findings before leaving Jordan.

The automation plan was finalized and presented to USAID for approval.

Equipment upgrade Once the automation plan is approved by USAID/W, any required additional hardware and software will be ordered and installed late in 1995.

Under USAID regulations the automation plan required AID/W approval. While awaiting approval for the overall system, the project proceeded with the procurement of some equipment and spare parts to keep the current system operational.

Internal Audit

Coordinate Internal Audit with Home Office, Write Action Memo for Internal Audit Early in the spring, DAI plans to bring Bob Gross, the DAI Controller, to the Middle East to perform a financial review of DAI's projects in the area. We will coordinate with him so that he can visit WQIC for approximately ten days and do an audit of project finances to ensure that we are accounting for all funds appropriately and that we are following DAI as well as USAID procedures correctly. We will ask DAI's other projects in the region to assist in the costs of the Controller's visit to minimize the cost to WQIC.

Since Mr. Gross was not available to carry out the proposed internal audit, arrangements were made for a visit from another DAI auditor. All preparations for the DAI Auditor, Sherah Bashaat, were completed prior to his arrival in May.

Prepare Books for Internal Audit. Internal Audit Takes Place. Auditors Write Up Recommendations Before the DAI Controller arrives, we will prepare all accounting materials so that he can easily review our accounting books from the beginning of the project. While he is here, he will thoroughly review all project transactions and record keeping procedures and recommend any changes or improvements to be made.

Mr. Bashaat met with the appropriate MWI and AID officials and carried out an analysis of the project's accounting and financial processing procedures and documents. He completed a report providing 13 audit findings and recommendations and four general recommendations which would improve the accounting and financial procedures being followed by the project. He conducted a debriefing for both USAID and MWI officials. DAI then implemented all the recommendations outlined in the Internal Audit report.

Quarterly/Annual Reports

Each Component Writes its Section. Management Writes its Section. Charts are Updated Each report contains updates for each technical component as well as management and administrative issues. It also includes charts on level of effort, finances, procurement, training, and publications.

Draft Is Complete Quarterly reports will be drafted for publishing at the end of March, June, September, and December (annual report).

Draft Is Reviewed by MWI. Draft Is Finalized and Sent to USAID After the first draft is completed, it will be given to the Project Coordinator for comments; those comments will be

incorporated as necessary and then the report will be finalized for submission to USAID during the first week following the close of the quarter

As planned, quarterly reports were drafted and reviewed by the Ministry and by USAID and relevant revisions/additions were incorporated into the final version. The final version was then published and distributed to USAID, the Ministry, the DAI Home Office and Subcontractors

Every report contained updates for each technical component as well as for management. The charts on level of effort, finances, procurement, training and publications were updated in each quarterly report

Replacement for Administrative Assistant

Write Action Memo for Extension, Receive MWI and USAID Approval for Extension The current Administrative Assistant Naomi Tannenbaum is on a one year contract which ends in April 1995. In February we will request that her contract be extended through July 1995 at which time Ms. Tannenbaum will depart the project to return to the United States for graduate studies.

The contract of the Administrative Assistant, Naomi Tannenbaum, was amended to extend her employment through July of 1995 at which time Ms. Tannenbaum was scheduled to leave the Project to return to the United States to begin graduate studies

Write Scope of Work Advertise for the Position After receiving approval for the extension of the current Administrative Assistant we will revise the Scope of Work for the replacement position to reflect actual responsibilities and advertise locally for a replacement.

The Scope of Work for the Administrative Assistant was rewritten to reflect actual responsibilities and the position was advertised locally

Receive and Review at Least Ten Resumes Interview Five Candidates Choose Candidate and Write Action Memo We hope to receive many responses to our advertisement so that we have a variety of qualified candidates to choose from. The current Administrative Assistant and the Chief of Party will interview at least five candidates and rank them in order of preference. The most preferable candidate will be submitted to MWI and USAID for approval. This will allow for a two month overlap so that the new Administrative Assistant can be fully trained in DAI administrative and financial procedures.

Since the response from the initial advertisement was very limited, the position was re-advertised. The second time, some 60 resumes were received and seven candidates interviewed by the Chief of Party and the incumbent Administrative Assistant

Receive MWI USAID Approvals Replacement Starts Work We will expect the replacement to start work one month after approvals are received in early June 1995.

The top-ranked available candidate was selected and approved by USAID. The new Administrative Assistant started work in mid-May, two weeks ahead of schedule. She overlapped with Ms. Tannenbaum for approximately one week

Semi-Annual Budget Review

Update Budget In order to better track project spending we plan to update the projected budget for the project twice a year (in January and July) to assure that all costs are within the limits set by the USAID approved budget for DAI. This will allow us to determine at what percentage we are spending project funds and that we are in line with budget items.

The budget was reviewed and realigned to reflect the conditions within the project

Review with Chief of Party Finalize Projection After the Administrative Assistant drafts the budget update it will be reviewed with the Chief of Party for accuracy and finalized

Completed on schedule

Work Plan Work Shop

Organize Dates and Facilitators, Write Scope of Work In August we will begin to organize a work shop for the coming year's work plan. The work shop will encourage the entire WQIC team to work together to plan the coming year's activities. It will also be a chance to discuss lessons learned during the first half of the project.

In consultation with MWI the workshop was scheduled for mid November. SOW's were written and a hotel selected

Receive CVs and EBDs from Home Office Write Action Memo Coordinate Schedules with Facilitators Once the dates and scope of work have been finalized and it has been determined who the facilitators of the work shop will be we will request USAID approval to go ahead with the work shop.

Approvals were received and arrangements were made to have TRG (Training Resources Group) provide a facilitator for the workshop. MWI agreed on the participant list and invitations were sent out

Interviews Begin Before the work shop begins the facilitators will interview key players in the project to determine main issues and objectives that will be faced in the coming year. The key issues faced during the project will be reviewed along with the actions taken (successful and unsuccessful) to resolve the issues. The interviews will also help the facilitators learn more about project staff which will allow them to more effectively run the work shop.

The facilitator, Kathy Alison, arrived November 6th and interviewed 18 staff members from AID, MWI, IVA, WAI and the DAI Team

Work Shop Is Held The work shop will be held over a five day period in mid-November. We will arrange to have adequate facilities outside Amman so that the WQIC group can stay together throughout the work shop and concentrate on the project.

The MWI determined that the workshop had to be held in Amman. Several hotels were contacted and the Amra, which provided the lowest bid, was selected as the workshop site

Begin Work Plan Draft Immediately before the work shop is held the team will begin to outline the work plan for the coming year so that the objectives and tasks for each component are known before the work shop is held. After the work shop the team should have a better idea of how to frame and expand upon the outlines into a final work plan for the coming year.

Immediately before the workshop was held, the team began to outline the work plan for 1996 so that the objectives and tasks for each component could be discussed and reviewed by the working groups during the workshop. After the workshop, the team had a better idea of how to frame and expand the outlines into a final work plan for 1996

Report Is Written When the work shop is complete the facilitators will spend a few days writing a report of the work shop conclusions and discussions and will then debrief project officials and USAID and MWI management on their findings.

AID and MWI was briefed and TRG (Workshop facilitator) prepared a report of the proceedings

Annual Work Plan

Components Write Drafts of Their Sections Management Writes Its Section, Charts Are Updated After the work shop the components and management will be able to write a full draft of the work plan. We will also be able to update charts with information required by the contract (see Quarterly Reports)

Each Working Group completed their sections of the Work Plan by early December

Draft is Complete MWI Reviews Draft, MWI Comments Are Incorporated When the draft is complete it will be given to the Project Coordinator of MWI and Project Officer of USAID for comments. Those comments will be incorporated where appropriate. The final version of the work plan will then be sent to USAID for approval.

The final draft Work Plan was prepared and delivered to AID and MWI for formal approval

Annual Work Plan/Annual Procurement Plan

A part of the work plan process is to formulate an annual procurement plan. This will be done by the local procurement office with close cooperation with all project components and Development Associates Inc. the subcontractor responsible for commodities procurement. The plan will be drafted along with the annual work plan text.

This activity was deferred until early 1996 after the work plan and budget revisions will have been approved

Annual Work Plan/Annual Training Plan

A part of the work plan process is to formulate an annual training plan. This will be done by the Training Coordinator/HRD Specialist with close cooperation with all project components and Development Associates Inc. the subcontractor responsible for the state-side training activities. The plan will be drafted along with the annual work plan text.

The training plan was developed and accepted by all parties

Commodity Management

DAI has established a tracking and management system for all non-expendable commodities procured under the project. Tracking forms giving procurement details and location of all items are updated and provide to MWI on a monthly basis and included in all Quarterly Reports to USAID. The project vehicles and drivers are managed by the DAI administrative office for use by all WQIC staff on an as needed basis. One vehicle (Ford) is under the control of the WQIC Project Coordinator.

DAI continued the tracking and management system for all non-expendable commodities procured under the project. Reports on the status of the commodities were provided in all Quarterly Reports to USAID. The project vehicles and drivers were managed by the DAI administrative office for use by all WQIC staff on an as needed basis. Detailed logs were maintained to track who used the vehicles as well as mileage and gasoline on those vehicles under the control of DAI.

Financial Management

Table 1 provides a summary of WQIC Project costs by component through the end of December 1995. DAI has spent \$5.45 million (48.48 percent of the project budget) in the first 48 percent of the project term. The expenditure rate is slightly behind the planned

schedule due to unexpected delays with one of the major procurement items, laboratory equipment. The technical specifications obtained from the various bidders were extremely complicated and difficult to compare and reach final agreement with the laboratory personnel and the procurement contractor. This problem is being resolved and at least \$500,000 worth of additional procurement should be completed and billed by March 1996.

Lessons Learned During the First Year

Lack of regularly scheduled meetings with the general staff can lead to confusion and misunderstandings. During the year, Management limited the number of meetings with the Ministry WQIC staff and the Secretary General's. In 1996, regular meetings need to be reinstated.

The time to place orders, review bids and obtain agreement on the final specifications for complex scientific equipment was under estimated. In retrospect, more time of scientists should have been built into the procurement process to assist MWI and the procurement contractor analyze the complex bids.

POLICY AND STRATEGIC PLANNING STUDIES [Component 1.1]

Objective

Develop the capability of the MWI Directorate of Planning Development and Information (PDI) to carry out policy and strategic planning studies that will result in the development and implementation of improved policies in the water sector

1995 Plans and Actual Progress

The planned focus for 1995 was concentrated in three areas (a) define the key policy issues that require in-depth analysis (b) study four of the priority policy issues using outside resources and (c) work with MWI to establish the PDI and train its staff to take over the policy analysis and formulation efforts in 1996

In early 1995 under the leadership of the MWI Secretary General the 1995 Work Plan for developing the Policy Agenda was modified. The basic products remained the same: Research abstracts, policy issue profiles, policy agenda (ranked issues) and SOW's for carrying out policy papers. However the revised approach relies on a fully participatory approach with full involvement of the Ministry staff, private sector, universities and donor organizations to prepare and write the policy issue profiles. Under the revised approach the time frame was lengthened to allow Ministry staff from other parts of Jordan to participate and allow opportunities for input from others outside the Ministry. The following sections are taken from the 1995 work plan. A short section has been added under each sub-activity to explain the actual progress²

Develop Policy Agenda

Complete Policy Research During January the policy research effort started in December 1994 will be completed. Two senior Jordanian specialists and a Research Assistant under the guidance of the GTZ resident engineer Mr DeJong will prepare a synopsis for all documents and papers that have addressed water policy issues over the past several years. In addition notes will be compiled from interviews carried out with senior Jordanian officials focusing on the relevant policy issues that need to be addressed in the coming years. The Team Leader for the Policy Team will arrive mid January for three weeks to assist completing the process. A Policy Committee appointed by MWI in late 1994 will provide oversight to this and all of the following sub-tasks

The above activities were completed, but the mix of assistance was changed and the participation of Mr DeJong was minimized. DAI hired six local consultants (GTZ hired two) to assist MWI complete the effort. In addition, Dr Peter Reiss arrived in January to assist in the effort.

Appoint Policy Committee MWI will appoint a Policy Committee composed of senior MWI officials and representatives from USAID and DAI to oversee the policy agenda development activity. The committee will be responsible to ensure that the key staff of the ministry and other agencies are involved in the policy agenda effort and that all of the policy issues important to Jordan are considered and analyzed to the extent needed to develop the final agenda

² The principle task is shown in **bold** and the sub task in *italic*. The actual progress during 1995 is shown at the bottom of each subsection in **bold italic**.

The MWI formed a 25 member Policy Committee to guide the overall policy effort under the Chairmanship of Dr. Bani Hani, Secretary General, MWI. By mid year, the committee was meeting on a regular basis, twice a week to review the policy issue profiles and statements. In the fall, several all day and evening meetings were arranged to expedite the review process.

Develop Preliminary Program Prior to departure from Jordan the Team Leader with the assistance of the two senior Jordanian specialists and the GTZ representative will prepare a work plan for carrying out the policy agenda effort including tentative work assignments and schedules for each of the team members.

Completed by Dr. Peter Reiss and the Policy Team

Team Planning Meeting (TPM) In mid March the team of specialists will be assembled to develop the policy agenda. The team of Expatriate and Jordanian specialists were identified and recruited in late 1994. The TPM will provide an opportunity for the policy team to understand each individual role, draft the report outline, develop schedules, and assign tasks. The meeting will last approximately three days and will include a professional facilitator.

Because of the revised approach to have the MWI staff take the lead in developing the profiles, it was determined that an expatriate team would not be needed until 1996. The Policy Committee meetings were substituted for the TPM.

Complete Report Outline Immediately following the TPM the report outline will be finalized and submitted for USAID and MWI approval while the team begins the interviews and research effort.

Canceled

Interviews, Research and First Draft Report The team will spend three weeks following up on the work of the Research Assistant with additional interviews and research, preparing supporting documents, and preparing a first draft report following the approved outline. The draft will be submitted to the Policy Committee for review.

Canceled

Review by Policy Committee and Prepare Second Draft Report Individual team members will meet with members of the Policy Committee to obtain their comments and a second draft will be prepared for presentation at the Agenda Workshop.

Canceled

In lieu of this and the above two activities, the Policy Committee has identified 24 issues that are important to the water sector of Jordan. Teams of Ministry and consultant staff have been preparing policy profiles which include statements on desired policy, strategy, action plan, and master planning considerations. 20 profiles were completed in 1995 and 12 have been reviewed and approved by the Policy Committee. In addition, abstracts have been prepared on 60 references used during the policy profile development.

Agenda Workshop A one day workshop will be held for senior Jordanian officials from all interested government institutions, private sector groups, and donors that will be directly involved in the formulation of future policies relating to the water sector.

Postponed until 1996 The workshop will be redesigned to replace and expand this activity.

Ministry and USAID Review After the Agenda Workshop the draft report will be submitted to selected officials of the GOJ and USAID. A three week period will be allowed for review and comments. The policy team will disband until the review is complete.

Postponed until 1996

Prepare Final Report and Scopes of Work After receiving comments from GOJ and USAID the Team Leader and select members of the original Policy Team will return to prepare the final report. The final report will include a ranking of the policy issues, supporting documents for each policy issue, and draft scopes of work for the team members required to carry out in depth studies of the first two policy issues.

Postponed until 1996

Agenda Officially Approved The MWI is responsible for providing official approval of the policy agenda so that the individual policy studies can commence. Based on an assumption that official approval will come within 30 working days after submission of the final report, the policy studies will begin.

Postponed until 1996

Policy Studies

The Policy Studies that were to begin in 1995 will have to be rescheduled for 1996 after the final policy agenda has been agreed to by MWI and USAID

Develop the PDI Directorate³

Appoint Director The initial step in developing the directorate is for MWI to appoint a strong Director with experience in the water sector and management. Once the Director is in place the following activities can be carried out. For the purposes of this work plan it is assumed that a director will be appointed by the end of January 1995⁴.

The Director of Planning and Studies was appointed in November 1995. Staff are yet to be assigned to the Directorate. As such, this and the following activities could not be carried out in 1995.

Define Role and Staff Needs DAI will work closely with MWI, the Director of PDI, and GTZ to assist in defining the role of the directorate and the staffing needs. Coordination with GTZ is required as they have a similar mandate as DAI in providing assistance to develop and strengthen the PDI.

Develop Job Descriptions Complete job descriptions will be developed for each position within the PDI with the assistance of the DAI Training Advisor and GTZ.

Appoint Key Staff MWI will have to appoint the key staff for the PDI based on the requirements of the positions defined in the last task.

Inventory of Staff Skills and Development of a Training Plan The individual skills of each PDI staff member will be inventoried and compared with the skills needed to carry out the job description for the position. This task will be carried out with the assistance of the DAI Training Advisor. Based on the analysis of the skills and needs, a training plan will be developed for each staff member to be carried out over the next three years.

Initiate Training During the last quarter of 1995 the above developed training plan will be initiated for several of the PDI staff members. Candidates will be selected and approved by

³ Name has changed under the current ministry restructuring program. It is now known as the Directorate of Studies and Planning.

⁴ For 1994 this assumption proved invalid and the strengthening of the Directorate could not take place.

MWI and the Training Advisor will then finalize the individual training activities and monitor progress

Coordinate With Key Planners (Planned)

Throughout the life of the project it is vital that there be full coordination with the key planners throughout MWI, GOJ and the donor community. This is especially true because of the development activities expected as a result of the signing of the Peace Accord. Currently activities of GTZ, UNDP and CIDA impact directly on the WQIC project and are being closely coordinated. In the near future it is expected that more coordination will be required with World Bank activities in Jordan.

Throughout the year, meetings were held with GTZ, UNDP, CIDA and USBR representatives to coordinate activities.

A written agreement was reached between GTZ, UNDP and DAI on defining the roles of each and agreeing to work together on the MIS effort. In addition, GTZ agreed to procure a new computer server that will allow all three organizations to be on the same network to share information and data.

GTZ is participating in the policy formulation effort under the leadership of DAI. GTZ has hired several local consultants to assist in the policy development effort. This cooperation ensures that the policy effort is coordinated with the Master Planning effort being undertaken by GTZ.

The USBR program supporting the regional data bank effort is being coordinated with the monitoring and data banks effort of WQIC. E-mail links have been established between the USBR headquarters, DAI, USAID, and MWI to ensure that all are informed of the progress and plans of each party.

Special Studies

Special Studies/Key Indicators

It is important to be able to quantify the impact of the investment being made by the WQIC project. A set of key indicators have been prepared by USAID to look at the possible impact to the water sector (Annex 3) and WQIC has developed an additional set of indicators that attempt to measure the direct impact of the project activities based on the results of the recently completed Base Line Survey. These additional indicators focus on agriculture⁵ and are as follows:

Conveyance System Delivery Efficiency % - measures the efficiency with which the Zarqa River and Zarqa Carrier I pipeline can deliver water to the farm gate. Data would be obtained from JVA diversion and delivery records. This indicator will measure impact from improvements in the Zarqa River delivery system and the water delivery conservation program.

Gross Return from Agricultural Production Per Cubic Meter of Water Used (l/m³) - measures the transition to higher value crops and decreased water use. The two would be difficult to separate. Data would be obtained from farm record, cropping pattern and water delivery information collected by the MOA and JVA. A number of tasks would contribute to this indicator.

⁵Change in the on-farm indicators is expected to be minimal until the price of water rises to the level where its use becomes a key factor in farm profitability.

On-Farm Water Use Efficiency, % - measures the efficiency with which water is used on-farm. More than one efficiency could be used such as distribution and application uniformity's. Data would be collected by the project and other organizations. The on-farm water conservation program and research training and demonstration tasks would be the primary causes for an improvement.

Number of Farmers Using Modern Irrigation O&M Practices - measures the effectiveness of training in correct O&M principles and adoption of those principles. By definition these would be farmers making optimum use of their water resources. Data would be collected by tracking over time trainees and their irrigation practices. The on-farm water conservation program and research training and demonstration tasks would be the primary causes for an increase.

The WQIC project staff will work with MWI, WAJ and JVA to collect the required information to track the key indicators. If sufficient information is not available for any specific indicator the Project will, with the prior approval of USAID and MWI, subcontract to local firms or universities in November of each year to carry out the necessary studies to measure the changes to selected indicators.

This portion of the 1995 work plan was not approved by USAID and thus not implemented.

Special Studies/Duckweed Feasibility

There is a need to investigate low cost methods of reducing the pressures on the overloaded waste water treatment plants throughout the country. A specialist in the use of duckweed will come to Jordan in January to investigate the feasibility of using duckweed methods of improving the waste water effluent.

This activity was completed using a consultant from the United States. The Ministry has taken the results of the study and designed a pilot project to test the recommendations provided in the report.

Special Studies/Other

There will be a need to carry out several small special studies to assist MWI in responding to the initiatives coming out of the peace process or to study other priority subject areas that have a direct impact on the water sector. Possible subject areas could be evaluation of wastewater management procedures to upgrade wastewater treatment plant effluent, sludge management and education, reduction of energy consumption in the water sector, determine the potential of utilizing renewable energy in the water sector, etc.

No other special studies were requested by the Ministry during 1995.

Lessons Learned During the Second Year (1995)

To establish plans and schedules which depend upon a bureaucracy completing institutional reorganization and personnel assignments within a given time can be frustrating. For example, the institutionalization of the planning and policy development relied on MWI appointing a Director of the Policy and Planning Directorate in early 1995 with experience in the water sector along with capable staff. The actual appointment was not made until November 1995 and staff are yet to be appointed.

Using a full participatory approach to policy development is a time consuming process. The original plan to identify the policy issues facing Jordan and develop policy profiles was based on the assumption that consultants would play the lead role and complete the process in six months. However, all parties agreed that using consultants may provide a product in a short time frame but would not provide a product that accurately reflected the needs of Jordan. When the process was opened up to full participation of specialists in and outside the Ministry, the time required to discuss each issue was under estimated. The process is taking much longer, but is providing a product that is more realistic and acceptable to all parties.

MANAGEMENT INFORMATION SYSTEM [Component 1.2]

Objectives

Water resources water distribution and allocation and institutional data available in the Ministry are of little value unless they are stored and disseminated as relevant information to groups that require the data for decision making and analytical studies. These groups include policy makers and managers technical specialists private sector interests and the general public. The goals of this component are to establish a unified Management Information System (MIS) for all aspects of water-related information in Jordan. The output of the MIS will provide administrative and management information for management use. The MIS output also will be interfaced with the GIS and modeling tools to enhance the evaluation of available information.

Based on the findings and recommendations of the CIDA study as instituted by the Ministry and the Government of Jordan the structure and design of the MIS may require modification. Consequently the flexibility of the MIS must be maintained as the organization of the Ministry changes and the information needs continue to develop. A complete restructuring of the Ministry a possible recommendation of the CIDA study would require a comprehensive MIS in the short-term to assist in administering the technical administrative and organizational functions of the restructured Ministry.

Task 1 MIS Administration

This task provides the administrative support within the Ministry and USAID necessary to accomplish the establishment of a unified Management Information System (MIS). General activities include approval of Action Memos and work plans or proposals which develop from the activities in the approved scope of work.

Accomplishments During 1995

Review Conceptual Design The MIS conceptual design alternatives and recommendations required to support the mission of the Ministry were reviewed by the Ministry and by USAID prior to development of a detailed engineering design.

Review Approve Procurement of ORACLE Database Software The recommendation to use ORACLE as the software platform for the proposed MIS for the Ministry was reviewed by the Ministry and USAID and USAID approval for procurement was obtained.

Review MIS Detailed Engineering Design The detailed design for the MIS required to support the mission of the Ministry and the recommendations to proceed with implementation of the MIS were reviewed by the Ministry and USAID.

Review Approve MIS Training Plan The MIS Training Plan and recommendations developed under the MIS Detailed Engineering Design Task were reviewed by the Ministry and USAID and USAID approval for proceeding with the US study tour was obtained.

Differences Between Actual and Planned Activities

Implement Ministry MIS Structure The Ministry is to establish and develop an organizational unit responsible for administration and operation/maintenance of the MIS. This activity has not been completed.

Define MIS Staff Resources The appropriate organizations of the Ministry are to identify the programming and systems integration resources available to fulfill the needs (if any) for in-house support to the customization and implementation of software. These staff should be

familiar with all relevant information systems and resources within the Ministry. This activity has not been formalized.

Review/Approve Action Memo for MIS Required Equipment The proposed list of required MIS equipment and the recommendations to support installation of the MIS will be reviewed by USAID prior to procurement. Because of resource constraints, this activity has not proceeded.

Constraints

The defined contract scope of work for the WQIC Project focuses the MIS activity toward development of an action plan for establishing a water management information unit for the Ministry. This unit would develop, maintain, and disseminate water-related information to policy makers and various audiences. The scope of work actually required by the Ministry to fully support the mission of the Ministry is significantly greater than that provided by a water management information unit. The scope of work required by the Ministry would include establishing an MIS to support all of the Ministry's information management requirements, including water quality, water resources, water allocation and pricing, customer services, administrative, financial, equipment use and inventory, and to provide the data management, GIS, and modeling tools necessary to use this information.

The resource constraints (both financial and LOE) of the current contract do not allow for full development of the MIS required to support the operations of the Ministry. Specific constraints are mentioned in subsequent paragraphs.

Actions that Could/Should be Taken

- (1) The Ministry must decide how to proceed with the MIS concept in terms of organization and administration. The Ministry needs to establish and develop an organizational unit responsible for administration and operation/maintenance of the MIS.
- (2) The appropriate organizations of the Ministry need to identify the programming and systems integration resources available to fulfill the needs (if any) for in-house support to the customization and implementation of software. These staff should be familiar with all relevant information systems and resources within the Ministry, and should require at most some software-specific training for the specific software environment selected for the MIS.

Task 2 Develop Detailed Design for MIS

This task provides for the development of the detailed engineering design for the Ministry's MIS.

Accomplishments During 1995

Detailed Engineering Design Report Complete During 1995, the detailed engineering design for the selected MIS conceptual architectural model was completed. The engineering design integrates the hardware element of the data and information storage and handling functions and requirements for all the organizations within the Ministry, including WAJ, JVA, and MWI. The design also includes communication interfaces required between these organizations to promote data exchange and sharing. The design has the flexibility to collapse into a single MIS architecture at such time as reorganization of the Ministry may occur. The design presents the physical plant, cabling, installation schematics, power requirements, and proposed work groupings. An itemized list of materials required to implement the MIS was identified, including hardware, hardware upgrades, software, software upgrades, and costs. A proposed implementation schedule was developed, including specifying installation time and priorities, testing, and training.

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

None

Task 3 Develop Concept of Operation Plan

This task focuses on developing a detailed Concept of Operation Plan (COP). The COP is the procedural equivalent to the architectural description of the MIS presented in the detailed engineering design. It describes organization process responsibility, system's information flows, quality assurance procedures, information capture procedures, interfaces, maintenance procedures, retrieval procedures, and tools, and operational philosophy. A survey of the functions and established procedures of the existing information systems was conducted during the conceptual design phase of the component. These functions will be reviewed specifically for changes (due to the lapse in time between the Conceptual Design and the proposed development of the COP), applicability to systems interface definitions, and quality assurance procedures defined in the COP.

Accomplishments During 1995

None

Differences Between Actual and Planned Activities

Concept of Operation Plan Complete This is an out-of-scope task although critically important to the establishment and development of the Ministry's MIS. The 1995 work plan described several tasks that would be required to fully support the MIS requirements for the Ministry. These tasks included development of a COP. This task was not initiated in 1995 because of WQIC Project resource constraints.

Constraints

There is no LOE included in the WQIC Project for this task. Approximately 10 weeks of LOE are required to develop the COP. In addition, Ministry decisions regarding the establishment and organization of the MIS are required to ensure development of the proper COP and to take full advantage of the COP development effort.

Actions that Could/Should be Taken

- (1) Negotiate with the Ministry to promote and ensure resolution of the MIS organization issue and establishment of the MIS function and administrative responsibilities.
- (2) Approve LOE for this task.

Task 4 Define Software Environment

Based primarily on the conceptual design completed in 1994 and on the Concept of Operation Plan, the detailed software design and specifications necessary to customize the system software and to establish all required interfaces must be developed. The requirements for any software customization in response to the conceptual design are defined and detailed specifications are developed. These specifications are to be at the level necessary to support the software customization efforts during MIS installation discussed below.

Accomplishments During 1995

None

Differences Between Actual and Planned Activities

Develop Software Implementation Plan This is an out-of-scope task although critically important to the establishment and development of the Ministry's MIS. The 1995 work plan described several tasks that would be required to fully support the MIS requirements for the Ministry. These tasks included defining the software environment and software specifications/customization to support Ministry program operations. This task was not initiated in 1995 because of WQIC Project resource constraints.

Constraints

There is no LOE included in the WQIC Project for this task. This task, including associated software development for numerous databases and menu-driven information retrieval management systems, is an extensive and time-intensive multi-year effort. Planning is required to proceed with this task and significant discussions with the Ministry are necessary to adequately scope the required level of effort. In addition, Ministry decisions regarding the establishment and organization of the MIS are required to ensure development of the proper software environment and to take full advantage of the software development effort.

Actions that Could/Should be Taken

- (1) Negotiate with the Ministry to promote and ensure resolution of the MIS organization issue and establishment of the MIS function and administrative responsibilities.
- (2) Negotiate the required scope for the software environment development and customization effort with the Ministry and USAID.
- (3) Complete or concurrently develop the Concept of Operation Plan (COP).
- (4) Approve LOE and associated costs for this task.

Task 5 Procure/Install MIS Equipment/Resources

This task is associated with the procurement and installation of the hardware (HW) and software (SW) necessary for establishing the Ministry's MIS.

Accomplishments During 1995

Procure/Install ORACLE Software The ORACLE database software language platform proposed to support the MIS for the Ministry was procured and installed on the WAJ mainframe and on the WAJ JVA and MWI Novell networks. Three levels of intensive training in using the ORACLE software were completed for selected staff from the three organizations. This early upgrading of the platform language and associated training were planned to promote a more rapid transition from the current data management systems to a Ministry system when the MIS hardware is installed.

Differences Between Actual and Planned Activities

Procure and Ship MIS Equipment Hardware and hardware training were not procured as planned. This is an out-of-scope task although critically important to the establishment and development of the Ministry's MIS. The 1995 work plan described several tasks that would be required to fully support the MIS requirements for the Ministry. These tasks included procuring and installing the hardware for the MIS. This task was not initiated in 1995 because of WQIC Project resource constraints.

Constraints

There is no LOE included in the WQIC Project for this task. This task including associated hardware procurement and installation for all Ministry operations and locations is an extensive and multi-year effort. The details for proceeding with the task are presented in the detailed engineering design for the MIS. Planning is required to proceed with this task and significant discussions with the Ministry are necessary to adequately scope the required level of effort. In addition, Ministry decisions regarding the establishment and organization of the MIS are required to ensure development of the proper MIS and to take full advantage of the MIS installation effort.

Actions that Could/Should be Taken

- (1) Negotiate with the Ministry to promote and ensure resolution of the MIS organization issue and establishment of the MIS function and administrative responsibilities.
- (2) Negotiate the required scope for the MIS hardware procurement and installation effort with the Ministry and USAID.
- (3) Complete Concept of Operation Plan (COP) and concurrently develop with software environment task.
- (4) Approve LOE and associated costs for this task.

Task 6 Operate Information Programs

This task focuses on developing and implementing specific public information and management support information services using the MIS.

Accomplishments During 1995

None

Differences Between Actual and Planned Activities

Develop Information Programs Information programs supporting the water user community, the public and decision makers within the Ministry are to be developed. Information services are provided to various user groups. This is an out-of-scope task although critically important to the establishment and development of the Ministry's MIS. The 1995 work plan described several tasks that would be required to fully support the MIS requirements for the Ministry. These tasks included developing information programs and management support information services for various Ministry operations. This task was not initiated in 1995 because of WQIC Project resource constraints.

Constraints

There is no LOE included in the WQIC Project for this task. This task including associated software specifications/customization is an extensive and multi-year effort. Planning is required to proceed with this task and significant discussions with the Ministry are necessary to adequately scope the required level of effort. In addition, Ministry decisions regarding the establishment and organization of the MIS are required to ensure development of the proper MIS and to take full advantage of the MIS installation effort.

Actions that Could/Should be Taken

- (1) Negotiate with the Ministry to promote and ensure resolution of the MIS organization issue and establishment of the MIS function and administrative responsibilities
- (2) Negotiate the required scope for the information program development effort with the Ministry and USAID
- (3) Complete Concept of Operation Plan MIS hardware installation and software environment development
- (4) Approve LOE and associated costs for this task

Task 7 MIS Training

This task focuses on the planning development and implementation of training which is necessary to support development operation and maintenance of the MIS

Accomplishments During 1995

Develop MIS Training Program Plan A training program to support staff development for the Ministry's MIS was drafted and included as part of the detailed engineering design for the MIS. The training program outlines the various types of training and skills required to administer operate and maintain an MIS. The numbers of students numbers of short-term classes and seminars numbers of degree program students (if any) and costs were specified. Training of two (2) staff in the United States as part of a month-long study tour was approved by USAID.

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

None

WATER MONITORING SYSTEM PROGRAM [Component 1.3]

Objectives

Strengthening the Ministry of Water and Irrigation's (Ministry) surface and ground water monitoring network and data collection programs is essential for establishing an effective water monitoring program for Jordan. Both water quality and water resources data and monitoring networks are required nation-wide. The national surface and ground water monitoring network must be enhanced to meet all the responsibilities and objectives of the Ministry.

A single central national water monitoring system is necessary to avoid duplication of effort to promote the most beneficial use of limited resources to assure that consistent methods and procedures are employed and the data are of known integrity and to prevent data gaps in necessary databases from developing due to areas of organizational influence.

Based on the findings and recommendations of the CIDA study as instituted by the Ministry and the Government of Jordan, the structure, design, and organizational responsibilities of the Water Monitoring Network Program may require modification. Consequently, the flexibility of the network program needs to be maintained as the organization of the Ministry changes and the responsibilities of a nation-wide water monitoring network program continue to develop. A complete restructuring of the Ministry, a possible recommendation of the CIDA study, would require consideration of a fully integrated water monitoring function within the Ministry which would incorporate the separate and various monitoring responsibilities of WAJ and the JVA.

One of the principal elements of the Jordan-Israel Peace Treaty focuses on water related matters. These include developing water resources, preventing contamination or pollution of water resources, jointly monitoring water quality along the boundary, providing water of equivalent quality when exchanged between the two countries, and prohibiting the discharge of municipal or industrial waste waters (within three years) into the Yarmouk or Jordan Rivers before treatment to standards allowing unrestricted agricultural use. The Water Monitoring Network Program (Component 1.3) and associated Central Laboratory Upgrade Program (Component 1.4) and Water Management Information System Program (Component 1.2) will contribute significantly to these efforts by establishing the programmatic foundations and technical support within Jordan required to monitor and collect water quality and water resources data to analyze water samples for physical, chemical, and biological characteristics and to manage and use those data which will be important for the cooperative efforts defined in the provisions of the Peace Treaty. Water resources and water quality data obtained from the water monitoring network will be important in decision-making processes for water availability, allocation and use, water sharing or exchanges, and developing strategies for long-term water needs.

A regional water databanks initiative has developed from the water sector committee of the multi-lateral discussions involving the Jordanians, Palestinians, and Israelis. Approximately 40 recommendations have been presented for the regional water databanks. Many of these recommendations support studies and efforts which are identical to the objectives of the WQIC Project. Coordination between the WQIC Project and the regional water databanks initiative is critical to promote consistent programs and practices, procedures, and protocols as well as to optimize use of available resources dedicating to these various activities.

Task 1 Monitoring Network Administration

This task provides the administrative support within the Ministry and USAID which is necessary to accomplish the enhancement of a national water monitoring network program. General activities

include approval of Action Memos and work plans or proposals which develop from the activities in the approved scope of work

Accomplishments During 1995

Review Water Monitoring System Adequacy Plan The required monitoring equipment and adequacy plan to enhance the nation-wide monitoring network was reviewed by USAID

Review Approve Action Memo for Required Monitoring Equipment The proposed list of required monitoring equipment was reviewed by USAID and approval to proceed with procurement was obtained

Review Upgrade Plan The Water Monitoring System Upgrade Plan was reviewed by the Ministry and USAID

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

None

Task 2 Evaluate Water Monitoring System and Make Recommendations

This task includes evaluation of the adequacy of the existing monitoring programs for surface water and ground water (both water resources and water quality) planned improvements to meet the overall monitoring program objectives and development of a list of new equipment and installations necessary to accomplish the goals and objectives of the water monitoring system administered by MWI

Accomplishments During 1995

Determine Adequacy of Monitoring Programs The information acquired for the Monitoring Network Survey Document (MNSD) and the Monitoring Network Adequacy Evaluation Document (MNAED) were evaluated against the objectives of the Monitoring Network Objectives Statement (MNOS) to determine the adequacy of the existing monitoring programs. The monitoring programs required to meet the requirements of the MNOS were compared to the current system in place. Areas requiring enhancement were identified and documented. These areas included upgrades in hardware (both mobile and field-installed) improvements in training additional sampling points (or moving points) changes in sampling frequency and changes in the type of information measured or samples collected. Plans for modifying or enhancing the water monitoring system were assessed in light of the MNOS. The Water Monitoring System Adequacy Evaluation Report was submitted to the Ministry and USAID.

Develop Required Equipment List Based on the findings of the adequacy evaluation a preliminary list of equipment to be purchased was developed. The adequacy evaluation identified ground water or surface water monitoring equipment or wells which required replacement or new systems. The list was further modified during development of the Water Monitoring System Upgrade Plan. This task evaluated these requirements and optimized the resources available to gain the maximum amount of needed information. The required equipment list was presented in an Action Memo to USAID for approval.

Differences Between Actual and Planned Activities

None

Constraints

The instrumentation and equipment requirements including installation to fully upgrade the Ministry's water monitoring system program are extensive. Costs for procurement and installation of instrumentation far exceed the WQIC Project budget for this activity. Consequently, the proposed level of effort for instrumentation procurement and installation is significantly less than what is required by the Ministry to support the long-term success of its monitoring program.

Actions that Could/Should be Taken

- (1) Secure additional funding to support full upgrade of the Ministry's water monitoring system program
- (2) Integrate, unify, and centralize all water monitoring system activities (including programs, personnel, resources, and related) within the Ministry
- (3) Improve, unify, and standardize the water databases and database management systems within the Ministry

Task 3 Develop Water Monitoring System Upgrade Plan

This task includes development of a plan for the immediate time-frame to enhance the existing water monitoring system and current plans to meet the monitoring programs goals outlined in the MNOS.

Accomplishments During 1995

Develop, Prepare, Draft, Review, Prepare Final Upgrade Plan A comprehensive plan for the upgrade and operation of the water monitoring system which fully meets the monitoring program objectives defined in the MNOS was developed. This plan was based on the MNSD and the MNAED. The plan consisted of a six volume document which addressed standard procedures and forms for the field collection of surface water, springs, and ground water measurement data; standard procedures and forms for water quality sampling for surface water, springs, ground water, drinking water, and wastewater; standard quality assurance procedures for all monitoring activities and programs; and standard field data management procedures for all monitoring activities and programs. The Upgrade Plan also included the detailed plans for surface water resources and quality monitoring for the Zarqa River Basin and similar plans for ground water resources and quality monitoring for the B2/A7 aquifer within the Zarqa River Basin. These surface and ground water monitoring plans will serve as models for plans to be developed by the Ministry for all surface water basins and ground water aquifers in Jordan.

Differences Between Actual and Planned Activities

None

Constraints

The surface and ground water monitoring plans for all surface water basins and ground water aquifers in Jordan and the related precipitation, evaporation, and wastewater monitoring plans should be developed as soon as possible. Implementation of the plans is required to support a fully functioning water monitoring system program. However, development of these plans, particularly those related to water resources monitoring, must proceed concurrently with the procurement and installation of required field instrumentation and related equipment. Further, very limited achievement of these objectives can occur in the absence of financial resources for procurement of instrumentation and of Ministry personnel dedicated to support and benefit from the WQIC Project. Similarly, sustainability of current activities will suffer without this support.

Actions that Could/Should be Taken

- (1) Secure additional funding to support full upgrade of the Ministry's water monitoring system program
- (2) Integrate, unify and centralize all water monitoring system activities (including programs, personnel, resources, and related) within the Ministry
- (3) Improve, unify and standardize the water databases and database management systems within the Ministry
- (4) The Ministry should provide a full-time counterpart to the WQIC Project to support integration and sustainability of program activities

Task 4 Develop Long-Term Monitoring Network Plan

This task includes development of a long-term plan for further monitoring program enhancements and for assuring that the program remains adequate for meeting future requirements

Accomplishments During 1995

Develop Program, Draft, Review, Prepare Final Long-Term Plan A plan addressing long-term strategies and recommendations for the upgraded water monitoring system networks and programs to remain responsive to the management information needs of Jordan was developed. The plan considers long-term aspects of the water monitoring system and organization, water quality sampling programs, water resources measurement programs, water monitoring equipment management, quality assurance/quality control procedures, data management procedures, database development and management practices, and water monitoring system education.

The Upgrade Plan addressed the enhancements for the immediate time-frame, while the Long-Term Plan developed a system to assure that the monitoring program remains at the appropriate level of effectiveness to ensure collection of information necessary for making decisions in the water sector in Jordan.

Differences Between Actual and Planned Activities

Prepare Final Long-Term Plan The long-term plan is in Ministry review and is anticipated to be completed by February 1996.

Actions that Could/Should be Taken

- (1) Secure additional funding to support full upgrade of the Ministry's water monitoring system program
- (2) Integrate, unify and centralize all water monitoring system activities (including programs, personnel, resources, and related) within the Ministry
- (3) Improve, unify and standardize the water databases and database management systems within the Ministry
- (4) The Ministry should provide a full-time counterpart to the WQIC Project to support integration and sustainability of program activities

Task 5 Procure Monitoring Network Equipment

This task focuses on procuring and installing the ground water monitoring wells and ground water and surface water monitoring equipment required to enhance the monitoring program consistent with the Water Monitoring System Upgrade Plan.

Accomplishments During 1995

Obtain Quotes Prepare USAID Action Memo for Approval of Required Equipment Quotes were obtained from vendors for required equipment. An Action Memo was prepared outlining the equipment requirements for enhancing and upgrading the water monitoring system. The Action Memo was submitted to USAID for approval prior to procurement of any equipment.

Procure and Ship Monitoring Equipment The required equipment authorized by USAID were procured.

Differences Between Actual and Planned Activities

Check Install and Field Test Monitoring Equipment The monitoring equipment were procured in 1995 but had not been shipped and cleared through Jordan customs and inspected upon arrival. Required site preparation and securing local subcontractor support services were initiated but not completed. Installation of all equipment was not completed in 1995. This element of the overall scope-of-work is anticipated to be completed over an extended period of time and will be complete by mid-1996.

Prepare O&M Manuals for Monitoring Equipment Operations and maintenance manuals will be written for the new monitoring equipment as appropriate. The O&M manuals will specify equipment calibration and use procedures, equipment cleaning, and recommended maintenance and maintenance schedules. This activity was not completed in 1995 and will be completed by mid-1996.

Constraints

See discussion under Tasks 2, 3, and 4 above.

Actions that Could/Should be Taken

See discussion under Tasks 2, 3, and 4 above.

Task 6 Implement Monitoring Network Upgrades

This task focuses on training of Ministry staff in use of the monitoring equipment and in administration of the water monitoring system program. The focus of the training will be oriented towards developing hands-on experience and in modifying or refining the monitoring program depending on the specific data needs of Jordan.

Accomplishments During 1995

Monitoring Implementation & Training Development of training programs for Ministry staff in the use of the monitoring equipment and in monitoring procedures and operations is being addressed through the curriculum development activities of the Human Resources Development component. Subcontracts were awarded in 1995 to begin preparation of these training courses. The proposed training includes both office/classroom instruction as well as working with monitoring personnel to develop capability in administering the monitoring program.

USAID authorization for a United States study tour of four (4) Ministry monitoring personnel was obtained in 1995 and the study tour is planned for mid-1996. Training is being coordinated in part through the curriculum development task of the Human Resources Development component of the WQIC Project.

Complete Monitoring Implementation & Training Implementation and training with the monitoring program will continue with emphasis on modifying the program as necessary to achieve the goals and objectives of the water monitoring system. Expansion of the monitoring network throughout Jordan will be promoted within the resource constraints. This activity was planned for 1996 as outlined in the 1995 Work Plan.

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

None

CENTRAL LABORATORY UPGRADE [Component 1.4]

Objectives

The Central Laboratory (CL) of the Water Authority of Jordan (WAJ) in the Ministry of Water and Irrigation (Ministry) is responsible for monitoring and analysis of drinking water quality and wastewater quality and for surface and ground water quality in the Kingdom of Jordan. The present facilities of the Ministry's Central Laboratory are not capable of meeting these responsibilities nor for providing support for an effective water quality monitoring program for Jordan. Upgrading the capabilities of the Central Laboratory (e.g. scope of analytical capability and sample volume including upgrading of training and equipment) is critical to the success of the water quality improvement and conservation program in Jordan.

To ensure consistency and uniformity within Jordan, the upgraded policies, procedures, and operations of the CL must be instituted at the other governmental, semi-governmental, or private laboratories in Jordan. This includes methodological procedures, as well as non-methodological procedures, a Quality Assurance/Quality Control (QA/QC) program, and health and safety programs. The improvements in the CL will result in improvements in the satellite laboratories throughout the Kingdom that interface with the CL. However, to achieve these goals, the CL must be able to produce quality data of known integrity.

Based on the findings and recommendations of the CIDA study, as instituted by the Ministry and the Government of Jordan, the structure, design, and organizational responsibilities of the upgraded CL may require modification. Consequently, the flexibility of the upgraded CL needs to be maintained as the organization of the Ministry changes and the responsibilities of the CL continue to develop. A complete restructuring of the Ministry, a possible recommendation of the CIDA study, would require consideration of the needs of the current JVA lab, which potentially would be integrated organizationally into the CL but still may function as a satellite lab in the Jordan Valley.

Task 1 Central Laboratory Administration

This task provides the administrative support within the Ministry and USAID which is necessary to accomplish the upgrade of the CL. General activities include approval of Action Memos and work plans or proposals which develop from the activities in the approved scope of work.

Accomplishments During 1995

Approve Proposal for CL Conceptual Design The space limitation of the CL necessitates consideration of designing and constructing a new CL. A proposal for completing a conceptual design for a new CL was prepared and submitted to USAID and authorization to proceed with the design was obtained.

Approve Proposal for Nation-Wide Laboratory Survey Several laboratories are providing water quality analyses for various ministries and governmental agencies. The quality of the analyses provided by these laboratories is unknown. A proposal for conducting a survey of the laboratories to assess comparability of procedures, QA/QC protocols, and equipment was prepared and submitted to USAID and authorization to proceed with the survey was obtained.

Approve CL Training Plan The CL Training Plan is being developed in part under the curriculum development task of the Human Resources Development component of the WQIC Project. A US study tour has been proposed for two senior laboratory management personnel to promote improved laboratory operations, particularly with respect to quality assurance protocols and programs. The Action Memo for this study tour has been approved by USAID.

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

None

Task 2 CL Equipment Procurement and Installation

This task involves the procurement and installation of new equipment necessary to upgrade the CL to the level determined appropriate in the Assessment and Evaluation of the Central Laboratory (AECL) Report completed in 1994. Two categories of equipment, Category B1 and Category B2, have been defined to work within the CL space constraints. Category B1 equipment are to be purchased and installed immediately. Category B2 equipment must be delayed until the space limitation constraint is solved.

Accomplishments During 1995

Procure Ship Category B1 Equipment The procurement subcontractor ordered and shipped most of the Category B1 equipment to Jordan. This task was handled as a continuous event so that easily procurable equipment could arrive in Jordan as soon as possible and could be installed when received.

Complete Procure Ship Category B1 Equipment This task is a continuation of the preceding one and is here only to permit installation of first-to-arrive equipment before procurement of all equipment was completed.

Install B1 Equipment Shipped equipment was installed in the laboratory when it arrived. Required site preparation was performed under this task. As each piece of equipment arrived the following activities were completed:

Verify transport damage and claim as necessary

Perform vendor delivery tests as appropriate

Install equipment per vendor specifications

Calibrate and test equipment as necessary

(note that new equipment training is under a different task)

Differences Between Actual and Planned Activities

Complete Installation of B1 Equipment All equipment has not been procured and installed under this task. These few pieces of equipment are major expenditures, require extensive procurement procedures, and require that trained vendor engineers complete the installation.

Constraints

Procurement of sophisticated, expensive laboratory instrumentation was substantially more complicated and time intensive than originally anticipated. Manufacturer and third-party bids required substantial review and evaluation both in Jordan and the United States. Some equipment was found to be manufactured only outside the United States and required separate USAID authorization.

Actions that Could/Should be Taken

Limited LOE for the laboratory specialist STTA did not allow the STTA to participate in the procurement process. Consequently, the most qualified staff were unavailable for procurement.

evaluations. This extended the planned period for procurement, shipment, and installation of the equipment. Future procurements should include time for support from technical experts.

Task 3 CL Training

This task involves the training necessary to upgrade the CL to the level determined appropriate in the AECL Report completed in 1994. Planning, development, and implementation of training necessary for the upgrade of the CL are discussed.

Accomplishments During 1995

Prepare CL Training Plan Action Memo Based on the findings and recommendations of the AECL Report completed in 1994, an Action Memo was prepared requesting authorization to proceed with a US study tour for key laboratory managers. The focus of the study tour is on state-of-the-art laboratory operations and quality assurance programs. Other laboratory training is proceeding under the curriculum development activity of the Human Resources Development component.

Differences Between Actual and Planned Activities

Develop CL Training Plan A training plan is in development but is uncompleted. This plan was to be developed when appropriate based on resolution of the laboratory space issue but has been moved forward because this issue still is unresolved. The plan is to include courses recommended in the AECL Report and authorized by USAID. Requirements for specific analytical skills, equipment operation and repair knowledge and procedural expertise (such as laboratory management and QA) will be developed. A training program meeting these requirements will be outlined in the plan. Numbers of students, numbers of short term classes and seminars, numbers of degree-program students (if any) and costs will be estimated.

Implement CL Training Courses The short-courses in the CL Training Plan will be implemented pending USAID authorization. These courses will address the technicians and scientists who actually use the equipment and perform the procedures in the CL. Implementation may be commercial, vendor-provided or customized by the contractor as needed. This activity will not proceed until completion of the CL training plan.

Implement Training on Category B1 Equipment The appropriate technicians are trained on the Category B1 equipment which has been procured for the CL. Sophisticated new equipment has been procured to include a training option. As indicated in the procurement task, such vendor training will be purchased with the equipment whenever possible and appropriate. This activity has not been completed because these equipment have not been installed.

Implement Training on Existing Equipment The appropriate technicians are trained on existing equipment as needed. This training is being procured from the vendor of the equipment but has not been delivered.

Constraints

See discussion under Task 2 above (CL Equipment Procurement and Installation)

Actions that Could/Should be Taken

None

Task 4 Laboratory Space and Resources

This task responds to the space limitation constraints of the Central Laboratory. Because of these constraints, the laboratory is not able to accommodate the analytical instrumentation required to fully support the water quality analytical services mission of the Ministry. While this task primarily requires actions by the Ministry, some limited support is provided by the WQIC Project.

Accomplishments During 1995

Prepare/Submit Conceptual Design for New Laboratory Because of the space limitations found at the CL, a conceptual design for a new laboratory was developed. The conceptual design was based on full service water quality laboratories currently operating in the United States.

Differences Between Actual and Planned Activities

Resolve Lab Space Limitation Issue Until the space limitation issue is resolved, the specific direction for the CL Upgrade component of the WQIC Project relative to expansion of the CL or construction of a new CL cannot be planned. This issue should be resolved to properly advance the refurbishment plan and long-term plan and to complete required training for upgrading the CL. This is a Ministry agenda issue and is out-of-scope for the WQIC Project.

Prepare Detailed Design for Lab Expansion or Construction This is a Ministry agenda issue and is out-of-scope for the WQIC Project.

Obtain Funding for New Lab/Lab Expansion This is a Ministry agenda issue and is out-of-scope for the WQIC Project.

Select Contractor for New Lab/Lab Expansion This is a Ministry agenda issue and is out-of-scope for the WQIC Project.

Construct New Lab/Lab Expansion This is a MWI agenda issue and is out-of-scope for the WQIC Project.

Relocate Lab Equipment & Resources The laboratory equipment and resources will be relocated either to a new lab or will be reorganized at the expanded lab. This is a Ministry agenda issue and is out-of-scope for the WQIC Project.

Constraints

None

Actions that Could/Should be Taken

The Ministry must work aggressively to resolve this issue and proceed with the detailed design, construction, and related transition to a new, larger water quality laboratory.

Task 5 Develop CL Refurbishment Plan

This task involves the development of a plan to assure that the CL continually will be refurbished and thus remain responsive to the analytical requirements and demands imposed on the CL. The tasks so far have concentrated on upgrading the CL to a new level of performance. The Refurbishment Plan will address keeping the CL at this level.

Accomplishments During 1995

None

Differences Between Actual and Planned Activities

CL Long-Term Refurbishment Plan Increases in sample load, changes in analytical technology, changes in analytical objectives, and changes in the community being serviced by the CL will be considered. Anticipated changes in requirements on the laboratory (in terms of kinds of analysis as well as number of samples) will be treated along with anticipated changes in analytical methods. This activity has been postponed pending resolution of the laboratory space limitation issue.

Constraints and Actions Needed

Resolution of the space limitation issue has postponed completion of this activity

Actions that Could/Should be Taken

Further delay in completion of this task should be re-evaluated based on decisions made this year about continued support of the WQIC project components. If modification of this component within the global WQIC Project issues is not recommended then initiation and completion of this task should proceed immediately.

Task 6 Long-Term Plan

A long-term plan will be developed for the CL to assure that the CL remains viable at the completion of the CL Upgrade task and into the future. Note that this task excludes the development of the plan for continued equipment refurbishment which is developed under the CL Refurbishment Task and training which is developed under the Training Task.

Accomplishments During 1995

None

Differences Between Actual and Planned Activities

Develop CL Long-Term Program Plan This task addresses other long-term planning issues effecting the laboratory. The evolution of procedures, participation in national and international calibration, projected changes in sample loads and type of analysis, evolution of QA procedures and the role of the CL in the analytical capacity of Jordan are among the topics to be addressed over the long term. This activity has been postponed pending resolution of the laboratory space limitation issue.

Constraints and Actions Needed

Resolution of the space limitation issue has postponed completion of this activity.

Actions that Could/Should be Taken

Further delay in completion of this task should be re-evaluated based on decisions made this year about continued support of the WQIC project components. If modification of this component within the global WQIC Project issues is not recommended then initiation and completion of this task should proceed immediately.

Task 7 Miscellaneous Laboratory Related Topics

During the first year of the WQIC Project the issue of the capabilities of other governmental laboratories conducting water quality analyses was raised. Assessment of the capabilities of the other laboratories was proposed as a means of developing uniform procedures and protocols to ensure the consistency and integrity of water quality data generated in these laboratories.

Accomplishments During 1995

Conduct Nation-Wide Laboratory Survey A survey of the major laboratories performing water quality analyses was completed using a format similar to that used to assess the CL and a report and recommendations were prepared and submitted to the Ministry.

Differences Between Actual and Planned Activities

None

Constraints and Actions Needed

None

Actions that Could/Should be Taken

None

ARTIFICIAL RECHARGE FEASIBILITY STUDY (Component 1.5)

Objectives

Water resources in Jordan are limited with most available resources being committed to use of one type or another. Several studies have presented the use of groundwater artificial recharge techniques as a means to more efficiently use and to increase the total amount of available water. For example, the national water management study recommended that all possible means be evaluated to enhance groundwater resources by studying the potential for increasing recharge of groundwater aquifers throughout Jordan. In direct response to this call for investigating artificial recharge in Jordan, a detailed plan based on existing information and new data collected from selected candidate sites was developed as a component of the WQIC Project.

Evaluating artificial recharge techniques by themselves will not increase groundwater recharge. It is essential that the Ministry of Water and Irrigation, which has the legal responsibility for managing water resources, include in their strategic planning any techniques which prove to enhance water quality and increase availability of the scarce resource. Therefore, the planning group within the MWI must also be advised and kept informed of the artificial recharge studies so that they can effectively use the results in formulating national policies, establish priorities, develop strategic long-term and short-term plans for the water sector, allocate appropriate human and financial resources, and ensure coordination with other national and international entities.

The 1995 Workplan contained a draft scope of work for the artificial recharge component. One of the accomplishments achieved during 1995 was a final approved scope of work which incorporated the work elements of the draft scope but did not follow the same outline. This makes it difficult to compare the results of 1995 with what was planned in 1994. To more accurately assess the achievements of the component, the results have been compared to the approved workplan and not to the draft workplan. This problem has been corrected in the 1996 workplan which contains an updated scope of work consistent with the approved scope of work.

The AR component consists of three phases. The initial phase develops a preliminary list of **proposed** sites. These sites are screened and evaluated using published site data to develop a list of **recommended** sites. The second phase consists of performing feasibility studies on the three highest priority recommended sites. The third phase, which is not funded within the WQIC AR Component, would consist of full engineering design and construction of the most promising AR site. Participation and training of the MWI technical and planning staff is included throughout the three phases, however, this is restricted to limited on-the-job training of a single half-time MWI employee. Formalized training and regular briefings/workshops on the results of this component, in addition to an increase in the level of MWI staff involved (at least up to the promised level of two full-time professionals) is required to ensure that results of the component increase the functional effectiveness of the planning system within the Ministry.

Task 1 Artificial Recharge Survey and Recommendations

Accomplishments During 1995

A draft report (Artificial Recharge Data Needs Document, ARDND) summarizing the findings and data needs for the AR feasibility study was prepared and submitted to the MWI in January for review. The report presented summaries of the existing AR projects completed and in progress in Jordan and identified technical issues related to these projects that will be important in development of the AR feasibility study. The report also included summaries of the water

resources data and locations of monitoring program stations that will be useful during more detailed characterization of candidate sites

Differences Between Actual and Planned Activities

None

Constraints and Actions Needed

None

Actions that Could/Should be Taken

None

Task 2 Prepare Artificial Recharge Proposal

Accomplishments During 1995

A proposal (Groundwater Artificial Recharge Studies Scope of Work Proposal) detailing the scope-of-work for the AR feasibility study was submitted to MWI and AID for authorization in March. The proposal was amended and accepted in final form in May. This project provides the means for evaluating the potential for artificial recharge using surplus water supplies to augment and improve groundwater resources and thereby reduce the rate of depletion of Jordan underground water resources. The overall objective of the project is to provide the MWI with the technical experience and information for how groundwater artificial recharge can be applied for the social and economic benefit of Jordan.

Differences Between Actual and Planned Activities

The proposal should have been approved to allow work to begin by January 1. The proposal was not approved until mid-May, delaying the start of work until June 1 (5 month delay).

Constraints and Actions Needed

The component is now scheduled to be completed by September 30, 1996.

Actions that Could/Should be Taken

None

Task 3 Phase 1 Site Evaluation and Screening

Accomplishments During 1995

Task 3.1 - Develop Selection Criteria and Methodology The selection criteria and methodology were completed in July, 1995 and presented to USAID and MWI. The methodology involved using a GIS system to plot overlays of the collected data using the criteria established by the ARWG in the ARDND as a guideline for site selection.

Task 3.2 - Collect and Compile Artificial Recharge Information The Artificial Recharge Phase I Data Collection activity was begun in June and was completed in the 4th quarter 1995. This was in keeping with the 1995 Annual Work Plan schedule of +4 months for this task. Several delays were encountered in the identification and collection of data, as well as the contracting of local support for data entry of some collected data into the AR information base. For instance, potentially important data from similar programs in Tunisia have been identified and officially requested, but have yet to be obtained. However, enough data was collected to complete the preliminary site identifications.

Task 3.3 - Initial Site Screening The Proposed list of 15 sites for further consideration was prepared and discussed with the MWI and USAID in November. Based on the results of field data verification and a detailed review of site specific data obtained from existing data sources these 15 sites were further screened to a list of eight Priority Sites.

Task 3.4 - Develop Artificial Recharge Sites Priority List The Phase I recommendation of eight sites suitable for Phase II feasibility study was presented informally to the MWI in December. Preparation of the Phase I summary report is ongoing. This report will be presented in draft form to USAID and MWI in first quarter 1996.

Task 3.5 - Recommend Sites and Develop Phase 2 Plan Three sites were selected by the Ministry under advice from the artificial recharge specialist, for feasibility study during Phase 2 of the component. Work on the Phase 2 plan is ongoing and should be completed early first quarter 1996.

Differences Between Actual and Planned Activities

The primary differences between the actual and proposed activities are related to schedule (5 month delay) and participation of MWI staff (only 1/2 professional dedicated to the component instead of the planned 2 professionals). Given the five month starting delay the project is now scheduled to finish September 1996 (original finish date April 1996). The project is currently on track relative to the delayed schedule.

Constraints and Actions Needed

The lack of MWI supporting staff has caused an increased work load for the current project staff (MWI and USAID contract staff). Although this resulted in only minor delays to the project during Phase I it is anticipated that it will cause increased delays in Phase 2 where three separate feasibility studies will be conducted. In order to avoid incurring these delays the Ministry should add staff to the project up to the initial commitment of 2 professionals.

Actions that Could/Should be Taken

None

INDUSTRIAL WASTEWATER DISCHARGE PREVENTION [Component 2 2]

Accomplishments During Year 1995

The tasks for the PP/WM Program accomplished during 1995 are shown in the attached charts and are as follows

Task 1 Audits and Reconnaissance Visits

Summary of Accomplishments in 1995

During this year the remaining four Audits and four Reconnaissance Visits were completed. These tasks were initiated in 1994 and are discussed below.

Remaining Audits As part of these audits the following were performed:

- Final Audit Evaluation Report for Audits #7 (Food and Oil) and #8 (Metal and Steel)
- Audits #9 (Brewery) and #10 (Yeast)

Activities under these audits included coordination, preparation of PP/WM Background Material (Draft Report, Review and Comments, and Final Report), Audit (Pre-Inspection Meeting, Audit, Post-Inspection Meeting, Draft Audit Evaluation Report, Review/Comments, and Final Report) as discussed in detail in the 1994 Work Plan. Upon completion of the final report, a one-day workshop was held at each industry to review the findings and recommendations.

Remaining Reconnaissance Visits Several additional facilities in the Amman-Zarqa areas were visited by the members of the PP/WM Committee. These facilities included United Textile Mills facility, Army facility in Zarqa, Lead Acid Batteries facility in Marka, Universal Electroplating and Trading facility, Sahab Industrial Estate, and ICA's plant facilities in Russafa. Additionally, the PP/WM Committee visited Aqaba's Fertilizer facility, Thermal Power Plant, Port Authority, and the Municipal Wastewater Treatment Plant.

Differences Between Actual and Planned Activities

No differences

Constraints

Not applicable

Actions that Could/Should be Taken

Not applicable

Task 2 Perform Feasibility Studies

Summary of Accomplishments in 1995

Four feasibility studies (FS) were performed. One of the key activities carried out along with the feasibility studies was on-the-job training for MWI and Chamber staff to provide them with the skills needed to plan and carry out feasibility studies in the future. Activities in this task were as follows:

Selection of Facilities for FS Based on the Audit Evaluation Reports and consultation with the PP/WM Committee, four facilities representing most of the audited facilities were selected for FS. The four facilities for FS were selected by the members of the PP/WM Committee. These facilities include Jordan Petroleum Refinery, Jordan Yeast Co., Jordan Sulpho-Chemicals Co., and a vegetable oil refining facility. These facilities were selected because they had more recommendable PP/WM and water conservation techniques than other facilities.

Selection of FS Team FS teams were selected to carry out a feasibility study for each of the four selected facilities. The members of the FS Team were as follows:

- Short-term consultants from Harza and SAIC
- MWI PP counterpart
- WAJ PP counterpart
- Management staff from the selected facility, and
- Production staff from the selected facility.

The team activities were coordinated with the Chamber.

Meeting for Initial Screening of Alternatives The FS Team for each FS met with related facility representatives and a local short-term consultant to review and discuss the alternatives presented in the Audit Evaluation Report for the facility. During this meeting, facility officials and a local consultant were encouraged to discuss the alternatives with respect to operation of the facility and availability of the resources to implement the possible alternatives. Those techniques determined to be technically unfeasible were deleted from further consideration.

Screening of Alternatives The screening of alternatives consists of the identification of a reduced list of alternatives for PP/WM which were analyzed in detail. Alternative screening aids in streamlining the FS process while ensuring that the most promising alternatives are being considered for detail analysis. The screening of alternatives was accomplished by completion of the following activities:

- Refinement of alternative definitions
- Preliminary evaluation of alternatives based on effectiveness, implementability, and cost.

The cost evaluation involved the development of capital and operating cost estimates based on preliminary process design using facility-specific parameters such as wastewater characteristics, quantities, discharge criteria, availability, and cost for utilities, assumed value for key design parameters, and fate of by-products. A total cost was assembled from operating cost, labor, capital cost, and time. The completion of this initial task established the framework for completing the FS.

Detailed Analysis and Selection of Alternatives Specific detailed evaluations of the remaining alternatives from the previous subtask were performed. This included detailed analysis of alternatives to be accomplished by further refinement of alternatives. Information provided is as follows:

- Preliminary design calculations
- Process flow diagrams
- Sizing of the key process components
- Preliminary site layouts
- All assumptions and
- Limitations and uncertainties

Specific detailed evaluations of each of the remaining alternatives were performed. As part of this subtask comparative analysis of alternatives were provided and preferred alternatives were highlighted.

Preliminary FS Report For each FS with assistance from other member of the FS Team the short term consultant prepared a Preliminary FS Report. This report included results of previous subtasks and was submitted to the PP/WM Committee for review and comments. Each report consisted of descriptions of technologies/processes and alternatives and preliminary cost estimates for the most feasible alternatives identified in the Audit Evaluation Report for the related facility. Meetings prior and after submittal of this report were held with the PP/WM Committee to discuss the contents of the report.

Pre-Final FS Report The Pre-Final FS Report was prepared to include the committee's comments. This report was prepared by the short-term consultant with assistance from other members of the FS Team and submitted to the PP/WM Committee for review and comments.

Final FS Report The Final FS Report was prepared by the short-term consultant with assistance from other members of the FS Team and included the PP/WM Committee's comments. This report was submitted to USAID for approval.

Differences between Actual and Planned Activities

FS reports for 3 FSs were not submitted by the Short-Term Consultant as scheduled in 1995 Work Plan.

Constraints

According to the Short-Term Consultant the delays for submission of the Preliminary Feasibility Studies were due to the time it took for the consultant to receive information from suppliers in the US and the time it took to receive the response to their requests for information.

Actions that Could/Should be Taken

Regardless of the above delays based on the 1994 WQIC Life of Contract Implementation Work Plan this task is still ahead of the original schedule. The PP/WM Working Group will do its best to perform remaining activities on schedule.

Task 3 Perform Demonstrations

Summary of Accomplishments

Based on the review of the FS Reports the PP/WM Committee selected two PP/WM techniques for plant-scale demonstrations. These techniques were those with wide application.

within the industrial types included for the PP/WM audits and FS. The objective for these demonstrations is to present effects of these techniques for PP/WM purposes.

In November 1995, for both demonstrations, local consultants in association with RSS prepared design specifications, Requests for Proposal (RFPs) and reviewed proposals. They also provided assistance in selecting the construction firm, and in 1996 will supervise installation and operation of the demos.

Prior to the distribution of the RFPs, Harza reviewed the RFPs for each demonstration project for inclusion in the final RFP document.

Differences between Actual and Planned Activities

FS report for 3 FSs were not submitted by the Short-Term Consultant as scheduled in the 1995 Work Plan. This delay also delayed selection of the techniques and facilities for the demonstration program as scheduled in 1995.

Also, due to the lack of experts at the RSS to carry out the demonstration program, three local senior consultants were hired to prepare design specifications and Requests for Proposal (RFPs) to review proposals, to provide assistance for awarding the construction firm, and to supervise installation and operation of the demonstrations.

The first demonstration program includes land application at the yeast facility's land treatment site. The second demonstration program is proposed for wastewater and water pre-treatment using reverse osmosis and a new continuous ion exchange process. This program was selected by the PP/WM several weeks after the selection of the first demonstration program. Upon receipt of the MWI and USAID approvals, a design specifications report will be prepared by the local consultants.

Also, based on the types of demonstration techniques, the time needed for construction and experimentation will be longer than planned in the 1995 Work Plan.

Constraints

American equipment vendors did not supply local consultants with equipment specifications in a timely manner. In addition, if this component experiences the same delays in the procurement and delivery of equipment as other components have experienced, timely completion of PP/WM programs will be difficult.

Based on the 1994 WQIC Life of Contract Implementation Work Plan, this task is still ahead of the original schedule, in spite of the delays described above.

Actions that Could/Should be Taken

Under the direction of the PP/WM specialist, the members of the PP/WM Working Group should do their best to perform remaining demonstration activities in a timely manner, in order to meet the 1996 Work Plan schedule. This includes close coordination and cooperation among PP/WM specialists, local consultants, the local construction contractor, and equipment vendors.

The PP/WM Working Group will do its best to perform remaining demonstration activities to meet 1996 Work Plan schedule.

Task 4 Perform Training

Summary of Accomplishments

Throughout the year volunteer trainers from WEF were engaged to provide in-country workshops and seminars for selected industries which need to practice PP/WM and water conservation

In 1995 WEF cooperated to provide on-the-job-training activities to transfer skills to the Chamber's industrial members. In December 1995 two one-day workshops on pollution prevention practices in organic chemical manufacturing were held one at the Amman Chamber of Industry and one at the Jordan Petroleum Refinery. Both workshops were well received by the participants.

Also as part of this task informational brochures and training materials such as posters were developed. Visited to the demonstration sites are being arranged.

An important facet of the training is the opportunity to identify (1) process streams amenable to recycling or reuse (2) areas where raw materials or wastes can be recovered and reused and (3) methods of altering processes to reduce the amount of waste generated.

Differences between Actual and Planned Activities

Due to schedule overlap and/or unavailability of WEF volunteer trainers part of this activity will be performed in 1996.

Constraints

Other commitments of WEF and of American NGOs prevented them from agreeing to conduct PP/WM training on a volunteer basis.

Actions that Could/Should be Taken

This program will be continued as part of the 1996 activities.

Task 5 Design and Assist in the Implementation of Financial Mechanisms

Summary of Accomplishments

The objective of this task was to assess alternative solutions provide incentives and identify financing mechanisms to achieve desired levels of PP water conservation and wastewater treatment. Funding mechanisms such as loan guarantees were explored and developed to assist industries in taking the necessary actions to address pollution problems.

This task was performed with assistance from USAID, the Central Bank and a group of Commercial Banks. The Chamber was involved as an advisor on local industrial needs. This activity is necessary to assure that the minimum business support and incentives are in place to encourage action by private sector business and industry. These incentives and associated support are required in an environment of slowly developing regulations and enforcement, inappropriate pricing for water and energy, and the lack of a waste discharge fee scale based on

the quantity and quality of the industrial effluent. These incentives will also facilitate the development of cooperative and sustainable governmental and private sector business and financing relationships.

Differences between Actual and Planned Activities

No differences

Constraints

Not applicable

Actions that Could/Should be Taken

Not applicable

Task 6 Short Term Training

Summary of Accomplishments

As part of the training component of the WQIC in cooperation with the Chamber MWI and other institutions short-term specialized training was arranged. The training was focused on practical measures to prevent pollution and control industrial pollution. Ten individuals five (5) from the private sector and five (5) from MWI were sent to the US for a two-week training period related to industrial pollution prevention. The US training was conducted by Harza in its Chicago offices. This training included learning to do environmental audits, visiting selected industries to observe techniques being practiced for PP/WM and participating in the Annual Purdue University Industrial Waste Conference. This program provided insights and information to members of MWI and the private sector in PP/WM and pollution control. It also provided information about the role and the degree of authority of governmental monitoring agencies vis a vis private operations.

Differences between Actual and Planned Activities

No differences

Constraints

Not applicable

Actions that Could/Should be Taken

Not applicable

Task 7 National Workshop

Summary of Accomplishments

Implementation of a National Conference was coordinated with the Chamber and MWI. A "Call for Paper" was advertised in local Arabic and English newspapers. This conference will be held in January 1996 at the Chamber's Conference Hall. This national PP/WM conference will be conducted for managers, technical personnel and others to ensure an in-depth understanding of the PP/WM issues and encourage industries to take major steps to reduce pollution and increase the efficient use of water.

Differences between Actual and Planned Activities

This activity was planned for 1995. However, at the request of the Chamber, it was postponed until January 1996 when key personnel would be available.

Constraints

Availability of the key personnel at the Chamber during December 1995.

Actions that Could/Should be Taken

This program will be coordinated with WEF or other NGOs and implemented as part of the 1996 activities.

IRRIGATION WATER MANAGEMENT [Component 3]

Objective

Conservation of irrigation water through improved efficiency in the pressurized pipe delivery system and on-farm irrigation system management

Task 1 Improving the Water Conveyance System

Review Inception Report Review the start-up of the study 30 days after the Notice to Proceed and summarizing data collected

The Inception Report, WQIC Project REPORT 3114-95-3a-01, was completed on time

Review Comprehensive Survey Report A report describing conveyance conditions. At this time the WQICP, MWI and JVA will decide whether to proceed with the next task or to end the study.

The Comprehensive Survey Report, Data Evaluation, WQIC Project REPORT 3114-95-3a-02, was completed on time. The decision was to proceed with the next task.

Maintain Files of Collected Data As data is collected by the subcontractor copies will be obtained by the WQIC Project. This data will be used in the Develop Water Delivery Conservation Program task of the next subcomponent.

Files and data on hand

Review Options Studies Begin reviewing studies of the options identified. These options will be fully detailed in the *Conceptual Studies Draft Report*. A feasibility study will be done for the option(s) selected by MWI and JVA and a *Feasibility Study Draft Report* prepared.

The draft Conceptual Study Report, WQIC Project REPORT 3114-95-3a-03, was completed and presented to MWI and JVA in mid-September. The draft report was completed on time and is under revision by the contractor.

Task 2 Develop Water Delivery Conservation Program

Identify Physical Deficiencies in System Data collected from the Zarqa River Conveyance Study and the JVA will be used to determine physical deficiencies in the pipelines. The identified deficiencies will be ranked according to their impact on water conservation efforts. The ranking will be used to *Develop Essential Repair Plan*. After the essential repair plan is completed the next step is to *Develop Annual Preventative Maintenance Plan*.

These plans will be developed with the JVA field staff as on-the-job training (OJT) to build the capacity within the JVA for preparing and implementing such plans in the future. A short-term expatriate expert in the Operation and Maintenance (O&M) of pressurized pipe delivery systems will assist in the preparation of the maintenance plans and in conducting the OJT. Ideally this work should follow the US training program described later so that the trained personnel can be directly involved in development of the plans and conducting the OJT. While he is here the expatriate will assist in preparing *Standard Operating Procedures for Pressurized Pipelines*. All plans and operating procedures will be translated into Arabic so all line personnel can have access to them.

A US specialist used on-the-job-training to accomplish these tasks and to train JVA personnel. He was assisted in conducting the training by the four engineers who received

training in the US. It was determined that an Essential Repair Plan was not needed. Draft Annual Preventive Maintenance Plans were developed for the Zarqa Carrier I pressurized pipelines.

On-the-job-training was accomplished and draft Standard Operating Procedures for the Zarqa Carrier I pressurized pipelines were developed.

Training in Operations and Maintenance. Initially three JVA engineers will be trained in the US on the principles of pressurized pipe delivery system O&M. Upon their return to Jordan these engineers will attend a trainers workshop. After the workshop these engineers will be involved in the preparation of the maintenance plans and train others initially with expatriate assistance in an on-the-job setting. After departure of the short-term expatriate the trained personnel will continue to train others.

Four JVA personnel were trained in the US on pressurized pipe operation and maintenance. A pressurized pipe delivery system on-the-job-training course was conducted in the Jordan Valley. The US specialist was assisted by the four engineers trained in the US. Twenty engineers and supervisors in charge of operations and maintenance were trained.

A Training Program Follow-up will be conducted approximately three months after completion of the training programs to address weaknesses identified in the interim period in the training program.

The arrival of the US expert was delayed until after the end of the US irrigation season. This delayed completion of the on-the-job-training program. Training program follow-up will be completed in 1996.

Task 3 Develop On-Farm Water Conservation Program

Develop On-Farm Irrigation Systems Evaluation Manual. Develop a manual translated into Arabic explaining the on-farm irrigation systems evaluation process with data collection forms, analysis procedures and evaluation procedures for use by Irrigation Management Service personnel. This manual will be used to conduct Evaluations in a replicable fashion to identify problem areas in the on-farm irrigation system that are of a physical nature.

An evaluations manual was developed as a series of the farmer training modules described later. Evaluations to identify problem areas in on-farm irrigation systems were conducted. Filtration problems, sand media and screen filter units, are the most important constraints to water conservation on fields in the Jordan Valley where trickle irrigation is being used.

Develop Water Conservation Program. This program will consist of two sections. The first section will address physical deficiencies in the on-farm systems. The second part will be prepared under a later task and will address the software (training) components that must be in place and operational before any sustainable water conservation efforts will succeed. Until an incentive structure exists parts of the plan on both the hardware and software sides will be unimplementable.

Two major deficiencies in the on-farm irrigation systems have been identified. Media in sand filters is not the proper size and elements in screen filters are under designed. Samples of sand media are being collected from local crushing plants and tested to determine suitability for media filters. The first prototype for a new screen filter element the same size as current elements, was made at a local manufacturer of screen filter units. Improvements in the prototype have been identified that will allow the economical manufacture of the new elements.

Develop Structure for Trial IMS. This sub task is integrated with the trial WUO and is dependent upon action from MWI and JVA.

The reorganization of JVA in the Valley, late in the year, has resulted in interest in the formation of a trial IMS unit in the Middle Valley. The basic unit will have two members, one each from the JVA and the MOA extension service office covering the same area. Formation of the unit is scheduled for early 1996.

Train On-Farm Water Conservation Advisors. Send one person from the MWI to the US for training in IMS activities. The fifth ASAE Drip Irrigation Symposium in April of 1995 will address many issues of importance to micro-irrigation in the Jordan Valley. The training of the IMS person should be scheduled so he can visit the symposium. Upon his return this person will attend a trainers workshop and actively participate in the farmer training programs mentioned later.

One person from the MWI was trained in California in IMS activities. This person did not attend the symposium. As the HRD unit in the Ministry has yet to develop a workshop for trainers, this portion of the training program is unsatisfied. The trainee did participate in the farmer training programs and is active in conducting farm irrigation system evaluations.

Five persons from the MWI and JVA attended the fifth ASAE Drip Irrigation Symposium. After the congress they traveled to California where they visited irrigation districts and farms using trickle irrigation.

Work with Farmers on Irrigation Water Conservation. Until an incentive structure exists the only advice likely to be accepted will be that involving little or no cost to the farmer. That said we will develop the materials and work with those farmers who have received the O&M training mentioned later and are willing to change their current practices.

Farms have been and are being evaluated, recommendations for improvements given, and farmer training session held.

4 Determine the Feasibility of Establishing a Water Users' Organization (WUO)

Submit Options to MWI and JVA. Options for organizing farmers and using farmers organizations were given by two short-term expatriate experts. These options will be combined into comprehensive alternatives and presented to MWI and JVA for evaluation. The alternatives will use the organization as a vehicle for the IMS to work with farmer members.

The feasibility study for Water Users Organizations (WUO) was completed. There are no formal WUOs in the Jordan Valley. Alternatives were given for the establishment of a trial WUO. The findings are reported in WQIC Project REPORT 3114-95-3b-02.

Eleven persons from the JVA and private sector were sent to Egypt to visit WUOs. Upon their return the decision by the MWI and JVA was to put the concept of a trial WUO on hold until a more appropriate time.

Develop Structure for Trial WUO. The alternative selected by MWI and JVA will be expanded into a detailed implementation program. We will submit Trial Program to MWI and JVA for approval before proceeding with its implementation. After approval of the program the next step is to Assist in Establishing Organization. Short-term expatriates specializing in WUOs and IMS activities will assist in this phase of the program. This will be a long-term process and will require periodic Follow-up on Organization.

Postponed by MWI and JVA. Long-term commitment from a donor agency is currently unavailable but required for development of a sustainable WUO.

Task 5 Conduct Research, Training, and Demonstration Activities

Write SOW and Subcontract for Activities The focus of the activities will be the preparation of materials to train farmers and IMS personnel in the operation and maintenance of micro-irrigation systems. A short-term expatriate expert on agricultural communications will be brought in to give assistance to the contractor. The WQIC Irrigation Working Group will *Supervise Contractor Activities*. Upon *Completion of Training Material Preparation* field testing, evaluation of the training program, revision of the material, and retesting of the material by the contractor will *Train Farmers in O&M of On-Farm Irrigation Systems*. Initial training activities in on-farm irrigation system O&M will focus on the educated farmers. The IMS person trained in the above task and others undergoing training will be active participants in these training programs. This training program is projected to be repeated at least twice more by MWI and JVA IMS specialists/trainers.

Training materials, currently in draft form, have been developed, field tested, and 22 farmers trained. The IMS person from MWI participated in the first training program. The training program was only conducted twice. The principles for structuring training material for adults are outlined in WQIC Project REPORT 3114-95-3b-04.

Contract Jordanian Experts for Special Studies Local consultants will be used to collect data used in the development and administration of the training program and to provide other assistance as required. Other possible studies that have been identified include: Cropping intensities by season, type of irrigation method, and water source; Potentials for different crops, economics, marketing, water use, planting material, and post harvest handling; and Determine locations and the total area affected in the Jordan Valley where farmers report water-logging problems.

Two Jordanian experts were contracted to collect water management extension information and survey farmers on water management knowledge and practices. Their findings are reported in WQIC Project REPORT 3114-95-3b-03. No special studies were required during development of the training materials. Prototypes of new screen filter elements were developed with the assistance of a local manufacturer but no fee was paid.

Data collection for the Baseline Survey of Agriculture Practices was completed. The final Baseline report was completed and has been released. The findings cover both crop seasons and are reported in WQIC Project REPORT 3114-95-3b-05.

Refine Key Indicators In cooperation with the subcontractor, indicators to measure the impact of the WQIC Project on water conservation in the Jordan Valley will be further developed. Procedures for acquiring valid data and analyzing the data for these indicators will be prepared.

No subcontractor was identified. Key indicators have been developed and incorporated into the new results packages required by USAID.

WATER MANAGEMENT EDUCATION [Component 4.1]

Objective

The objective of this component is to strengthen the Ministry of Water and Irrigation (MWI) through human resources development and training. The WQIC Project addresses these needs and also provides funding for contractual training and initiating training in-country. Development and implementation of some activities will require consideration of the recommendations of the organizational study being conducted by CIDA. The WQIC Project identifies a number of objectives for water management education including:

1. Establishment of a Human Resources Development (HRD) Cell and preparation of a Phase I Action Plan
2. Development of an MWI Manpower Plan
3. Development of a Phase II HRD Program
4. Strengthening MWI in-service training capabilities
5. Development of a Master Training Plan and Training Center Management Plan
6. Development of new in-service courses and upgrading of training staff

Accomplishments During the First Year

In 1995, the Training Management Handbook manual was prepared. It provided a comprehensive plan for developing and managing the future Ministry of Water and Irrigation Training Center.

The detailed design for the Training Center and the new Ministry of Water and Irrigation Building (eighth floor) was completed by an engineering firm which also submitted the construction documents which will be used in the construction phase in 1996. The budget for the extra four floors was taken from CIP money.

Development of course curricula (which was justified by the Training Needs Assessment) was divided into three phases due to lack of budget. In Phase I, the University of Jordan, with the cooperation of MWI staff, developed 19 priority courses.

The Phase I Plan identified a number of overseas training needs. During 1995, 46 people traveled to the U.S. and received training in specific fields.

Ninety MWI staff members were trained at the MWI in a course entitled "Improved Technical Writing." 74 MWI employees attended 4 levels of English Improvement Courses. Over 675 staff members received computer training in Microsoft Word, Microsoft Excel, Advanced Excel, Auto-cad, Novell, and Microsoft Project in outside facilities.

Task 1 Water Management Education Administration

This task provides the administrative support within the MWI and USAID which is necessary for the Water Management Education (WME) component of the WQIC Project to function. General activities include approval of action memos and work plans or proposals which develop from the activities in the approved scope of work.

Summary of accomplishments

Review and Approve Overseas Training Courses USAID reviewed each proposed training course against the SOW and against the budget available

Review and Approve PIO/P Documents USAID reviewed and approved the PIO/P documents for each candidate proposed to receive training

Approve Training Center Design USAID reviewed and approved the Training Center Design for the Ministry of Water and Irrigation

Approve Curriculum Development USAID reviewed and approved the phase 1 of the curriculum development against the SOW and against the budget available

Approve Manpower Plan Study USAID reviewed and approved the Manpower Plan Study for the HRD unit against the SOW and against the budget available

Differences between actual and planned activities

Although USAID approved the Manpower Plan study the Water Management Education Component could not proceed with the activity due to delay in implementation of the CIDA study. It will be postponed till next year

The procurement of AV equipment required to support the function of the HRD unit was delayed and postponed till next year due the lack of an HRD unit

Constraints

The main constraint in this activity is the delay of the CIDA study till June 1996 and the lack of an HRD director to assign employees and AV specialist

Actions that could/should be taken

The HRD working group should forward a stronger request to the Ministry to establish an HRD unit that will carry out all the activities

Task 2 Overseas Training

The WQIC Project statement of work (SOW) identifies a number of specific overseas training programs to be implemented for the project. Some revisions of the scope of this training have been made during the first year of the project. The four Master's Degrees originally specified have been canceled in favor of providing more exposure to short-term skills development of a greater number of personnel assigned as project counterparts. In addition, the original SOW did not provide for any overseas training for the Irrigation Component. Overseas training for the Irrigation Component has been included in the revised plan. The Water Management Education proposal presented at the end of the 1995 Work Plan outlines the training needs for each project component.

Summary of accomplishments

- A group of six MWI employees visited Egypt to inspect the training centers available there
- A group of six people traveled to Florida on a Micro-Irrigation trip
- A group of nine people visited the Water Users Association in Egypt
- A group of three people visited the Egyptian Drainage Research Institute

- A group of ten people from MWI and from different industries in Jordan participated in a pollution prevention program in the US
- Four Jordan Valley Authority employees participated in training for the design, maintenance and management of pressurized pipeline systems in the US
- One engineer received training in on-farm water management techniques
- The Vice President of JES visited Washington DC and visited several environmental organizations
- In Florida and California, six JES employees participated in sessions on the management and design of public awareness campaigns
-

Differences between actual and planned activities

The WQIC Project statement of work (SOW) identified a number of specific overseas training programs to be implemented for the project. In addition to the programs organized, there were other courses mentioned in the contractual Training Plan, i.e. MIS training, Central Laboratory Training, Water Monitoring, and Training Center Management. These courses will be postponed until 1996.

Constraints

The main constraints to overseas training are (1) the unavailability of an HRD director to help nominate the appropriate candidates, (2) the lack of coordination between involved parties, and (3) the interminable bureaucracy and resultant delays. Another major constraint is the content of the training programs themselves. According to the participants, the material introduced is far too sophisticated to be applied in Jordan.

Actions that could/should be taken

An HRD director should be appointed immediately. S/he should have the authority to reduce red tape in order to expedite coordination among the various groups and to speed up the nomination process. TOFEL courses should be offered to ministry employees before they take the ALI/GU exam.

Before sending participants to training programs, the content of the programs should be investigated more thoroughly to determine if the program content is appropriate for our training needs.

Task 3 Establish HRD Unit

Summary of accomplishments

None!

Differences between actual and planned activities

Create HRD Unit Prior to development of manpower planning and more specific programs for the MWI, the HRD Unit should have been established by the MWI.

Appoint Team Five Managers US training is to be arranged for selected staff in the management of training and in training of trainers. An initial training of trainers course was supposed to be conducted locally. Staff members require training to organize, monitor and evaluate instruction.

Train Managers in Evaluating Skills Classroom coordinators will have the responsibility for organizing and conducting evaluations of each course delivered. Both instructors and students will be evaluated to determine if course objectives are being met. Training of staff members to fulfill this function was supposed to be done through a local subcontract.

Program Development Once established, the HRD Unit was supposed to begin performing the responsibilities of a human resources function. In the short-term these include developing seminars with the Public Awareness component about the MWI, re-examining the Manpower Study, developing a management training plan for the potential restructuring of the MWI, and presenting a Strategic Planning Seminar for the MWI.

Constraints

The lack of an HRD unit

Actions that could/ should be taken

In view of the apparent acceptance by the MWI of the CIDA recommendations on Ministry reorganization and after the establishment of an HRD unit, the planned steps need to be addressed by the HRD unit in 1996.

Task 4 Develop the MWI Manpower Plan

Summary of accomplishments

The Manpower Plan task was further revised and approved by USAID. It was to start with translating skills into Arabic in order to compare them to job descriptions recommended by the CIDA study. This would result in identifying the type of training needed to improve the skills of employees. Employees were trained on Oracle in order to have a unified database.

Differences between actual and planned activities

Due to the uncertainty of the current vague MWI institutional structure, the Manpower Plan activity was revised.

Constraints

The lack of an HRD director as well as the delay of announcing and implementing CIDA recommendations resulted in postponing this activity.

Actions that could/should be taken

The HRD Director and staff should be appointed. A local consultant should be subcontracted to carry out the scope of work in the study. More involvement from the HRD working group will be required.

Task 5 Develop and Deliver In-Service Courses

Summary of accomplishments

In addition to the development of the draft 19 core courses which were identified as necessary in the Training Needs Assessment a number of basic computer courses were offered to employees at the six-station computer training center at the Ministry. These courses included Introduction to DOS-Windows, MS-WORD and MS-EXCEL. Four computer trainers were assigned to this activity and were trained in more advanced and specialized courses in order to up-grade the training center by making it possible to offer Advanced EXCEL, AUTOCAD and MS-PROJECT. One of the most significant accomplishments is training the MWI computer division staff on NOVEL Network Operating System which helped them to manage the computer network system in the project.

One of the major identified needs in the TNA was the improvement of English language and technical report writing skills. Ninety engineers received training in Technical Report Writing organized by the American Language Center. Also 74 employees attended four levels of English Language courses.

Differences between actual and planned activities

Under the SOW of this component it was planned to develop audio/visual aids and to appoint and train 4 MWI staff members to support this activity. This task was postponed until qualified staff was appointed. More advanced computer courses were supposed to be developed (Autocad, Advanced Excel and MS-Project).

Constraints

Lack of qualified employees to support this activity and the lack of audio-visual staff in the Public Awareness Unit. Unavailability of incentives to motivate trainers.

Actions that could/should be taken

Complete this task in 1996. A mechanism of allocating incentives for the trainers should be developed.

Task 6 Design New Training Center

Summary of accomplishments

A subcontract was signed with an engineering consulting firm to prepare an architectural design for the MWI training center according to the requirements pre-set by the Ministry. This subcontract was amended to include submitting a complete design for the entire MWI eight floor building which will accommodate all the new Directorates which will be formed when the CIDA study recommendations are implemented.

Differences between actual and planned activities

Two activities were planned under the SOW of this component but were not conducted: (1) Rental of training facilities to be used to conduct in-service training until the training center is constructed and (2) contracting an expert in Educational Facilities Design.

Constraints

(1) Lack of an HRD director and of a Project Manager assigned on this project delayed some of the decisions on the architectural design. This lack also made for poor communication with the engineering firm and the involved parties. (2) The vague or unclear indications concerning future changes in the institutional structure of the Ministry made decisive action impossible.

Actions that could/should be taken

A Project Manager who will provide crucial assistance in the construction phase needs to be assigned to this activity.

Task 7 Develop Phase II HRD Plan

Following the Manpower Planning activity, further development plans for the HRD Unit and the MWI are necessary if the HRD Unit is to function in a responsible way.

Summary of accomplishments

None!

Differences between actual and planned activities

Prepare Year In-Service Training Schedule for years 2 and 3 Elements of this activity are included in the final task under the Manpower Plan above. This activity addresses course scheduling, career planning, etc. for the years immediately following the 1995 plan.

Prepare HRD Management Plan In addition to the coordination and development of training and the training center, the new organization study will require the preparation of a functional statement for the HRD Unit. It will also require the development of plans to ensure that attention is paid to the personnel functions usually conducted by the HRD Unit. These would include forecasting needs, personnel budgeting, recruitment, employment, retention, career planning, payroll, staff morale, and counseling, and retirement counseling.

Prepare Training Center Management Plan The decision to develop a new training center will require the presence of personnel within an HRD Cell, development of training center policy and operational procedures, development of annual budgets, development of staffing plans, and the creation of job descriptions for the center.

Constraints

The lack of an HRD unit in the Ministry.

Actions that could/should be taken

As soon as the HRD unit is established and qualified staff is assigned, the above steps should be carried out.

PUBLIC AWARENESS PROGRAM [Component 4.2]

Objective One

Strengthen capacity of MWI and the Jordan Environment Society (JES) staff to plan supervise and implement public awareness activities that will encourage people to adopt practices which will maximize the use of water and protect the quality of water

Task 1 Implement Out-of-Country Training

Accomplishments during 1995

Select and Send Candidates Candidates from both JES and MWI have taken the English Language (ALI/GU) test and two have attended language training. Five candidates from JES three from JES branches travelled to the United States in October for two and one half weeks to observe community water conservation awareness programs in Florida and California.

Monitor Training Public Awareness worked with the Training Specialist and the subcontractor to arrange the training program.

Differences Between Actual and Planned Activities

Implement Out of Country Training for MWI and JES Staff Two MWI staff need to reach a 200 ALIGU score in order to attend training in 1996. Two more JES Staff will be sent in 1996.

Constraints

If possible more candidates especially women could be sent from the volunteer organizations that have participated in the public awareness campaigns.

Actions that Could/Should be Taken

If more volunteers were to be sent more money would have to be allocated to training.

Task 2 Implement In-Country Training

Accomplishments during 1995

Conduct Computer Training Computer training classes as well as on-the-job training were conducted for seven JES and MWI staff to strengthen the staff's capability for desktop publishing graphic design spreadsheet and general communications. This training helped staff generate computer based fact sheets brochures pamphlets and other mass media material but more training is needed because new staff have been added.

Differences Between Actual and Planned Activities

Implement Management Training Staff members from JES and MWI did not attend in-country management training conducted by the WQIC Project. Because there was a change in staff it was decided that this training would be conducted in 1996.

Conduct Annual Workshop A workshop for 25 people was previously planned for November 1995 to further develop audio-video and communications awareness skills and techniques for the WQIC staff and voluntary organizations. This was delayed until next year 1996 because a new person who will be in charge of working in this area was assigned by MWI in late September.

Constraints

Management training was not offered by the WQIC. In addition, the audio video workshop had to be postponed until 1996 when there would be a budget for production of films and short spots.

Actions that Could/Should be Taken

Because the Public Awareness staff must often work and cooperate with other organizations and volunteers, all MWI and JES staff should be sent to in-country training which contains management, organizational development and team building exercises to help them work cooperatively with others.

Objective Two

To develop, coordinate, implement, and monitor water use campaigns aimed at policy makers, educational institutions, the public and private sector, industries, agriculture, local organizations, local communities, and individuals.

Studies were conducted through WQIC as outlined below to refine the strategies to be used in developing campaigns and to provide the framework for developing demonstrations of water saving devices and practices.

JES and MWI staff developed public awareness strategies and campaigns for water conservation and protection of water quality at three levels. At **Level One**, general awareness was created for the need to conserve water through mass media campaigns. **Level Two** focused on human resources development-- especially leader training to plan and implement the development of community campaigns. At **Level Three**, community campaign activities were implemented by leaders trained in Level Two to facilitate a change in behavior of the general population in water use and protection. The campaigns also were developed in cooperation with other ministries, WQIC components, public and non-governmental organizations, community leaders and individuals.

Task 3 Implement Water Use Behavioral Study

Accomplishments during 1995

Sub-Contractor Conducted Study The pre-campaign study determined the present knowledge, attitudes and practices of water use behavior by using questionnaires and focus group interviews. After 18 months a post-campaign study will endeavor to determine the changes in awareness and practices which have occurred since the pre-campaign study.

Supervise the Study and Refined Strategies MWI and JES staff attended all of the focus group sessions and helped supervise the study. They have reviewed the studies to refine their strategies for 1996. Results of the studies done by others such as RSCN have been reviewed in order to direct future strategies for implementing public awareness campaigns.

Differences Between Actual and Planned Activities

The pre-campaign study did not start until March 1995 because of a delay in obtaining MWI approval. However, after the contract was signed, the study proceeded as planned. A preliminary report was submitted in December.

Constraints

The delay is explained above and no actions need to be taken.

Actions that Could/Should be Taken

None

Task 4 Implement Water Use Practices Study

Accomplishments during 1995

Award Contract The offers were read, approved, and awarded to a subcontractor in September 1995.

The Subcontractor Conducts Study The subcontractor conducted a study and submitted a report which identified water-saving devices for both domestic and industrial use which are available on the local Jordanian market as well as in the United States. After approval of the survey, nine sites were selected.

Supervision of Study The staff worked with the sub-contractor to determine the sites for installation of the devices.

Differences Between Actual and Planned Activities

The installation of the water devices was delayed because of negotiations between the contractor and subcontractor concerning the cost of installing the water meters in the selected sites. Information on materials and kits will be developed after the devices are tested.

Constraints

The subcontractor submitted an offer for the cost of installing the water meters which was not accepted by USAID. Alternatives are being sought to reduce the cost of the proposed installation.

Actions that Could/Should be Taken

MWI staff are working with WAJ to determine if WAJ can install the meters. Otherwise, two additional offers from other contractors for the installation of the water meters will have to be obtained.

Task 5 MWI and JES Staff Develop and Implement Public Awareness Activities

Accomplishments during 1995

Coordination between MWI and JES Staff MWI staff and JES staff have been equally responsible for developing and implementing the public awareness activities. One of the strongest points in the public awareness campaigns has been the cooperation between the MWI and JES. The leaders of the two organizations have been responsible for encouraging this

cooperation JES staff and branches have done a lot of the organization of the events and the MWI staff have cooperated in the organization and presentation of technical information

Coordination of Activities with other Ministries The main cooperative efforts which were started in 1994 among other ministries continued. The Ministries of Education, Youth, Municipal, Rural Affairs, and Environment, Awqaf, Health, Social Development, Higher Education, Information, and the Army and National Security, were involved in working with the campaigns.

Coordination with other Components

- **Water Pollution Component** A workshop was developed in cooperation with this Component on International Water Week in March with the local industries. A poster on pollution prevention in water and a brochure were developed.
- **Irrigation Water Management Component** A workshop was developed in cooperation with this Component on International Water Week in March with the local farmers. Also workshops were conducted in the South Jordan Valley and with the Noor Al Hussein Foundation in the Jordan Valley to work with local farmers.

Coordination with Other Organizations Cooperation was established with the Boy Scouts and Girl Scouts and others as requested. Most of the activities were lectures and seminars on water conservation and water resources in Jordan.

Special Exhibitions Developed for International Water Day and Special Events Displays for International Water Day, March 22, and other events were implemented for the whole week. Programs were developed for this week in cooperation with other components and other organizations. A ceremony on March 22 recognized all of the volunteers who were active in the last year's water awareness campaigns.

On World Environment Day in June a ceremony under the patronage of Queen Noor also honored the volunteers. The staff cooperated with the American Embassy in developing displays for International Earth Day. A Water Festival with the theme "Every Water Drop Counts" held in October and organized with the University of Jordan Faculty of Sports and other university students drew over 2,000 participants.

Posters, fact sheets, computer displays and brochures were available at exhibits to give information on water resources and methods to save and protect water at special events.

Differences Between Actual and Planned Activities

Water Quality Monitoring and MIS When the information systems data bank is operational the information needs to be properly packaged and disseminated to the relevant water-user audiences. The data bank has not been established and this activity will be delayed until this information is available.

Constraints

None

Actions that Could/Should be Taken

The 1996 budget for the MWI needs to include funding for public awareness activities.

6 JES and MWI Staff Develop and Implement Community Awareness Project in Water (APW)

LEVEL ONE -Implement Mass Media Campaigns

Accomplishments during 1995

Develop Information Material and Mass Communications

- *Communications material* A number of informational materials were developed to give information on water resources and water conservation 10 fact sheets 3 pamphlets 5 posters 8 stickers and 3 brochures Public service announcements were cosponsored with non-governmental public awareness efforts School and community competitions with children artists and university students for creating posters songs drama and poems were conducted The winners announced on March 22 The winning productions were reviewed in order to select some for use as campaign material themes The poster for this day was developed from one of the posters submitted by the children
- *Special television spots and programs* Children's programs and spots are being planned with Jordan TV University students have taped an English program which spotlights water conservation with children The beginning script has been prepared and the actual production will take place in 1996 A specialist was assigned to work with the program in September

Differences Between Actual and Planned Activities

Develop Demonstration Program on Water Saving Devices Not completed because the water saving devices study was not finished in time to develop the demonstrations After the study on water use practices and devices is finished displays will be installed at selected sites such as schools public and private buildings or industries throughout Jordan Staff will set up demonstrations and monitor the devices and sites to evaluate effects of the devices

Communications Material Billboards were canceled because after staff explored the costs they felt that the money could be utilized in a better way Film spots were developed with JTV but they have not been completed at this time

Mobile Exhibition Development Mass media displays were to be designed for the materials to be bound in a special plastic form to develop special mobile exhibits in schools communities and for special occasions This was not completed but it is in the design stage

Constraints

Explained above

Actions that Could/Should be Taken

Demonstrations on water saving methods and devices could be proposed by the JES branches and five or six sites selected These sites could be visited by community people or other organizations to gain new ideas on water conservation

LEVEL TWO - TOT and Human Resource Development

Accomplishments during 1995

Trainers who participated in a 1994 TOT Workshop used their skills to work with community leaders in various organizations and groups-- JES branch volunteers Women's Federation Ministry of Education Ministry of Agriculture university students handicapped youth Girl and Boy Scouts and other public and private organizations

Workshops were coordinated with other voluntary organizations schools religious organizations and local communities to develop resources which can be used in campaign activities

In 1995 approximately 1000 leaders attended the workshops and seminars which were held throughout Jordan

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

A better method of follow-up needs to be developed

LEVEL THREE - Establish and Follow-up Community Programs

Accomplishments during 1995

Leaders who were trained in Level Two helped to develop plan and implement community programs JES branches have suggested such subjects as water harvesting and clean-up campaigns at water sites The Women's Federation has worked in with the JES Branches to develop workshops on water conservation They helped coordinate the recognition ceremony for the volunteers under the patronage of Her Majesty Queen Noor The Salt JES Branch helped organize the workshop with Her Royal Highness Princess Basma

The university students organized lectures at the universities with students and in elementary and secondary schools under the title Each One Teach One

It is estimated that approximately 10 000 people were reached in seminars lectures and workshops in 1995 About 50% of the participants were women and girls These number do not include people reached through television exhibits or focus group interviews in the behavioral study

Task 7 Develop a Long Term Operational Plan for Public Awareness

The DAI Public Awareness Specialist MWI and JES staff started to develop a long term operational and sustainable plan for public awareness This plan is outlined in the 1996 Plan of Work It includes nominating a National Committee on public awareness to be headed by a well known public figure using the JES Branches as extended team and developing liaison officers to work with the JES Branches in the governorates

Differences Between Actual and Planned Activities

None

Constraints

None

Actions that Could/Should be Taken

The Plan needs to be finalized in 1996

**Summary Of Expenditures Through December 1995
WQICP Costs By Component**

	WATER MONITORING AND MANAGEMENT	INDUSTRIAL POLLUTION PREVENTION	IRRIGATION MANAGEMENT	WATER MANAGEMENT EDUCATION	TOTAL	
SUBMISSION 1	\$5,995 30	\$2 997 66	\$2,997 66	\$5,995 30	\$17,985 92	
SUBMISSION 2	\$16 172 35	\$8 086 18	\$8,086 18	\$16,172 35	\$48,517 06	
SUBMISSION 3	\$33,939 77	\$16,969 89	\$16,969 89	\$33 939 77	\$101 819 32	
SUBMISSION 4	\$89,032 24	\$44,516 12	\$44,516 12	\$89,032 24	\$267,096 72	
SUBMISSION 5	\$69 643 83	\$50,942 83	\$33 436 28	\$54,266 49	\$208,289 43	
SUBMISSION 6	\$46 531 26	\$37,581 70	\$35,546 16	\$40,886 90	\$160,546 02	
SUBMISSION 7	\$120,509 79	\$92,682 13	\$29,321 36	\$43,259 60	\$285,772 88	
SUBMISSION 8	\$98,986 19	\$25,679 50	\$53,756 19	\$26,281 32	\$204 703 20	
SUBMISSION 9	\$111,562 24	\$22,739 26	\$23,018 12	\$33,303 53	\$190 623 15	
SUBMISSION 10	\$71,827 11	\$84,213 78	\$50,789 99	\$51 610 75	\$258 441 63	
SUBMISSION 11	\$133,901 00	\$96,477 45	\$49,041 71	\$56 241 43	\$335 661 59	
SUBMISSION 12	\$17,080 35	\$38 688 20	\$897 99	\$708 68	\$57 375 22	
SUBMISSION 13	\$26,194 20	\$22 589 59	\$33 461 37	\$50 835 46	\$133 080 62	
SUBMISSION 14	\$55 112 90	\$50 026 65	\$37,641 85	\$43,878 40	\$186,659 80	
SUBMISSION 15	\$80 153 49	\$40,941 08	\$26,352 88	\$32,557 84	\$180,005 29	
SUBMISSION 16	\$85 796 05	\$43,181 81	\$33,898 32	\$55,410 40	\$218,286 58	
SUBMISSION 17	\$113 586 42	\$15,946 12	\$34,468 38	\$32,906 98	\$196,907 90	
SUBMISSION 18	\$113,499 67	\$200,959 75	\$31,019 58	\$104 016 47	\$449 495 47	
SUBMISSION 19	\$108,647 52	\$30,536 23	\$33,795 56	\$53 512 57	\$226 491 88	
SUBMISSION 20	\$221,302 29	\$21 070 24	\$23,379 46	\$27 713 51	\$293 465 50	
SUBMISSION 21	\$138,564 57	\$40 714 55	\$32 653 97	\$54 376 28	\$266 309 37	
SUBMISSION 22	\$99 697 23	\$32,834 02	\$34,896 82	\$25,392 21	\$192,820 28	
SUBMISSION 23	\$122 497 44	\$183 701 16	\$34,823 40	\$82,967 90	\$423,989 90	
SUBMISSION 24	\$145,520 05	\$92 254 97	\$23 512 85	\$37,553 62	\$298 841 49	
SUBMISSION 25	\$133,636 54	\$24 539 87	\$25 920 94	\$64 282 24	\$248 379 59	
TOTAL	\$2 125 753 26	\$1 320 870 74	\$754,203 03	\$0 00	\$1,117,102 24	\$5 451 565 81

WQIC Project
Commodities Procured Under the "Commodities" Line Item

through December, 1995

DESCRIPTION	CODE NO	VOUCHER	DATE	COMP	JD	USD
GIBSON AIRCONDITION	43-40	JD-199	8/17/94	EDUCA	1000 000	1440 92
PORTABLE (OHP)SINON HM 26F	43-40	JD-309	10/20/94	EDUCA	530 000	759 31
SINON (OHP) HP 400	43-40	AJ-JD16	11/3/94	EDUCA	550 000	792 51
GIBSON AIRCONDITION (T/ROOM)	43-40	AJ-JD38	11/17/94	EDUCA	1075 000	1553 47
PANASONIC VIDEO	43-40	AJ-JD77	12/8/94	EDUCA	375 000	541 91
PANASONIC TV	43-40	AJ-JD77	12/8/94	EDUCA	735 000	1062 14
6 COMPUTERS (COMPU DYNE)	43-40	AJ96,138,147	12/18/94	EDUCA	8370 000	11906 12
CANON ZOOM LENS EF70-210MM F3 5-4 5	43-40	AJ-JD170	2/2/95	EDUCA	395 000	567 53
KINDERMANN 2500DATA SLIDE PROJ	43-40	AJ-JD173	2/2/95	EDUCA	450 000	646 55
6 COMPUTER DESKS	43-40	AJ-JD173	2/2/95	EDUCA	492 000	706 90
SUB TOTAL						19977 36
TEMP METER KIT	43-40	DAI/HO	5/31/95	IRRG		501 10
IRRIGATION EQUIPMENTS	43-40	DAI/HO	8/31/94	IRRIG		4727 08
SELEX COPIER MACHINE GR-1650	43 40	AJ-JD230	9/1/94	IRRIG	1150 000	1657 06
2 CRAFT AIRCONDITIONS W/T	43-40	JD258	9/22/94	IRRIG	1170 000	1683 45
ALR-FLYER 486 DX & LASER PRINT	43-40	JD259/AJ48	9/22/94	IRRIG	2570 000	3705 86
SUB TOTAL						12274 55
PHOTOCOPY MACHINE (SELEX) CHAMB	43-40	JD-209	8/25/94	POLLU	1150 000	1671 51
SELEX COPIER MACHINE GR-1650	43-40	AJ-JD238	9/8/94	POLLU	1150 000	1647 56
PANASONIC MULTI SYSTEM VTR	43-40	JD-290	10/6/94	POLLU	455 000	653 74
PANASONIC TV (MOD TC 25V30R)	43-40	JD-290	10/6/94	POLLU	735 000	1056 03
NATIONAL VIDEO CAMERA VHS	43-40	JD-290	10/6/94	POLLU	945 000	1357 76
FIRST COMPUTER 486DX(CHAMBER)	43-40	AJ-JD101	12/22/94	POLLU	1732 000	2463 73
CANON ZOOM LENS EF70-210MM F3 5 4 5	43-40	AJ-JD170	2/2/95	POLLU	395 000	567 53
FAX MACHINE XEROX 7235	43 40	AJ JD173	2/2/95	POLLU	450 000	646 55
KINDERMANN SLIDE PROJECTOR	43 40	AJ JD173	2/2/95	POLLU	450 000	646 55
LASER PRINTER XEROX 4510	43-40	AJ-JD173	2/2/95	POLLU	1715 000	2464 08
DESK TOP 80486 DX 2/66 INTEL	43-40	AJ JD173	2/2/95	POLLU	1732 000	2488 51
HP DESK JET 1200 C/PS	43 40	AJ JD173	2/2/95	POLLU	2600 000	3735 63
LAP TOP POWER EXEC 4 / 32 SL	43 40	AJ JD173	2/2/95	POLLU	4049 000	5817 53
10 BIN SORTER FOR SELEX (CHAMBER)	43 40	AJ-JD289	4/20/95	POLLU	750 000	1098 10

WQIC Project
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SUB-TOTAL						26314 81
PROJECT HATS WITH DESIGHN	43-40	JD-139	7/7/94	PUBLIC	1200 000	1744 18
POSTERS 4 COLORS	43 40	JD- 139	7/7/94	PUBLIC	1300 000	1889 54
EMBASSY CAMERA CENTER	43 40	DAI/HO	7/31/94	PUBLIC		559 75
WQICP LOGO	43 40	AJ JD228	9/1/94	PUBLIC	400 000	576 37
MACINTOSH LC 475 8/250	43 40	JD231	9/1/94	PUBLIC	1387 500	1999 28
MACINTOSH LC 475 8/250	43 40	JD231	9/1/94	PUBLIC	1387 500	1999 28
AL NASHER AL SAHAFI (S/W) JES	43-40	AJ JD237	9/8/94	PUBLIC	700 000	1002 87
AL NASHIR AL SAHAFI 5USERS	43-40	AJ JD94	12/15/94	PUBLIC	1100 000	1564 72
DESIGN ARABIC & ENG WATER MAP	43 40	AJ JD227	3/16/95	PUBLIC	650 000	924 60
6000 WATER MAP POSTERS	43 40	AJ JD227	3/16/95	PUBLIC	1620 000	2304 40
WQICP BROCHURES DESIGN	43 40	AJ JD252	3/30/95	PUBLIC	600 000	874 64
(2000)ENGLISH WATER MAP	43 40	AJ-JD281	4/16/95	PUBLIC	620 000	902 47
3 1BM VRAM TO 2 MB	43 40	AJ-JD 397	6/29/95	PUBLIC	390 000	565 22
3 APPLE MULTIPULE SCAN 17 DISPLAY	43 40	AJ JD 397	6/29/95	PUBLIC	2610 000	3782 61
6 16 MB RAM 60NS 70PIN F/MAC 7100	43 40	AJ-JD 397	6/29/95	PUBLIC	2880 000	4173 91
3 POWER MACINTOSH 7100	43 40	AJ-JD 397	6/29/95	PUBLIC	8352 000	12104 35
5 AIRCONDITIONS (GIBSON) F/JES	43 40	AJ-JD 531	9/21/95	PUBLIC	5125 000	7198 03
POWERED MIXER (459) F/ JES	43 40	AJ-JD 578	10/12/95	PUBLIC	1225 000	1774 85
2 SPEAKER (210) F/ JES	43 40	AJ JD 578	10/12/95	PUBLIC	1020 000	1477 83
WATER FESTIVAL SUPPLIES	43 40	AJ JD 579	10/12/95	PUBLIC	624 200	904 38
POSTAGE STAMP DESIGN AND PRODUCTION	43 40	ADV JD-337	10/15/95	PUBLIC	4900 000	7101 45
CONNECTING VALVES & FITTINGS (WATER SAV DEV)	43 40	AJ-JD 623	11/9/95	PUBLIC	414 000	584 75
(1000) WQICP FOLDERS (4 COLORS)	43 40	AJ JD 651	11/23/95	PUBLIC	425 000	600 28
SUB-TOTAL						56609 76
TI 14 4 DATA/9600 S/R FAX MODEM	43 40	DAI/HO	4/30/94	WATER1		682 00
2 JEEP CHEROKE	43 40	FU 02	6/5/94	WATER1		45950 00
1 JEEP CHEROKE	43 40	FU 04	6/26/94	WATER1		22975 00
COMPUTER TECHNOLOGY INC	43 40	DAI/HO	7/31/94	WATER1		4770 00
40% PAYMENT OF COMP CONTR	43 40	DAI/HO	7/31/94	WATER1		40837 00
2 SHREDDERS	43 40	JD 206	8/25/94	WATER1	640 000	930 23
DATASHOW 16 8M LCD PROJECTION	43 40	DAI/HO	8/31/94	WATER1		4110 00

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WQIC Project
Commodities Procured Under the "Commodities" Line Item

through December, 1995

FORD TEMPO (GRAY)	43-40	FU-09	9/8/94	WATER1		13450 00	
FORD TEMPO (GRAY)	43-40	FU-09	9/8/94	WATER1		13450 00	
BROTHER FAX MACHINE	43-40	AJ-JD257	9/22/94	WATER1	625 000	899 28	
BROTHER FAX MACHINE	43-40	JD257	9/22/94	WATER1	625 000	899 28	
BROTHER FAX MACHINE	43-40	JD257	9/22/94	WATER1	625 000	899 28	
BOOKS FOR WQICP (SALINITY)	43-48	DAI/HO	10/31/94	WATER1		682 00	
BOOKS (WATER ENVIRONMENT)	43-48	DAI/HO	10/31/94	WATER1		2562 67	
SELEX COPIER MACH M GR-6000	43-40	AJ-JD15	11/3/94	WATER1	10150 000	14625 36	
IBM EQUIPMENT	43-40	AJ-JD40	11/17/94	WATER1	7646 940	11050 49	
IBM EQUIPMENT	43-40	AJ-JD40	11/17/94	WATER1	7646 940	11050 49	
IBM EQUIPMENT	43-40	AJ-JD40	11/17/94	WATER1	7646 940	11050 49	
IBM EQUIPMENT	43-40	AJ-JD40	11/17/94	WATER1	7646 940	11050 49	
IBM COMPUTER EQUIPMENT	43-40	AJ-JD76	12/8/94	WATER1	11680 700	16879 62	
IBM COMPUTER EQUIPMENT	43-40	AJ-JD113	12/28/94	WATER1	9843 060	14081 63	
TALLY LASER PRINTER T-9008	43-40	AJ-JD125	1/5/95	WATER1	1240 000	1763 87	
IBM EQUIPMENT (FINAL PAYMENT SSC)	43-40	AJ-JD184	2/9/95	WATER1	2061 310	2961 65	
NETWARE V 4 1 UPGRADE	43-40	AJ-JD 427	7/22/95	WATER1	1695 000	2456 52	
ORIGINAL IBM PS/NOTE/ 25	43 40	AJ-JD 473	8/17/95	WATER1	2068 000	2997 10	
HP OMNIBOOK 4000 CT 486 DX4 100 MHZ	43-40	DAI/HO	8/31/95	WATER1		3497 00	
4 FLIP CHART STANDS	43 40	AJ-JD 519	9/14/95	WATER1	560 000	801 14	
WASHING MACHINE (ELECTROLUX) F/DAI -APT	43-40	AJ-JD 562	10/5/95	WATER1	592 000	831 46	
5 LASER PROCESSING UNIT F/MANNESMAN	43-40	DAI/HO	09/31/95	WATER1		1065 00	
SUB TOTAL						259259 06	
PAYMENT FOR VEHICLE INSUR	43 83	JD-71	5/14/94	WATER2	1000 000	1444 00	
PAYMENT FOR VEHICLE INSUR	43-83	JD-80	5/26/94	WATER2	2000 000	2887 22	
INSURANCE FOR 2 SEADANS	43 83	JD-190	8/10/94	WATER2	992 000	1431 46	
GRAY JEEP NO 4394 INSURANCE	43-83	AJ-JD311	5/3/95	WATER2	1000 000	1457 72	
RED JEEP NO 4388 INSURANCE	43-83	AJ-JD311	5/3/95	WATER2	1000 000	1457 73	
CHAMPANE NO 4389 INSURANCE	43 83	AJ-JD311	5/3/95	WATER2	1000 000	1457 73	
INSURANCE F/2 WQICP VEHICLE (FORD)	43-83	AJ-JD 503	9/4/95	WATER2	992 000	1419 17	
SUB TOTAL						11555 03	
IBM & LASER PRINTER	43 05	JD- 1	3/3/94	WATER3	350 000	507 25	

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WQIC Project
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CAR RENTAL W/DRIVER	43-85	JD 43	3/3/94	WATER3	700 000	1014 49
CAR RENTAL W/DRIVER	43-85	JD-44	3/5/94	WATER3	700 000	1014 49
2 486/PC & LASER RENT	43-05	JD- 6	3/22/94	WATER3	500 000	724 64
CAR RENTAL (MONTH)	49-85	JD-12	3/29/94	WATER3	450 000	538 64
COMPUTER TECH INC	43 40	DAI/HO	3/31/94	WATER3		6334 00
486/PC & LASER PRINT	43-05	JD 23	4/4/94	WATER3	350 000	507 25
2 CARS RENTAL	49 85	JD-19	4/4/94	WATER3	1000 000	1449 28
2 486/PC & LASER PRINTER	43 05	JD 58	4/28/94	WATER3	550 000	786 84
2 486/PC & LASER PRINTER	43 05	JD-67	5/12/94	WATER3	940 000	1346 70
3 486/PC & LASER PRINTER	43 05	JD 102	6/8/94	WATER3	650 000	931 23
3 486/PC & LASER PRINTER	43-05	JD-108	6/16/94	WATER3	640 000	927 54
2 486/PC & LASER PRINTER	43 05	JD-168	7/28/94	WATER3	500 000	722 54
2 486/PC & LASER PRINTER RENT	43-05	JD-207	8/25/94	WATER3	500 000	726 74
2 486/PC & LASER PRINTER RENT	43 05	JD-281	10/1/94	WATER3	500 000	718 39
SUB-TOTAL						18250 02
QUARK XPPRSS	43-40	DAI/HO	5/31/94	WATER4		588 00
COMPUTER SOFTWARE	43 40	DAI/HO	8/31/94	WATER4		15794 00
AMS SYSTEMS	43-40	DAI/HO	9/30/94	WATER4		585 00
STRATIGIC MAPPING S W	43 40	DAI/HO	11/30/94	WATER4		521 00
LOTUS NOTES V3 0 F/W & IBM OS/2 F/W	43-40	DAI/HO	11/30/94	WATER4		526 00
SUPERVISER LOTUS NOTES TRAINING	43 40	AJ JD265	4/6/95	WATER4	522 000	759 83
LOTUS ORGANIZER 20USER LICENS	43 40	AJ-JD265	4/6/95	WATER4	1380 000	2008 73
LOTUS NOTES TRAINING 20 PART	43-40	AJ-JD265	4/6/95	WATER4	2660 000	3871 90
LOTUS NOTES 20USER LICENS	43 40	AJ JD265	4/6/95	WATER4	5938 000	8643 38
ORACLE MAIN FRAME 5 DEVELOPERS	43 40	AJ-JD 450 C	7/31/95	WATER4	14975 000	21484 94
25 USERS (ORACLE) INCLUDING RDBMS & CDE	43-40	AJ JD 450 C	7/31/95	WATER4	17750 000	25466 28
PC INSTALLATIONS CHARGES FOR ORACLE	43 40	AJ JD 502	8/31/95	WATER4	24260 000	34706 72
ANTI VIRUS NLM V2 5 NETWORK 10 USER	43 40	DAI/HO	11/30/95	WATER4		540 00
SUB TOTAL						115495 78
(ITEMS LESS THAN \$ 500 00)						71508 41
TOTAL						591244 76

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WQIC Project
Commodities Procured Under the "Commodities" Line Item

through December, 1995

NOTES	WATER1 = Non-expendable commodities under component 1 Includes all office furniture, books, computers, network installation, vehicles					
	WATER2 = Expendable Insurance on commodities for the WQIC Project					
	WATER3 = Expendable Miscellaneous (Shipping, fees, rentals, printer cartridges, spare parts, computer disks etc)					
	WATER4 = Software for the WQIC Project					
	WATER1, 2 & 3 = Component 1a, Supporting MWI Water Resources Policy and Planning Unit					
	MIS = Component 1b, Water Management Information System					
	WMEQ = Component 1c, Water Monitoring Network Program and Field Data Collection					
	LAB = Component 1d, Upgrading WAJ and JVA Laboratories					
	GWR = Component 1e, Ground Water Recharge/Aquifer Studies					
	POLLU = Component 2b, Industrial Wastewater Discharge Prevention					
	IRRIG = Component 3, Irrigation Water Management					
	EDUCA = Component 4a, Human Resources Development/Training					
	PUBLIC = Component 4b, Public Awareness Program					

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Table 2
Planned and Completed Accomplishments for 1995

Number	Component Name	Description of Accomplishment	Planned Amount	Completed (Estimated)
1 1	Policy and Strategic Planning Studies	Establish policy agenda for MWI	1	0 5
		Prepare policy papers on the most important issues facing the water sector	3	0
		Carry out special studies identified by MWI	3	1
		Develop PDI Directorate	1	0
1 2	Management Information System	Detailed Engineering Design Document for Ministry wide MIS	1	1
		Installation of ORACLE Software	1	1
		Concept of Operation Plan for MIS (Out of scope)	1	0
		Software Implementation Plan for MIS (Out of scope)	1	0
		MIS Training Plan (Overseas)	1	1
1 3	Water Monitoring Network Program	Monitoring Adequacy Document	1	1
		Required Equipment List	1	1
		Monitoring Network Upgrade Plan (6 volumes)	1	1
		Long-term Monitoring Network Plan	1	1
		Installation of Monitoring Network Equipment	1	0
1 4	Central Laboratory Upgrade	New Central Laboratory Conceptual Design	1	1
		Nation-Wide Laboratory Survey Report	1	1
		Installation of Category B1 Equipment (categories)	15	10
		Central Laboratory Refurbishment Plan	1	0
		Long-term Central Laboratory Plan	1	0
		Central Laboratory Training Plan (Overseas)	1	1
1 5	Artificial Recharge Feasibility Study	Training on Category B1 and Existing Equipment	1	0
		Artificial Recharge Data Needs Document	1	1
		Artificial Recharge Study Proposal	1	1
		Artificial Recharge Site Selection Methodology and Criteria	1	1
		Artificial Recharge Data Compilation	1	1
		Artificial Recharge Proposed List	1	1
		Artificial Recharge Priority Sites List	1	1
2 2	Industrial Wastewater Prevention	Recommended Sites and Develop Phase II Plan	1	1
		Conducted PP/WM Audits	10	10

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Table 2
Planned and Completed Accomplishments for 1995

		Conducted Reconnaissance Audits	20	20
		Feasibility studies	4	4
		Coordinate Training Activities of MWI and private sector candidates	10	10
3 2	Irrigation Water Management	Essential Repair Plan Zarqa Carrier 1	1	1
		Annual Preventative Maintenance Plan Zarqa Carrier 1	1	1
		JVA Personnel Trained in Preparation of Maintenance Plans	8	20
		Standard Operating Procedures for Pressurized Pipeline Delivery Systems	1	1
		JVA Personnel Trained in Operation of Pressurized Pipeline Delivery System	8	20
		On-Farm Irrigation Systems Evaluation Manual	1	1
		On-Farm Water Conservation Program	1	1
		Develop implementation plan for pilot IMS	1	1
		Develop implementation plan for pilot WUO	1	0
		Establishment of the pilot WUO and IMS	1	0
		Persons Trained to Conduct Irrigation Management Service Activities	4	1
		On-Farm Irrigation Management Training Materials Prepared	1 set	1 set
		Farmers Trained in On-Farm Irrigation System O&M	10	4
		Conveyance system studies	3	3
		Final Baseline Study Report Prepared and Distributed	1	1
4 1	Water Management Education	Courses developed	40	21
		Minipower Plan prepared	1	0
		Training Center Designed Construction Specifications and Equipment Specifications prepared	3	2
		Equip facilities 6 classrooms 3 offices Shops AV Unit	13 units	3
		Conduct In-Service Training for MWI staff	590	692
		Candidates sent Overseas for training- Comp 1 Comp 2 Comp 3 comp 4 1 comp 4 2	24	41
		Produce up to 20 videos and train four staff in Production Techniques	24	0
4 2	Public Awareness	Pre Campaign Study Behavioral Study of Water Users	1	1
		Distribute and Water-Saving Devices Study	1	1
		Workshops with Community Leaders	12	16
		TV Spots and TV documentary film	16	13
		Posters Fact Sheets Brochures Stickers & Pamphlets on Water Resources Conservation and Protection produced	30	25
		Seminars and Forums	0	30
		Lectures	0	60
		Special Events	3	6

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Table 3
WQIC Publications List

Title	Report Number	Date	Author (s)	Description
Water Quality Monitoring and Management				
Plan and SOW for Policy Agenda Item	3114-94-1a-01	Aug 94	Max Goldensohn	Action plan for policy development
Management Information Systems Report	3114-94-1b-01	Dec 94	SAIC	Unified MIS for all MWI functions
Detailed Engineering Design & Implementation Report	3114-95-1b-02	Aug 95	SAIC	MWI MIS Final Report
Monitoring Network Objectives Statement	3114-94-1c-01	Sep 94	Working Group	Program Objectives
Monitoring Network Survey Document	3114-94-1c-02	Dec 94	Working Group	Summary of Water Monitoring Sys
Water Monitoring System Adequacy Report	3114-95-1c-03	Apr 95	SAIC Working Gr	
Water Monitoring System Upgrade Plan Vol 1	3114-95-1c-04	Aug 95	SAIC Working Gr	Upgrade Plan
Water Monitoring System Upgrade Plan Vol 2	3114-95-1c-04	Aug 95	SAIC Working Gr	Monitoring System Procedures
Water Monitoring System Upgrade Plan Vol 3	3114-95-1c-04	Aug 95	SAIC Working Gr	Zarqa River Basin Surface Water Qual Mon Progr
Water Monitoring System Upgrade Plan Vol 4	3114-95-1c-04	Aug 95	SAIC Working Gr	Zarqa River Basin Surface Water Resources Mon Prot
Water Monitoring Syst Upgrade Plan App D Vol 5	3114-95-1c-04	Oct 95	SAIC Working Gr	Aquifer Ground Water Quality
Water Monitoring Syst Upgrade Plan App E Vol 6	3114-95-1c-04	Oct 95	SAIC Working Gr	Aquifer Ground Water Level
Assessment & Evaluation of the Central Laboratory	3114-94-1d-01	Aug 94	Ferdesh Moghadami	Assessment and recommendations
Assessment & Evaluation of JVA Laboratory	3114-95-1d-02	Jun 95	SAIC	Eval of facility conditions personnel
Conceptual Design for CL of the WAT	3114-95-1d-03	Aug 95	F Moghadami	Construction consolidation of CL
Artificial Recharge Objectives Statement	3114-94-1e-01	Sep 94	Working Group	Program Objectives
Artificial Recharge Data Needs	3114-95-1e-02	Jun 95	Working Group	
Industrial Pollution Prevention				
Background Material Potish Industry	3114-94-2a-01	Aug 94	Harza	
Background Material Phosphate Industry	3114-94-2a-02	Aug 94	Harza	
Background Material Slaughterhouse Industry	3114-94-2b-03	Sept-94	SAIC	
Background Material Sulfur Industry	3114-94-2b-04	Sept 94	SAIC	
Audit Evaluation Potish Industry	3114-94-2b-05	Nov 94	Harza	
Audit Evaluation Phosphate Industry	3114-94-2b-06	Nov 94	Harza	
Thermal Electric Power Plant Industry	3114-94-2b-07	Dec-94	Harza	Audit Report Background Material
Refinery Industry	3114-94-2b-08	Dec 94	Harza	Audit Report Background Material
Audit Evaluation Ammonium Sulfate Slaughterhouse	3114-94-2b-09	Nov 94	SAIC	
Audit Evaluation Jordan Sulphate Chemicals Co	3114-94-2b-10	Nov 94	SAIC	
Paper and Carbon Dioxide Factories Co (Rec Visit)	3114-94-2b-11	Nov 94	R Abdel Khaleq	}
Tanning Company (Rec Visit)	3114-94-2b-12	Nov 94	R Abdel Khaleq	}

Table 3
WQIC Publications List

Title	Report Number	Date	Author (s)	Description
Cement Factories Company (Rec. Visit)	3114 94 2b 13	Nov 94	R Abdel Khaleq	}
Coca Cola Company (Rec. Visit)	3114 94 2b 14	Nov 94	R Abdel Khaleq	}
Le & Aerated Water Company (Rec. Visit)	3114 94 2b 15	Nov 94	R Abdel Khaleq	}
Arab Chemical Detergent Industries (Rec. Visit)	3114 94 2b-16	Nov 94	R Abdel Khaleq	} Assessment of feasible
Pipes Manufacturing Company (Rec. Visit)	3114 94 2b 17	Nov 94	R Abdel Khaleq	} alternatives for PP WM and
Bect Company (Rec. Visit)	3114 94 2b 18	Nov 94	R Abdel Khaleq	} water conservation practices
Modern Rising Sesame Facility (Rec. Visit)	3114 94 2b 19	Nov 94	R Abdel Khaleq	} in Jordan
Poultry Processing and Marketing (Rec. Visit)	3114 94 2b 20	Nov 94	R Abdel Khaleq	}
United Pharmaceutical Mfg Co (Rec. Visit)	3114 94 2b 21	Nov 94	R Abdel Khaleq	}
The Arab Iron & Steel Ind (Rec. Visit)	3114 94 2b 22	Nov 94	R Abdel Khaleq	}
Petroleum Refinery (Rec. Visit)	3114 94 2b 23	Nov 94	R Abdel Khaleq	}
United Chemical Company Ltd (Rec. Visit)	3114 94 2b 24	Nov 94	R Abdel Khaleq	}
Al Hussein Thermal Power Station	3114 95 2b 25	Mar 95	Harza	Audit Report
Jordan Petroleum Refinery	3114 95 2b 26	Mar 95	Harza	Audit Report
Vegetable Oil Refining Industry	3114 95 2b 29	Apr 95	SAIC	Audit Report
Jordan Iron & Steel Industries Co	3114 95 2b 30	Apr 95	SAIC	Audit Report
Jordan Woisted Mills Co	3114 95 2b 31	Mar 95	R Abdel Khaleq	Recon. Visit
Jordan Narrow Fabric Co	3114 95 2b 32	Mar 95	R Abdel Khaleq	Recon. Visit
Yeast Industry	3114 95 2b 33	Mar 95	Harza	Audit Report Background Material
Brewery Industry	3114 95 2b 34	Mar 95	Harza	Audit Report Background Material
Jordan Yeast Industries	3114 95 2b 35	Apr 95	Harza	Audit Report
Arab Brewery Company	3114 95 2b 36	Apr 95	Harza	Audit Report
Training Courses in Pollution Prevention	3114 95 2b 37	Mar 95	Harza, DA	Manual on US Short Term Training
Aqaba Indust. Complex Jordan Phosphate Mining	3114 95 2b 38	Jul 95	MWI WAJ	Reconnaissance Visit
Univ. Electroplating & Univ. Metal Extrusion	3114 95 2b 39	Jul 95	R Abdel Khaleq	Reconnaissance Visit
Lead Acid Batteries United Industries Corp	3114 95 2b-40	Jul 95	R Abdel Khaleq	Reconnaissance Visit
Jordan Yeast Industries	3114 95 2b-41	Oct 95	Harza	Feasibility Study
Jordan Petroleum Refinery	3114 95 2b-42	Oct 95	Harza	Feasibility Study
Universal Modern Industries (Veg. Oil Refining)	3114 95 2b-43	Oct 95	Harza	Feasibility Study
Sulpho Chemicals Company	3114 95 2b-44	Oct 95	Harza	Feasibility Study
Design & Assist with Implement. & Financial Mech.	3114 95 2b-45	Dec 95	DAI	Assess Financial mechanism to assist Industries

Table 3
WQIC Publications List

Title	Report Number	Date	Author (s)	Description
/ Upper River Conveyance Study	3114 95-31 01	Apr 95	Hirzi & CC	Part 1 Data Collection
/ Upper River Conveyance Study	3114 95-31 02	May 95	Hirzi & CC	Part 2 Data Evaluation
Need Ass. for An Irrigation Management Service	3114 94-3b 01	Nov 94		Assess needs for IMS
Opps. & Options for Participatory Irrigation Management in Central Jordan Valley	3114 95-3b 02	Jan 95	P. Reiss & IVA	
Survey of On Farm Water Management in J. Valley	3114 95-3b 03	Apr-95	DAI & IVA	
Promoting Water Conserv. by Trg. J.V. Farmers	3114 95-3b 04	Apr 95	D. Kuhnle, DAI	
Irr. Management & Water Quality in the Central J.V.	3114-95-3b 05	Apr 95	UOJ W&ER&S	Baseline Survey
Achieving Sustainable Irr. Water Conservation	3114 95-3b 06	Dec 95	R. Hagan	
Water Management Education				
Water Management Education Phase I Action Plan	3114 94-4a 01	Mar 94	Robert Smail	Plan for Phase I development
Creation of a Human Resources Development Unit	3114 94-4a 02	Apr 94	Robert Smail	Discuss needs and org. functions
Human Resources Development Policy Paper	3114 94-4i 03	Apr 94	Robert Smail	Sets out proposed IIRD policies
National Training Management Plan	3114 94-4a 04	May 94	Robert Smail	Summary of Phase I action plan
Empower Planning Study Proposal	3114 94-4i 05	Jun 94	Robert Smail	Approach to Phase II development
Training Needs Assessment	3114 94-4i 06	Sep 94	Robert Smail	Results of field surveys
Administrative/Management				
Quarterly Report January-March 94	3114 94 00 01	Apr 94	DAI Team	Report on Progress for Quarter
Annual Workplan and Life of Project Plan	3114 94 00 02	Jun 94	DAI Team	
Quarterly Report April-June 94	3114 94 00 03	Jul 94	DAI Team	Report on Progress for Quarter
Quarterly Report July-Sept 94	3114 94 00 04	Oct 94	DAI Team	Report on Progress for Quarter
1995 Annual Work Plan	3114 94 00 05	Dec 94	DAI Team	
Quarterly Report January-March 1995	3114 95 00 06	Apr 95	DAI Team	
Automation Plan for WQIC Project	3114 95 00 07	Jun 95	DAI Team	
Quarterly Report April-June 1995	3114 95 00 08	Jun 95	WQIC Team	Report on Progress for Quarter
Quarterly Report July-September 1995	3114 95 00 09	Sep 95	WQIC Team	Progress for the Quarter
1996 Workplan	3114 95 00 10	Dec 95	DAI Team	
Review and Planning workshop	3114 95 00 11	Nov 95	K. Alison, IRG	Major Accomplishments of WQIC to date

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Table 3
WQIC Publications List

Title	Report Number	Date	Author (s)	Description
Newsletter 1		May 94	DAI Team	
Newsletter 2		Jun 94	DAI Team	
Newsletter 3		Jul 94	DAI Team	
Newsletter 4		Aug 94	DAI Team	
Newsletter 5		Sep 94	DAI Team	
Newsletter 6		Oct 94	DAI Team	
Newsletter 7		Nov 94	DAI Team	
Newsletter 8		Dec 94	DAI Team	
Newsletter 9		Jan 95	DAI Team	
Newsletter 10		Feb 95	DAI Team	
Newsletter 11		Mar 95	DAI Team	
Newsletter 12		Apr 95	DAI Team	
Newsletter 13		May 95	DAI Team	
Newsletter 14		Jul 95	DAI Team	
Newsletter 15		Aug 95	DAI Team	

Table 4
Water Quality Improvement and Conservation Project

In-Country Training
October-December

Title	Type	Length	Instructor	Cost (JD)	Women			Men			Total Participants		
					MWI	JVA	WAJ	Other	MWI	JVA		WAJ	Other
Dos-Windows	Computer	10h	MWI Trainers		1	5	4		1	12	33		56
Microsoft Word	Computer	10h	MWI Trainers		1	2	4		2	6	17		32
Microsoft Excel	Computer	10h	MWI Trainers		4	3	2		1	8	18		36
Advanced Oracle	Computer	60h	CCS		2	1			3	3	7	1	17
DBA Oracle	Computer	60h	CCS		2	1			1	1	5	1	11
English Courses	Language	48h	MLC	3,420		1	8		2	9	28		48
TOTAL					10	13	18		10	39	108	2	200

In-Country Training
Cumulative Training Todate

Title	Women				Men				Total Participants	Cum Part Days
	MWI	JVA	WAJ	Other	MWI	JVA	WAJ	Other		
Computer Courses	48	64	71	4	86	124	267	11	675	3375
English Courses	1	1	3		1	4	14		74	7104
Technical Writing	5	4	5		12	23	41		90	1080
TOTAL	44	57	69	4	91	121	242	9	687	11559

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Table 5

ACTION MEMORANDA

Number	Subject/Title	Date Prepared	Date MWI Approval	Date AID Approval
1	WATER RESOURCES MONITORING & MANAGEMENT			
1-01	Short Term Laboratory Upgrade Assessment Specialist	4/16/1994	4/20/1994	4/24/1994
1-02	Short Term Water Monitoring Specialist	4/15/1994	4/15/1994	Postponed
1-03	Information Systems User Needs Survey Specialist	4/15/1994	4/15/1994	4/24/1994
1-04	Policy Agenda - STTA	6/22/1994	6/28/1994	7/20/1994
1-05	Expansion of Laboratory Upgrade SOW	8/02/1994	8/04/1994	8/08/1994
	<i>Amendment 1 - SOW for JVA Lab Upgrade</i>	8/20/1994	8/23/1994	8/25/1994
1-06	Short-Term Network Administrator	11/09/1994	11/09/1994	11/16/1994
1-07	Policy Team - local STTA	1/02/1995	1/03/1995	1/08/1995
1-08	Duckweed	12/26/1994	12/26/1994	12/27/1994
1-09	MIS detailed design	1/02/1995	1/02/1995	1/05/1995
1-10	Nationwide lab management survey	1/22/1995 4/04/1995	1/24/1995 4/06/1995	4/11/1995
	<i>Amendment 1 - Replacing Moghadami with Sood</i>	8/29/1995	Cancelled	
1-11	Policy study - approval of Team Leader & local staff	1/15/1995	1/15/1995	1/17/1995
1-12	Conceptual Design of Central Laboratory	1/22/1995 4/04/1995	1/24/1995 4/06/1995	4/11/1995
1-13	Candidates for Detailed Design of the MIS	3/01/1995	3/06/1995	3/12/1995
	<i>Amendment # 1 Rearranging staff effort levels</i>	3/26/1995	3/30/1995	4/02/1995
1-14	Policy Team - local and American STTA	4/01/1995	4/10/1995	4/13/1995
1-15	Extension for Computer Management Systems Expt	4/13/1995	4/16/1995	4/25/1995
1-16	Approval of MIS Candidate	6/07/1995	6/10/1995	6/14/1995
1-17	Automation Plan for WQIC Project	6/22/1995	6/24/1995	Pending

Table 5

1-18	Central Laboratory - Technical Editor	7/02/1995	7/08/1995	7/18/1995
1-19	Policy Team - extension of local consultants	7/08/1995	7/26/1995	7/27/1995
1-20	Allocation for time for Russ extension	8/19/1995	8/20/1995	8/30/1995
1-21	PADT Team Recruitment	11/02/1995	11/02/1995	12/10/1995
1-22	SAIC Support for Review of Laboratory Equipment	12/16/1995	12/27/1995	12/28/1995
2	INDUSTRIAL POLLUTION PREVENTION			
2-01	Harza's Short-Term Consultants Services	6/08/1994	6/14/1994	6/14/1994
2-02	Establishing Budget for PPO	4/19/1994 6/20/1994	6/25/1994	6/28/1994
2-03	SAIC's short-term consultant services	6/30/1994	7/2/1994	7/11/1994
2-04	Change in Audit	8/21/1994	8/22/1994	8/22/1994
2-05	Revised Budget for PPO (<i>Amendment No 1</i>)	10/05/1994	10/05/1994	10/16/1994
2-06	Industrial Auditor for Audit nos 5 & 6	10/18/1994	10/18/1994	10/19/1994
2-07	Replacement of Auditor for 7 & 8	11/06/1994	11/06/1994	11/06/1994
2-08	WEF Training	16/04/1995	4/17/1995	4/25/1995
2-09	Feasibility Study - IWDP	5/02/1995	5/06/1995	5/15/1995
2-10	CIERA/WEF for Pro Bono Candidates	5/31/1995	6/04/1995	6/04/1995
2-11	Candidates for Slaughterhouse Ind Training	5/31/1995	6/04/1995	6/04/1995
2-12	Assistance in Implementation of Financial Ass Mech	9/11/1995	9/14/1995	9/18/1995
2-13	PP Local Training Program	9/16/1995	9/19/1995	9/21/1995
2-14	First Demonstration Program	11/01/1995	11/04/1995	11/26/1995
2-15	Kodukul and Dencker	12/03/1995	12/06/1995	12/10/1995

Table 5

3	IRRIGATION WATER MANAGEMENT			
3-01	Short Term Water users Organization Specialist	4/21/1994	4/21/1994	4/24/1994
3-02	Subcontract for the Zarqa River Conveyance Study	6/15/1994	6/18/1994	6/22/1994
3-03	Subcontract for completion of the Baseline Survey	5/17/1994	5/31/1994	6/07/1994
3-04	Agricultural Communications Specialist	12/10/1994	12/14/1994	12/28/1994
3-05	Equipment for Irrigation Water Management	8/09/1994	8/13/1994	8/16/1994
3-06	Short Term Jordanian Consultants	9/25/1994	10/27/1994	10/30/1994
3-07	Training and Demonstrations Subcontract	12/10/1994	12/14/1994	12/27/1994
3-08	Irrigation Management Equipment	1/11/1995	1/11/1995	1/17/1995
3-09	Pipeline Operations & Maint Specialist	4/04/1995	4/04/1995	4/11/1995
3-09	(Amendment 1) Expanding Pipeline O&M SOW	7/31/1995	8/03/1995	8/07/1995
3-10	Recess on WUO Farmer training and Behavioral Study	8/19/1995	8/20/1995	8/20/1995
3-11	Goldensohn Nov 95 trip	11/01/1995	11/02/1995	Postponed
3-12	Replacement of Hurzi employee	11/02/1995	11/04/1995	11/07/1995
3-13	Water Quality Monitoring Equipment	11/25/1995	Pending	
4	WATER MANAGEMENT EDUCATION			
4-01	Recruitment of Human Resources Development (HRD) Advisor (Jordanian)	4/20/1994	4/20/1994	4/24/1994
4-02	Third Country Training	1/03/1995	1/03/1995	1/10/1995
4-03	Academic Training	4/21/1994	6/04/1994	7/10/1994
4-04	Purchase order for HRD	6/07/1994	6/15/1994	6/19/1994
4-05	HRD STTA	7/03/1994	7/07/1994	7/18/1994
4-06	Manpower plan implementation	Cancelled		

Table 5

4r-07	Trg course Impr of Report Writing for Engineers	8/02/1994	8/07/1994	8/08/1994
4a-08	Short term training for Comp 2 - MWI	9/10/1994	9/13/1994	10/05/1994
4a-09	Curriculum Development Activity Comp 4r-2	8/16/1994	9/13/1994	9/18/1994
4r-10	Short Term Training for Comp 2 - Chamber	9/17/1994	9/29/1994	APPROVED
4a-11	Short Term Training for Comp 3	9/11/1994	9/13/1994	9/22/1994
	<i>Amendment # 1</i>	3/01/1995	3/15/1995	3/29/1995
	<i>Amendment # 2</i>	8/01/1995	8/08/1995	8/20/1995
4r-12	Short Term Training for Comp 3	9/11/1994	9/12/1994	9/22/1994
	<i>Amendment # 1</i>	3/09/1995	3/15/1995	3/29/1995
	<i>Amendment # 2</i>	4/25/1995	4/29/1995	5/07/1995
4r-13	Local Support for Curriculum Dev Coordinator	9/18/1994	9/20/1994	9/25/1994
4a-14	Training Courses Imp of Report Writing for Eng	2/05/1995	2/15/1995	2/23/1995
4a-15	Training Courses Imp of English Language for MWI	10/25/1994	11/05/1994	11/16/1994
4r-16	Curriculum Development	12/14/1994	12/14/1994	1/05/1995
4r-17	Training Center design	12/14/1994	12/14/1994	12/28/1994
	<i>Amendment # 1</i>	4/27/1995	Cancelled	
4r-18	Manpower Planning for MWI	1/15/1995	1/15/1995	2/14/1995
4a-19	ASAE Microirrigation Conference	2/18/1995	3/01/1995	3/07/1995
	<i>Amendment # 1 (cancelled)</i>	3/21/1995	3/21/1995	3/23/1995
	<i>Amendment # 2</i>	3/26/1995	3/27/1995	3/27/1995
4r-20	Extension of Curriculum Dev Coordinator	3/30/1995	4/01/1995	4/02/1995
4r-21	Minister and SG trip	3/10/1995	3/14/1995	3/23/1995
	<i>Amendment # 1</i>	3/26/1995	3/27/1995	3/27/1995
4a-22	Training - Component 2 - PP/Wastewater Minimization	3/09/1995	3/15/1995	3/23/1995
4r-23	Contract funded travel for SG and Minister	3/26/1995	3/27/1995	3/27/1995
4r-24	Participant training - Component 2 PP/W M	4/10/1995	4/12/1995	4/11/1995
4r-25	Visit to Egyptian Drainage Res Institute	4/10/1995	4/12/1995	4/12/1995
4r-26	Egyptian Water User Association Visit	4/10/1995	4/12/1995	4/13/1995
4r-27	University Lecture Group	4/15/1995	4/15/1995	Not Approved
4r-28	Eng Language Tutoring for SG JLA	4/19/1995	5/02/1995	5/04/1995

Table 5

4a-28	(Amendment 1) Eng Language Tutoring	7/27/1995	7/30/1995	8/02/1995
4a-29	A&E firm for Training Center design	5/21/1995	5/22/1995	6/04/1995
4a-30	Water Monitoring System Training	9/09/1995	9/09/1995	9/13/1995
4a-31	Central Laboratory Training	9/09/1995	9/09/1995	12/10/1995
4a-32	MIS Management Training	9/07/1995	9/10/1995	9/13/1995
4a-33	JES public awareness training	9/26/1995	9/30/1995	10/01/1995
	(Amendment # 1)	10/02/1995	10/02/1995	10/04/1995
4a-34	MWI community Development/public awareness training	10/03/1995	10/08/1995	10/09/1995
4a-35	Obelisk travel	8/08/1995	8/08/1995	8/10/1995
4a-36	Travel for JES Vice President	8/20/1995	8/22/1995	8/24/1995
4a-37	JES Candidates/Public Awareness Training	10/17/1995	10/17/1995	10/20/1995
4b-01	Money for Public Awareness material	6/04/1994	6/04/1994	6/05/1994
4b-02	Public Awareness Workshop	6/08/1994	6/14/1994	6/19/1994
4b-03	Behavioral Study SOW	9/12/1994	9/13/1994	10/25/1994
4b-04	Water Savings Devices Study SOW	3/13/1995	3/14/1995	3/27/1995
5	GENERAL ADMINISTRATION			
5-01	Country Clearance	2/17/1994		2/17/1994
5-02	Country Clearance & Travel authorization for TDY Staff	2/19/1994		2/22/1994
5-03	Country Clearance & Travel Auth	2/20/1994		2/23/1994
5-04	Vehicle Rental	2/23/1994		2/24/1994
5-05	Housing Allowance/Temporary Lodging Allowance	3/02/1994		3/09/1994
5-06	Administrative Assistant	3/03/1994		3/08/1994
5-07	Admin Staff - Project Secretary	3/03/1994		3/08/1994

Table 5

1-08	Admin Staff - Accountant	3/03/1994		3/07/1994
1-09	Driver/Expeditor	3/03/1994		3/07/1994
1-10	Approval for Team Building & Start-up Workshop & country clearance for staff	3/09/1994		3/09/1994
1-11	Admin Staff - Accountant	3/23/1994		Not approved
1-12	Admin Staff - Accountant	3/24/1994		3/24/1994
1-13	Guest House	5/02/1994	5/02/1994	5/05/1994
1-14	Muller Resignation	5/02/1994	5/02/1994	Concurred
1-15	Project Support Staff	5/07/1994	5/07/1994	5/08/1994
1-16	Working hours for Expatriates	5/04/1994	5/04/1994	5/09/1994
1-17	Void			
1-18	Six-day work week for STTA (Failed to DAI/B June 13)	6/06/1994	6/07/1994	6/08/1994
1-19	Rental Computers	6/05/1994		6/23/1994
1-19a	Rental Computers	6/16/1994		6/19/1994
1-20	Salary approval/ST Lab Upgrade Specialist	5/19/1994		6/02/1994
1-21	Travel authorization & country clearance for SAIC rep	5/19/1994		5/26/1994
1-22	Local Hire Salaries	6/01/1994	6/01/1994	6/02/1994
1-23	Approval for ST Management Info Specialist	6/01/1994	6/01/1994	6/01/1994
1-24	Travel Auth & Country Clearance for John Leo	6/08/1994	6/08/1994	6/12/1994
1-25	Travel Auth & Country Clearance for Pollution Prevention Spec's Dependents	6/08/1994	6/08/1994	6/16/1994
1-26	Approval for Del-Santos LTTA (HO action)	6/13/1994		6/19/1994
1-27	Task 7 of Subcomponent 3b Water Pricing Study	6/13/1994	6/14/1994	Concurred
1-28				
1-29	Baseline Survey	6/29/1994	7/11/1994	7/18/1994
1-30	Freight for Dario Del Santo	6/22/1994	6/22/1994	6/23/1994
1-31	Ken Country Clearance	6/28/1994	-	6/30/1994
1-32	Training Report Approval	7/06/1994	7/06/1994	Concurred
1-33	Dario's country clearance	7/12/1994	-	7/17/1994

Table 5

5-34	Appointment of a Deputy COP	7/17/1994	7/31/1994	8/08/1994
5-35	R&R Travel for R Small	7/25/1994	7/31/1994	Not Approved
5-36	Phase I for Developing MWI Policy Agenda	7/28/1994	7/28/1994	8/01/1994
5-37	Travel of Chief of Party	8/18/1994	8/21/1994	8/25/1994
5-38	Sub-Contract for computer training	7/30/1994	8/04/1994	8/09/1994
5-39	Report Writing Training	Cancelled		
	Travel Auth for Industrial Auditor	8/03/1994	-	8/07/1994
5-41	MIS Specialist Departure from Post (John Loo)	8/10/1994	8/10/1994	8/10/1994
5-42	Dario's family country clearance	8/14/1994	-	8/22/1994
5-43	Travel of Project Coord & COP	8/18/1994	8/21/1994	9/05/1994 (Partial)
5-44	Travel & Country Clearance for Industrial Auditor	8/31/1994	-	9/08/1994
5-45	Subcontract Agreement with RSS	9/07/1994	9/08/1994	9/15/1994
5-46	Berg and Kager Clearance	9/18/1994	-	9/19/1994
5-47	Team Building & Progress Review Workshops	9/29/1994	10/12/1994	Cancelled
5-48	Travel of Project Coordinator	10/6/1994	10/12/1994	10/13/1994
5-49	Approval for Water Users Organization Expert	10/20/1994	10/20/1994	10/25/1994
5-50	Travel Auth & Country Clearance for IMS Spec	10/13/1994	-	10/16/1994
5-51	Rest and Recreation Travel (Colleen Ross Shawn)	12/03/1994	12/07/1994	12/07/1994
5-52	Housing Allowance	10/29/1994	-	Not approved
5-53	Country clearance & Travel Auth for Karen Lisle	10/25/1994	-	10/26/1994
5-54	Home Office Backstopper	1/02/1995	1/03/1995	Not Approved
5-55	Journey and Waldron country clearance	12/24/1994	-	12/27/1994
5-56	DA subcontract (HO)	12/09/1994	-	APPROVED
5-57	Behavioral sub contract	2/09/1995	28/2/1995	3/06/1995
5-58	CC/TA for PADT Leader	1/15/1995	-	1/18/1995
5-59	Extension/Replacement of AA	2/20/1995	28/2/1995	3/07/1995
5-60	Short-Term Information Systems Specialist	2/07/1995	28/2/1995	3/07/1995
5-61	TA/CC for Krishna Murthy	2/23/1995	-	2/28/1995
5-62	Approval of MLC Subcontract	3/6/1995	3/6/1995	5/15/1995

Table 5

5-63	Darrin Kuhnle as Ag Communications Specialist	3/8/1995	3/8/1995	3/13/1995
5-64	CC/TA for Kuhnle	3/12/1995	-	3/14/1995
5-65	Subcontract for Training and Demonstrations	3/21/1995	3/21/1995	3/29/1995
5-66	Internal Audit	4/01/1995	4/02/1995	4/12/1995
5-67	Information Systems Experts	3/30/1995	4/01/1995	4/02/1995
5-68	CC/TA for MIS Team	3/30/1995	-	4/03/1995
5-69	CC/TA for Peter Reiss	3/30/1995	-	4/03/1995
5-70	CC/TA for Compliance Study Specialists	4/05/1995	-	4/05/1995
5-71	CC/TA for Information Systems Experts	4/13/1995	-	4/17/1995
5-72	Management Visit	5/02/1995	5/04/1995	5/08/1995
5-73	CC/TA for Tony Barclay	5/04/1995	-	5/08/1995
5-74	AA (Mette) Approval and FO-PA promotion	5/14/1995		5/15/1995
5-75	CC/TA Artificial Recharge Specialist	5/27/1995		5/29/1995
5-76	Management Visit (Max Goldensohn)	6/05/1995	Cancelled	
5-77	CC/TA for MIS Team	6/04/1995	-	6/05/1995
5-78	Modification of RSS contract	6/08/1995	6/12/1995	6/18/1995
5-79	CC/TA for MIS specialist	6/07/1995	-	6/13/1995
5-80	CC/TA for Karen Lisk	6/14/1995	-	6/18/1995
5-81	Dario request for R&R	6/14/1995	6/17/1995	6/22/1995
5-82	CC/TA Alex Vircol - Harza Engineering	6/17/1995	-	6/25/1995
5-83	Compliance Study - Add David Bogan	6/21/1995	6/22/1995	6/30/1995
5-84	Ring air shipment of HHE	6/23/1995	-	7/02/1995
5-85	Pipeline Specialist - Martin Roche approval	7/04/1995	7/08/1995	7/20/1995
5-86	Smriti - large monetization	7/18/1995	7/18/1995	7/20/1995
5-87	Approval to hire permanent secretary - L. Shabnam	7/27/1995	8/03/1995	8/15/1995
5-88	Curriculum Development Subcontract	7/10/1995	7/28/1995	8/09/1995
5-89	Human Resources Manager	8/06/1995	8/16/1995	8/20/1995
5-90	Water Devices Contract	8/12/1995	8/15/1995	8/24/1995
	(Amendment # 1) Water Device Sub-Contract	11/07/1995	11/09/1995	Pending
5-91	Smriti-permission send all HHE by air	8/12/1995	8/14/1995	8/24/1995

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Table 5

5-92	CC/TA for P. Reiss	8/22/1995	-	8/30/1995
5-93	CC/TA for Alexis Vircol - Harza Engineering	8/23/1995	-	8/30/1995
5-94	Training Center design contract	8/26/1995	8/26/1995	8/27/1995
5-95	Jordan TV contract for film production	9/04/1995	9/11/1995	9/13/1995
5-96	September Water and Environment Workshop	9/10/1995	9/11/1995	9/12/1995
5-97	CC/TA for Mckonc and Hannay	9/16/1995	-	9/20/1995
5-98	Acting AA and Work Plan workshop	9/22/1995	9/24/1995	9/26/1995
5-99	CC/TA for Faridh Moghadomi	9/23/1995	-	9/25/1995
5-100	CC/TA for SAIC Senior System Engineer	9/23/1995	-	Cancelled
5-101	WQIC Workplanning workshops	9/27/1995	9/30/1995	10/01/1995
5-101a	Revised Administrative Budget for WQIC Workplanning Workshop	12/5/1995	-	12/12/1995
5-102	Abu Ajameh appointment as Senior Advisor - Planning	10/1/1995	10/01/1995	10/09/1995
5-103	Local consultants for PP/WM	10/17/1995	10/17/1995	10/30/1995
5-104	CC/TA for Martin Roache	10/10/1995	-	10/12/1995
5-105	CC/TA AR component Dr. M. Chchata	10/11/1995	-	10/12/1995
5-106	CC/TA for Sophia Khelifi	10/21/1995		10/30/1995
5-107	CC/TA for Kathy Alison	11/01/1995	-	
5-108	Travel of Chief of Party for the DAI Staff Conference	12/6/1995	12/10/1995	12/12/1995
5-109	CC/TA for Pro-Bono candidates	12/09/1995	-	12/13/1995
5-110	CC/TA for Pete Saunders Zarqa River Convey Study	12/23/1995	-	Pending
5-111	Tech Support to Design US Study Tour	12/30/1995		
6	PROCUREMENT			
6-01	Approval to purchase 4-wheel drive vehicles in country	3/13/1994	3/13/1994	3/15/1994
6-02	Approval to purchase 2 sedans	3/13/1994	3/13/1994	3/15/1994

Table 5

6-03	Approval to purchase office furniture in country	3/13/1994	3/13/1994	3/16/1994
6-04	Approval to purchase computer equipment	3/13/1994	3/13/1994	3/15/1994
6-05	Remodelling part of MWI 2nd floor	4/11/1994	4/11/1994	4/11/1994
6-06	Remodelling part of MWI 1st & 8th floor	4/20/1994	4/20/1994	4/24/1994
6-07	Purchase of Software	8/16/1994	-	8/17/1994
6-08	Procurement of Testing Equipment (HO action)	5/28/1994	Faxed to DAI/B 6/06	5/31/1994
6-09	Approval to purchase a datashow (HO action)	6/03/1994	Faxed to DAI/B 6/07	6/05/1994
6-10	Approval to purchase Mac Computer Equipment (HO action)	6/03/1994	Faxed to DAI/B 6/07	6/05/1994
6-11	Approval to purchase printers (HO action)	6/03/1994	Faxed to DAI/B 6/07	6/05/1994
6-12	Approval to purchase slide projector (HO action)	6/03/1994	Faxed to DAI/B 6/07	6/05/1994
6-13	Approval to purchase IBM Computer Equipment (HO action)	6/06/1994	Faxed to DAI/B 6/13	6/08/1994
6-14	Approval to purchase installation & networking services (HO action)	6/06/1994	Faxed to DAI/B 6/13	6/08/1994
6-15	Approval to purchase Macintosh Software	6/07/1994	Faxed to DAI/B 6/13	6/13/1994
6-16	Procurement of WQIC Huts	6/25/1994	6/26/1994	6/27/1994
6-17	Purchase of Fax Machines	6/28/1994	6/28/1994	6/29/1994
6-18	Approval on Fax Machines	7/09/1994	7/09/1994	7/18/1994
6-19	Approval to purchase Shredders	7/17/1994	7/20/1994	8/02/1994
6-20	Approval to purchase photocopiers	8/08/1994	8/14/1994	9/15/1994
6-21	Furnishing & Equipment for JV A lab	8/01/1994	8/07/1994	8/16/1994
6-22	Procurement of office equipment	8/01/1994	8/05/1994	8/08/1994
6-23	Procurement for DAI/MWI Meeting Room	8/03/1994	8/04/1994	8/08/1994
6-24	Procurement for MACs	8/06/1994	8/08/1994	8/16/1994

Table 5

6-25	Training Equip for MWI Training Center	9/24/1994	9/25/1994	9/26/1994
6-26	Addendum to purchase order 3114-PR-0611	8/30/1994	8/31/1994	9/15/1994
6-27	Development of Computer Lab for MWI	8/27/1994	8/31/1994	9/15/1994
6-28	Purchase of Software for MAC computers	10/09/1994	10/10/1994	10/13/1994
6-29	Procurement of cameras	11/03/1994	11/09/1994	11/20/1994
6-30	Lab equipment procurement	11/07/1994	11/08/1994	11/15/1994
6-31	Lotus notes	11/09/1994	11/09/1994	11/23/1994
6-32	Lotus Notes Training	1/31/1995	-	2/01/1995
6-33	Payment for Printing Jordan Water Map	2/20/1995	2/20/1995	2/22/1995
6-34	WQIC Project Brochure	3/14/1995	3/15/1995	3/16/1995
6-35	Cancelled			
6-36	Procurement of ORACLE Software	5/24/1995	5/29/1995	6/11/1995
6-37	Procurement of water monitoring system equipment	5/27/1995	5/29/1995	6/20/1995
6-38	Books and training materials for Training Center	5/07/1995	5/08/1995	5/18/1995
	<i>(Amendment #1) Books & Training materials</i>	7/29/1995	8/03/1995	8/07/1995
	<i>Amendment # 2 Books</i>	9/18/1995	9/18/1995	9/20/1995
6-39	Novell upgrade	5/18/1995	5/20/1995	5/22/1995
6-40	Air conditioners for JES	6/20/1995	6/22/1995	7/02/1995
6-41	Film Production/MWI	7/10/1995	7/18/1995	7/20/1995
6-42	Waiver for CL	7/15/1995	7/24/1995	Pending
6-43	Procurement of laptop computers	7/30/1995	7/31/1995	8/02/1995
6-44	Sound Equipment for JES	8/05/1995	8/20/1995	8/20/1995
6-45	Equipment for Convivance Study	9/02/1995	9/03/1995	9/05/1995
6-46	Purchase of Ultrasonic Water Meter	9/26/1995	9/28/1995	10/01/1995
6-47	Spare parts for computers	10/06/1995	10/08/1995	10/09/1995
6-48	Equipment for the JVA Lab	10/14/1995	10/14/1995	Pending
6-49	Equipment for Chamber of Industry	11/05/1995	11/05/1995	11/06/1995
6-50	Duckweed Ponds	11/23/1995	Cancelled	

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Table 5

7	Artificial Recharge Activities			
7-01	Artificial Recharge - procurement of computers	6/21/1995	6/22/1995	6/27/1995
7-02	Phase I local TA support	7/24/1995	7/26/1995	7/30/1995
7-03	Procurement of software - ARC/INFO	8/12/1995	8/14/1995	8/24/1995
7-04	ERMC contract for data compilation	8/28/1995	8/29/1995	9/13/1995
7-05	Senior Review - GVV R10	9/23/1995	9/24/1995	Cancelled
7-06	AR Phase I Senior Review	10/10/1995	10/10/1995	10/11/1995