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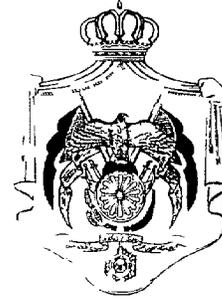
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Report 3114-97-00-18 The Hashemite Kingdom of Jordan

Water Quality Improvement and Conservation Project

1996 Annual Progress Report

The WQIC Team



Ministry of Water and Irrigation



The Technical Assistance Team Includes
Development Alternatives, Inc
Science Applications International Corp
Harza Environmental Services, Inc
Development Associates, Inc



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LIST OF ACRONYMS

AR	Artificial Recharge
BAFO	Best and Final Offer
CIDA	Canadian International Development Agency
CL	Central Laboratory
CMS	Computer Management System
CIP	Commodity Import Program
COP	Concept of Operations Plan
DA	Development Associates, Inc
DAI	Development Alternatives, Inc
DPS	Directorate of Planning and Studies
EBD	Employee Biographical Data
FS	Feasibility Studies
GIS	Geographical Information Systems
GTZ	Deutsch Gessellschaft Fur Technische Zusammenarbeit
HRD	Human Resources Development
IAS	Irrigation Advisory Service
IEC	Information, Education and Communications
IME	Mediterranean Water Institute
IMS	Irrigation Management Services
ISPAN	Irrigation Support Project for Asia and the Near East
JES	Jordan Environmental Society
JVA	Jordan Valley Authority
KAC	King Abdullah Canal
KTR	King Talal Reservoir
LOE	Level of Effort
MIS	Management Information Systems
MN	Monitoring Network
MWI	Ministry of Water and Irrigation
NGO	Non-Governmental Organization
O&M	Operations and Maintenance
PD&I	Planning, Development and Information
PIO/P	Project Implementation Order/Participants
PP/WM	Pollution Prevention/Waste Minimization
QA/QC	Quality Assessment/Quality Control
RFP	Request for Proposals
RSCN	Royal Society for the Conservation of Nature
RSS	Royal Scientific Society
SAIC	Science Applications International Corporation
SG	Secretary General
SOW	Scope of Work
STTA	Short-Term Technical Assistance
TDY	Temporary Duty
TNA	Training Needs Assessment
UNDP	United Nations Development Program
USAID	United States Agency for International Development
VOCA	Volunteers in Overseas Cooperative Assistance
WAJ	Water Authority of Jordan
WB	World Bank

WEA	Water, Environment and AgriBusiness
WEC	World Environment Center
WEF	Water Environment Federation
WERSC	Water and Environment Research and Study Center
WG	Working Group
WUO	Water Users Organization
WQIC	Water Quality Improvement and Conservation

EXECUTIVE SUMMARY

Introduction

The magnitude and interrelated nature of the water issues in Jordan require input from experts in a variety of disciplines. The Water Quality Improvement and Conservation (WQIC) Project provides the opportunity for the Government of Jordan, consumers, the private sector, and agriculturists to improve different aspects of the water sector. The project is working with the Ministry of Water and Irrigation (MWI) and other government and non-government agencies (Jordan Environmental Society, Amman Chamber of Industries, Royal Society for the Conservation of Nature (RSCN) and the Royal Scientific Society (RSS)) to promote sustainable water conservation programs. Though many of the activities are focused in the Zarqa Basin, the goals of the project are of national importance. The programs will be based on rational allocation of water to competing users, pollution prevention and water recovery, and improvements of on-farm irrigation efficiencies. Programs will touch all sectors of Jordan's economy and society.

The goal of the WQIC Project is "to improve the overall management and conservation of Jordan's water resources." The project purpose is "to increase the quality and quantity of the water available in the Zarqa River Basin System through water conservation." The project has been divided into five main components:

- 1 Water Resources Monitoring and Management
- 2 Water Pollution Prevention and Cleanup
- 3 Irrigation Water Management
- 4 Water Management Education
- 5 Public Awareness

Four major objectives have been identified to achieve the goal and purpose of the project. Those objectives are to (1) improve water quality through pollution prevention, (2) reduce water demand, (3) augment water supply, and (4) build public and private institutions capable of managing sustainable water conservation and quality programs. While overall project objectives have not been changed, the project's scope and activities have been modified to address USAID's result packages for the water and environment sector in Jordan.

1996 Workplan and Progress

In this report the 1996 workplan is given for each component and progress for each task is identified by italics and bold type. The 1996 work plan was based on a commitment from GOJ to allocate financial resources through the Commodity Input Program (CIP) and through human resources in support of project activities. The degree to which the GOJ resources were made available are noted in the discussion of each component.

The following table (Table 1) summarizes the accomplishments as compared to those planned for 1996 to support the goals and purpose of the WQIC project. The major accomplishments include the preparation of the final draft of the policy framework for the Ministry, development of water monitoring plans and installation of 41 stations by MWI, development of reports that have led to loan acquisition and construction by the MWI, training for 365 professionals, and public awareness campaigns. There has been some delays in the review and publication of the various reports prepared by the consultant and some activities have been canceled by the MWI or AID. During the year \$ 3.9 million were expended on the procurement of commodities and technical assistance associated with these accomplishments.

Table 1

1996 Accomplishments

Number	Component Name	Description of Accomplishment	Planned	Completed
1 1	Policy and Strategic Planning	Complete the establishment of the policy agenda for MWI	1	final draft
		Prepare policy papers on the most important issues facing the water sector	2	0 ¹
		Develop PDI Directorate	1	0 ¹
1 2	Management Info System	Concept of Operation Plan for MIS	1	1
		MIS Workshop (1-2 days)	1	0 ¹
1 3	Water Monitoring Network	Manage development of Surface and Ground Water Monitoring Plans (by basin and aquifer)	34	24 ²
		Long-term Monitoring Network Plan	1	1
		Oversee Installation of Monitoring Network Equipment (locations)	42	34 ³
1 4	Central Laboratory Upgrade	Central Laboratory Refurbishment Plan	1	0 ⁴
		Installation of Category B1 Equipment (pieces)	9	3 ⁵
		Laboratory Operations QA/QC SOP Plan (draft)	1	in progress
		Training on Category B1 and Existing Equipment (pieces of equipment)	8	6 ⁶
1 5	Artificial Recharge	Artificial Recharge Feasibility Studies	2	2
		Artificial Recharge Engineering Design	1	in progress
		Artificial Recharge Workshop	1	1
2	Industrial Wastewater	Install Pilot-Scale Demonstration Systems	2	1 on order
		National Conference	1	1
		PP/WM Workshops	6	3
3	Irrigation Water Management	Zarqa River Conveyance Study, Phase B Feasibility and Environmental Assessment of the Zarqa River Conveyance System between Hwaret & Abu Zeighan Weirs	1	Final
		Zarqa River Conveyance Study Part 3 Selection of preferred alternative	1	Final
		Zarqa Carrier I, Maintenance Inspection Report	1	Draft
		Zarqa Carrier I, Operation and Maintenance Field Manual	1	Draft
		Evaluation of water conditioning at Tal Al-Thahab weir	1	Inspection Memo
		Irrigation Water Delivery Scheduling Pilot Study	1	Final
		On-Farm Irrigation System Evaluations	1	1
		Evaluation of Pressurized Pipeline Operation and Maintenance Training	1	Draft
		Study of 14.5 km Extension of the King Abdullah Canal	1	Final

Table 1

1996 Accomplishments

		Micro Irrigation Systems Training Modules English	20	Final
		Micro Irrigation Systems Training Modules, Arabic	12	Draft
4	Water Management Education	Courses developed	19	15
		Manpower Plan prepared	3	1
		Training Center Designed Construction and Equipment Specifications prepared	1	1
		Equip facilities 6 classrooms, 5 offices, Shops, AV Unit	13 units	0 ⁷
		Conduct In-Service Training for MWI staff	360	335
		Candidates sent Overseas for training- All components	50	30
5	Public Awareness	Pre-Campaign Study, Behavioral Study of Water Users	1	1
		Database and Water-Saving Devices Study	1	1
		Workshops with Community Leaders	12	11
		TV Spots and TV documentary film	11	1 Film
		Posters, Fact Sheets, Brochures, Stickers & Pamphlets	30	20

- 1 Deferred as a result of senior executive management changes in MWI and/or lack of MWI staff assigned
- 2 This includes 10 final surface water monitoring plans, 10 final ground water monitoring plans, 4 draft ground water monitoring plans
- 3 This activity has become a Ministry responsibility, this number includes the installation of 15 monitoring wells, rehabilitation of 14 existing monitoring wells which have been integrated into the upgraded monitoring plans, and the installation/rehabilitation of 5 surface water monitoring stations In January 1997, the rehabilitation of an additional 21 wells were completed
- 4 Deferred until completion of the laboratory operations QA/QC, and SOP plans
- 5 Includes liquid scintillation counter, epifluorescence microscope, inductively coupled plasma, Of the remaining pieces automatic titrators (3), mercury analyzer (1), and *Giardia lamblia* sampling/analysis (1) are ordered and enroute and gas proportional counter (1) has been cancelled
- 6 Includes liquid scintillation counter (1), *Giardia lamblia* sampling/analysis (1), Varian graphite furnace AA (1), Finnegan MAT GC/MS (1), epifluorescence microscope (1), inductively coupled plasma (1), Of the remaining items mercury analyzer (1) will occur in 1997 and the gas proportional counter has been cancelled
- 7 MWI did not rent the required facilities

PROJECT MANAGEMENT

Objectives

The objective of project management is to track and coordinate all project activities, oversee general project progress and facilitate resolution of constraints. Project management also provides linkages amongst Ministry counterparts, the DAI team, and the USAID mission and serves as 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.

1996 Plans and Accomplishments

The following describes the workplan and progress made for this year.

Meetings to Expedite Implementation

The following are the key scheduled meetings that are used to expedite implementation and provide a forum for the exchange of ideas beneficial to the project. In addition, there are numerous individual and group meetings 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 fortnightly on Wednesday. These meetings allow the MWI, DAI and USAID management team to discuss current activities and plans, and to clarify issues on all sides. All major constraints to project implementation will be reviewed at these meetings and plans will be made to address the constraints and commitments will be obtained on action items to be carried out by all parties.

These meetings were held approximately every three weeks. They allowed the DAI management team, the Ministry Project Coordinator and the USAID Project Officer to discuss current activities and plans and to clarify any project issues. 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, meetings were held with the Secretary General of MWI to review issues and project progress.

WQIC Staff Meetings Will be held once a month and will be called by the WQIC Project Coordinator in coordination with the Senior Counterparts. 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 requiring USAID or MWI management intervention will also be identified and agreement will be made as to a course of action for resolution.

These meetings were not held as scheduled as Ministry Senior Management did not feel that they were required. Only three WQIC staff meetings were held during 1996 in addition to several project briefings which took place during the third and fourth quarters to update the Minister of Water and Irrigation and the Secretary Generals on project progress and issues.

MWI Staff Meetings Will be held once or twice per month. During these meetings, the Secretary General will brief the MWI staff members on administrative matters and events.

These meetings were held on an irregular basis.

DAI Staff Meetings Will be held once or twice per month. 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.

DAI Staff Meetings took place on a monthly basis or as needed. During these meetings, the COP briefed the DAI team on administrative matters and project events. The meetings provided an opportunity for the DAI team to discuss current activities, upcoming events, and any issues which required management's attention.

Working Group Meetings Will be held at least monthly, at the discretion of the Senior Counterpart in coordination with the Advisor. These meetings will focus on component activities, setting detailed implementation schedules, defining individual assignments and deadlines, identifying significant findings that should be called to the attention of management, and identifying unresolved implementation constraints requiring assistance from management.

Most working groups met once a month to review the component's progress during the previous month, discuss plans for the following month, and assign tasks and responsibilities for the work to be completed. Some working groups were more effective than others at achieving teamwork and collaboration for implementing project activities.

Meetings with Other Projects and Donors To be set up by the Secretary General on an intermittent basis. These meetings will keep WQIC informed of related projects in the region, in order to coordinate WQIC activities and goals wherever possible.

Meetings with other projects and donors took place during 1996 and proved to be very effective to coordinate activities and carry out joint activities to improve the implementation efficiency of the water resources related projects in Jordan. As a result of these collaborative efforts, GTZ participated with DAI on the policy development effort, DAI provided technical assistance to the CIDA team on the Ministry restructuring activity, DAI and GTZ are working jointly on developing a unified management of information systems within the Ministry, and the WQICP team worked closely with the USGS and UNDP projects on the water monitoring network and database development activities.

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.

The DAI Home Office has provided administrative and technical support to the project throughout 1996. 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.

Management Trip

Coordinate Timing with Home Office Write Action Memo During the summer of 1996, 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 finalized, 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 offer advice on project management to improve implementation efficiency. Field trips to project sites will also be carried out.

Debrief 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 take place with USAID and MWI management.

This task was deferred to early 1997 due to changes in management in the DAI home office and within the Ministry.

Finalize Contract SOW and Budget Revisions

This task will finalize the SOW and negotiate a revised budget to accurately reflect the requirements of the 1996 Work Plan.

Two contract modifications were negotiated and executed during 1996 to support changes required in project implementation. The first, (Modification no 4) modified and expanded the DAI Scope of Work and added \$2.3 million to the total contract value. The second, (Modification no 5) increased the contract amount by approximately \$440,408 for the procurement of maintenance equipment and supplies for the Jordan Valley Authority.

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 the local staff. During 1996, some support functions were reallocated and job descriptions revised to reflect changes in responsibilities. For each review, both the employee and supervisor noted the employee's accomplishments during the year, developed a list of expected achievements for the coming year, and discussed general issues relating to working conditions on the project. After each review, memoranda were written by the supervisor summarizing the meeting which served as a basis for determining annual salary increases.

Information Highway

Management The DAI Computer Management System (CMS) Expert provided overall management of the WQIC network through 1996. He provided day-to-day management and debugging of the network and provide individual training to those working on the network. The software and computer manual library for the project is being managed and maintained by a ministry computer programmer who was trained and supervised by the DAI CMS expert who provided supervision on the software and manuals check out system.

The DAI Computer Management System (CMS) Expert provided continued overall management of the WQICP network through 1996. This included daily management of

the network, troubleshooting as well as providing training, as needed. He managed and maintained the software and computer manual library for the project.

Training Plan A training plan was carried out to ensure that the MWI staff are capable of taking over the management of the network by the summer of 1997. A MIS specialist from DAI will come to Jordan for one month to assist in training implementation and in streamlining the network.

During 1996, one MWI staff member was trained on management of the network and received training in Windows NT. He worked closely with the DAI expatriate MIS specialist during his stay to streamline the network and received general training in Lotus Notes and network administration.

Interfacing With Other Networks The CMS expert worked with other network managers in MWI, WAJ and JVA to ensure full interfacing with their networks, this part of interfacing is covered under the total MIS solution for the whole Ministry and will be carried out according to the 1997 Work Plan.

The Automation Plan was revised and finalized in October, 1996 and included two proposed phases. An Action Memo was approved for the procurement of Phase I which includes an additional heavy duty File & Application Server and hardware and software to service the establishment of the new Directorates being established within MWI, the Water Information System being developed by the GTZ Project, the WQIC Project, and the UNDP project. The Server was procured and is being tested in the DAI home office in order to be installed in the Ministry in January 1997. The remainder of the equipment for Phase I is under tendering and will be procured and installed in the first quarter of 1997.

Refining Computerized Management Systems A MIS specialist from DAI will customize and install DAI's project implementation and monitoring system which will facilitate processing and tracking all daily administrative activities. The MIS expert will also assist WQIC in further developing its Lotus Notes capabilities.

In August 1996, a MIS specialist came to Jordan for five weeks to work with the DAI CMS expert and the MWI computer specialist to resolve recurrent network problems and further develop some capabilities and procedures. Some of the tasks the team accomplished include:

- *Installing and configuring Windows NT Advanced Server 3.51 with Lotus Notes 4.1 Server. A Lotus Notes Administration class was carried out.*
- *Researching and developing Lotus Notes database requirements.*
- *Installing on-line backup system for the two servers.*
- *Installing an anti-virus protection software network wide.*
- *Automating cc Mail maintenance.*
- *Implementing cc Mail Automatic Directory Exchange with DAI in Bethesda.*
- *Setting up a dedicated Internet Station and a Lotus Notes database for Internet Sign-out.*
- *Developing a Network Management Policy which was distributed to all project personnel.*

Audit

USAID Financial Audit Early in the spring, AID is planning to have an independent audit of the WQIC Project including DAI's contract. We will prepare for and coordinate with AID to assist the auditors in their task as it relates to the activities funded under the DAI contract and its subcontractors.

USAID decided not to carry out the financial audit for WQICP thus no action was taken for this task

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 which will be incorporated as necessary. The report will then 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 USAID and relevant additions/revisions were incorporated into the final version. Final versions were submitted to USAID on time and were distributed to the Ministry, DAI home office and subcontractors. Each report contained progress updates for the technical components as well as for management.

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 ensure that all costs are within the limits set by the USAID approved budget for DAI. This will allow us to determine what percentage of project funds we have spent. We will also be able to ascertain that we are in line with budget items.

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.

Budget reviews were carried out as planned and the budget was realigned in contract Modification no. 4 to reflect the conditions and needs of the project.

1997 Work Plan Workshop

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

Receive CVs and Employee Biographical Data sheets (EBD) from Home Office Write Action Memo Coordinate Schedules with Facilitators Once the dates and scope of work have been finalized, and the facilitators have been selected, we will request USAID approval to hold the workshop.

Carry out Interviews Before the workshop begins the facilitators will interview key players in the project to determine main issues and objectives for 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 conduct the workshop more effectively.

Workshop Is Held The workshop 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 workshop and concentrate on the project.

Draft 1997 Workplan Immediately before the workshop 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 workshop is held. After the workshop, 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.

Write Report When the workshop is complete, the facilitators will spend a few days writing a report summarizing workshop conclusions and discussions, and will then debrief project officials, USAID and MWI management on their findings.

A three day project planning workshop was held in Amman at the Inter-Continental Hotel on October 21st, 22nd, and 23rd. Prior to the workshop approximately 18 Ministry officials, project technical assistance team members and working group members were interviewed by the workshop facilitator. The workshop was designed and facilitated by Kathy Alison from Training Resources Group. The objectives of the workshop were to

- *Discuss the current status of the WQICP components*
- *Develop a better understanding of USAID's Strategic Objectives, Results Packages and Indicators and their relationship to the WQICP components*
- *Review and agree on next steps to complete the 1997 workplan*
- *Discuss sustainability issues (policy, staffing, training, and financial resource needs, and ways to integrate activities into the Ministry framework and organization) and present a strategy for why and how the activities of the WQIC project should be sustained in the future*

The workshop focused on the workplan for 1997 and 1998 and sustainability strategies of the major components of the project. During the workshop, the working groups formulated plans for 1997 and 1998 which were further developed and finalized during November and December 1996.

Annual Work Plan

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

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

The working groups completed their work plans during November and a complete draft was submitted to MWI and USAID for review. Several meetings took place with USAID and MWI to discuss the workplan and proposed modifications and additions to the DAI contract scope of work. A final draft of the workplan was submitted to USAID in

December 1996 however some revisions will be required after all parties agree on the changes required in the contract scope of work

Other Workshops

Quarterly Progress Review Workshops Immediately after the completion of the first and second quarterly Progress Reports a workshop will be held to review and discuss implementation progress. The workshop will be attended by all the WQIC Working Group staff, the ministry management (Project Coordinator, Secretaries General, Directors), USAID staff and key staff working on other projects associated with WQIC. The purpose of this two day workshop is to review and discuss implementation progress, identify any impediments to progress, and recommend corrective actions.

Full Quarterly Review Workshops were not implemented because all parties felt that the workshops were not necessary

However, a project review was carried out in the third quarter for a limited number of participants from each working group and the MWI Project Coordinator during a one day session at the WQIC apartments. The goal of the session was to review the presentations which were to be made to Ministry Senior Management and to review and discuss mid-year progress for each component

In addition, several project briefings took place during the third and fourth quarters for USAID and Ministry management

Financial and Technical Support Workshop In August of each year the WQIC Project will sponsor a budgeting and technical assistance requirement workshop for the Ministry. This two day workshop will provide the information required by the Ministry of Finance on the Annual Budget, CIP requirements, Credit and Loan requirements, Technical Support needs, and local consultant needs.

This task was not carried out as planned since all parties agreed that a workshop was not required. However, each working group and the DAI team assisted in defining the Ministry's CIP requirements for 1997

Water Seminar for Jordan's Scientific Week A seminar will be held prior to the Scientific Week to assist MWI focus on specific subject areas and help prepare for presentations at the Scientific Week.

This task was canceled by MWI

Financial Management

Table 2 provides a summary of expenditures through December 1996 by component. By the end of December, DAI spent \$9.38 million representing 67% of the total project budget being expended during the first 74% of the Project term. After accounting for commodities that have been ordered and not billed, the expenditures would be at 72% of the total project budget. Thus the expenditure rate is on schedule for the project

Commodity Management

DAI has established a tracking and management system for all non-expendable commodities procured under the project. Tracking forms providing procurement details and location of all items are updated and distributed to MWI on a monthly basis. These charts are also 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. In

preparation for the audit, mentioned above, a team of MWI, AID and DAI representatives will verify and acknowledge receipt of all commodities received during the first two years of the DAI contract

Tables 3 and 4 provide lists of non-expendable commodities purchased under the project since inception in 1994

POLICY AND STRATEGIC PLANNING STUDIES [WQIC Project Component 1 1]

Objectives

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

In meeting the objective, the component addresses a portion of Sub-Result 1 1 and Sub-Result 2 1 of the USAID result packages for the "Water Resources and Environment" team

1996 Workplan and Progress

The focus for the 1996 workplan was concentrated in three areas, (a) complete the policy profiles and identify the key policy issues that require in-depth analysis, (b) study two of the priority policy issues using MWI and outside resources, and (c) work with MWI to establish the DPS and train its staff¹ to take over the policy analysis and formulation efforts in 1997-8. These areas of concentration supported the USAID led effort to establish result packages for the WQIC Project and fulfill the requirements of Activity 1 1 1 (Strengthen the Planning Unit) and Activity 1 1 2 (Develop Appropriate Procedures For Planning) under Result #1 (Improved Water Resources Management), and activities 2 1 under Result #2 (Increased Conservation and Sustainable Use of Water Resources)

Activity 1 1 1 Develop the DPS Directorate

Define Role and Staff Needs DAI will work closely with MWI, the Director of DPS, CIDA, and GTZ to assist in defining the functions and 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 DPS. This may be a lengthy process because of the reorganization process occurring in the Ministry which has left the functions of this Directorate unclear. In addition, an effort will be made to assess the capabilities of the private sector to support studies being carried out by the DPS. At this stage, a visit to Egypt is planned to meet with members of the Strategic Planning Unit to gain from their experiences in setting up the operational units.

DAI provided assistance to the CIDA team developing the mandate and staffing needs for the proposed Directorate of Policy and Strategy (DPS)². With the changes in personnel within the Ministry, the proposed trip to Egypt was canceled.

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

Draft job descriptions were prepared for the Director and the Section Heads for the proposed DPS. The descriptions will have to be finalized once MWI decides on the final configuration and role of the DPS.

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

On hold, pending approval of the final structure

¹ Need to be appointed by MWI

² Currently referred to as the Directorate of Policy Analysis and Strategy

Inventory of Staff Skills and Development of a Training Plan The individual skills of each DPS 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 WQIC HRD personnel. 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.

Can not begin until staff are appointed

Initiate Training Once all the key staff are in place, the above developed training plan will be initiated for several of the DPS staff members. Candidates will be selected and approved by MWI and the HRD Unit will then finalize the individual training activities and monitor progress.

Can not begin until staff are appointed

Activity 1 1 2 Develop Policy Document

Policy Profiles and Statements Completed The Policy Committee will complete the review of the 24 draft policy profiles and agree to the proposed policy, action plan, strategies and master plan statements. This activity was started in 1995 and will be accomplished through the normal group meetings on Monday and Thursday of each week and at all day workshops and night sessions at the DAI Guest House.

The Policy Committee completed the task and consolidated the policy profiles into 22 key issues facing

Complete Second Drafts of Profiles and Approval by the Policy Committee The individual policy issue groups will complete a second draft of the Policy Profiles incorporating the comments and suggestions from the discussion on the first draft. The second draft will be circulated to the members of the Policy Committee for their final comments and approval.

A two volume report on the 22 policy issues was prepared and circulated.

National and International Review Team A team of international and national experts will be assembled prior to the National Water Policy Conference. The team will review and edit all the profiles and statements, prepare the Final Draft Report, participate in the national conference, and prepare the final report based on the out come of the conference.

Two specialists were retained to complete the final draft report for submission to the Minister and his staff for review

Team Planning Meeting (TPM) Prior to the conference the team of specialists will attend a TPM. The TPM will provide an opportunity for the Expatriate and Jordanian specialists (Policy Team) to understand each individual role, draft the report outline, develop schedules, and assign tasks. The meeting will last approximately two days and will include a professional facilitator.

Canceled by the Minister

National Water Policy Conference A two day conference will be held for senior Jordanian officials from all interested government institutions, private sector groups, legislators and donors that will be directly involved in the formulation of future policies relating to the water sector. Key individuals from some of the countries in the region might also be invited as observers. The participants will review, discuss, and rank the policy profiles developed by the Policy Committee.

Canceled by the Minister

Prepare Final Report and Scopes of Work Immediately following the conference the Team will 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 specialists required to carry out in depth studies of the four highest ranked policy issues

The final report was delivered to the Minister as planned. However, as the ministry is not prepared to proceed with any in-depth studies at this time the scopes or work were not prepared

Ministry and USAID Review The final report will be submitted to selected officials of the GOJ and USAID for review. A three week period will be allowed for review and comments

After the review by the Minister, several additional drafts were prepared. In the end two full reports were prepared. One by the WQIC project for general distribution and one report under the name of the Ministry to be used as their policy framework

Agenda Officially Approved The MWI is responsible for providing official approval of the policy agenda so that the individual policy studies can commence. Approvals will be obtained from the Higher Water Council and other ministries. Based on an assumption that official approval will come within 30 working days after submission of the final report, the in-depth policy studies will begin on the highest ranked issues

During the year the plans changed and the ranking and this activity were not carried out

Activity 1 1 3 Policy Studies

Scope of Work for Initial Studies Based on the outcome of the national conference and approval by MWI, the SOW for the first two studies will be finalized. An Action Memorandum will be prepared and submitted to MWI and USAID to authorize funding to carry out the first two in-depth studies during the remainder of 1996. Additional studies will be carried out in 1997

Recruit Study Teams 1&2 The DAI Home Office will be requested to recruit specialists to assist in carrying out the studies. At the same time, DAI/Jordan will work with MWI and GTZ to recruit the Jordanian specialists that will be on the study teams. Once the teams are selected and formally approved by MWI and USAID, the studies will be started

Implementation of Studies It is anticipated that throughout the remainder of 1996, two in-depth studies will be carried out (see attached charts). The studies will address the priority policy issues identified by the Policy Team, provide recommended policy changes, and develop draft legislation required for Jordan to implement the recommended policy changes

No policy studies were carried out in 1996. It has not been determined if the Ministry will request additional studies in 1997. However, it appears that the FORWARD project, funded by USAID, will carry out two studies in the policy area during 1997

Activity 1 1 4 Coordinate With Key Planners

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

During the year, numerous meetings were held with GTZ, UNDP, USAID Data Banks Project and MWI on coordinating efforts relating to the future structure of the Management Information System (MIS) and the roles of each party

Several meetings were held between MWI, the Ministry of Planning and the Ministry of Finance to assist the MWI in establishing the procedures required to expend the CIP funds for 1996 to support the WQIC activities and to develop the 1997 budgets

The CIDA contractor, DAI, and MWI agreed to coordinate their efforts and DAI agreed to recruit and mobilize a local consultant to develop job descriptions for the new WPA as part of the restructuring effort. In addition, a STTA was recruited to assist with the HRD activities and coordinate our efforts with that of the CIDA team.

Several meetings were held with the World Bank, French, and German technical assistance teams to coordinate efforts on other water-related projects in Jordan

Activity 1 1 5 Special Studies

There may 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, development of additional water resources, procedures to upgrade wastewater treatment plant effluent, sludge management and education, reduction of energy consumption in the water sector, evaluation of the potential of utilizing renewable energy in the water sector, etc.

Case studies may be carried out on two or three subject areas in preparation for the Mediterranean Water Institute (IME) seminar planned for early 1997. The studies will be in the areas of policy, public awareness, and/or human resources development.

Two studies were requested by the ministry and were carried out under the Irrigation Management component of this project

Key Indicators

- Planning unit established and positions filled with qualified staff
- Number of studies completed to international standards
- Broadly based policies for sustainable water use developed, adopted, and implemented

**INTEGRATED NATIONAL WATER RESOURCES MONITORING SYSTEM
ESTABLISHED
[WQIC Project Components 1 2, 1 3, 1 4]**

Objectives

Under the earlier WQIC Project workplans (1994, 1995), the project components included in the Integrated National Water Resources Monitoring System were considered as independent, though related, project elements. Because these components are in fact related functionally as well as organizationally within the Ministry, these components are now addressed through a more integrated program as discussed below. These objectives also are to achieve Sub-Result 1 2 of Result 1 (Improved Water Resources Management) of the WQIC Project as defined by USAID.

The existing data collection and management system for water quantity and water quality data is inadequate to meet the needs of water sector decision makers. Data are stored in several databases throughout WAJ, JVA, and the MWI and there are duplications and gaps. Data are not consistent from database to database. The reliability and comparability of much of the data are questionable because the data have been collected by several independent organizations without standard procedures and quality assurance protocols. Monitoring program resources often have been inadequate over the past several years to permit normal and routine operation and maintenance functions. It is essential that the water resources monitoring system be significantly improved if effective water resources planning and management are to be achieved.

This sub-result will create the water monitoring network, monitoring procedures, and water databases required for an effective national water quality/quantity monitoring system. In addition, the sub-result will support an integrated information management system (MIS) for Ministry operations and decision-making. The sub-result will lead to an increase in the number of surface water monitoring stations and ground water monitoring wells in critical areas of the Zarqa River Basin. Capabilities of the Central Laboratory of the Ministry (e.g., equipment, analytical procedures, quality assurance and operations, training) will be substantially increased. When complete, the integrated comprehensive national water resources management system will provide analysts and decision-makers with the information necessary for wise resource management in the Zarqa River Basin. The monitoring network aspect of this sub-result also will provide the foundation and model for the Ministry to expand the program to other surface water basins and ground water aquifers.

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 wastewater (within three years) into the Yarmouk or Jordan Rivers before treatment to standards allowing unrestricted agricultural use. The Integrated National Water Resources Monitoring System 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 resources monitoring system 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.

Currently, sustainability of the WQIC Project is seriously threatened by the lack of adequate counterparts who are dedicated to the activities of the WQIC Project, as well as by the existence of

several Ministry organizations responsible for various aspects of the activities included under the integrated water resources monitoring system. For example, there are several independent organizations responsible for monitoring activities thereby resulting in duplication of effort, data gaps, and related. In addition, the requirements for adequately upgrading the necessary Ministry programs to achieve the overall sub-result objectives are greater than what is currently available in the project budget. These requirements apply to both commodities (e.g., equipment, training) as well as to level of effort. The MIS is also suffering from similar institutional and staff issues.

1996 Workplan and Progress

The following 1996 accomplishments relate to the specific activities, tasks, and subtasks identified in the 1996 work plan. These activities, tasks, and subtasks were specified and structured to be consistent with the results packages developed in cooperation with USAID.

Activity 1 2 Upgrade Ministry Water Quality Laboratory Capabilities

Description of Activity This activity includes the appraisal of the existing equipment and supporting services of the Ministry's water quality laboratories (WAJ and JVA), and the procurement of new equipment on a priority basis. It includes technical assistance and training on the use of both new and existing instrumentation, methodologies, and quality assurance. This activity is expected to substantially increase the analytical capabilities of the laboratories in the number of samples handled, the analysis performed, and the integrity of the results generated.

Task 1 2 1 Laboratory Upgrade Administration

Provide the administrative support within the MWI and USAID necessary to upgrade and achieve sustainability of the Ministry's laboratories.

Subtask 1 2 1a Approve Action Memo for Refurbishment Plan Under the current level of effort, a laboratory refurbishment plan will be prepared. Prior to initiation of this activity, Ministry and USAID approval will be obtained.

This subtask has been deferred pending development and completion of the laboratory QA/QC, operations, and detailed analytical procedures task

Subtask 1 2 1b Approve Action Memo for Development of Standard Procedures and Plans Based on program needs for upgrading the laboratory and pending an increase in the contract level of effort, detailed procedures/protocols for laboratory quality assurance, operations, and procedures will be prepared. Prior to initiation of this activity, Ministry and USAID approval will be obtained.

This subtask was completed in 1996

Task 1 2 2 Procurement/Installation of Category B1 Instrumentation

This task involves completing installation of Category B1 equipment necessary to upgrade the laboratory to the level determined appropriate in the Central Laboratory Assessment Report completed in 1994. Procurement/installation of Category B2 equipment has been delayed until the space limitation constraint is fully resolved.

Subtask 1 2 2a Complete Installation of Category B1 Equipment Several items of the Category B1 equipment which have been procured in 1995 will be installed in 1996. This

includes the inductively coupled plasma, mercury analyzer, gas proportional counter, and liquid scintillation counter

The liquid scintillation counter (LSC) and inductively coupled plasma (ICP) were delivered to the laboratory in 1996. The LSC has been installed and is operational. Installation of the ICP was delayed because the laboratory still was not ready to install the instrument when it arrived and a part was damaged in shipping. Installation is anticipated to be complete in January 1997. The mercury analyzer required an origin waiver and now has been ordered. It will be installed in early 1997. The gas proportional counter (GPC) has been deleted from the procurement list until the laboratory can resolve a methodology problem with their existing equipment. In addition, three (3) automatic titrators were ordered and enroute to Jordan.

Task 1 2 3 Laboratory Refurbishment Plan

This task involves the development of a plan to assure that the Ministry's Central Laboratory continually will be refurbished and thus remain responsive to the analytical requirements and demands imposed on the laboratory. Earlier tasks have focused on upgrading the laboratory to a new level of performance. The Refurbishment Plan addresses maintaining the laboratory at this new level.

Subtask 1 2 3a 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 laboratory 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 had been postponed because of the laboratory space limitation issue. However, the issue still is unresolved and the task now is proposed to move forward.

This task has been deferred pending completion of Task 1 2 4

Task 1 2 4 Develop Laboratory Operations, Quality Assurance (QA), and Standard Procedures and Plans

Subtask 1 2 4a Develop State-of-the-Art Laboratory Procedures Detailed procedures and standards will be prepared for laboratory analytical procedures, laboratory operations, equipment operation and maintenance, health and safety, and quality assurance/ quality control. The evolution of procedures, participation in national and international QA audits and calibration, projected changes in sample loads and type of analysis, evolution of QA procedures and the role of the laboratory in the analytical capacity of Jordan are among the topics to be addressed over the long term.

This subtask is in progress. The first phase of work focuses on developing detailed QA/QC and laboratory operations procedures. This work will be completed in early February 1997. At that time, preparation of the second phase, development of detailed technical analytical procedures, will commence.

Subtask 1 2 4b Institute State-of-the-Art Laboratory Programs The procedures and protocols developed in the above subtask will be instituted at the operational level at the Ministry laboratory.

This subtask will begin following completion of Subtask 1 2 4b

Task 1 2 5 Laboratory Training

This task involves the training necessary to upgrade the Ministry laboratory to the level determined appropriate in the AECL Report completed in 1994

Subtask 1 2 5a Complete United States Study Tour for Laboratory QA and Operations

Training of two staff in the United States in state-of-the-art laboratory operations and quality assurance procedures and practices is planned as part of a month-long study tour

Three Ministry personnel from the WAJ Central Laboratory and JVA Laboratory completed a four week United States training study tour which focused on laboratory operations and QA/QC

Subtask 1 2 5b Prepare/Develop In-Country Training Courses in Laboratory Operations and Quality Assurance Short-courses in laboratory operations and quality assurance will be developed by Ministry staff and local contractors. These courses are intended for the laboratory in general and for technicians and scientists who actually use the equipment and perform procedures

A QA/QC training course was completed in 1996 by the University of Jordan as part of the WQIC Project's curriculum development effort

Subtask 1 2 5c Complete In-Country Training in Laboratory Operations and Quality Assurance Short-courses in laboratory operations and quality assurance will be presented following development

Completion of the QA/QC training course developed under Subtask 1 2 5b was not initiated in 1996. The plans are to offer this course in 1997

Subtask 1 2 5d Complete In-Country Training for B1 Category Instrumentation

Technicians are trained on the Category B1 equipment which has been procured for the Central Laboratory. Sophisticated new equipment has been procured to include a training option

Training was completed for the liquid scintillation counter as part of the installation process. Training for other Category B1 instruments will continue into 1997 as these instruments are installed.

Subtask 1 2 5e Complete Training for Existing Laboratory Instrumentation Technicians are trained on existing equipment (e.g., Finnegan MAT GC/MS, Giardia sampling/analysis, GPC radionuclide analyzer, multi-channel alpha spectrometer), as needed. This training is anticipated to be completed overseas for two of the individuals

Three WAJ Central Laboratory personnel completed training in the United Kingdom for the Finnegan MAT GC/MS. One person was trained in the United States on Giardia sampling and analytical practices. Several laboratory personnel were trained in Jordan on use of the laboratory's Varian graphite furnace AA

**Activity 1 3 Establish a Unified Information Management System (MIS) Unit
(personnel, computer systems, and advisory team)**

Description of Activity This activity includes a detailed engineering design for the hardware and software components of the MIS (task completed in 1995). The activity includes the procurement of hardware and software, testing and operating of the MIS, with the provision of personnel training. This activity will contribute to achieving the sub-result, because of the interdependence of the national water resources monitoring system with the MIS. The MIS

will allow for packaging and dissemination of relevant information to various groups and entities, as needed

Task 1 3 1 MIS Administration

Provide the administrative support within the MWI and USAID necessary to accomplish the establishment and sustainability of the MIS

Subtask 1 3 1a Identify Technically Appropriate and Authorized MIS Representatives (Steering Committee) from WAJ, JVA, MWI Technical qualified computer specialists from WAJ, JVA, and MWI with responsibility and authority to make recommendations and decisions regarding development of the MIS will be established as a team for planning and conducting all activities associated with development of the Ministry's MIS

The MIS steering committee was formally established by the Ministry in July 1996

Subtask 1 3 1b Define MIS Concepts for the Ministry Currently, the term MIS and what is involved in an MIS are not clearly understood or accepted throughout the Ministry. This task is intended to clearly define and establish the concept of the MIS for the Ministry

During 1996, the Ministry arrived at a definition of the MIS for the Ministry. This in turn led to the establishment of the MIS steering committee. During late 1996, the Ministry began discussions of establishing a formal MIS department to oversee full development and day to day operations of the Ministry's MIS

Subtask 1 3 1c Define and Establish MIS Function for the MWI The MIS function for the MWI will be defined and the proposed objectives, authorities, and responsibilities of the MIS function will be identified. After the MIS function is established, the existing WQIC Project computer network system will be integrated into the MIS for the MWI. This may require installation of some minimal hardware and software

This subtask has been completed at the Ministry level during preparation of the CONOP. To date, no MIS function for the MWI level has been identified by the Ministry

Subtask 1 3 1d Implement Ministry MIS Structures Each organization of the Ministry will establish a computer support unit responsible for the development of the MIS for that organization and for operating the system when installed. The primary objective of the unit will be the implementation and operation of the MIS hardware for that organization. Database management activities for databases accessed through the MIS will be the responsibility of the unit collecting or analyzing the data. These activities will not be the responsibility of the MIS units

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 organization, and should require at most some software-specific training for the specific software environment selected for the MIS

Each organization of the Ministry continues to operate within their current organizational structure. Formal MIS departments within these organizations have not been established.

Subtask 1 3 1e Review/Approve Action Memo for Concept of Operation Plan (COP) The proposed scope of work for the COP for the MIS will be reviewed and approved by the Ministry and USAID prior to authorization

This subtask was completed in 1996

Subtask 1 3 1f Review/Approve MIS Detailed Engineering Design The detailed engineering design for the MIS prepared in 1995 will be approved by the Ministry prior to proceeding with final plans for procuring MIS equipment and installing the MIS hardware

The detailed engineering design for the MIS has not been formally approved by the Ministry However, the specific technical design elements specified in the engineering design document have been incorporated into MIS plans formulated by JVA and WAJ

Subtask 1 3 1g 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 and approved by the Ministry prior to procurement Because of resource constraints, any procurement for this activity during 1996 will come from CIP funds

During 1996, JVA procured equipment to support their portion of the MIS The equipment was procured using CIP funds, JVA budget moneys, and moneys available under the Kreditanstalt Fuer Wieder Aufbau (KFW) project in the Jordan Valley Some MIS equipment for WAJ was procured using their budget moneys and very limited CIP funds In total, the amount of MIS equipment procured in 1996 still is far short of the equipment specified in the detailed engineering design

Task 1 3 2 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 system in the detailed engineering design It describes organization process responsibility, system's information flow, quality assurance procedures, information capture procedures, interfaces, maintenance procedures, retrieval procedures and tools, and operational philosophy A survey of the COP and of 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

This task is critically important to the establishment and development of the Ministry's MIS In addition, Ministry decisions regarding the establishment and organization of the MIS are required to ensure preparation of the proper COP and to take full advantage of the COP development effort

This task was completed in 1996

Task 1 3 3 MIS Training

This task focuses on the planning, development, and implementation of training which is necessary to support the development, operation, and maintenance of the MIS A training program to support staff development for the Ministry's MIS was prepared 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

Subtask 1 3 3a United States Study Tour Training of two (2) staff in the United States in MIS operations and administrative practices is planned as part of a month-long study tour This has been approved by USAID

Two (2) Ministry personnel completed approximately five (5) weeks of training in the United States in MIS operations, Novell networking, and Oracle database programming and management

Subtask 1 3 3b Short-Term Local Training Development and implementation of the training courses presented in the MIS detailed engineering design will be pursued with local subcontracts and internal training programs. This is a multi-year process.

This task was deferred pending the return of trainees from the United States, the delivery of the CONOP's report, and the installation of the MIS backbone system.

Subtask 1 3 3c MIS Workshop Based on the activities of subtask 1 2 2 1b, a workshop may be conducted to promote education of key Ministry personnel in the concepts of information management systems and to explain the proposed MIS for the Ministry.

This subtask was deferred in early 1996 due to management changes in the Ministry at the senior executive level. Since then, the MIS has been making reasonable progress consistent with the available resources. Current thinking is to hold an MIS workshop in 1997 if the MIS activity receives a substantial increase in resources.

Activity 1 4 Establish a Unified Water Quality/Quantity Monitoring System

Description of Activity This activity includes

- The design of both water resources and water quality monitoring programs with primary focus on the surface and ground water resources, including both drinking water and wastewater monitoring,
- detailed procedures and protocols for collecting water measurement data and water quality samples and for data management practices,
- procurement and installation of water monitoring equipment, and
- training of personnel for various monitoring functions and responsibilities

Task 1 4 1 Monitoring System Administration

Provide the administrative support within the Ministry and USAID necessary to accomplish the enhancement of the national water monitoring network and the establishment and sustainability of a unified national water monitoring system. The subtasks outlined below are essential for the success of the project but are Ministry activities and outside the control of the contractor.

Subtask 1 4 1a Establish Ministry Water Monitoring System Program Structure The Ministry will establish and develop a coordinated organizational unit(s) responsible for water resources monitoring and water quality monitoring functions. This may be an extended structure among the three organizations currently comprising the Ministry. Conceptual models of potential organizational structures may be developed, as appropriate. Staffing, equipment, budgeting, and related resources required to support the functions of the program will be determined.

The Ministry is continuing to work with restructuring of major program functions including the monitoring function. Formal reorganization of the monitoring function by the Ministry was not announced in 1996.

Subtask 1 4 1b Establish Water Resources Database Steering Committee Technically qualified specialists from WAJ, JVA, and MWI with responsibility and authority to make recommendations and decisions regarding development of the Water Resources Databases

will be established as a team for planning and validating/merging existing databases and creating new databases

A database steering committee has been established as part of GTZ's National Water Master Plan Update Project. WQIC Project personnel are included in the committee. The WQIC Project will coordinate with this group for the specific water monitoring system databases to be developed.

Subtask 1 4 1c Develop Operations Plan for Management of the Water Monitoring System Program Function A plan for the operations, management, and coordination of the water monitoring system program and functions will be developed. The operations plan will define the overall structure and responsibilities of the components and staff of the organization, the flow of work and support provided by the water monitoring function, and related operational characteristics.

This primarily is a Ministry responsibility. As noted under Subtask 1 4 1a, formal reorganization of the monitoring function by the Ministry was not announced in 1996. Consequently, Subtask 1 4 1c was not initiated.

Subtask 1 4 1d Institute Operational Water Monitoring System Program Organization The functions and organization of the water monitoring system program are brought operational.

This primarily is a Ministry responsibility. This subtask was not initiated in 1996.

Subtask 1 4 1e Approve/Authorize Procurement of Additional Monitoring Equipment and Installation of Monitoring Stations Including Wells Substantial additional equipment and monitoring wells are required to establish a fully functional monitoring network.

An action memo requesting procurement of additional monitoring equipment is in preparation and will be submitted to USAID in January 1997.

Task 1 4 2 Develop Detailed Water Monitoring Plans

Plans detailing the program objectives, decision statements, data requirements, decision rules, data quality requirements, monitoring network design, data measurement/collection type and frequency, and data evaluation procedures for all surface water basins, ground water aquifers, and other hydrologic and water quality responsibilities of the water monitoring system program are prepared and instituted.

Subtask 1 4 2a Develop Surface Water Basins Plans Plans will be developed for surface water resources and surface water quality monitoring for each of the basins in Jordan. Plans already have been prepared for the Zarqa River Basin.

In 1996, monitoring plans were developed for all surface water basins. Separate water resources and water quality monitoring plans were developed for the Yarmouk Basin, Wadi Mujib/Dead Sea/Wadi Hasa Basins, Wadi Araba Basin, Jordan River and Rift Side Wadis Basins, and Azraq/Jafr/Hammad/Sirhan Basins. In total, 10 surface water monitoring plans were developed.

Subtask 1 4 2b Develop Ground Water Aquifer Plans Plans will be developed for ground water resources and ground water quality monitoring for each of the aquifers used as water sources in Jordan. Plans will be developed for the extensive aquifer systems by geographic area. Plans already have been prepared for the B2/A7 aquifer within the Zarqa River Basin.

In 1996, monitoring plans were developed for the B2/A7 and B4 ground water aquifers. In total, 14 ground water monitoring plans were developed covering the extent of these aquifers throughout Jordan. Separate ground water resources and water quality monitoring plans were developed for the B2/A7 and B4 aquifers in the Yarmouk Basin, the

B2/A7 aquifer in the Wadi Mujib/Dead Sea/Wadi Hasa Basins, the B2/A7 and B4 aquifers in the Azraq Basin, and the B2/A7 and B4 aquifers in the Jafr Basin

Subtask 1 4 2c Develop Meteorological Monitoring Plans Plans will be developed for monitoring precipitation and evaporation throughout Jordan

MWI resources were not available to develop these plans in 1996 They are proposed to be completed pending available resources in the 1997 Work Plan

Subtask 1 4 2d Develop Wastewater Monitoring Plans Plans will be developed for monitoring discharges to the environment from municipal wastewater treatment plants and from industrial operations

MWI resources were not available to develop these plans in 1996 They are proposed to be completed pending available resources in the 1997 Work Plan

Subtask 1 4 2e Develop Drinking Water Monitoring Plans Plans will be developed for monitoring drinking water distribution systems for the various drinking water networks in Jordan

MWI resources were not available to develop these plans in 1996 They are proposed to be completed pending available resources in the 1997 Work Plan

Task 1 4 3 Upgrade Water Monitoring System Networks

This task focuses on procuring and installing the ground water monitoring wells and ground water and surface water monitoring equipment required to enhance the water monitoring system network consistent with the Monitoring Network Adequacy Evaluation and Monitoring Network Upgrade Plan, both completed in 1995 Equipment consistent with budget constraints was procured and shipped in 1995

Subtask 1 4 3a Install Surface Water Monitoring Equipment for Zarqa River Basin Procured surface water monitoring equipment will be installed at the locations identified in the Surface Water Resources Monitoring Plan for the Zarqa River Basin

This task was mostly completed in 1996 Surface water monitoring equipment was installed at five new or rehabilitated stations Ain Ghazal, Wadi Slehi, Wadi Um Dunaneer, Wadi Zarqa at Zarqa/Sukhneh, and Wadi Dhuleil at Sukhneh The remaining station at King Talal Reservoir will be installed in early 1997

Subtask 1 4 3b Install Ground Water Monitoring Wells for B2/A7 Aquifer Procured equipment for ground water level (piezometry) monitoring will be installed throughout the country Water quality monitoring wells will be installed in the B2/A7 aquifer within the Zarqa River Basin

This task was substantially completed in 1996 Fifteen (15) new monitoring wells were installed into the B2/A7 aquifer in the Zarqa River Basin In addition, approximately 14 B2/A7 aquifer wells in the Basin were rehabilitated for monitoring purposes Equipment installation is in progress

Subtask 1 4 3c Procure/Install Additional Water Monitoring Equipment Substantial additional monitoring equipment, surface water monitoring stations, and ground water monitoring wells are required to establish a fully functional national water monitoring system network This subtask anticipates the Ministry securing additional funds to continue with equipment procurement and installation in support of the national monitoring network This element of the overall scope-of-work is anticipated to be completed over an extended period of time (i e , multi-year)

The required equipment will be authorized for procurement by USAID, as appropriate, procured and then shipped to Jordan. The equipment will then be cleared through Jordan customs and inspected upon arrival. The equipment will be brought operational upon arrival, as possible. Equipment installation requires the support of the Ministry and local subcontractors to ensure proper placement.

In addition to the ground water aquifer monitoring well installations mentioned under Subtask 1.4.3b, eight (8) new monitoring wells for the B2/A7 and B4 aquifers in the Yarmouk Basin are being installed. Also, approximately 25 existing B2/A7 and B4 aquifers wells in the Yarmouk and Azraq Basins are being rehabilitated for monitoring purposes. Equipment installation for these wells is in progress.

No additional monitoring equipment was procured in 1996 pending the progress and results of installation of the equipment ordered in 1995 and received during 1996. At the end of 1996, a second list of monitoring equipment had been prepared for surface water monitoring stations and ground water monitoring wells. An action memo for procuring this equipment is anticipated to be submitted to USAID in January 1997.

Subtask 1.4.3d 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 subtask was not initiated in 1996 because all major pieces of monitoring equipment included detailed instruction manuals on installation, operation, and maintenance.

Task 1.4.4 Establish a Central Water Database Management System

This task focuses on unifying and centralizing the various water monitoring data and database management schemes within the Ministry. Data are stored in numerous databases within the Ministry. Database management protocols are largely non-existent and significant delays or data gaps result in the databases. Duplication of data also presents difficulties because inconsistencies result through various data verification processes. Consequently, much of the data may at times be considered unreliable.

Subtask 1.4.4a Develop Unified Water Database Structure and Organizational Plan. Existing water databases will be identified, surveyed, and evaluated. A plan will be developed for integrating all water database management functions into a coherent organization. This may be an extended structure among the three organizations currently comprising the Ministry. Conceptual models of potential organizational structures may be developed, as appropriate. Staffing, equipment, budgeting, and related resources required to support the functions of the program will be determined.

The subtask primarily is a Ministry responsibility and was initiated in 1996 under the lead of the GTZ National Water Master Plan Project. The subtask will continue to develop in 1997 under the lead of GTZ.

Subtask 1.4.4b Identify, Procure, Install Required Hardware and Software. Hardware and software required for a functional, operational database will be identified, procured, and installed. Some software already have been procured by the WQIC Project (e.g., ORACLE database software) and by the GTZ Water Master Plan Updating Project (e.g., Ground Water for Windows software, GIS ArcView software). Additional software and the hardware required to support this function are anticipated to be procured with CIP funds identified in the MIS component of the WQIC Project.

Hardware and software required for the databases were identified in 1996 under the lead of the GTZ Project. Some additional software and hardware will be procured in 1997 to support the water information database management system in the Ministry.

Subtask 1.4.4c: Validate and Unify Existing Databases for Water Monitoring Data. The UNDP Project currently maintains a FoxPro database for water monitoring data. As noted previously, other databases also exist throughout the Ministry. These databases could be merged back together prior to transfer to a new database software management system. This subtask focuses on validating and then merging the base data in the various databases to establish a single reference point for future database management activities. In addition, monitoring or other relevant data will be merged into a single database. Local and expatriate STTA LOE and support is required to complete this subtask.

This subtask (1.4.4c) and subsequent subtasks (1.4.4d, 1.4.4e) have been deferred by the Working Group until early 1997. During 1996, significant developments focusing on water databases and water information systems associated with the GTZ National Water Master Plan Project and the Regional Water Data Banks Project required that the WQIC Project defer full planning and initiation of these subtasks. In November 1996, final decisions regarding the Hydsys database/analytical software package which the Regional Water Data Banks Project was evaluating were made. Based on these developments and decisions, final planning for these subtasks was able to go forward. The subtasks are anticipated to commence in January 1997.

Subtask 1.4.4d: Develop Specific Databases for the Upgraded Monitoring Program. The validated data and merged databases will form the basis for the new, unified water monitoring database for the Ministry. It is anticipated that a new database structure will be established using ORACLE V7.1 database software. Then the merged, validated database will be transferred to the new ORACLE database platform. This subtask is dependent on the success of Subtask 1.4.4c (above) and securing additional LOE and support.

See the discussion for Subtask 1.4.4c.

Subtask 1.4.4e: Develop Database Management and Administrative Protocols for Operation of the Water Monitoring System Database. Protocols and procedures for the management and administration of the new water monitoring system database will be established. The protocols and procedures will address data receipt, data validation, data entry and verification, data correction/modification, data access, and related technical and administrative elements of management of an informational database. This subtask is dependent on the success of Subtask 1.4.4c (above) and securing additional LOE and support.

See the discussion for Subtask 1.4.4c.

Task 1.4.5 Long-Term Plan

This task focuses on the preparation of the final long-term water monitoring system plan completed in draft in 1995. This plan is to assure that the monitoring system, once upgraded, will remain responsive to the management information needs of Jordan. This plan considers changes in requirements for sampling and measurement frequency, additional monitoring sites, training, and related.

This Task was completed in 1996. The Water Monitoring System Long-Term Plan specifically addresses long-term development of water quality monitoring plans and networks, water resources monitoring plans and networks, water monitoring equipment management, QA/QC procedures, data management procedures, database development and management procedures, training programs, and monitoring system program organization.

Task 1 4 6 Training of Water Resource Monitoring and Assessment Staff

This task focuses on the planning, development, and implementation of training which is necessary to support the integrated national water monitoring system. A training program to support staff development for the Ministry's Water Monitoring System was presented in the Long-Term Water Monitoring System Plan. The training program outlines the various types of training and skills required to operate and maintain an integrated water monitoring system.

Subtask 1 4 6a United States Study Tour Training of four (4) staff in the United States in water quality management and monitoring and quality assurance practices is planned as part of a month-long study tour. This has been approved by USAID. Similar training for an additional 2 persons is being considered.

In 1996, four (4) personnel from WAJ and JVA received four (4) weeks of training in the United States in water quality monitoring and related QA/QC practices

Subtask 1 4 6b Short-Term Local Training Implementation of a training program is being pursued in association with the Human Resources Component. The Long-Term Monitoring plan presented generic details of the proposed water monitoring system training. Training will be conducted with local subcontracts and through internal training programs. This is a multi-year process.

During 1996, on-the-job training was provided as part of development of the surface water basin and ground water aquifer monitoring plans as well as during installation of the monitoring stations. Extensive hands-on training was provided in the use of global positioning satellite (GPS) units which the Ministry has acquired through various sources in 1996.

Subtask 1 4 6c Staff Training in the Database System Staff working with the various elements of the water monitoring system network and related water monitoring database will be trained in the procedures and protocols of the system. This training will be coordinated with the Human Resources Development component of the WQIC Project.

This training will be provided during and after development of the water monitoring databases (Task 1 4 4) which has been deferred until 1997.

Indicators

Two indicators have been identified to measure progress on achieving this sub-result:

Indicator #1 Equipment procured, installed, and operational

Indicator #2 Annual increase in the number of laboratory analyses performed to standard

The data for these indicators will be obtained annually from the laboratory records, the records of MWI, WAJ, and JVA, and contractors' project records. Progress toward achieving these indicators initially can be measured by the completion of preliminary tasks (primarily studies and plans) required to define and establish the institutions and programs necessary for ensuring long-term sustainability of this sub-result. Indicator #1 is an early measure of the developmental progress of the sub-result. Achievement of Indicator #2 is dependent on successful completion of Indicator #1 and establishment of the institutions and programs necessary to sustain the integrated, national water resources monitoring system.

ARTIFICIAL RECHARGE [WQIC Project 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. This component of the WQIC project addresses Sub-Result 11 "Planning System Functioning Effectively" of USAID's result packages for the "Water Resources and Environment" team.

The objective of the artificial recharge activities is to identify practical techniques for using artificial recharge to improve the management of the water resources in Jordan. The AR component of the WQIC project 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 sites. The third phase will consist of a full engineering design of the most promising AR site.

1996 Workplan and Progress

The following work plan activities, tasks, and subtasks were specified and structured to be consistent with the new results packages developed in cooperation with USAID. The WQIC Project components and tasks identified in the WQIC Project Paper, WQIC Project Contract, and WQIC Project Work Plans for 1994 and 1995 were superseded in favor of this new approach.

Activity 1 5 1 Conduct Feasibility Studies

Description of Activity Various feasibility, design, and pilot studies are envisioned under this activity. The preparation of these studies will contribute to the effective functioning of the MWI planning process, while directly contributing to addressing key priority needs in the water sector. The specific study which is the concern of this work plan is the feasibility and design of artificial recharge projects in Jordan. The task involves direct participation of various technical and support staff from the MWI, WAJ, and JVA as appropriate, working in cooperation with USAID contract staff. Both on-the-job and structured training opportunities will be made available for MWI technical and planning unit staff.

Task 1 5 1 1 Artificial Recharge Feasibility Studies

Subtask 1 5 1 1a Field Data Collection and Experiments Finalize feasibility study work plans, perform further characterization at each site, and conduct field testing to validate site characteristics and quantify additional hydrogeologic parameters as required for artificial recharge conceptual plans. Develop and implement a long-term monitoring program in coordination with the WQICP water monitoring system team.

This subtask was completed in 1996. Two (2) sites, Wadi Madoneh south of Zarqa and Wadi Butum near Qasr Amra, were selected for the feasibility study analyses.

Subtask 1 5 1 1b Site Assessment and Data Analysis For each selected site, analyze aquifer recharge characteristics based on existing information and new data. Evaluate appropriate

artificial recharge alternatives using computer analyses to calculate potential recharge capacities, aquifer response, water quality impact, and subsurface losses

This subtask was completed in 1996. Field studies included surface geophysics survey of the Wadi Madoneh and Wadi Butum sites using seismic refraction, reflection, and electromagnetic tools. Field studies also included lineament analysis, limited geologic mapping, infiltration testing, well rehabilitation, water level monitoring, and water quality sampling and chemical analysis, and soil grain size sampling and analysis. Hydrologic analysis of the potential volume of precipitation runoff water available for artificial recharge purposes at the sites was completed using curve number techniques.

Subtask 1 5 1 c Environmental Impact Assessment Develop an environmental assessment in accordance to USAID requirements for each feasibility study site, based on the alternatives analyzed in Task 2 2. Potential alterations in land use, disruption due to construction, changes in wetland habitats, changes in water quality and socioeconomic conflicts arising from changes in water usage will be addressed.

This subtask was deferred in 1996 at the request of USAID and the Ministry.

Subtask 1 5 1 d Socioeconomic Assessment Evaluate the socioeconomic benefit associated with artificial recharge alternatives for each site, including capital investment, requirements, operating costs, cost/benefit analysis for using recharged water, and the long-term economic and social impact of artificial recharge versus a no-action plan.

This subtask was completed in 1996 and the results were incorporated into the feasibility study report.

Subtask 1 5 1 e Feasibility Study Reports Prepare a Phase 2 completion report containing feasibility studies for each site and recommendations for implementing artificial recharge actions. Each feasibility study will contain the results of Subtasks 1 5 1 b through d, and a recharge plan for the selected site.

This subtask was completed in 1996. The feasibility study report presents the findings of the field investigations for the Wadi Madoneh and Wadi Butum sites, the results of analyses of the data, preliminary identification and screening of artificial recharge alternatives suitable for the two sites, a socioeconomic evaluation of the suitability of artificial recharge applications at the two sites, and a conceptual engineering design for a pilot study at the two sites. Based on the findings of the feasibility study, the Wadi Madoneh site was selected for proceeding with the pilot study engineering design.

Task 1 5 1 2 Artificial Recharge Engineering Design

Subtask 1 5 1 2a AR Design Detailed Work Plan This task will involve review of the Phase I and Phase II work by the design team, site inspection and delineation of additional engineering data needs, and the preparation of a final engineering design detailed work plan.

This subtask was integrated into the feasibility study report and completed in 1996.

Subtask 1 5 1 2b Preliminary Design This task will involve collection of identified additional data needed for design, preliminary engineering analysis of artificial recharge problem, cost estimates (including capital investment and operations/maintenance), preliminary design (drawings and specifications) and presentation of preliminary results.

Preliminary engineering design drawings and specifications, surveying, and material estimates and costs were completed in 1996. This work will be refined in early 1997 during the final design subtask.

Subtask 1 5 1 2c Final Design This task involves the incorporation of comments on the preliminary design from the MWI, USAID and other involved parties, the preparation of a final design for the artificial recharge facility (drawings and specifications) and presentation of the results

This subtask is in progress and will be completed in February 1997 as originally scheduled

Task 1 5 1 3 Training

Subtask 1 5 1 3a Prepare/Develop In-Country Workshop(s) Using International Experts and Results of AR Feasibility Studies and Engineering Design This task involves the preparation of a workshop in Jordan to include a summary presentation of the WQIC Artificial Recharge Component activities, as well as lectures by international experts on artificial recharge principles, techniques, analyses, practices, applications, and economic and social benefits. The objective is to expose 10 to 15 highly qualified and interested participants that work in the artificial recharge subject area to the latest proven techniques and benefits of artificial recharge

This subtask was completed in 1996

Subtask 1 5 1 3b Complete In-Country Workshop(s) A three-day workshop/seminar will be held at a location in Jordan. All necessary coordination activities, on-going logistical support and workshop facilitation will be provided under this task. A workshop summary and recommendations will be prepared and used to brief MWI and USAID on the results

This subtask was completed in 1996 with the participation of Dr Herman Bouwer, an internationally renowned expert in artificial recharge technologies. Dr Bouwer presented a two day workshop and then participated in two days of field site visits to assist the project team identify suitable artificial recharge technologies and infiltration sites

Subtask 1 5 1 3c Finalize Preparations for United States Study Tour for Arid Lands AR Installations This task involves preparations for a United States study tour of arid lands artificial recharge installations. An itinerary will be developed and submitted to MWI and USAID for approval. This trip will include attendance at an international conference, workshop, or short course pertaining to artificial recharge and on hand experience on functional AR sites for up to three Jordanian specialists

This subtask was completed in 1996

Subtask 1 5 1 3d Complete United States Study Tour for Arid Lands AR Installations The itinerary from Subtask 1 5 1 3c will be implemented

During 1996, three (3) Ministry personnel received three (3) weeks of training in the United States in the application of artificial recharge technologies with specific emphasis on arid land applications

Indicators

Indicator #1 *Number of studies completed to international standards*

INDUSTRIAL WASTEWATER DISCHARGE PREVENTION [WQIC Project Component 2]

Objective

Industries of Jordan adopting clean technology and pollution control techniques for pollution prevention, water conservation, and cleanup

In meeting the objective, this component addresses Sub-Result 1.3 of USAID's result packages for the "Water Resources and Environment Team"

1996 Workplan and Progress

In order to accomplish the component's objective, the following activities were planned

Activity 2.1 Establish an Environmental Unit within the Ministry of Water and Irrigation

MWI plans to create an Environmental Unit to monitor and provide follow up for all environmental related effort that relate to water and the responsibilities of MWI. The unit will be responsible for developing a program for pollution prevention, ensuring water resources environmental protection, reviewing all environmental considerations and providing input for environmental assessments being carried out on water project. This unit will be responsible to carry on the activities started under the Industrial Wastewater Discharge Prevention component of WQIC.

This activity will be performed through implementation of the following tasks

- Establish MWI Environmental Unit and define its roles and responsibilities,
- develop job descriptions for the Environmental Unit staff and work with MWI to staff the unit, and
- provide follow up and management of all PP/WM efforts

No governmental official actions have been taken towards implementing the Environmental Unit pending finalization of the restructuring of the MWI. Once the restructuring takes place, this component will be able to implement its activities and provide follow up and management for PP/WM efforts through an organizational structure. The expertise gained through this components' activities will provide support to the newly established unit.

Activity 2.2 Follow up on Pollution Prevention Audit and Perform Feasibility Studies

Ten audits and four feasibility studies have been completed to date. The MWI and the Chamber will follow up on the recommendations outlined in the audit reports to encourage sustained pollution prevention practices for the audited industries.

Follow-up visits to the industries will be carried out by MWI, the Chamber and consultant staff to ensure implementation of PP/WM practices. Some of the visits will be scheduled

during the consultant's trips to Jordan to supervise the installation and operation of the demonstration programs

Contacts are continuous with industries to follow up progress in implementing recommendations outlined in the audit reports. Several positive feedback letters have been received from audited industries. A matrix is being prepared showing the improvements made at each industry as a result of the audit recommendations.

Activity 2 3 Procure and Install Demonstration Equipment

This task will be the continuation of the two demonstration programs initiated during late 1995. The PP/WM Committee selected two PP/WM techniques for plant-scale demonstrations. These techniques are those with wide applicability for the industrial types included for the PP/WM audits and FS. The objective of these demonstrations is to show that such PP/WM techniques are cost effective in Jordan.

During the estimated six month period of the installation and operation of the two demonstration plants, the expatriate consultant will conduct two or three short visits in Amman, for supervisory purposes at the demonstration sites.

Technical specifications for two demonstration programs, Land Application at the Yeast Co. and Water/Wastewater pre-treatment at the Jordan Petroleum Refinery were prepared.

An Invitation For Bid (IFB) was prepared and advertised in the U.S. for the procurement of equipment for both demonstration programs.

A committee was formed to review the bids received, and select a bidder for the Yeast Co. demonstration and the award for supply of the equipment has been made. Delivery to Jordan will take place by the end of February.

The second demonstration program for the refinery was suspended with agreement of AID and MWI.

Request for Proposals (RFP) for a local subcontract to install and operate the yeast demonstration equipment was prepared and advertised. The award of this RFP will be made in early 1997.

Activity 2 4 Extend Public Awareness Program to Cover the Industrial Sector

The public awareness program which is being implemented by MWI and JES will be extended to cover the industrial sector, with the objective of minimizing water use in the industries and promoting water recycling. This activity will provide information to professional users on general and specific questions related to industrial environmental management. Access to information is provided through videos, posters, technical literature, electronic databases (e.g. PP/WM Clearinghouse, Enviroline, pollution Abstract, etc.), environmental laws/regulations and other material on industrial pollution prevention.

An informational brochure was developed in coordination with JES, as part of the Public Awareness activities. A local workshop on pollution prevention and water conservation was held at Sahab Industrial Estate as part of the public awareness program which is being implemented by MWI and JES. The workshop included three presentations by JES, MWI and the Industrial Estate Corporation staff, in addition to several presentations by industrialists at the Estate with success stories in pollution prevention and water

recycling The activity was very successful and WQIC was invited to have similar events at the Corporations' other industrial estates in other parts of Jordan

Another workshop was held for industrialists in Aqaba in coordination with JES Major industries in Aqaba participated in this workshop Concepts of PP/WM were introduced and industries were encouraged to take major steps to increase water use efficiencies

The failure to establish an Environmental Unit at MWI is delaying the establishment of an office which could develop a "clearing house" to provide information to professional users on general and specific questions related to industrial environmental management Once the MWI restructuring takes place and roles are defined, technical materials prepared through the project's activities can be compiled into one information center which can be made available to a wide range of users Contacts can then be established with relevant organizations to keep the information up to date.

Activity 2 5 Train Personnel (public and private) Related to Industrial Activities

A number of individuals from private and public sectors will be trained In-country workshops will focus on pollution PP/WM (clean technology) This activity will be performed through the implementation of the following tasks

Workshops Conduct workshops focusing on the areas of the selected industries with needs for PP/WM and water conservation Six (6) in-country workshops and seminars, utilizing the members from WEF or similar NGO's will be carried out over the year Many of the recommended techniques for the audited industries are also applicable for many other industries These technologies can be transferred to industries during training and seminars in 1996

In addition, To prevent duplication of effort and to facilitate coordination with the new Department of the Environment, a workshop will be arranged to discuss goals and objectives and also coordination between this project and any other similar on-going activities in Jordan

In January 1996 a WEF volunteer conducted a one-day workshop on pollution practices in slaughtering industries in the Chamber Representatives of slaughtering industries from several Governorates attended the workshop, along with representatives from other concerned governmental agencies and municipalities Another workshop was also held by a WEF volunteer at the Amman Slaughter House This workshop was attended by Amman Slaughter House personnel who discussed with the expatriate how to improve the Slaughter House's implementation of pollution prevention techniques

No specialized workshops have been conducted afterwards as a result of failure to identify expatriate volunteers Contacts failed to identify and recruit specialists to conduct these workshops

National Conferences Hold National Conferences In the areas of the selected industries with needs for PP/WM and water conservation, one National conference, utilizing government and private sector staff involved in clean technology practices will be conducted in December This conference will be conducted for managers, technical personnel and others to ensure an in-depth understanding of the clean technology issues and encourage industries to take major steps to reduce pollution and increase water use efficiencies

The training programs will be tailored for audiences such as plant operators, plant managers, financial analysts, and government environmental officers

A National Conference was arranged in coordination with MWI and the Chamber of Industries. The conference was held in January 1996. Sixteen papers were presented by both the PP/WM Working Group and industrialists. The conference was attended by managers, technical personnel and other interested individuals. The conference succeeded in providing an in-depth understanding of PP/WM issues. It also provided a forum for industrialists to share their experiences about pollution prevention techniques and how to increase water use efficiency.

Activity 2.6 Assist in Financing

MWI/Chamber will follow up and expand on the financial mechanisms and the incentives in order to enhance the PP/WM and water conservation practices in industries located in Zarqa as well as in other regions of Jordan.

Incentives and support are required in an environment of slowly developing regulations and enforcement and inappropriate pricing for water and energy. In addition, a waste discharge charging system based on the quantity and quality of the industrial effluent is lacking. These incentives will also facilitate the development of cooperative and sustainable governmental and private sector business and financing relationships.

Discussions on how to pursue this activity has taken place. A workshop was held at the Amman Chamber of Industry in December 1996. Participants from the industrial sector, banking sector and the public sector attended the workshop. The recommendations outlined in the report were presented and a discussion between all concerned parties on ways to implement these recommendations took place. Some concrete responses and ideas were obtained and summarized in a short report.

Indicators

The key indicator to measure the progress for this sub-result

The number of industries adopting clean technology

IRRIGATION WATER MANAGEMENT [WQIC Project Component 3]

Objectives

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

This objective addresses Sub-Result 2.2 of USAID's result packages for the "Water Resources and Environment" team

1996 Workplan and Progress

This work plan is structured to be consistent with the new results packages developed in cooperation with USAID. The subcomponents and tasks given in the project paper and contract have been revised in accordance with the new approach. Pilot projects and training are the primary focus for the next year. Several of the activities are extensively linked and work proceeds on simultaneously without need for additional personnel. Linkages occur within and across sub/sub result divisions.

Activity 3.1 Improved efficiency in the pressurized pipe delivery system

Rehabilitate system Survey/study current maintenance status of the system, develop a plan for addressing deficiencies, submit the plan and estimated bill of materials to JVA and the MWI. Results from this activity would come as a by-product from the training program for JVA Operations and Maintenance staff and technical assistance from DAI.

The inspection and recommendations report for the Zarqa Carrier I pressurized irrigation water pipeline is in draft form. The physical inspection of the pipeline uncovered significant discrepancies between the original design drawings and later changes to the pipeline and fixtures. Standards are needed to determine the impact, if any, these discrepancies have on pipeline operation and performance. The draft report will be finalized when ordered publications on standards for the installation of ductile iron pipelines and fixtures are received. The standards are also needed to complete the Zarqa Carrier I Operations and Maintenance Field Manual.

Improve quality of water delivered to system Upgrade water conditioning at the Tal Al Thahab Weir. Funding for this activity will be included in the Ministry budget for improving the conveyance of water in the Zarqa River with technical assistance provided by DAI.

The JVA has succeeded in getting JD 200,000 from the 1997 CIP budget allocated for rehabilitation of the Tal Al-Thahab weir. USAID has agreed, in principle, to allocate \$630,000 for the purchase of equipment from the United States for the rehabilitation. Once final USAID approval is received, the work will commence.

Assess options for improving delivery scheduling Analyze the capacity of the secondary pipe (lines) delivery network. If feasible, select line(s) to pilot test limited rate on-demand scheduling. If not feasible, evaluate the rotation scheduling being used. Monitor progress and results (this would feed back into training and assistance).

A site for the scheduling pilot study has been selected, DA-22 Line 5 Branch 2, which has 15 farm units. The capacity in the delivery pipeline is sufficient to service a limited-rate on

demand irrigation water delivery schedule Start-up of the pilot study is on hold pending JVA commitment of personnel to the study

Train JVA operation and maintenance (O&M) staff, Zarqa Carrier I Evaluate on-the-job-training activities completed and O&M performance Develop local in-service training programs recommended by the evaluation Two engineers should receive short-term training on operations and maintenance in the United States

An evaluation of the Pipeline O&M training program conducted in the Jordan Valley is in draft form. This report will be finalized upon receipt of outstanding questionnaires Two engineers received intensive training on pressurized pipeline O&M at the San Benito County Water District in California.

Activity 3 2 Improved efficiency in on-farm irrigation system management

Establish and train an LAS unit The basic pilot unit would have one JVA junior engineer and one extension agent from the Ministry of Agriculture These persons would receive on-the-job-training from the MWI WQIC Project Irrigation Working Group Four engineers should receive short-term training on irrigation water management in the United States Trained personnel are field evaluated and records audited at least twice in the first year following completion of the training program, additional training is programmed as needed

Three engineers from JVA and one Extension Agent from the MOA received training in the United States on farm irrigation systems and spent one week with Mobile Labs program in California. None of the JVA persons are currently working with the Project on the LAS pilot study The formation of the LAS is on hold until the JVA appoints full time personnel to the pilot unit

Implement pilot/demonstration initiatives in the Central Jordan Valley Initiatives will be selected in cooperation with JVA, MOA, input suppliers, and the WQIC Project to assist farmers with correct trickle and micro-spray irrigation practices The primary focus will be on those farmers participating in other activities of the irrigation management component but other farmers requesting assistance will receive assistance

A joint research and demonstration initiative on irrigation scheduling was started at one farm in the fourth quarter of 1996 Participants in this program include the Water and Environment Research and Study Center of the University of Jordan, French Mission Regionale Eau Agriculture, WQIC Project, and the farmer The initiative is using soil moisture readings and evaporation pan data to determine irrigation quantities and delivery schedules Study plots include open field, multi-span plastic house, and regular plastic house Crops used are tomato and cucumber

Train farmers in trickle irrigation system operation and maintenance Farms belonging to trainees will be evaluated before they participate in the training courses After the farmer is trained, the IAS personnel will assist him to improve his operation, if he so desires After one year the farms will be reevaluated to determine impact of the training program The first farmers to be trained and assisted will be those participating in the pilot scheduling program

Given that the training was to be conducted by IAS personnel, this activity is on hold until the JVA commits personnel to the LAS pilot program.

Develop extension material on irrigation water use A large body of research results that could be used to prepare extension materials on conservative irrigation water use are present in Jordan This activity will identify the materials available and appropriate for preparing extension materials, contract with material developers, and duplicate and distribute prepared materials Farmers will be surveyed about the usefulness of the new materials and the survey results used to improve the materials

This activity has been moved to 1997 Results from system evaluations performed by the IAS and the initiative on irrigation scheduling will supply data for the first set of extension materials

Activity 3 3 Zarqa River Conveyance Feasibility Study

Preparation of a feasibility study and environmental assessment of alternative IRR3a The alternative selected by the MWI and JVA was IRR3a, rehabilitation of the Hwaret weir and laying a 1 4 m diameter ductile iron pipe line from the Hwaret weir to the Abu Zeighan weir The feasibility study and environmental assessments would be prepared as specified by the scope of work given in the subcontract

The preliminary design, feasibility study, and environmental assessments were completed on schedule and used by the MWI and JVA to obtain funding from another source for a design-build contract

Preparation of final engineering design and tender documents These two products will finish the pre-construction phase of the program Currently this activity and construction are not funded under the current contract

These tasks were undertaken by the local contractor under the design-build contract The WQIC Project was not involved in this phase of the project Rehabilitation of the Hwaret weir and laying a 1 4 m diameter steel pipe line from the Hwaret weir to the Abu Zeighan weir was completed in the fourth quarter of 1996

Key Indicators

On-farm water use and delivery efficiencies increase

WATER MANAGEMENT EDUCATION [WQIC Project Component 4]

Objectives

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 Jordan. Development and implementation of some activities will require consideration of recommendations from the organizational study being conducted by CIDA. The WQIC Project identified a number of objectives for water management education including

- Support establishment of a Human Resources Development Directorate, and
- Strengthening MWI employees skills and capabilities

1996 Workplan and Progress

Activity 4 1 1 Water Management Education Administration

This task provides the administrative support within the MWI and USAID which is necessary for the Water Management Education component of the WQIC Project. General activities include approval of Action Memos and work plans or proposals which are developed from the activities in the approved scope of work. Specific activities include

Review and Approve Overseas Training Programs USAID will review each proposed training program against the SOW and against the budget available

Review and Approve Project Implementation Order/Participants (PIO/P) Documents

Water Management Education Component coordinated with all the WQICP components and identified training needs. Action memos were prepared and approved for all overseas training which was implemented in 1996

PIO/P documents for all participants nominated by MWI were prepared by the component staff and were approved by USAID

Activity 4 1 2 Overseas Training Program

The WQIC Project identified a number of specific overseas training programs to be implemented for the project. Some additional training needs have been identified by each component during 1995. Some of these training programs are within the DAI contract and were postponed from last year, others are new.

The training needs have been summarized for overseas and in-country training. The general sequence of activities required for completing overseas training are outlined and briefly discussed below.

Coordinate with Specialist/Identify Courses and Prepare Action Memoranda In the beginning of the year, the Training Coordinator will work with the expatriate advisors and the Project Coordinator to determine participants for each of the courses and to refine the

training needs for 1996 for each project component. Upon identification of training courses, locations, and times, Action Memoranda will be prepared and submitted to USAID for training authorization.

Obtain Firm Nominations Following USAID approvals for organizing and funding the training, the overseas training process will proceed. The contractor and the MWI will nominate two candidates for each approved position for the training courses for each project component.

Arrange ALI/GU English Language Tests Candidates for training courses must pass the test. Testing will be arranged for each candidate.

Arrange Language Courses Candidates who do not pass the ALI/GU test may choose to enroll in and receive English language instruction (TOEFL) to improve their knowledge and command of the language, at their own initial expense. Following instruction, the candidate must again take and pass the ALIGU test. Reimbursement of expenses will be made for successful candidates.

Prepare PIO/P documents PIO/P forms will be prepared for each candidate who is nominated for a course and passes the ALI/GU test. The forms will be submitted to USAID for authorization 45 days prior to the candidates' departure for the training course.

Brief Participants Candidates approved by USAID will be briefed regarding cultural norms and technical aspects of the training course and will be provided advanced maintenance allowance.

The Water Management Education component worked with all WQIC Project technical specialists, and developed and designed training programs according to their needs. All trainee candidates passed the ALI/GU test. Development Associates, DAI's training subcontractor, administered and managed the training programs. Evaluation of all overseas training was conducted in order to offer quality training in the future.

Thirty people from MWI and other institutions received training in the United States and the United Kingdom. The following table shows training areas.

<i>Training Program</i>	<i>No of Participants</i>
<i>Water Monitoring</i>	<i>4</i>
<i>MIS</i>	<i>2</i>
<i>Laboratory</i>	<i>7</i>
<i>Policy</i>	<i>4</i>
<i>Irrigation</i>	<i>10</i>
<i>Artificial Recharge</i>	<i>3</i>
<i>Total</i>	<i>30</i>

Activity 4 1 3 Support Establishment of HRD Directorate

Manpower planning is critical to the MWI, but the HRD Directorate needs to be established. In view of the apparent acceptance by the MWI of the recommendations of the CIDA Study on Reorganization, several steps need to be taken by the HRD Directorate in 1996. The following tasks will be implemented by the HRD working group:

Task 4 1 3a Revise the HRD Phase 1 action plan that outlined a comprehensive strategy and policy to align it with the new concepts and functions in the water sector

Task 4 1 3b Train the HRD director (USA)

Task 4 1 3c Re-examine the scope of work of the Proposed Manpower Study to align it with the MWI's plans for implementation

In addition to the above tasks, work with the Policy component to implement the plans to support the DPS Directorate

In order to support the Ministry in the human resources planning, an HRD specialist developed the scope of work of the human resources planning study for the Water Planning Authority This scope of work was then adopted by two HRD local consultants who met with the CIDA team and selected ministry officials A first draft for 28 job descriptions was then completed for the main functions of the CIDA proposed structure

In addition, the HRD specialist conducted several interviews with Ministry officials, and developed a draft report on "The Development of Human Resources Services Directorate in the Water Sector"

Activity 4 1 4 Develop and Up-Grade In-Service Training (Temporary Training Facilities)

The in-service training task focuses on the development and presentation of local, short-term training courses to support the mission and function of the MWI The courses include technical, management, and administrative training Upon locating, renting and equipping the Training Facilities, the following activities will be carried out in 1996 (CIP funds will be used for the rent)

Task 4 1 4a Develop Incentive Schemes for staff The HRD director will develop an incentive scheme for the training staff that is acceptable to the GOJ

An Incentive Scheme for the MWI computer trainers was developed and sent to the Prime Ministers Office for approval The incentives were then paid from 1996 CIP funds

Task 4 1 4b Continue Courses from 1995 Phase II of the curriculum development activity will start in 1996, subject to the availability of MWI funds (CIP) Some 24 courses will be developed by the Subcontractor (The University of Jordan) Also Phase III for delivering 43 courses to MWI staff is scheduled to begin in 1996 subject to the availability of MWI funds In addition, continue offering English language and technical report writing courses according to WQIC Project needs

The Water Management Education component, in coordination with both WAJ and JVA counterparts prioritized the list of courses to be developed under phase II However, the Secretary General requested that this activity be put on hold until the delivery of the courses developed in phase I is completed and evaluated.

Task 4 1 4c Appoint & Train Training Coordinators Classroom coordinators will have 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 coordinators on facilitating courses and presentation methods (using computers) through a local subcontract

Three coordinators for the computer training that was offered at the Ministry, were appointed to evaluate, coordinate, plan, and develop advanced courses

Task 4 1 4d Setting Criteria for Trainers and Training of Trainers The HRD will be in charge to work with the subcontractor to set criteria for trainers who will attend a series of workshops on Training the Trainers that will be conducted by STTA

This subtask was postponed until delivery of courses begins

Task 4 1 4e Setting Criteria for Trainees Define and circulate trainees criteria and develop a database for trainees

In coordination with both WAJ, JVA, and the University of Jordan, a criteria for trainees was set, and list of trainees was finalized and approved by the Secretary Generals

Task 4 1 4f Develop Training Plan The Training Management group will be working with the University of Jordan to develop a Training Plan for the delivery of the courses

A training plan could not be developed until venue for training is provided by the Ministry

Task 4 1 4g Develop New Curricula (phase II) Additional courses will be required to improve and maintain the skills and performance of the MWI personnel especially after CIDA starts implementing its recommendations for the new structure As new courses are identified, the course objectives and content need to be developed and tailored to the specific needs and requirements of the MWI Utilizing CIP funds, DAI will assist MWI with the curricula development The general steps in the process of developing new curricula include preparing Requests for Proposals, advertising for proposals, reviewing proposals, issuing purchase orders for selected contractors, and monitoring the performance of the subcontracts through development of the new curricula

No additional courses were developed because CIDA proposed structure was still under study and was not yet approved by the Ministry

The Water Management Education Component organized several local training courses in English Language, Technical Report Writing, and advanced computer courses Following is a summary of these courses

- *24 employees from the Jordan Valley Authority received four levels of English Language courses by the MES Cultural Center,*
- *24 employees from the Jordan Valley Authority received training in basic computer skills (Dos-Windows, Word, Excel),*
- *74 employees from the Ministry of Water and Irrigation received training in English Language by the Modern Language Center,*
- *10 people received one month instruction of TOEFL,*
- *45 engineers from the Ministry of Water and Irrigation received training in Technical Report Writing by the American Language Center,*
- *170 people received training in basic computer courses(Dos-Windows, Word, and Excel),*
- *77 employees from the Ministry of Water and Irrigation received computer training in advanced computer courses (advanced Excel, advanced Word, advanced Autocad, and MS-Project) by the College computer center, and,*
- *12 employees from the Artificial Recharge section in the Ministry of Water and Irrigation received training in computerized geophysics techniques by the Geophysics Service center*

Task 4 1 4h Up-grade Computer Courses A number of advanced and more specialized computer courses will be developed i e Advanced Excel, Autocad, Ms-Project An incentive

scheme should be developed. More trainers should be trained in training methods and advanced computer courses i.e. PC Configuration and trouble shooting courses. Plans should also be developed to offer training at remote sites at the Jordan Valley or Aqaba.

Computer trainers attended the advanced computer courses that were organized by the Water Management Education component and developed draft outlines and manuals for Autocad, Advanced Excel, and advanced Word

Activity 4 1 5 Develop MWI Permanent Training Center Capabilities

In 1995, a consultant engineering firm was subcontracted to develop the design of the new MWI building that will also hold the ministry training center. Upon completion of this subcontract the engineering firm will also submit the construction documents needed for the construction phase that will be carried out by the Ministry.

Task 4 1 5a Develop Training Rooms Design Specifications Assist the HRD Director in writing the training rooms design specifications before the bids are advertised.

The Water Management Education component in coordination with the MIS component assisted the design contractors in developing preliminary design specification for the training rooms and the MIS room in the new MWI building

Task 4 1 5b Develop Equipment Specifications/Procure Center Equipment Assist the HRD Directorate to equip training rooms by procuring training equipment and office supplies.

A draft list of training equipment specifications was prepared.

Task 4 1 5c Revise Training Management Handbook Revise the training management handbook and prepare a report of future personnel requirements.

An HRD consultant developed in draft form the " Training Center Staff Handbook" that listed staff required for the future training center. The report can be finalized once the CIDA report is accepted by the Ministry

Task 4 1 5d Train Training Center Director The candidate will receive training in USA on management of a training center.

Training Center Director was not appointed.

Task 4 1 5e Develop Audio/Visual Aids Audio/visual aids are critical to support the in - service training objectives, functions, and responsibilities of the HRD Directorate. Audio/visual equipment will be identified, procured, and installed and audio/visual materials will be created and developed.

A draft list of Audio-Visual equipment was prepared but not finalized until staff is appointed and trained.

Task 4 1 5f Appoint Staff MWI staff will be required to support the audio/visual program. These staff will be appointed by the MWI.

No staff was appointed by the Ministry

Task 4 1 5g Develop and Train in Audio-Visual Aids Production DAI will support development and training of the Directorate through local subcontract. Work involves production planning, script writing, filming techniques, editing, and final production of videos. The A/V group will also perform same functions for 35 mm slides to be used in local courses, will organize delivery of A/V aids and operation of classroom equipment for courses, in conjunction with Instructors.

The Water Management Education Component was not able to organize any training in audio-visual production because the Ministry did not assign any skilled employees in the HRD Directorate

Task 4 1 5h Contract One Expert Following USAID authorization to proceed with the audio/visual program, one STTA expert will be retained to assist the MWI in the training that is to be organized by the local subcontractor and in the development of audio/visual materials

Nothing was accomplished under this sub task as there is a question as to whether AID will fund the required equipment

Activity 4 1 6 Implementation of CIDA recommendations

The original plan for the WQIC Project was to develop a Manpower Plan for the Ministry. Because of the CIDA recommendations and current negotiations on the future structure of the Ministry, the Manpower Planning was delayed because it seemed to be a duplication of efforts. In lieu of developing the Manpower Plan, the consultant will assist the Ministry with the implementations of the CIDA recommendations once the HRD Directorate is staffed and functional. The following tasks are anticipated starting in late 1996 or early 1997.

Task 4 1 6a Assist with the implementation CIDA Recommendations The contractor will work closely with the CIDA team and the HRD to support the implementations of these recommendations.

Task 4 1 6b Organizing Workshops to introduce these Changes The contractor will support the HRD directorate in organizing workshops to introduce the new changes to MWI employees.

Task 4 1 6c Develop Training Needs according to new functions A local subcontractor (six weeks) will be hired to compare new MWI functions versus job descriptions of present employees and identify training needed. The subcontractor will be also asked to build skill matrix of MWI employees.

As a step to support the future HRD Directorate, the staff worked closely with the CIDA team in order to assist the Ministry in developing job descriptions for the proposed new functions. However, it is not possible to organize the workshop and introduce these new changes to the employees before official approval was granted.

Activity 4 1 7 Develop Phase II HRD Plan

Following CIDA implementation, further development plans for the HRD Directorate and the MWI are necessary if the HRD Directorate is to function. An STTA will develop an HRD Management Plan and prepare a Training Center Management Plan. These activities are summarized below.

Task 4 1 7a Prepare Year 2 & 3 In-Service Training Schedule This activity addresses course scheduling, career planning, etc. for the immediate years following the 1996 planning period.

Task 4 1 7b Prepare HRD Management Plan In addition to the coordination and development of training and the training center, the new organization study will require that a functional statement for the HRD Directorate be prepared, and plans developed to ensure that attention is paid to the personnel functions usually conducted by the HRD Directorate. These

would include forecasting needs, personnel budgeting, recruitment, employment, retention career planning, pay rolling, staff morale and counseling, and retirement counseling

These actions cannot be taken until the Ministry establishes the HRD Directorate and appoints staff

**PUBLIC AWARENESS PROGRAM
[WQIC Project Component 5]**

Objectives

The objectives of the Public Awareness Component are to

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

In meeting the objectives, the component addresses Sub-Result 2.3 of the USAID result packages for the "Water Resources and Environment" team "Information, Education and Communication (IEC) programs are developed and strengthened concerning water use, reuse and conservation"

1996 Workplan and Progress

The following activities, tasks, and sub tasks are designed to establish results which have been designated by USAID for this sub-result, 2.3. The following tasks derive their funding from three sources. The major sources are the USAID grant directly to JES and the USAID funded DAI contract and a minor source from RSCN which is also funded by a USAID grant. Although this work plan is focused on what will be accomplished as a result of assistance under the DAI contract, the following activities have mixed funding for the implementation costs and technical assistance under the DAI contract.

Activity 5.1 Establish IEC Capability in the MWI and JES

Developing IEC capabilities in the MWI and JES organisations will enable the sustainability of water use, reuse and conservation objectives. Human resource development and training are needed to increase the staff's and volunteer's abilities to develop, implement and manage IEC programs. Staff will receive training in the United States as well as in-service training in Jordan.

Plans include the out-of country and in-country training needed to further develop the skills of the MWI and JES staff to develop and manage public awareness programs. Previously no staff were available to design or develop short films and spots which are needed for television programs, workshops and school programs. However in 1995 a new person has been appointed to the MWI who has previous experience in this field. It is planned that this staff member plus training in audio-visual for all of the staff and some volunteers will aid in the development of public awareness films and spots in 1996.

The following training is planned and other training will be developed as needed.

Task 5.1.1 Implement Out-of-Country Training

Candidates Selected and Attend Training It is planned that one MWI staff and one JES staff member will attend training on management of public awareness programs, one MWI staff

member and one JES member will be trained on development of audio-visual and communications material for public awareness, one MWI and one JES staff or volunteer on development of community awareness programs,

Monitor Training The Public Awareness Specialist will be the liaison person with the HRD Unit to help monitor the progress of the training process from selection of candidates to utilization of staff when they return

***Candidates from JES have been selected but they are scheduled to attend training in 1997
Candidates from MWI will not be selected until permanent staff are selected for the new Directorate in-charge of public awareness activities***

Task 5 1 2 Implement In-Country Training

Implement Management Training Staff members from JES and MWI will attend in-country management training which will develop their organisational and management skills in group development conducted by the WQIC Project

Management training under the Project has not been available however, three MWI staff attended training funded by the Ministry

Communications Training Staff members will receive training in communications skills which includes interviewing techniques, listening techniques and workshop development skills A Short Term Specialist is needed to help in this workshop

JES staff attended communications and facilitation training funded by the King Hussein Environmental Management Training Program.

Conduct Computer Training Computer training classes will be continued for JES and MWI staff as well as on-the-job training to strengthen the staff's capability for desktop publishing, graphic design, spreadsheet, and general communications This training helps staff generate computer based fact sheets, brochures, pamphlets and other mass media material

A intensive computer training on desktop publishing was held at JES which included developing graphic design, spreadsheets and word processing in Arabic and English

Conduct Audio Visual Workshop A workshop will be held to develop audio-video skills and techniques for the WQIC staff and volunteers A film will be produced through the involvement of volunteers and elementary school students A Short Term Technical Assistant is needed to help develop this workshop and to assist in TV program development

The Short Term Technical Assistant and alternate which had been proposed was not available in the appropriate time frame Also the Ministry staff member who had experience in audio visual development was transferred to the Ministry of Education After interviewing audio visual firms which are experienced in producing documentaries and animated films, it was decided that the workshop could be conducted by a firm within Jordan The offers are under review and the workshop will be held in the beginning of March 1997

English Language Training English language training is needed to enable the staff to develop reports and plans, interact with professionals from other organisations and donors and to participate in conferences and workshops

One MWI staff attended training and received a 200 ALIGU score One JES staff member has attended training and has shown considerable progress

Activity 5 2 MWI and JES will Implement IEC Programs

This activity will develop coordinate, implement, and monitor water use campaigns aimed at policy makers, educational institutions, public and private sector, industries, agriculture, local organisations and communities, and individuals

Plans for the next year include refining previous campaign strategies as a result of studies performed in 1995, developing sustainable programs and implementing public awareness campaign and activities

Task 5 2 1 Campaign Strategies are Refined According to Studies

Results of specific studies through the WQIC Project as outlined in the following helps to refine the strategies used in developing campaigns and provide the framework for developing demonstrations using water saving devices and practices

Use Pre Campaign Behavioural Study to Refine Strategies The pre-campaign study included a questionnaire, focus group interviews and water measurements conducted by volunteers Television and radio was noted as being an important way to create awareness Therefore strategies to use television is being considered Many of the participants were aware of the scarcity of resources and feel that water conservation and quality is an important issue

Issues of water resources and conservation differed according to the area the residents live in The staff will use the behavioural study to plan and implement seminars and workshops which coincides with the needs in the various areas Results of the studies done by others will also be considered in directing strategies to implement public awareness campaigns

Results of the behavioural study have been used in workshops for training trainers and in various lectures and seminars

Develop Strategies for Water Savings Devices Campaigns The staff will develop strategies and activities for using water saving devices informational kits and demonstrations for water conservation

Two seminars have been designed and will be implemented in January 6 and 7, 1997 The seminars are being sponsored by the MWI and JES for personnel from hotels, engineering consultants, military, hospitals, NGO's, universities and JES branches

A pamphlet on water saving devices, a leaflet containing technical information on disadvantages and advantages, method of installation, and approximate costs, and display boards showing water saving devices have been produced.

Implement Demonstration Program on Water Saving Devices Water saving devices exhibits and information will be shown at exhibits and selected sites such as schools, public and private buildings, or industries throughout Jordan Staff will set up demonstrations and use them in seminars and lectures

Portable demonstration boards have been prepared which shows the water saving devices with corresponding information An exhibit showing the amount of water used by an ordinary faucet and one with a water saving device has been produced and will be used for exhibits

Task 5 2 2 Developing Sustainable IEC Activities

The activities need to be continued after the funding ends The MWI and JES organisations will coordinate activities to work with the JES Branches, other Ministries and organisations

JES branches in the various areas can be used as resources and organisers to help plan and implement activities with the other organisations in their areas

MWI and JES staff coordinate activities The JES and MWI public awareness staff will form an integrated team to plan and to develop sustainable public awareness strategies and campaigns for water conservation and protection of water quality. The team will also work together to develop and implement public awareness activities throughout Jordan

MWI and JES staff have been coordinating their activities

Develop Long Term Plan Developed by the public awareness team to outline a sustainable public awareness program which includes a National Committee on Water Conservation, designation of JES Branches as local extended team, appointment of liaison officers from different local organizations, and a system for developing feedback and additional resources

The development of the Long Term Plan has been delayed until February 1997

Development of a National Committee on Water Conservation Public Awareness A National Committee will be set up to review and develop impetus to the concept of water conservation. A well known public figure will be named as the Chairperson and other influential people will be named on the committee. The public awareness team will help develop the roles and responsibilities of the Committee

A National Committee has not been set up

Name JES Branches as Extended Team The strategy for developing sustainability is to use JES branches as a part of the extended team to coordinate and cooperate with appointed liaison or extension officers from the regional or Governorate MWI offices, Ministry of Education, Women's Federation and other ministries, NGO's, and other public and non-governmental organizations to implement programs

The liaison and extension officers have been appointed and cooperating with the public awareness team.

Coordinate Activities with other Ministries The main cooperative efforts will continue as follows with the Ministries of Education, Youth, Municipal, Rural Affairs, and Environment, Awqaf, Health, Social Development, Higher Education, and the Army and National Security. New efforts will be started with the Ministry of Tourism, Information and Agriculture. Informational material, lectures and seminars will target the specific needs of the participants

Workshops, lectures and seminars have been implemented with the above Ministries except for Youth, and Agriculture

Coordinate Activities with other NGO's The major activities such as workshops, seminars and special events will be held with the Women's Federation, Arab Women's Society, Noor Al Hussein Foundation, Farmer's Associations and other NGO's

Activities have been coordinated with all of the NGO's above. Also cooperative activities were implemented with the Royal Society for the Conservation of Nature (RSCN)

Coordinate Activities with the National Environment Center JES is establishing a National Environment Center (NEC). The staff will coordinate activities with them concerning water saving devices, rainfall harvesting, improvement of water quality, household consumption and use, and others as needed

A site for a water demonstration is being studied to show modern water use practices by collecting rainfall water from greenhouses to be used for efficient irrigation. Other techniques are also being studied.

Establish Forums for Feedback and Follow-up Liaison officers and extension officers from the various organizations will be asked to attend a forum every three months. The public awareness team will obtain feedback, gather information on needed future resources and activities, and monitor the effectiveness of the activities.

Two forums were held to evaluate the previous activities and to plan and follow-up for the 1996 activities

Task 5 2 3 *Implementing IEC Campaigns and Activities*

There are different levels of creating awareness, developing knowledge, changing attitudes and practices. All levels are occurring at the same time.

Level one develops and creates general awareness of the need to conserve water through mass media campaigns. More personal contact is established in level two and three. Level two focuses on human resource development especially training for trainers of public and private organizations to plan and implement the development of community campaigns. Level three implements community campaign activities in cooperation with the people trained in Level two to facilitate a change in water conservation practices of the general population in water use.

Implement Mass Media Campaigns-Level One

- *Develop special exhibitions and Special Events* Displays for International Water Day, March 22, Earth Day, Fourth Science & Technology Week and other events will be planned. Posters, fact sheets, computer exhibits and brochures will be available at exhibitions to give information on water resources and methods to save and protect water at special events. *Special events were attended by approximately 7,500 people. The events were held for International Water Day, Earth Day, Fourth Science and Technology Week, Arab Environment Day. An Environmental Action Day was held in Dajania near Mafrak for students and the local community. An activity was coordinated with the Crown Prince Award for children in Anjara. A ceremony was held to award certificates for women in Madaba to honor their participation in water conservation activities.*

A special exhibit attended by 1,500 people was also devised for Environment Week developed by the Balqaa branches from Fuheis, Salt, and Deir Alla.

- *Develop mass media and communications material* At least 8 posters, 10 stickers, 5 brochures, 3 pamphlets, and 10 film spots will be developed to bring attention to the needs and methods of water conservation and protection. Samples of programs from other countries will be reviewed to gain more knowledge about campaigns which have proved to be effective. School and community competitions for posters, songs, drama, and poems will be conducted with school children, artists and university students.

The winning productions may be used as themes for the campaign material. The winners will be announced on International Water Day, March 22. The JES Art Committee will develop art to be used as exhibits for International Water Day and developed into calendars.

Some of the previous posters, water wheel and water slides were not available because they had been distributed. The behavioral study showed that themes need to be repeated in order to create awareness. The staff decided that since limited quantities had been produced those posters and communications materials that were good and were still needed for new participants should be reproduced. Therefore, six posters, four stickers, the water wheel, and water slide were reproduced. Four new posters were produced on

water conservation, wastewater treatment, and water harvesting Four new stickers were produced and two computer exhibits, and 7 brochures and pamphlets were produced One cloth bag displaying water conservation messages was developed to encourage people to replace plastic bags which are causing a problem for pollution in Jordan

No film spots were produced because the MWI person trained in this was transferred and the AV workshop has been delayed until next year One film on Jordan water resources was produced. The film on Jordan's water resources has been shown on JTV, exhibits, International Water Day, and workshops

Competitions were developed with school children and the awards were given to them at the Water Festival Day in October The JES Art Committee developed paintings, photography, and ceramic works for an exhibition in December A calendar, brochure and card were produced to display the water related environmental issues

- *Mobile exhibition development* Mass media printed materials will be bound in a special plastic form to develop special mobile exhibits in schools, communities and for special occasions Exhibits are planned for International Water Day, International Environment Day, International Children's Day, Arab Environmental Day, Handicapped Rights Day, Farmer s Day, and Mother's Day

Portable exhibition boards have been developed and are available for use in lectures, seminars and workshops Special display boards were installed at JES to exhibit the water awareness material.

- *Develop special television spots and programs* Staff will attend a special workshop to learn how to develop TV spots and programs Staff plan to develop a TV program for children which spotlights water conservation with children Cooperation is being planned with Jordan TV to show programs and spots concerning water conservation and community activities related to the campaigns Radio interviews and programs will also feature information on special activities and campaigns

The audio-visual workshop was delayed until March 1997 but approximately 6 radio interviews and television programs were presented in 1996

- *Seminars and lectures developed* These activities will be developed as requested according to the needs of the different organizations

About 100 lectures and 27 seminars and have been given throughout Jordan

- *Training of Trainers (TOT) and Human Resource Development - Level Two* Volunteers from JES branches will receive training to organize and maintain cooperation with other organizations to implement public awareness campaigns

Trainers which consists of staff and volunteers trained in 1994 and 1995 will train new community leaders from the JES branches, Women's Federation, Ministry of Education Teachers, Ministry of Agriculture Extension Agents, university students, handicapped youth, Girl and Boy Scouts and other public and private organizations New trainees will attend workshops to develop their skills as trainers and gain information on water use and conservation, strategies, materials, and plans for implementation of the public awareness campaigns

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

Workshops have been held with 540 community leader volunteers from the JES branches, Women's Federation, Women's Committee, and Ministry of Education, and Ministry of Awqaf

- *Establish, Implement and Follow-up Community Programs - Level Three* Community participants which have been trained in level two will implement activities with JES volunteers, women's group volunteers, university students, other Ministries, other NGO's, and other organizations

A water conservation demonstration program has been set up in Edoun National Park in Irbid to show how rainfall harvesting in old wells can be utilized for drip irrigation for watering olive trees and other forest trees

The total number of people who have participated in the water conservation activities are over 20,000

- JES branches are planning to implement two water conservation camps for youth in the summer

One camp was held by the Ajloun JES branch

Activity 5 3 MWI and JES will Coordinate IEC programs with Strategic Objective Result and Sub Result Teams

Task 5 3 1 Planning and Implementing Activities

In developing a comprehensive, public awareness program, objectives and activities will be discussed and coordinated with the larger core and extended teams for water resources and environment

Policy and Planning Work will continue with the policy team to develop a policy statement on public awareness and to help develop activities with policy makers to develop legislation which is necessary to establish new or improved policies

A policy statement was written and submitted to the Policy and Planning Committee

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 policy makers and water-user audiences

The information systems data bank is not currently operational.

Water Pollution and Waste Minimisation Develop educational and training information for the local industries Seminars, informational brochures and materials can be developed in coordination to publicise water saving, and environmental friendly technology

Two seminars were held in Aqaba and Sahab which stressed pollution prevention and water preservation

Irrigation Water Management Work will continue with this team and other organizations concerned with irrigation water management to discern what are the best ways to affect water

conservation methods and habits through developing information and communication strategies with farmers farm owners and managers

No activities were held with this component although public awareness activities were conducted with farmers in cooperation with other NGO's

TABLE 2
Summary Of Expenditures Through December 1996
WQICP Costs By Component

	WATER MONITORING AND MANAGEMENT	INDUSTRIAL POLLUTION PREVENTION	IRRIGATION MANAGEMENT	WATER MGMT 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	\$26,289.03	\$22,684.42	\$33,556.20	\$50,930.29	\$133,459.94
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
SUBMISSION 26	\$83,326.04	\$42,075.70	\$17,525.23	\$46,581.77	\$189,508.74
SUBMISSION 27	\$122,388.26	\$42,989.12	\$15,428.90	\$40,136.72	\$220,943.00
SUBMISSION 28	\$174,916.02	\$18,587.45	\$36,626.56	\$23,455.67	\$253,585.70
SUBMISSION 29	\$298,470.80	\$103,816.85	\$28,267.93	(\$1,669.80)	\$428,885.78
SUBMISSION 30	\$368,216.37	\$0.00	\$26,712.44	\$33,197.16	\$428,125.97

TABLE 2
Summary Of Expenditures Through December 1996
WQICP Costs By Component

WQICP 1996 Annual Progress Report

	WATER MONITORING AND MANAGEMENT	INDUSTRIAL POLLUTION PREVENTION	IRRIGATION MANAGEMENT	WATER MGMT EDUCATION	TOTAL
SUBMISSION 31	\$399,422 99	\$0 00	\$38,399 03	\$41 063 00	\$478,885 02
SUBMISSION 32	\$161 368 48	\$0 00	\$34,419 67	\$39 919 83	\$235,707 98
SUBMISSION 33	\$177,740 98	\$0 00	\$26,823 63	\$20 049 62	\$224,614 23
SUBMISSION 34	\$262,991 59	\$0 00	\$23,792 18	\$28 589 01	\$315,372 78
SUBMISSION 35	\$206 955 49	\$0 00	\$32,506 66	\$100 253 03	\$339,715 18
SUBMISSION 36	\$325,349 49	\$0 00	\$46,419 21	\$45 093 62	\$416,862 32
ADJUSTMENT NO 1	\$17,102 71	\$0 00	\$0 00	\$0 00	\$17,102 71
ADJUSTMENT NO 2	\$152,277 17	\$0 00	\$0 00	\$0 00	\$152,277 17
SUBMISSION 37	\$154 237 76	\$0 00	\$28,171 68	\$39 826 53	\$222,235 97
TOTAL	\$5 164,248 78	\$1 528,434 69	\$1,109,390 98	\$1,573,693 23	\$9,375,767 68

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WQICP Annual Progress Report

Commodities Procured Under the "Commodities Line Item
Through December 1996

DESCRIPTION	CODE NO	VOUCHER	DATE	COMP	JD	USD
GIBSON AIRCONDITION	43 40	JD 199	17/08/94	EDUCA	1000 000	1440 92
PORTABLE (OHP)SINON HM 26F	43 40	JD 309	20/10/94	EDUCA	530 000	759 31
SINON (OHP) HP-400	43 40	AJ-JD16	3/11/94	EDUCA	550 000	792 51
GIBSON AIRCONDITION (T/ROOM)	43-40	AJ JD38	17/11/94	EDUCA	1075 000	1553 47
PANASONIC VIDEO	43-40	AJ-JD77	8/12/94	EDUCA	375 000	541 91
PANASONIC TV	43-40	AJ JD77	8/12/94	EDUCA	735 000	1062 14
6 COMPUTERS (COMPU DYNE)	43-40	AJ96,138,147	18/12/94	EDUCA	8370 000	11906 12
CANON ZOOM LENS EF70-210MM F3 5-4 5	43-40	AJ JD170	2/02/95	EDUCA	395 000	567 53
KINDERMANN 2500DATA SLIDE PROJ	43-40	AJ JD173	2/02/95	EDUCA	450 000	646 55
6 COMPUTER DESKS	43-40	AJ JD173	2/02/95	EDUCA	492 000	706 90
TEMP METER KIT	43-40	DAI/HO	31/05/95	IRRG		501 10
IRRIGATION EQUIPMENTS	43 40	DAI/HO	31/08/94	IRRG		4727 08
SELEX COPIER MACHINE GR 1650	43-40	AJ-JD230	1/09/94	IRRG	1150 000	1657 06
2 CRAFT AIRCONDITIONS W/T	43 40	JD258	22/09/94	IRRG	1170 000	1683 45
ALR FLYER 486 DX & LASER PRINT	43-40	JD259/AJ48	22/09/94	IRRG	2570 000	3705 86
EQUIPMENT FOR PROJECT	43-40	DAI/HO	31/10/94	IRRG		1116 63
PHOTOCOPIER MACHINE (NASHWA 3415)	43 40	AJ-JD 1235	11/30/96	IRRG	1750 000	2471 75
GLASS PARTITION FOR WQICP SERVER	43-40	AJ-JD844	14/03/96	MIS	880 000	1242 94
CRAFT AIRCONDITION FOR WQICP SERVER	43-40	AJ JD934	9/05/96	MIS	1115 000	1574 86
4 EKO COMPUTER SYSTEMS (PENTIUM 100 Mhz)	43-40	AJ-JD 1022	4/07/96	MIS	9100 000	12853 11
AUTOCAD rel 13 FOR WINDOWS	43-40	AJ JD 1022	4/07/96	MIS	2290 000	3234 46
UNINTERRUPTABLE POWER SUPPLY	43-40	AJ-JD 1022	4/07/96	MIS	1225 000	1730 23
20 MS OFFICE PRO FOR WINDOWS 3 11 LICENSE	43-40	AJ-JD 1035	16/07/96	MIS	5400 000	7627 12
MS OFFICE FOR WINDOWS 95	43-40	AJ JD 1035	16/07/96	MIS	440 000	621 47
15 MS OFFICE FOR WINDOWS 95 LICENSE	43-40	AJ JD 1035	16/07/96	MIS	4350 000	6144 07
NETWARE CONNECT & PORT	43 40	AJ-JD 1035	16/07/96	MIS	950 000	1341 81
PROLIANT 5000 MODEL (128-MB MEMORY EXPANS)	53-40	DAI/HO	12/31/96	MIS		28889 00
PHOTOCOPY MACHINE (SELEX) CHAMB	43-40	JD 209	25/08/94	POLLU	1150 000	1671 51
SELEX COPIER MACHINE GR-1650	43-40	AJ JD238	8/09/94	POLLU	1150 000	1647 56
PANASONIC TV (MOD TC 25V30R)	43-40	JD-290	6/10/94	POLLU	735 000	1056 03
PANASONIC MULTI SYSTEM VTR	43-40	JD 290	6/10/94	POLLU	455 000	653 74
NATIONAL VIDEO CAMERA VHS	43-40	JD 290	6/10/94	POLLU	945 000	1357 76
FIRST COMPUTER 486DX(CHAMBER)	43-40	AJ JD101	22/12/94	POLLU	1732 000	2463 73
CANON ZOOM LENS EF70-210MM F3 5-4 5	43-40	AJ JD170	2/02/95	POLLU	395 000	567 53

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WQICP Annual Progress Report

Commodities Procured Under the Commodities Line Item
Through December 1996

LAP TOP POWER EXEC 4 / 32 SL	43-40	AJ JD173	2/02/95	POLLU	4049 000	5817 53
DESK TOP 80486 DX 2/66 INTEL	43-40	AJ JD173	2/02/95	POLLU	1732 000	2488 51
LASER PRINTER XEROX 4510	43 40	AJ JD173	2/02/95	POLLU	1715 000	2464 08
HP DESK JET 1200 C/PS	43-40	AJ JD173	2/02/95	POLLU	2600 000	3735 63
FAX MACHINE XEROX 7235	43-40	AJ-JD173	2/02/95	POLLU	450 000	646 55
KINDERMANN SLIDE PROJECTOR	43 40	AJ-JD173	2/02/95	POLLU	450 000	646 55
10 BIN SORTER FOR SELEX (CHAMBER)	43-40	AJ-JD289	20/04/95	POLLU	750 000	1098 10
CONSERVATION MESSAGE STAMP	43-40	JD 252	16/06/94	PUBLIC	252 000	365 22
EMBASSY CAMERA CENTER	43 40	DAI/HO	31/07/94	PUBLIC		559 75
POSTERS 4 COLORS	43-40	JD 139	7/07/94	PUBLIC	1300 000	1889 54
PROJECT HATS WITH DESIGHN	43-40	JD 139	7/07/94	PUBLIC	1200 000	1744 18
WQICP LOGO	43 40	AJ-JD228	1/09/94	PUBLIC	400 000	576 37
MACINTOSH LC 475 8/250	43-40	JD231	1/09/94	PUBLIC	1387 500	1999 28
MACINTOSH LC 475 8/250	43-40	JD231	1/09/94	PUBLIC	1387 500	1999 28
AL NASHER AL SAHAFI (S/W) JES	43-40	AJ JD237	8/09/94	PUBLIC	700 000	1002 87
AL NASHIR AL-SAHAFI 5USERS	43-40	AJ-JD94	15/12/94	PUBLIC	1100 000	1564 72
DESIGN ARABIC & ENG WATER MAP	43-40	AJ JD227	16/03/95	PUBLIC	650 000	924 60
6000 WATER MAP POSTERS	43-40	AJ-JD227	16/03/95	PUBLIC	1620 000	2304 40
WQICP BROCHURES DESIGN	43-40	AJ-JD252	30/03/95	PUBLIC	600 000	874 64
(2000)ENGLISH WATER MAP	43 40	AJ-JD281	16/04/95	PUBLIC	620 000	902 47
3 POWER MACINTOSH 7100	43-40	AJ-JD 397	29/06/95	PUBLIC	8352 000	12104 35
6 16 MB RAM 60NS 70PIN F/MAC 7100	43-40	AJ JD 397	29/06/95	PUBLIC	2880 000	4173 91
3 1BM VRAM TO 2 MB	43 40	AJ JD 397	29/06/95	PUBLIC	390 000	565 22
3 APPLE MULTIPULE SCAN 17" DISPLAY	43 40	AJ-JD 397	29/06/95	PUBLIC	2610 000	3782 61
5 AIRCONDITION (GIBSON) F/JES	43-40	AJ-JD531	21/09/95	PUBLIC	5125 000	7198 03
POSTAGE STAMP DESIGN & PRODUCTION	43-40	AJ-JD		PUBLIC		7565 22
1 POWERED MIXER	43 40	AJ-JD578	12/10/95	PUBLIC	1225 000	1774 85
2 SPEAKER	43-40	AJ-JD578	12/10/95	PUBLIC	1020 000	1477 83
WATER FESTIVAL SUPPLIES (WATER WALK)	43-40	AJ-JD579	12/10/95	PUBLIC	624 200	904 38
CONNECTING VALVES AND FITTING S (PA)	43-40	AJ-JD623	9/11/95	PUBLIC	414 000	584 75
1000 WQICP FOLDERS 4 COLORS	43 40	AJ-JD651	23/11/95	PUBLIC	425 000	600 28
DOCUMENTARY FILM (WATER RESOURCES)	43 40	AJ JD856	23/03/96	PUBLIC	5000 000	7062 15
SUPPLIES FOR WATER DEVICES STUDY	43-40	AJ-JD890	11/04/96	PUBLIC	787 500	1112 29
SUPPLIES FOR WATER DEVICES STUDY	43 40	AJ-JD917	25/04/96	PUBLIC	633 000	894 07
SUPPLIES FOR WATER DEVICES STUDY	43 40	AJ-JD918	25/04/96	PUBLIC	499 000	704 80

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WQICP Annual Progress Report

Commodities Procured Under the "Commodities" Line Item
Through December 1996

TI 14 4 DATA/9600 S/R FAX MODEM	43 40	DAI/HO	30/04/94	WATER1		535 00
2 JEEP CHEROKE	43 40	FU- 02	5/06/94	WATER1		45950 00
1 JEEP CHEROKE	43 40	FU 04	26/06/94	WATER1		22975 00
40% PAYMENT OF COMP CONTR	43-40	DAI/HO	31/07/94	WATER1		40837 00
2 MS EXCEL ENGLISH V4 0 3 5'	43-40	DAI/HO	31/07/94	WATER1		582 00
2 PAGEMAKER V5 0	43 40	DAI/HO	31/07/94	WATER1		1036 00
QUARK EXPRESS V3 3	43-40	DAI/HO	31/07/94	WATER1		559 00
2 ADOBE ILLUSTRATOR V5 1	43-40	DAI/HO	31/07/94	WATER1		718 00
2 ADOBE PHOTOSHOP V2 51	43-40	DAI/HO	31/07/94	WATER1		1111 00
DATASHOW 16 8M LCD PROJECTION	43-40	DAI/HO	31/08/94	WATER1		4110 00
3 MS EXCEL F/WINDOWS V5 0 LICENSE	43 40	DAI/HO	31/08/94	WATER1		777 00
PAGEMAKER F/WINDOWS V5 0 SINGLE	43-40	DAI/HO	31/08/94	WATER1		519 00
14 VIRUSCAN V1 5 WINDOWS,SINGLE W/DOCUMEN	43-40	DAI/HO	31/08/94	WATER1		1036 00
14 NORTON UTILITIES V8 0 SINGLE	43 40	DAI/HO	31/08/94	WATER1		1536 00
9 LOTUS 123 FOR WINDOWS V4 01 LICENSE	43-40	DAI/HO	31/08/94	WATER1		2151 00
13 MS PROJECT F/ WINDOWS V4 0 LICENSE PACK	43 40	DAI/HO	31/08/94	WATER1		4702 00
2 DBASE III PLUS V1 1 SINGLE SERVER	43-40	DAI/HO	31/08/94	WATER1		878 00
CORELDRAW V5 0 SINGLE W/DOCUMEN W/CD 3 5'	43-40	DAI/HO	31/08/94	WATER1		548 00
2 SHREDDERS	43 40	JD-206	25/08/94	WATER1	640 000	930 23
FORD TEMPO (GRAY)	43-40	FU-09	8/09/94	WATER1		13450 00
FORD TEMPO (GRAY)	43 40	FU-09	8/09/94	WATER1		13450 00
BROTHER FAX MACHINE	43-40	AJ JD257	22/09/94	WATER1	625 000	899 28
BROTHER FAX MACHINE	43-40	JD257	22/09/94	WATER1	625 000	899 28
BROTHER FAX MACHINE	43-40	JD257	22/09/94	WATER1	625 000	899 28
BOOKS FOR WQICP (SALINITY)	43-48	DAI/HO	31/10/94	WATER1		682 00
BOOKS (WATER ENVIRONMENT)	43-48	DAI/HO	31/10/94	WATER1		2562 67
SELEX COPIER MACH M GR-6000	43 40	AJ-JD15	3/11/94	WATER1	10150 000	14625 36
IBM EQUIPMENT	43 40	AJ-JD40	17/11/94	WATER1	7646 940	11050 49
IBM EQUIPMENT	43-40	AJ-JD40	17/11/94	WATER1	7646 940	11050 49
IBM EQUIPMENT	43-40	AJ-JD40	17/11/94	WATER1	7646 940	11050 49
IBM EQUIPMENT	43-40	AJ-JD40	17/11/94	WATER1	7646 940	11050 49
IBM COMPUTER EQUIPMENT	43-40	AJ JD76	8/12/94	WATER1	11680 700	16879 62
IBM COMPUTER EQUIPMENT	43-40	AJ-JD113	28/12/94	WATER1	9843 060	14081 63
TALLY LASER PRINTER T-9008	43-40	AJ-JD125	5/01/95	WATER1	1240 000	1763 87
IBM EQUIPMENT (FINAL PAYMENT SSC)	43-40	AJ-JD184	9/02/95	WATER1	2061 310	2961 65

TABLE 3

Commodities Procured Under the "Commodities Line Item
Through December 1996

NETWARE V 4 1 UPGRADE	43-40	AJ JD 427	22/07/95	WATER1	1695 000	2456 52
ORACLE MAIN FRAME 5 DEVELOPERS	43 40	AJ JD 450 C	31/07/95	WATER1	14975 000	21484 94
25 USERS (ORACLE) INCLUDING RDBMS & CDE	43-40	AJ JD 450 C	31/07/95	WATER1	17750 000	25466 28
ORIGINAL IBM PS/NOTE/ 25	43-40	AJ JD 473	17/08/95	WATER1	2068 000	2997 10
PC INSTALLATIONS CHARGES FOR ORACLE	43-40	AJ JD 502	31/08/95	WATER1	24260 000	34706 72
HP OMNIBOOK 4000CT,486DX4-100MHZ COLOR	43 40	DAI / HO	31/08/95	WATER1		3497 00
5 LASER PROCESSING UNIT F / MANNESMAN	43 40	DAI/HO	31/9/95	WATER1		1065 00
4 FLIP CHART STAND	43-40	AJ JD519	14/09/95	WATER1	560 000	801 14
ANTI VIRUS NLM V2 5 NETWORK,10 USER	43-40	DAI/HO	30/11/95	WATER1		540 00
REIMB OF 6 COMPUTERS (UNIFINE)	43-40	RV AJ JD30	3/04/96	WATER1	-8370 000	11906 12
REIMB OF LASER PRINTER (T 9008 TALLY)	43-40	RV AJ JD31	3/04/96	WATER1	-1240 000	-1763 87
REIMB OF ORACLE MAIN FRAME	43-40	RV AJ JD32	3/04/96	WATER1	-32725 000	-46951 22
REIMB OF ORACLE PC-INSTALLATION	43-40	RV AJ-JD33	3/04/96	WATER1	-24260 000	-34706 72
REIMB OF ORACLE TRAINING COSTS	43-40	RV AJ-JD35	3/04/96	WATER1	-8000 000	-11299 44
ORACLE TRAINING COURSE COST	43-40	AJ JD933	9/05/96	WATER1	6000 000	8474 58
RICOH PHOTOCOPIER F/MINISTER OFFICE & SORTER	43-40	AJ JD970	30/05/96	WATER1	2600 000	3672 31
RICOH PHOTOCOPIER F/ADMINISTRATION OFFICE	43-40	AJ JD970	30/05/96	WATER1	925 000	1306 50
LOTUS NOTES DESKTOP,INT'L VERSION	53-40	DAI/HO	31/07/96	WATER1		4192 41
HP LASER JET 4V	43-40	AJ JD 1043	25/07/96	WATER1	1970 000	2782 48
NETWORK CARD RJ 45	43-40	AJ JD 1043	25/07/96	WATER1	370 000	522 60
DOCUMENT FEEDER F/MINISTERS OFFICE MACHINE	43-40	AJ JD 1065	8/08/96	WATER1	999 000	1411 02
DATABASE PACKAGE FOR MAC FOR (JES)	43 40	AJ JD 1066	8/08/96	WATER1	840 000	1186 44
STORAGE CHARGES FOR LAB EQUIPMENT	43-40	AJ JD 1080	08/15/96	WATER1	359 570	507 87
INSURANCE FOR 2 SEDAN (4703 & 4704)	43-83	AJ JD 1070	8/08/96	WATER1	992 000	1401 13
2 32 MB SIMMS FOR IBM PENTIUM SERVER	43-40	DAI/HO	31/08/96	WATER1		1206 90
LOTUS NOTES DESKTOP INTERNATIONAL	53-40	DAI/HO	31/08/96	WATER1		840 00
VEHICLE MAIN/REPAIR (GAS)	49-86		30/06/94	WATER2		718 03
VEHICLE MAIN/REPAIR (GAS)	49-86		31/07/94	WATER2		573 42
VEHICLE MAIN/REPAIR (GAS)	49-86		31/08/94	WATER2		537 32
VEHICLE MAIN/REPAIR (GAS)	49-86		OCT 94	WATER2		590 07
VEHICLE MAIN/REPAIR (GAS)	49-86		NOV 94	WATER2		1237 14
VEHICLE MAIN/REPAIR (GAS)	49-86		DEC 94	WATER2		989 35
VEHICLE MAIN/REPAIR (GAS)	49-86		JAN 95	WATER2		905 69
VEHICLE MAIN /REPAIR (GAS)	49 86		FEB 95	WATER2		733 19
VEHICLE MAIN /REPAIR (GAS)	49-86		MAR 95	WATER2		740 54

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Commodities Procured Under the Commodities' Line Item
Through December 1996

VEHICLE MAIN /REPAIR (GAS)	49 86		APRIL,95	WATER2		933 90
RED JEEP NO 4388 INSURANCE	43 83	AJ JD311	3/05/95	WATER2	1000 000	1457 73
CHAMPANE NO 4389 INSURANCE	43-83	AJ JD311	3/05/95	WATER2	1000 000	1457 73
GRAY JEEP NO 4394 INSURANCE	43 83	AJ JD311	3/05/95	WATER2	1000 000	1457 72
VEHICLE MAIN /REPAIR (GAS)	49 86		MAY 95	WATER2		865 22
VEHICLE MAIN / REPAIR (GAS)	49 -86		JUNE,95	WATER2		931 01
VEHICLE MAIN / REPAIR (GAS)	49-86		JULY,95	WATER2		1908 24
INSURANCE FOR 2 FORDS	43-83	AJ JD503	4/09/95	WATER2	992 000	1419 17
IBM & LASER PRINTER	43-05	JD 1	3/03/94	WATER3	350 000	507 25
2 486/PC & LASER RENT	43-05	JD 6	22/03/94	WATER3	500 000	724 64
CAR RENTAL (MONTH)	49 85	JD 12	29/03/94	WATER3	450 000	538 64
2 CARS RENTAL	49-85	JD-19	4/04/94	WATER3	1000 000	1449 28
486/PC & LASER PRINT	43 05	JD 23	4/04/94	WATER3	350 000	507 25
CAR RENTAL W/DRIVER	43-85	JD-43	3/03/94	WATER3	700 000	1014 49
CAR RENTAL W/DRIVER	43-85	JD-44	5/03/94	WATER3	700 000	1014 49
COMPUTER TECH INC	43-40	DAI/HO	31/03/94	WATER3		6334 00
2 486/PC & LASER PRINTER	43-05	JD 58	28/04/94	WATER3	550 000	786 84
2 CARS RENTAL	49 85	JD 61	30/04/95	WATER3	500 000	715 31
2 486/PC & LASER PRINTER	43-05	JD-67	12/05/94	WATER3	940 000	1346 70
PAYMENT FOR VEHICLE INSUR	43-83	JD-71	14/05/94	WATER3	1000 000	1444 00
PAYMENT FOR VEHICLE INSUR	43 83	JD-80	26/05/94	WATER3	2000 000	2887 22
3 486/PC & LASER PRINTER	43 05	JD- 102	8/06/94	WATER3	650 000	931 23
3 486/PC & LASER PRINTER	43 05	JD 108	16/06/94	WATER3	640 000	927 54
2 486/PC & LASER PRINTER	43-05	JD 168	28/07/94	WATER3	500 000	722 54
2 486/PC & LASER PRINTER RENT	43-05	JD-207	25/08/94	WATER3	500 000	726 74
INSURANCE FOR 2 SEADANS	43-83	JD-190	10/08/94	WATER3	992 000	1431 46
2 486/PC & LASER PRINTER RENT	43-05	JD-281	1/10/94	WATER3	500 000	718 39
SHAWN NIAKI HHE CHARGES	53-41	DAI/HO	31/05/96	WATER3		1916 16
INSURANCE FOR 3 JEEPS 4388,4389 & 4394	43-83	AJ-JD942	12/05/96	WATER3	2700 000	3813 56
SHIPPING OF COMMODITIES CHARGES	53-41	DAI/HO	31/05/96	WATER3		1237 49
QUARK XPRESS V3 3 SINGLE W/DOCUMENT	43-40	DAI/HO	31/05/94	WATER4		588 00
STRATIGIC MAPPING S W	43-40	DAI/HO	30/11/94	WATER4		521 00
LOTUS NOTES 20USER LICENS	43-40	AJ-JD265	6/04/95	WATER4	5938 000	8643 38
LOTUS ORGANIZER 20USER LICENS	43-40	AJ-JD265	6/04/95	WATER4	1380 000	2008 73
LOTUS NOTES TRAINING 20 PART	43-40	AJ-JD265	6/04/95	WATER4	2660 000	3871 90

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Commodities Procured Under the Commodities' Line Item
Through December 1996

SUPERVISER LOTUS NOTES TRAINING	43-40	AJ-JD265	6/04/95	WATER4	522 000	759 83
SUBSCRIPTION						634 01
ITEMS PROCURED LESS THAN \$ 500 00						83890 89
						617433 05

NOTES WATER1 = Non expendable commodities under component 1 Includes all office furniture, books, computers, network installation vehicles
 WATER2 = Expendable Vehicle operations and maintenance for the WQIC Project
 WATER3 = Expendable Miscellaneous (Shipping fees, rentals, printer cartridges, spare computer disks, etc)

WATER1, 2 & 3 = Component 1a Supporting MWI Water Resources Policy and Planning
 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 4
 Non Expendable Commodities
 Through December 1996

COMMODITIES PROCURED BY DEVELOPMENT ASSOCIATES

DESCRIPTION	DATE	LOCATION	COMPONENT	UNIT COST	Q OF UNI	TOTAL COST (\$)
CABINET 2 DOORS 65 H	4/04/95	WAJ/LAB	LAB	\$525 00	3	\$1 575 00
CABINET ACID 45GAL 65' H	4/04/95	WAJ/LAB	LAB	\$578 00	3	\$1 734 00
FREIGHT CHARGES	4/04/95					\$492 05
CONDUCTIVITY/TOS METER WITH PATENTED PROBE DESIGN	4/04/95	WAJ/LAB	LAB	\$495 00	2	\$990 00
PROBE ASSY CONDUCTIVITY / TOS	4/04/95	WAJ/LAB	LAB	\$175 00	4	\$700 00
KIT INSTL PRCBE 10FT CABLE	4/04/95	WAJ/LAB	LAB	\$225 00	6	\$1 350 00
GALIC ACIC SOLUTION	4/04/95	WAJ/LAB	LAB	\$7 25	1	\$7 25
SODIUM CHLORIDE 491 MG/L 100ML	4/04/95	WAJ/LAB	LAB	\$6 50	6	\$39 00
SODIUM CHLORIDE 10246 MG/L 100ML	4/04/95	WAJ/LAB	LAB	\$6 50	6	\$39 00
PORTABLE RATIOING TURBIDIMETER W/AUTOMATIC CR	4/04/95	WAJ/LAB	LAB	\$895 00	2	\$1,790 00
BATTERY ELIMINATOR 230V 6VDC	4/04/95	WAJ/LAB	LAB	\$40 00	2	\$80 00
LAMP ASSEMBLY 2100P	4/04/95	WAJ/LAB	LAB	\$35 00	4	\$140 00
FORMAZIN TURB STD 4000NTU 100ML	4/04/95	WAJ/LAB	LAB	\$6 30	3	\$18 90
SILICONE OIL 15ML SCDB	4/04/95	WAJ/LAB	LAB	\$5 00	2	\$10 00
SAMPLE CELL 2100P TURB PK/6	4/04/95	WAJ /LAB	LAB	\$15 00	4	\$60 00
HACH ONE PORTABLE PH METER AUTO TEMP COMPENSATION	4/04/95	WAJ/LAB	LAB	\$495 00	4	\$1 980 00
STAND ELECTRODE HOLDER	4/04/95	WAJ/LAB	LAB	\$49 00	4	\$196 00
BATTERY ALKALINE J 6VOLT	4/04/95	WAJ/LAB	LAB	\$4 00	8	\$32 00
ELECT PKG HACHONE PH CCMB W/T N	4/04/95	WAJ/LAB	LAB	\$140 00	8	\$1,120 00
HACH ONE REF ELECT SOLUT	4/04/95	WAJ/LAB	LAB	\$0 00	2	\$0 00
HACH ONE ELECTRO S/MANU	4/04/95	WAJ/LAB	LAB	\$0 00	2	\$0 00
BUFFER POWER PILOLOW PK/50	4/04/95	WAJ/LAB	LAB	\$8 25	4	\$33 00
HACH ONE REF ELECTROYTE CRTG	4/04/95	WAJ/LAB	LAB	\$6 95	16	\$111 20

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

	Through December 1996					
FREIGHT CHARGES	4/04/95					\$ 15 00
BNCHTOP CTRL 1HT OUTPUT (DIMS 12X12X12)	4/04/95	WAJ/LAB	LAB			\$537 90
TRANSPORTATION D TO DOOR	4/04/95					\$7 909 58
AIR FREIGHT CHARGES	4/04/95					\$1 973 55
INSURANCE	4/04/95					\$181 09
TJ 36 CAIN 18U 12 OST M T/C PROBE	05/17/95					\$40 62
DESIGNING OPERATING&MAINTAINING PVC	7/06/95					\$11 00
DRIP AND MICROIRRIGATION FOR TREES,VINES & ROW CROPS	7/06/95	MWI/LIB	WATER1			\$46 00
THE ECONOMIC IMPACT OF IRRIGATED AGRICULTURE	7/06/95	MWI/LIB	WATER1			\$31 50
EFFECTIVE USE OF WATER IN IRRIGATED AG	7/06/95					\$7 00
GROUND WATER & SOIL CONTAMINATION REMEDIATION	7/06/95	MWI/LIB	WATER1			\$33 50
GROUND WATER QUALITY PROTECTION	7/06/95	MWI/LIB	WATER1			\$72 50
IRRIGATION INDUCED WATER QUALITY AGROWING PROBLEMS	7/06/95	MWI	WATER1			\$37 50
IRR TECHNICAL MANUAL ENGINEERING DATA	7/06/95					\$11 00
MICRO IRRIGATION METHODS & MATERIAL UPDATE	7/06/95					\$33 00
PLANING FOR AN IRRIGATION SYSTEM	7/06/95					\$22 00
TROUBLE SHOOTING IRR CONTROL SYSTEM	7/06/95	MWI/LIB	WATER1			\$23 00
CERTIFIED IRR DESIGNER VIDEO SERIES	7/06/95					\$102 00
IRR WITH RECLAIMED MUNICIPAL WASTEWATER	9/06/95					\$93 50
DRINKING WATER QUALITY MANA	12/06/95					\$59 00
LOW LV ENV RADIO SOURCE	12/06/95					\$58 00
NUTRIET REMOVAL FROM WASTE	12/06/95					\$110 00
SCREENING EQUIPMENT HANDBOOK	12/06/95			\$45 00	2	\$90 00
SIM WASWTR TREA PLAN OPER T	12/06/95			\$23 75	3	\$71 25
SIMPLIFIED WASTEWATER TREATMENT PLANT OPERATIONS (WORKBOO	12/06/95	MWI/LIB	WATER1	\$10 75	3	\$32 25
SHIPPING CHARGES	12/06/95					\$7 10
GRAB SAMPLER	06/19/95			\$230 00	2	\$460 00

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

	Through December 1996					
SPARE SAMPLING BOTTLES 1000 ML	06/19/95			\$15 00	6	\$90 00
SHIPPING CHARGES	06/19/95					\$14 26
SAMPLER GRAB 18 FT	8/09/95			\$474 70	2	\$949 40
BOTTLE 1000ML W/CAP	8/09/95			\$19 35	6	\$116 10
TRANSPORTATION	8/09/95					\$16 00
EPA NATIONAL PUBLICATIONS CATALOG FIRST EDIT	8/09/95					\$77 00
SHIPPING & HANDLING FEE	8/09/95					\$13 50
METALS IN GROUND WATER ALLEN /PERDUE/ BR	11/10/95					\$59 95
OZONE IN WATER TREATMENT AWWARF	11/10/95					\$84 00
HAZARDOUS WASTE RISK ASSESSMNT ASANTE DUAH	11/10/95					\$77 00
ECOLOGICAL RISK ESTIMATION BARTELL/GARDNER	11/10/95					\$84 00
HYDROCARBON BIOREMEDIATION BATTLE LABS	11/10/95					\$0 00
EMERGING TECHNOLOGY FOR BIOREMEDIATION	11/10/95					\$69 95
41 ST PURDUE INDUSTRIAL WASTE CONFERENCE	11/10/95					\$124 95
PROCEEDINGS 43RD INDUSTRIAL WASTE CONFERENCE	11/10/95					\$124 95
PROCEEDINGS OF THE 44TH INDUS WASTE CONFERENCE	11/10/95					\$121 95
45TH PURDUE INDUSTRIAL WASTE CONFERENCE	11/10/95					\$110 00
PRACTICAL HB/SOIL WALDOSE (ZONE & GRNDWTR)	11/10/95					\$89 95
DESCRIPTION & SAMPLING/CONTAM SOILS (A FIELD MANU)	11/10/95					\$49 95
ENVIRONMENTAL IMPACT STATEMENT BREGMAN MACKNET	11/10/95					\$77 95
CHEMICAL KINETICS & PROCESS DYNAMICS IN AQUATIC SYS	11/10/95					\$75 95
FIELD SAMPLING METHODS F/REMEDIAL INVESTIGATION	11/10/95					\$69 95
PERFORMING EGOLOGICAL RISK ASSESSMENTS /BALDW	11/10/95					\$49 95
PRINCIPLES & PRACTICES F/PETROLEUM CONTAMINATED	11/10/95					\$84 00
SOIL SAMPLING/METHODS ANALYSIS CARTER	11/10/95					\$75 00
RESTORATION & MANAGEMENT OF LAKES & RESERVOIRS	11/10/95					\$69 95
COMPARATIVE ENVIRONMENTAL RISK ASSESSMENT	11/10/95					\$79 95

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Table 4
Non Expendable Commodities

	Through December 1995				
ENVIRONMENTAL STATISTICS ASSESSMENT & FORECASTING	11/10/95				\$99 95
PRACTICAL MANUAL/GROUNDWATER MICROBIOLOGY	11/10/95				\$59 95
MUNICIPAL STORMWATER MANAGEMENT	11/10/95				\$79 95
INDUSTRIAL WASTEWATER TREATMENT (GUIDEBOOK)	11/10/95				\$49 95
GROUNDWATER MODELS FOR RESOURCES ANALYSIS	11/10/95				\$69 95
HAZARDOUS WASTE SITE REMEDIATION	11/10/95				\$47 95
PRINCIPLES OF AIR QUALITY MANAGEMENT	11/10/95				\$59 95
CONSTRUCTED WETLANDS FOR WASTEWATER TREATMENT	11/10/95				\$87 95
PRACTICAL HB OF COMPOST ENGRG HAUG	11/10/95				\$75 95
ILLUTR HB PHYS CHEM PROPERTIES ENV FATE/ORGANIC CHEM	11/10/95				\$99 95
ENVIRONMENTAL CHEMISTRY SIXTH EDITION	11/10/95				\$59 95
FUNDAMENTALS OF ENVIRONMENTAL CHEMISTRY MANAHAN	11/10/95				\$55 95
FATE & PREDICTION/ENVIRONMENTAL CHEM/SOILS PLANTS	11/10/95				\$89 95
ENVIRONMENTAL LAW AND ENFORCEMENT	11/10/95				\$59 95
HANDBOOK OF AIR POLLUTION CONTROL ENGINEERING&TECH	11/10/95				\$79 95
WATER SUPPLY DEVELOPMENT F/MEMBRANE WTR TREATMENT	11/10/95				\$75 95
CONSTRUCTED WETLANDS F/WAT QUALITY IMPROVEMENT	11/10/95				\$79 95
MANUAL OF AQUATIC SEDIMENT SAMPLING MUDROCH/AZCUE	11/10/95				\$49 95
APPLICATION OF SOLIDIFICATION/STABILIZATION NEHRING	11/10/95				\$69 95
REUSE OF SLUDGE & MINOR WASTEWATER RESIDUALS	11/10/95				\$59 95
PRINCIPLES OF CONTAMINANT HYDROGEOLOGY PALMER	11/10/95				\$59 95
BIOREMEDIATION OF PETROLEUM CONTAMINATED SITES RISER	11/10/95				\$71 95
HANDBOOK OF WASTEWATER RECLAMATION & REUSE	11/10/95				\$95 00
TOXIC SUBSTANCES IN MUNICIPAL WASTE WATERS	11/10/95				\$66 95
STANDARD HB/SOLID & HAZARDOUS WASTE FACILITY ASSESSMENT	11/10/95				\$89 95
PHOSPHORUS & NITROGEN REMOVAL FROM MUNICIPAL WAS WTR	11/10/95				\$74 00
SURFACE & AQUATIC PHOTOCHEM HELZ/ZEEP/CROSB	11/10/95				\$89 95

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Table 4
Non Expendable Commodities

		Through December 1996				
ENVIRONMENTAL SITE ASSESSMENT PHASE I BASIC GUIDE HESS	11/10/95					\$75 95
POLLUTION PREVENTION HANDBOOK (HIGGINS)	11/10/95					\$75 00
MANUAL ON THE CAUSES AND CONTROL OF ACTIVATED SLUDGE	11/10/95					\$55 95
SUBSURFACE TRANSPORT & FATE PROCESSES KNOX	11/10/95					\$69 95
HB OF CHEMISTRY & PHYSICS 75TH EDITION LIDE	11/10/95					\$101 50
BIOLOGICAL MONITORING OF AQUATIC SYSTEMS LOEB / SPACIE	11/10/95					\$65 95
HAZARDOUS WASTE PLANING SOESILO WILSON	11/10/95					\$59 95
MUNICIPAL SLUDGE IN LAND RECLAMATION SOPPER	11/10/95					\$64 95
CHEMISTRY & MICROSTRUCTURE OF SOLIDFIELD WASTE FORMS	11/10/95					\$105 00
BIOTECHNOLOGY/TREATMENT OF HAZARDOUS WASTE STONER	11/10/95					\$77 95
BASIC MECH MAINT PROCEDURES AT WATER /WSTWTR TRMNT	11/10/95					\$49 95
PRIMARY TREATMENT/WSTWTR TREATMENT PLANTS	11/10/95					\$56 95
WORKBOOK OF ATMOSPHERIC DISPERSION ON ESTIMATES 2ND ED	11/10/95					\$79 95
ESTIMATING COSTS OF AIR POLLUTION CONTROL VATAVUK	11/10/95					\$97 00
MERCURY POLLUTION INTEGRATION AND SYNTHESIS WATRAS	11/10/95					\$95 95
HANDBOOK OF WATER CONSERVATION VICKERS	11/10/95					\$0 00
HANDBOOK OF WATER CONSERVATION VICKERS	11/10/95					\$47 78
USE TAX FOR SEPT 95	11/10/95					\$4 14
COOLER MARINE (WHITE)	11/14/95	WAJ/W H	LAB	\$63 99	10	\$639 90
U TEK REFRIGERNT PK CS-12 240ZE	11/14/95	WAJ/W H	LAB	\$18 91	4	\$75 64
STAND TOP /1 7/8 DIA BAI	11/14/95	WAJ/W H	LAB	\$47 50	5	\$237 50
STANDARD BALL STYLE BOTTOM	11/14/95	WAJ/W H	LAB	\$47 50	5	\$237 50
SECCHI DISK	11/14/95	WAJ/W H	LAB	\$26 00	2	\$52 00
1050 CC EXT TUBE/ 1 7/8" BAI	11/14/95	WAJ/W H	LAB	\$115 00	5	\$575 00
LEAD UNIT	11/14/95	WAJ/W H	LAB	\$21 25	2	\$42 50
SHIPPING & HANDLING	11/14/95					\$8 43
SOIL PROCESSES AND WTR QUALITY LAL / STEWART	11/16/95	MWI/LIB	WATER1	\$69 95	1	\$69 95

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Table 4
Non Expendable Commodities

Through December 1996						
SYSTEM DEV CHARGES FOR WATER ,WW, AND STORMWATER FAC	11/16/95	MWI/LIB	WATER1	\$59 95	1	\$59 95
WATER QUALITY DATA ANALYSIS & INTERPRETATION HOUNSLOW	11/16/95	MWI	WATER1	\$79 95	1	\$79 95
ENVIRONMENTAL MANAGEMENT HANDBOOK RYDING	11/16/95	MWI/LIB	WATER1	\$105 00	1	\$105 00
AGROCHEMICAL ENVIRONMENTAL FATE STUDIES STATE OF THE ART	11/16/95	MWI/LIB	WATER1	\$79 95	1	\$79 95
POLLUTION PREVENTION INTEGRATION (WIGGLESWORTH)	11/16/95	MWI/LIB	WATER1	\$77 95	1	\$77 95
BASIC HAZARDOUS WASTE MANAGEMENT (BLACRMAN)	11/16/95	MWI/LIB	WATER1	\$69 95	1	\$69 95
AIR SPARGING FOR SITE REMEDIAT BATTELLE	11/16/95	MWI/LIB	WATER1	\$69 95	1	\$69 95
HYDROCARBON BIOREMEDIATION BATTELLE LABS	11/16/95	MWI/LIB	WATER1	\$74 95	1	\$74 95
COMPOSTING & RECYCLING MUNICIPAL SOLID WASTE DIAZ/SAVAGE	11/16/95	MWI/LIB	WATER1	\$64 95	1	\$64 95
METHODS OF AIR SAMPLING & ANALYSIS , 3RD ED LODGE	11/16/95	MWI/LIB	WATER1	\$79 95	1	\$79 95
SHIPPING AND HANDLING	11/16/95					\$26 81
EIDE VLB CONTROLLER W/2S/1P/1G	11/06/95	MWI	WATER1	\$28 00	5	\$140 00
STB 2MB PCI VIDEO CARD S/N 1395,1396 1397	11/06/95	MWI	WATER1	\$180 00	3	\$540 00
GVC 15 SVGA MONITOR S/N 1354 MFG 5PTA57M007178	11/06/95	MWI	WATER1	\$340 00	1	\$340 00
GVC 15 SVGA MONITOR S/N 1436 MFG 5PTA57M007145	11/06/95	MWI	WATER1	\$340 00	1	\$340 00
GVC 17 SVGA C/MONITOR S/N 1423 MFG 7PTA59M002069	11/06/95	MWI	WATER1	\$660 00	1	\$660 00
MICROSOFT SERIAL MOUSE 2 0A	11/06/95	MWI	WATER1	\$30 00	6	\$180 00
(SANYO) CD ROM DRIVE	11/06/95	MWI	WATER1	\$230 00	1	\$230 00
CPU HEATSINK WITH FAN	11/06/95	MWI	WATER1		2	
PENTIUM PCI MOTHERBOARD W/256K CACHE PIPLINE BURST TRITON	11/06/95	MWI	WATER1	\$270 00	2	\$540 00
INTEL PENTIUM 90 PROCESSOR	11/06/95	MWI	WATER1	\$290 00	2	\$580 00
4MB 72 PIN SIMM EDO F/RJ 45 BNC,& GENERAL PC REPAIR	11/06/95	MWI	WATER1	\$150 00	12	\$1,800 00
3 5 FLOPPY DRIVE 1 44MB S/N 1344 1345,1346,1347 1348 ,MFG	11/06/95	MWI	WATER1	\$30 00	5	\$150 00
CONNER 850MB IDE HARD DRIVE S/N 1410 1415, MFG	11/06/95	MWI	WATER1	\$220 00	6	\$1 320 00
FILEPRO CFS850A EIDE MODE 4	11/06/95	MWI	WATER1			\$0 00
FILEPRO CFS1274A EIDE MODE 4	11/06/95	MWI	WATER1			\$0 00
FUJITSU 2GB SCSI 2 HDD S/N 1401,MFG J0008473	11/06/95	MWI	WATER1	\$730 00	1	\$730 00

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Table 4
Non Expendable Commodities
Through December 1995

FUJITSU 2GB SCSI 2 HDD S/N 1402 MFG J0008509	11/06/95	MWI	WATER1	\$ 730 00	1	\$ 730 00
KINGSTON ETHERNET COMBO CARD S/N 1416 1420 MFG	11/06/95	MWI	WATER1	\$ 40 00	5	\$ 200 00
HANDBOOK OF WATER CONSERVATION VICKERS	11/06/95	MWI	WATER1	\$ 73 20	1	\$ 73 20
MODLE 51B PORTABLE DO METER	12/12/95			\$ 640 00	1	\$ 640 00
FIELD OXYGEN PROBE	12/12/95			\$ 225 00	2	\$ 450 00
CARRYING CASE FOR DO METER	12/12/95			\$ 145 00	1	\$ 145 00
PROBE RECONDITIONING KIT	12/12/95			\$ 25 00	4	\$ 100 00
PROBE CABLE ASSEMBLY 150	12/12/95			\$ 300 00	1	\$ 300 00
O RING KIT	12/12/95			\$ 10 00	2	\$ 20 00
DIAPHRAGM KIT	12/12/95			\$ 20 00	2	\$ 40 00
SHIPPING AND TAX	12/12/95					\$ 101 27
COMPUTER TOOL KIT F/RJ 45 BNC, & GENERAL PC REPAIR	1/10/96	MWI	WATER1	\$ 319 00	1	\$ 319 00
CONNER 1 2GB IDE HARD DRIVE S/N 1644,1645 MFG	1/10/96	MWI	WATER1	\$ 280 00	2	\$ 560 00
GLOBAL COMPUTER CLEANING KIT	1/10/96	MWI	WATER1	\$ 44 00	10	\$ 440 00
DATAVAC VACUM CLEANER	1/10/96	MWI	WATER1	\$ 85 00	1	\$ 85 00
VARIABLE DEPTH KEMMERER SAMPLER STAINLESS STEEL	12/08/95	WAJ/W H	LAB	\$ 250 00	2	\$ 500 00
MESSENGER FOR (VARIABLE DEPTH KEMMERER) 45 B10	12/08/95	WAJ/W H	LAB	\$ 44 00	2	\$ 88 00
CABLE 50 METERS FOR (VARIABLE DEPTH KEMMERER) + UPS	12/08/95	WAJ/W H	LAB	\$ 35 06	2	\$ 70 12
250 FT TEFLON SUSP CORD	11/13/95			\$ 275 00	5	\$ 1 375 00
SHIPPING CHARGES	11/13/95					\$ 4 51
M3 902 E PORTABLE FLOWMETER W/ CONVERTER SN 13605	12/15/95			\$ 6,550 00	1	\$ 6,550 00
TRANSDUCER FOR SMALL PIPE (T 903 SP)	12/15/96			\$ 950 00	1	\$ 950 00
FREIGHT CHARGES	12/15/95					\$ 43 12
ID P/N#D 135 000 MODEL# ACR 20MA LOGGER S/N 10233	12/14/95			\$ 569 00	1	\$ 569 00
ID P/N#D 135 100 MODEL#ACR SOFTWARE,MANUAL & LIGHT WAND	12/14/95			\$ 159 00	1	\$ 159 00
ID P/N# MODEL# MODIFY 4 20mA INPUT CABLE TO ADD CONNECTOR	12/14/95			\$ 50 00	1	\$ 50 00
SHIPPING CHARGES	12/14/95					\$ 11 70

Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

	Through December 1996					
TRANS AND AIR FREIGHT CHARGES F/COMM PROCUREMENT	12/14/95					\$1,506 96
WORLD AL MANAC & 8K OF FACTS 95	11/08/95	MWI/LIB	WATER1	\$7 61	2	\$15 22
GETTING TO YES NOGOTIATION AGREEMENT WITHOUT GIVING IN	11/08/95	MWI/LIB	WATER1	\$8 46	1	\$8 46
SALINISATION OF LAND WATER RESOURCES	11/08/95	MWI/LIB	WATER1	\$9 35	1	\$9 35
MANAGING IRRIGATION ANALYZING AND IMPROVING THE PERFORMANC	11/08/95	MWI/LIB	WATER1	\$97 95	1	\$97 75
IRRIGATION PUMPING PLANTS	11/08/95	MWI/LIB	WATER1	\$27 50	1	\$27 50
DRIP IRRIGATION FOR ROW CROPS	11/08/95	MWI/LIB	WATER1	\$17 50	2	\$35 00
	11/08/95			\$17 50	2	\$35 00
PLANTS ANALYSIS MANUAL	11/08/95	MWI/LIB	WATER1	\$127 50	1	\$127 50
ENVIRONMENT ASSESSMENT	11/08/95	MWI/LIB	WATER1	\$97 50	1	\$97 50
SHIPPING AND TAX CHARGES FOR COMMODITY	11/08/95					\$145 19
TRANS AND AIR FREIGHT CHARGES F/BOOK PROCUREMENT	11/08/95					\$753 48
CUSTOMER SERVICE	11/08/95					\$108 52
GURLEY PRECISION INSTRUMENT'S D622FM CURRENT METERS	1/05/96			\$2 659 82	3	\$7 979 46
GURLEY PRECISION INSTRUMENT S D625FM CURRENT METERS	1/05/96			\$2 181 80	2	\$4 363 60
3700 SAMPLER W/ 1L POLYPRO BTLS	01/19/96			\$2,595 00	2	\$5 190 00
923 HIGH CAP POWER PACK 240 V	01/19/96			\$200 00	2	\$400 00
LEAD ACID BATT ASSY 12V 6 5 AH	01/19/96			\$145 00	2	\$290 00
SOLAR PANEL BATTERY CHARGER	01/19/96	WAJ/W H	ISCO	\$470 00	2	\$940 00
SUCT LINE W / STR 3/ 8 ID X 25 FT	01/19/96	WAJ/W H	ISCO	\$80 00	2	\$160 00
BULK SUCT TUBE VNL 3/8 500	01/19/96	WAJ/W H	ISCO	\$260 00	2	\$520 00
BTL NALGENE 2 5 GAL E / CAP (299001304)	01/19/96	WAJ/W H	ISCO	\$45 00	2	\$90 00
FLOAT AND HOUSING ASSY (603704045)	01/19/96	WAJ/W H	ISCO	\$60 00	2	\$120 00
INSERT COMPOSITE BTL	01/19/96	WAJ/W H	ISCO	\$35 00	2	\$70 00
DESICCANT BAG 4 OZ (099000208)	01/19/96	WAJ/W H	ISCO	\$1 89	12	\$22 68
DISCHARGE TUBE 50 FOOT LENGTH (686700047)	01/19/96	WAJ/W H	ISCO	\$175 00	3	\$525 00
DETECTOR BASE ASSY (603704022)	01/19/96	WAJ/W H	ISCO	\$89 00	2	\$178 00

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Table 4
Non Expendable Commodities

	Through December 1996					
PUMP MOTOR ASSY (602704009)	01/19/96	WAJ/W H	ISCO	\$120 00	1	\$120 00
PUMP HOUSING BUSHING (603703012)	01/19/96	WAJ/W H	ISCO	\$2 32	10	\$23 20
LIP SEAL 3 / 4 BORE 3 / 8" SHAFT (602999903)	01/19/96	WAJ/W H	ISCO	\$5 65	5	\$28 25
SUBMERG PROBE FLOW METER 10 RANGE (684220001)	01/19/96	WAJ/W H	ISCO	\$3 095 00	1	\$3,095 00
HIGH CAP POWER PACK 240 V (601684093)	01/19/96	WAJ/W H	ISCO	\$200 00	1	\$200 00
LEAD ACID BATT ASSY 12 V 6 5 AH	01/19/96	WAJ/W H	ISCO	\$145 00	1	\$145 00
SOLAR PANEL BATTERY CHARGER (683000027)	01/19/96	WAJ/W H	ISCO	\$470 00	1	\$470 00
FLOWLINK SOFTWARE W / MANUAL (602544043)	01/19/96	WAJ/W H	ISCO	\$30 00	1	\$30 00
INTERROGATOR CABLE 9 PIN 1 PC (602544044)	01/19/96	WAJ/W H	ISCO	\$70 00	1	\$70 00
CBL SAMP TO FM 6 CNDCT,25 (603004107)	01/19/96	WAJ/W H	ISCO	\$85 00	1	\$85 00
DOT MATRIX PRINTER RIBBON BLAC	01/19/96	WAJ/W H	ISCO	\$7 00	10	\$70 00
PLOTTER PAPER ROLL	01/19/96	WAJ/W H	ISCO	\$6 00	50	\$300 00
DESICCANT DRI CAN CANISTER	01/19/96	WAJ/W H	ISCO	\$8 18	5	\$40 90
DESICCANT CARTRIDGE AASY	01/19/96	WAJ/W H	ISCO	\$5 12	5	\$25 60
FUSE 2 5 A 250 V FB 3 A G	01/19/96	WAJ/W H	ISCO	\$0 78	5	\$3 90
FUSE 5 A 250 V FB 3 A G (411032275)	01/19/96	WAJ/W H	ISCO	\$0 64	10	\$6 40
DESICCANT 8 MESH 1 # BOTTLE / CAN (09901103)	01/19/96	WAJ/W H	ISCO	\$19 00	1	\$19 00
SPOOL END CAP (603213229)	01/19/96	WAJ/W H	ISCO	\$0 78	10	\$7 80
SUBMERGE PROBE 1 10 FT (603224002)	01/19/96	WAJ/W H	ISCO	\$495 00	2	\$990 00
MAGELLAN PRO MARK X CP GPS RECEIVERS, SERIAL NO S	01/30/96	WAJ/W H	WAJ	\$4 223 33	3	\$12 669 99
POST PROCESSING SOFTWARE	01/30/96	WAJ/W H	WAJ		3	
COAXIAL CABLE	01/30/96	WAJ/W H	WAJ		3	
ADAPTER	01/30/96	WAJ/W H	WAJ		3	
BATTERY BELT PACK AND CHARGER	01/30/96	WAJ/W H	WAJ		3	
SHOULDER STRAP WINDOW MOUNT, OPERATION MANUALS BINDER	01/30/96	WAJ/W H	WAJ		3	
223009610 USERS GUIDE 2230098 SUBMETER KIT USE GUIDE	01/30/96	WAJ/W H	WAJ		3	
EXTERIOR ANTENNA KIT MULTIPATH FOR GPS	01/30/96	WAJ/W H	WAJ		3	

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Table 4
Non Expendable Commodities

Through December 1996						
NICAD BATTERY PACK WITH 220 V CHARGER	01/30/96	WAJ/W H	WAJ		3	
GEOGRAPHIC CALCULATOR SOFTWARE	01/30/96	WAJ/W H	WAJ		1	\$0 00
TOTAL						\$0 00
IDE SUPER I / O CARD AND SHIPPING	01/22/96			\$34 00	5	\$170 00
CREDIT ORDER (IDE SUPER I/O CARD & VIA UPS TO CUSTOMER	01/22/96					(\$131 00)
P/N 273 464 BTTL ,SAMPLE EPA QUAL GLASS W/CAPS1000 ML	12/26/95	WAJ/W H	LAB	\$48 00	8	\$384 00
P/N 273 448 BTTL SAMPLE,EPA QUAL GLASS W/CAPS1000 ML	12/26/95	WAJ/W H	LAB	\$46 00	8	\$368 00
P/N 273 492,BTTL SAMPLE,EPA,QUAL PLASTIC W/CAPS1000 ML	12/26/95	WAJ/W H	LAB	\$46 00	8	\$368 00
METALS IN GROUND WATER ALLEN/PERDUE/BR	10//11/95	MWI/LIB	WATER1			
BIOREMEDIATION OF PETROLEUM CONTAMINATED SITES	10//11/95	MWI/LIB	WATER1			
HAZARDOUS WASTE PLANNING SOESILO WILSON	10//11/95	MWI/LIB	WATER1			
P/N 273 468 BTTL SAMPLE,EPA,QUAL GLASS W/CAPS 500 ML	12/26/95	WAJ/W H	LAB	\$40 00	17	\$680 00
P/N 273 496 BTTL SAMPLE,EPA,QUAL PLASTIC W/CAPS 500 ML	12/26/95	WAJ/W H	LAB	\$91 00	8	\$728 00
P/N 273 501 BTTL SAMPLE,EPA,QUAL PLASTIC W/CAPS 125 ML	12/26/95	WAJ/W H	LAB	\$105 00	4	\$420 00
P/N 273 501 VIAL SAMPLE,EPA,QUAL PLASTIC W/CAPS 40 ML	12/26/95	WAJ/W H	LAB	\$133 45	1	\$133 45
P/N 14 649 7STOP WATCH W/ BATTERY	12/26/95	WAJ/W H	LAB	\$33 00	6	\$198 00
TRANSPORTATION AND AIR FRIGHT CHARGES	01/25/96					\$5 440 15
3D000906 3D000931 3D000927 COMPLETE WITH POST PROCE-						
SSING SOFTWARE CABLES ADAPTER & NORMAL ACCESSORIES						
GURLEY PRECISION INSTRUMENT S W/CABLE & CARRYING CASE	3/01/96	WAJ/W H	WAJ	\$2 698 50	2	\$5 397 00
GURLEY PRECISION INSTRUMENT S TYBE A CRANE M 3700	3/01/96	WAJ/W H	WAJ	\$3 450 00	2	\$6 900 00
TRANSPORTATION CHARGES	3/01/96					\$442 00
ANALYTICAL BALANCE SA 120 220 V W/ WINDSCREEN POWER CORD	02/27/96	JVA/LAB	IRRIG	\$1 610 00	1	\$1,610 00
SYQUEST EZ135 INTERNAL DRIVE S/N 1855	2/12/96	WAJ/LAB	WAJ	\$250 80	1	\$250 80
SYQUEST CARTRIDGES	2/12/96	WAJ/LAB	WAJ	\$250 80	1	\$250 80
CABLE DIA 040 SST (QTY 49200)	02/20/96	WAJ/W H	WAJ	\$19 819 78	1	\$19 819 78
DS 600 XL 25001 MULTI PARAMETER SENSOR SONDE ASSY	02/19/96	WAJ/W H	YSI	\$2,133 00	4	\$8,532 00

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

Through December 1996						
DS 600 XL 20001 MULTI -PARAMTR SENSOR (600XL SONDE ASSY)	02/19/96	WAJ/W H	YSI	\$2 691 00	2	\$5 382 00
PH PROBE REPLACEMENT KIT FOR XL (DS 6561)	02/19/96	WAJ/W H	YSI	\$162 00	18	\$2,916 00
CONDUCT /TEMP PROBE REPLAC KIT (DS 6560)	02/19/96	WAJ/W H	YSI	\$351 00	12	\$4 212 00
DS 610D HNDHELD TERMINAL KIT 32K (131040320)	02/19/96	WAJ/W H	YSI	\$895 50	4	\$3,582 00
DS 610DM HUNDHLD FLD DIS TERMINAL KIT,128K (131040330)	02/19/96	WAJ/W H	YSI	\$1 795 50	2	\$3 591 00
CARRYING CASE FOR 610D/DM UUNIT	02/19/96	WAJ/W H	YSI	\$67 50	6	\$405 00
DS CASE CARRYING FOR M# 600XL	02/19/96	WAJ/W H	YSI	\$252 00	6	\$1 512 00
COND CALIBRAT SOLUTION 1000 (DS 3161)	02/19/96	WAJ/W H	YSI	\$58 00	1	\$58 00
CONDUCT CALIB SOLUTION 10 000 (DS 3163)	02/19/96	WAJ/W H	YSI	\$58 00	1	\$58 00
CONDUCT CALIB SOLUTION 100,000 (DS 3165)	02/19/96	WAJ/W H	YSI	\$58 00	1	\$58 00
PH 4 0 BUFFER 6 PINTS/BX (DS 3821)	02/19/96	WAJ/W H	YSI	\$68 00	1	\$68 00
PH 7 0 BUFFER 6 PINTS/BX (DS 3822)	02/19/96	WAJ/W H	YSI	\$68 00	1	\$68 00
PH 10 0 BUFFER 6 PINTS/BX (DS 3823)	02/19/96	WAJ/W H	YSI	\$68 00	1	\$68 00
FREIGHT CHARGES	02/19/96					\$10 31
DIGITAL TURBIDITY METER (ITEM 224270)	02/28/96	WAJ/W H	WAJ	\$535 50	1	\$535 50
CASE FOR DIGITAL TURBIDITY METER (ITEM 224271)	02/28/96	WAJ/W H	WAJ	\$49 26	1	\$49 26
SHIPPING AND HANDLING	02/28/96					\$9 31
PUBLICATIONS	12/29/95	****	****			\$183 49
IBM PC 350 4D2 66 540 H,8M DW/H,540MB 3 5 IN 720KB IBM 8MB 70N	03/25/96	JVA/LAB	IRRIG	\$2 443 00	1	\$2 443 00
CD IN IDE		JVA/LAB	IRRIG			\$0 00
MOUSE SER 2 0 WIN95 3 G40 14IN,1024I, 28D,MPR II		JVA/LAB	IRRIG			\$0 00
PRINTER CARTRIDGE BLACK DJ / DW	03/25/96	JVA/LAB	IRRIG	\$25 00	20	\$500 00
PRINTER CARTRIDGE, COLOR,DW	03/25/96	JVA/LAB	IRRIG	\$26 00	20	\$520 00
MICROSOFT DOS 6 22 OEM	03/25/96	JVA/LAB	IRRIG	\$45 00	1	\$45 00
HP DESKJET 660C 220V	03/25/96	JVA/LAB	IRRIG	\$499 00	1	\$499 00
PRINTER CABLE (PARALLEL) 10'	03/25/96	JVA/LAB	IRRIG	\$10 00	1	\$10 00

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

	Through December 1996 03/25/96					
SALES TAX AND FREIGHT CHARGES						\$205 77
LAB OVEN 210 DEGREES C 3 1 CU FT 220V 67460 03 # 3512 1	03/22/96	JVA/LAB	IRRIG	\$580 00	1	\$580 00
PH CONDUCTIVITY METER	03/22/96	JVA/LAB	IRRIG	\$365 00	1	\$365 00
STORAGE CABINET FOR FLAMMABLE CHEMICALS 2 DOOR (60 GALLON)	03/22/96	JVA/LAB	IRRIG	\$750 00	1	\$750 00
GROUNDING WIRE WITH ALLIGATOR CLIPS 1950 TO GROUND CABINET	03/22/96	JVA/LAB	IRRIG	\$23 00	1	\$23 00
SPARE METAL SHELVES 1911 FOR CABINET ABOVE	03/22/96	JVA/LAB	IRRIG	\$48 00	3	\$144 00
PIPET FILTER RED W/3 BUILT IN BALL VALVES	03/22/96	JVA/LAB	IRRIG	\$5 00	1	\$5 00
PIPET MAXIPETTOR PIPETTOR 1 10 ml	03/22/96	JVA/LAB	IRRIG	\$385 00	1	\$385 00
PIPET TIP MAXITIP P TIPS 50 PER PACKAGE (SPARE TIPS) 100/PK	03/22/96	JVA/LAB	IRRIG	\$88 00	8	\$704 00
PIPET 1000 TO 5000 UL	03/22/96	JVA/LAB	IRRIG	\$130 00	1	\$130 00
PIPET TIPS OXFORD 314 1 5 ML 250/PKG (SPARE TIPS)	03/22/96	JVA/LAB	IRRIG	\$27 00	5	\$135 00
PIPET AUTO 200 1000 UL	03/22/96	JVA/LAB	IRRIG	\$130 00	1	\$130 00
PIPET TIPS 1000/CS 201 1000 UL	03/22/96	JVA/LAB	IRRIG	\$32 00	2	\$64 00
PIPET TIPS MAXITIP S 200/PKG	03/22/96	JVA/LAB	IRRIG	\$78 00	1	\$78 00
PIPET TIP MAXITIP 100/PK	03/22/96	JVA/LAB	IRRIG			\$0 00
COMBITIPS 1 25 ML 100/PKG	03/22/96	JVA/LAB	IRRIG	\$76 00	1	\$76 00
COMBITIPS 2 5 ML CAPACITY 100/PKG	03/22/96	JVA/LAB	IRRIG	\$76 00	1	\$76 00
PIPET TIPS 5 ML CAPACITY 100/PK COMBITIPS	03/22/96	JVA/LAB	IRRIG	\$76 00	5	\$380 00
PIPET TIPS COMBITIPS 12 5 ML CAPACITY, 100/PKG	03/22/96	JVA/LAB	IRRIG	\$76 00	5	\$380 00
PIPET TIPS 25 ML CAPACITY,100/PKG 71632 14 #22 26 170 3	03/22/96	JVA/LAB	IRRIG	\$76 00	1	\$76 00
PIPET TIPS COMBITIPS 50 ML CAPACITY, 100/PKG	03/22/96	JVA/LAB	IRRIG	\$88 00	1	\$88 00
ADAPTER 50 ML	03/22/96	JVA/LAB	IRRIG	\$17 00	5	\$85 00
LINE CONDITIONER 500W 220V 4 OUTLETS LS 504L	03/22/96	JVA/LAB	IRRIG	\$250 00	1	\$250 00
FREIGHT CHARGES	03/22/96					\$127 54
A 71 SUPER BASIC	03/19/96	JVA/LAB	IRRIG	\$2,225 00	6	\$13,350 00
CLOCK CHELSEA MOUNTED	03/19/96	JVA/LAB	IRRIG	\$600 00	6	\$3 600 00
KIT MET CHART	03/19/96	JVA/LAB	IRRIG			\$0 00

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

	Through December 1996					
KIT SPRING DRIVE 6 0 MONTH	03/19/96	JVA/LAB	IRRIG	\$675 00	6	\$4 050 00
A 71 TIME SCALE 2 4 /DAY	03/19/96	JVA/LAB	IRRIG	\$0 00	6	\$0 00
BEARING BALL 22 MM OD X 7 MM ID X 7MM	03/19/96	JVA/LAB	IRRIG	\$0 00	12	\$0 00
GEAR SPUR 80T 32P	03/19/96	JVA/LAB	IRRIG	\$150 00	6	\$900 00
GEAR 40T 32P	03/19/96	JVA/LAB	IRRIG	\$0 00	6	\$0 00
HUB GEAR GAGE	03/19/96	JVA/LAB	IRRIG	\$0 00	6	\$0 00
SHAFT SPROCKET FLOAT PULLEY	03/19/96	JVA/LAB	IRRIG	\$0 00	6	\$0 00
PEN TYPE A	03/19/96	JVA/LAB	IRRIG	\$60 00	18	\$1,080 00
PEN CLEANERS PACKAGE OF 12	03/19/96	JVA/LAB	IRRIG	\$8 00	6	\$48 00
INK BLACK010865 6 BOTTELS 10Z030CC EA	03/19/96	JVA/LAB	IRRIG	\$50 00	6	\$300 00
INK BLACK 30CC / 1 OZ	03/19/96	JVA/LAB	IRRIG	\$10 00	6	\$60 00
PULLEY CABLE 375 MM ALUM	03/19/96	JVA/LAB	IRRIG	\$75 00	6	\$450 00
FLOAT PULLEY RING 750 MM DIA , CABLE	03/19/96	JVA/LAB	IRRIG	\$175 00	6	\$1 050 00
FLOAT 8 COPPER	03/19/96	JVA/LAB	IRRIG	\$90 00	6	\$540 00
COUNTERWT, SST 12 OZ	03/19/96	JVA/LAB	IRRIG	\$15 00	6	\$90 00
FLOAT LINE 125MM BEAD SPACING,CONT LENGTHS	03/19/96	JVA/LAB	IRRIG	\$5 00	180	\$900 00
END HOOKS SET OF TWO	03/19/96	JVA/LAB	IRRIG	\$10 00	6	\$60 00
CHARTS A 25 (14959) 12 ROLLS ITEMS BELOW ARE SPARES F/A 71	03/19/96	JVA/LAB	IRRIG	\$275 00	6	\$1 650 00
CHART A 25 METRIC	03/19/96	JVA/LAB	IRRIG	\$22 95	500	\$11,475 00
COUNTERWT SST 12 OZ	03/19/96	JVA/LAB	IRRIG	\$15 00	100	\$1 500 00
FLOAT 8 COPPER	03/19/96	JVA/LAB	IRRIG	\$90 00	100	\$9 000 00
PEN TYBE A	03/19/96	JVA/LAB	IRRIG	\$60 00	100	\$6 000 00
INK BLACK010865 6 BOTTELS 10Z030CC EA	03/19/96	JVA/LAB	IRRIG	\$10 00	100	\$1 000 00
FLOAT LINE 125MM BEAD SPACING,CONT LGTH	03/19/96	JVA/LAB	IRRIG	\$5 00	200	\$1,000 00
F RECORDER METRIC, TS 0 5 TO 32 DAY	03/19/96	JVA/LAB	IRRIG	\$1,200 00	20	\$24,000 00
CHART F 4 FLAT	03/19/96	JVA/LAB	IRRIG	\$0 00	20	\$0 00
GAGE GEAR KIT 1 10M FOR F RECORDER	03/19/96	JVA/LAB	IRRIG	\$0 00	20	\$0 00

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Table 4
Non Expendable Commodities

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	Through December 1996					
PEN TYPE F	03/19/96	JVA/LAB	IRRIG	\$54 00	60	\$3,240 00
PEN CLEANERS PACKAGE OF 12	03/19/96	JVA/LAB	IRRIG	\$8 00	20	\$160 00
INK BLACK 30CC / 1 OZ	03/19/96	JVA/LAB	IRRIG	\$10 00	20	\$200 00
PULLEY CABLE 375 MM ALUM	03/19/96	JVA/LAB	IRRIG	\$75 00	20	\$1 500 00
FLOAT 8 COPPER	03/19/96	JVA/LAB	IRRIG	\$90 00	20	\$1,800 00
COUNTERWT SST 12 OZ	03/19/96	JVA/LAB	IRRIG	\$15 00	20	\$300 00
FLOAT LINE 125MM BEAD SPACING CONT LGTH SUPPLY IN 2 200M	03/19/96	JVA/LAB	IRRIG	\$1 50	400	\$600 00
END HOOKS SET OF TWO	03/19/96	JVA/LAB	IRRIG	\$10 00	20	\$200 00
INK BLACK010865 6 BOTTELS 10Z030CC EA	03/19/96	JVA/LAB	IRRIG	\$50 00	20	\$1,000 00
CHARTS F4 (14987) ,PKG OF 4 ITEMS BELOW ARE SPARES FOR F	03/19/96	JVA/LAB	IRRIG	\$90 00	20	\$1 800 00
GMT/F KIT 0 5 TO 32 DAY	03/19/96	JVA/LAB	IRRIG	\$475 00	20	\$9 500 00
FLOAT 8 COPPER	03/19/96	JVA/LAB	IRRIG	\$90 00	30	\$2 700 00
INK BLACK 30CC/ 1 OZ	03/19/96	JVA/LAB	IRRIG	\$8 33	100	\$833 00
PEN TYPE F	03/19/96	JVA/LAB	IRRIG	\$54 00	30	\$1 620 00
DOOR TO DOOR TRANSPORTATION	3/08/96					\$1 083 00
STEVE VWR FULL 8 SS & BRASS # 35E #008 (57334 272)	3/04/96	JVA/LAB	JVA	\$30 75	1	\$30 75
STEVE VWR FULL 8 SS & BRASS # 170E #010 (57334 292)	3/04/96	JVA/LAB	JVA	\$31 33	1	\$31 33
PH/MV/C PORT METER KIT W/RS232E # 001 (34100 236)	3/04/96	JVA/LAB	JVA	\$444 00	1	\$444 00
ULTRA CLEANER TANK COVER A82 1 #003 (2181C 950)	3/04/96	JVA/LAB	JVA	\$51 85	1	\$51 85
ULTRA CLEANER TANK COVER (FOR ABOVE ITEM)A52 1 2 5GAL	3/04/96	JVA/LAB	JVA	\$21 25	1	\$21 25
SIEVE VWR FULL 8 SS & BRASS # 10E #006 (57334 256)	3/04/96	JVA/LAB	JVA	\$24 85	1	\$24 85
SIEVE , VWR FULL 8 SS & BRASS 18E# 007 (57334 264)	3/04/96	JVA/LAB	JVA	\$24 85	1	\$24 85
SIEVE VWR FULL 8" SS & BRASS # 60E # 009 (57334 280)	3/04/96	JVA/LAB	JVA	\$24 85	1	\$24 85
SIEVE VWR FULL 8 SS & BRASS # 325E #012 (57334 300)	3/04/96	JVA/LAB	JVA	\$60 20	1	\$60 20
PAN VWR FULL HEIGHT 8" W/RIM BRASS E#013 (57334 644)	3/04/96	JVA/LAB	JVA	\$11 73	1	\$11 73
COVER VWR 8 DIAMETER BRASS E #014 (57334 648)	3/04/96	JVA/LAB	JVA	\$6 30	1	\$6 30
FREIGHT CHARGES	3/04/96					\$8 88

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Table 4
Non Expendable Commodities

		Through December 1996				
SPECAM SPACIAL ITEM AM	4/07/96			\$34 05	1	\$34 05
IN SITU TROLL SP4000 DATA LOGGER	03/20/96	WAJ/W H	WAJ	\$3 657 50	4	\$14,630 00
IN SITU TROLL SP4000 DATA LOGGER	03/20/96	WAJ/W H	WAJ	\$4 473 70	4	\$17,894 80
IN SITU TROLL SP4000 DATA LOGGER	03/20/96	WAJ/W H	WAJ	\$5,291 00	4	\$21 164 00
TROLL SP4000 POWER AND COMMUNICATION PACKAGE	03/20/96	WAJ/W H	WAJ	\$ 198 00	4	\$792 00
SHIPPING CHARGES AND INSURANCE	03/27/96					\$650 08
AIR FREIGHT TRANSPORT AND CUSTOMS CLEARANCE CHARGES	3/06/96					\$3,164 43
PIPET TIP MAXITIP 100/PK	03/28/96			\$95 56	1	\$95 56
SCA TA S0138 1 232 TO RS488 CONV	03/28/96			\$303 83	1	\$303 83
TNF 0005	03/28/96			\$35 00	1	\$35 00
STEVE VWR FULL,8 SS & BRASS # 120E# 10	03/18/96	JVA/LAB	IRRIG	\$31 12	1	\$31 12
TRI CARD 2750TR/LL VARISSETTE 410524	03/19/96	WAJ/LAB	LAB			
2700 SOFTWARE KIT	03/19/96	WAJ/LAB	LAB			
IPA SOFTWARE KIT	03/19/96	WAJ/LAB	LAB			
REPLY SOFTWARE KIT	03/19/96	WAJ/LAB	LAB			
WORKLIST SOFTWARE KIT	03/19/96	WAJ/LAB	LAB			
ULTRA LOW LEVEL SOFTWARE KIT	03/19/96	WAJ/LAB	LAB			
DPM 1 2 3 SOFTWARE KIT	03/19/96	WAJ/LAB	LAB			
DISK MEDIA KIT	03/19/96	WAJ/LAB	LAB			
AMBIENT KIT LSA	03/19/96	WAJ/LAB	LAB			
486SX COMPUTER SYSTEM	03/19/96	WAJ/LAB	LAB			
DOT MATRIX PERINTER, 220V/50HZ	03/19/96	WAJ/LAB	LAB			
COLOR VGA MONITOR KIT	03/19/96	WAJ/LAB	LAB			
UNQUENCHED STANDARDS	03/19/96	WAJ/LAB	LAB			
UNQONCHD TC STDS (LL) SET/3	03/19/96	WAJ/LAB	LAB			
ALPHA/BETA OPTION	03/19/96	WAJ/LAB	LAB			
TRIAC	03/19/96	WAJ/LAB	LAB			

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Table 4
Non Expendable Commodities

	Through December 1996					
OPTO CPLR/ISO	03/19/96	WAJ/LAB	LAB			
RELCTV TRNSDCR	03/19/96	WAJ/LAB	LAB			
OPTICAL SWITCH	03/19/96	WAJ/LAB	LAB			
PMT REFLECTOR	03/19/96	WAJ/LAB	LAB			
SHUTTER LIGHT SEAL	03/19/96	WAJ/LAB	LAB			
ELEVATOR DRIVE SPRING ASM	03/19/96	WAJ/LAB	LAB			
IDE HARD DISK UPGRADE	03/19/96	WAJ/LAB	LAB			
80MM FAN GUARD & FILTER	03/19/96	WAJ/LAB	LAB			
GAS SPRING	03/19/96	WAJ/LAB	LAB			
2700 INSTAL DISK	03/19/96	WAJ/LAB	LAB			
2700 MASTER DISK SOFTWARE	03/19/96	WAJ/LAB	LAB			
INSTRUMENT S/W MASTER DISK	03/19/96	WAJ/LAB	LAB			
PM TUBE	03/19/96	WAJ/LAB	LAB			
PMT SOCKET ASSY	03/19/96	WAJ/LAB	LAB			
IC HVL 100	03/19/96	WAJ/LAB	LAB			
ADC BD II	03/19/96	WAJ/LAB	LAB			
POWER SUPPLY SERVICE KIT	03/19/96	WAJ/LAB	LAB			
ULTIMA GOLD 2X5 LITERS	03/19/96	WAJ/LAB	LAB			
SYSTEM TOTAL	03/19/96	WAJ/LAB	LAB			\$58 062 00
STAFF GAGE (POCRCELAIN ENAMEL ON 18 GAGE)	03/25/96	WAJ/W H	WAJ	\$12 00	2500	\$30 000 00
FREIGHT CHARGES	4/01/96					\$1,444 25
FREIGHT /INSURANCE FOR SHIPPING (STAFF GAGES)	4/01/96					\$1 124 07
PUBLICATION (EXECUTIVE LEADERSHIP H R GLOSSARY ETC)	4/01/96		***			\$214 87
ACR 20 mA DATA LOGGER FULLY CPMPATAIBLE M3 902 FLOWMETER	03/29/96	WAJ/W H	WAJ	\$569 00	1	\$569 00
ACR SOFTWARE MANUAL & INTERFACE CABLE W/ CONNECTOR	03/29/96	WAJ/W H	WAJ	\$159 00	1	\$159 00
25 PIN CONNECTOR	03/29/96	WAJ/W H	WAJ			\$0 00
MODIFY 4 20 mA INPUT CABLE TO ADD CONNECTOR F/M3902	03/29/96	WAJ/W H	WAJ	\$56 46	1	\$56 46

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Table 4
Non Expendable Commodities

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	Through December 1996					
BX60F3, STAND F/TRANSMITTED/ REFLECTED LIGTH	04/26/96	WAJ/LAB	LAB	\$2 604 00	1	\$2 604 60
UYCP 11 YUCP POWER CORD	04/26/96	WAJ/LAB	LAB		3	\$45 90
NOSEPIECE SEXTUPLE REVERSED F/DIC/POL SLIDERS	04/26/96	WAJ/LAB	LAB			\$520 20
5 ul110 U LH100 BX50 LAMP HOUSING /12V /100 W HALOGEN	04/26/96	WAJ/LAB	LAB			\$441 00
5 ur510 U URBC UNIVERSAL CASSETTE MOUDLE, 4 CUBE TURRET	04/26/96	WAJ/LAB	LAB			\$531 00
U URBL UNIVERSAL OPTICAL REAR MOUDLE UV TRANSMITTED	04/26/96	WAJ/LAB	LAB			\$632 70
5 UR500 UNIVERSAL LAMP HOUSING, HALOGEN,MERCORY XENON	04/26/96	WAJ/LAB	LAB			\$153 90
5 UL515 LAMPSOCKET 100W MERCURY F/UNIV LAMPHOUSE	04/26/96	WAJ/LAB	LAB			\$430 20
5 UL592B COLLECTOR LENS HG/XE TYPE B F/UNIV LAMPHOUSE	04/26/96	WAJ/LAB	LAB			\$472 50
5 LB256 BH2 RFL T3 POWER SUPPLY FOR 100 WATT MERCURY	04/26/96	WAJ/LAB	LAB			\$1 270 80
8 B192 HB0103W/2 MERCURY BURNER FORBH- REFLECTED	04/26/96	WAJ/LAB	LAB			\$720 00
8 C406 12V 100W HALOGEN BULB	04/26/96	WAJ/LAB	LAB	\$28 80	5	\$144 00
3 U133 U TR30 OBSERVATION TUBE TRINOCULAR 30 F N 22	04/26/96	WAJ/LAB	LAB			\$1 299 60
2 U1002 WH10X 2 EYEPIECE F N 22 WITH PERTICLE SHELF	04/26/96	WAJ/LAB	LAB	\$142 20	2	\$284 40
U SVRS CERAM STAGE /RIGHT LOW/ CONTROL/ 1 SLIDE	04/26/96	WAJ/LAB	LAB			\$410 40
6 U520 UCDB 2 SWING OUT 5 PT TURRET CONDENSER	04/26/96	WAJ/LAB	LAB			\$1,755 90
6 U526 U TLD 0 9 TOP LENS ELEMENT F/CAT # 6 U520	04/26/96	WAJ/LAB	LAB			\$351 90
U CD112 U DP20 DIC 20X UPLFL PRISM	04/26/96	WAJ/LAB	LAB			\$475 20
U CD119 U DP100 DIC 100X OIL UPLFL UPLAPO PRISM / UCD	04/26/96	WAJ/LAB	LAB			\$522 00
U P100 DIC SLIDER FOR U D6RE TRANSMITTED LIGHT	04/26/96	WAJ/LAB	LAB			\$1 732 50
U P115 ANALYZER F/TRANSMITTED LIGHT	04/26/96	WAJ/LAB	LAB			\$179 10
3 U801 U SPT SINGLE PHOTO PORT/PHOTO OR VIDEO	04/26/96	WAJ/LAB	LAB			\$36 90
2 U720 PE2 5X 2 5 X PHOTO PROJECTION F/UIS OPTIC	04/26/96	WAJ/LAB	LAB			\$233 10
7 U510 PM DA35CX ADAPTER / 35MM CAMERA BACK /DX CODE	04/26/96	WAJ/LAB	LAB			\$199 80
7 U530 PM C35CX CAMERA BACK / 35MM DXCODE	04/26/96	WAJ/LAB	LAB			\$769 50
0 0502 24MM DIAMETER MICROMETER DISC, 10MM/100	04/26/96	WAJ/LAB	LAB			\$28 80
U M41001 MODULER B MAX FILTER CUBE FITC/BODIPY/FLUD 3/DIO	04/26/96	WAJ/LAB	LAB			\$0 00

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Table 4
Non Expendable Commodities

Through December 1996							
7 U210 PM CB20 AUTMATIC EXPOSURE CONTROL BOX/ PM20	04/26/96	WAJ/LAB	LAB				\$1 928 70
7 U200 PM PB20 AUTOMATIC EXPOSURE BDY/PM20	04/26/96	WAJ/LAB	LAB				\$2 395 80
2 U1032 35WH10X 2 EYEPIECE 35MM PHOTOMASK F N 22	04/26/96	WAJ/LAB	LAB				\$225 00
1 UC525 OBJECTIVE U PLAN FLUORITE PHASE 20X/0 50	04/26/96	WAJ/LAB	LAB				\$824 40
1 UC535 OBJECTIVE U PLAN FLUORITE PHASE 100X OIL/1 30	04/26/96	WAJ/LAB	LAB				\$1 990 80
2 U930 U CT30 CENTERING TELESCOPE F/PHASE CONT	04/26/96	WAJ/LAB	LAB				\$159 30
U CD101 U PH1 PHASE CONT ANNULUB/UNIVCOND 10X/20X	04/26/96	WAJ/LAB	LAB				\$94 50
U CD103 U PH3 CONTRAST ANNUALS UNIV COND 100X	04/26/96	WAJ/LAB	LAB				\$94 50
B 0550 1MM/ 100 METRIC STAGE MICROMETER DISC FOR BIO	04/26/96	WAJ/LAB	LAB				\$61 20
SHIPPING CHARGES	04/26/96						\$1 147 98
ULTRASONIC CLNR W/MECH TMR 5 50G 220VE & FREIGHT CHARGES	4/09/96	JVA/LAB	IRRIG				\$1 524 30
ULTRASONIC CLNR W/MECH TMR 2 5 G 220 VE	4/09/96	JVA/LAB	IRRIG				\$904 00
MATERIAL SIEVE VWR FULL 8' SS & BRS #230	4/09/96	JVA/LAB	IRRIG				\$40 08
WATER QUALITY MANAGEMENT KRENKEL (PUBLICATION)	05/24/96	MWI	WATER1				\$143 00
WILDLAND WATER QUALITY SMPLING & ANALYSIS PPR TX STEDNICK	05/24/96	MWI	WATER1				\$67 56
ROCTEST CPR 150 METER WLI	05/31/96	WAJ/W H	WAJ	\$850 00	4		\$3 400 00
ROCTEST CPR 200 METER WLI	05/31/96	WAJ/W H	WAJ	\$930 00	4		\$3 720 00
ROCTEST CPR 300 METER WLI	05/31/96	WAJ/W H	WAJ	\$1 340 00	3		\$4,020 00
TRANSPORTATION AND INSURANCE FOR LAB EQUIPMENT	05/31/96						\$16 580 17
PROSONIC ULTRASONIC LEVEL MEASUREMENT TRANSMITTER	05/22/96	WQICP	OFFICE				\$1 915 00
PROSONIC SENSOR POSITIONER 316 S S UNIVERSAL FLANGE	05/22/96	WQICP	OFFICE				\$1,849 30
TRANSPORTATION AND INSURANCE	05/31/96						\$5,469 30
SHIPPING CHARGES	06/26/96						\$75 86
PH CONDUCTIVITY METER	06/19/96	JVA/LAB	IRRIG				\$365 00
STORAGE CABINET FOR FLAMMABLE CHEMICALS	06/19/96	JVA/LAB	IRRIG				\$750 00
GROUNDING WIRE WITH ALIGATOR CLIPS 1950	06/19/96	JVA/LAB	IRRIG				\$23 00
SPARE METAL SHELVES 1911	06/19/96	JVA/LAB	IRRIG	\$48 00	3		\$144 00

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

	Through December 1996					
PIPET FILLER RED	06/19/96	JVA/LAB	IRRIG	\$5 00	9	\$45 00
PIPET MAXIPETTOR	06/19/96	JVA/LAB	IRRIG			\$385 00
PIPET 1000 TO 5000 UL	06/19/96	JVA/LAB	IRRIG			\$130 00
PIPET AUTO 200 1000 UL	06/19/96	JVA/LAB	IRRIG			\$130 00
FREIGHT CHARGES	06/19/96	JVA/LAB	IRRIG			\$124 38
ROCTEST CPR 500 METER WLI AND FREIGHT CHARGES	6/07/96	WAJ/W H	WAJ			\$1,999 85
DIGITAL TURBIDITY METER	6/12/96	JVA/LAB	IRRIG			\$594 00
CASE FOR DIG TURBIDITY METER AND SHIPPING CHARGES	6/12/96	JVA/LAB	IRRIG			\$61 77
SPECAM SPECIAL ITEM AM AND SHIPPING CHARGES	06/13/96					\$34 05
OPTIMA 3000 W/CTRL ASSEMBLY 50HZ OPTIMA 3000 ICP OES	06/20/96	WAJ/LAB	LAB			\$148 500 00
ICP WINLAB SOFTWARE ASSEMBLY	06/20/96	WAJ/LAB	LAB			
DFC VENTRS PENT 100 16MB 1 2GBIDE	06/20/96	WAJ/LAB	LAB			
15IN COLOR MONITOR SVGA	06/20/96	WAJ/LAB	LAB			
CABLE PC TO PRINTER	06/20/96	WAJ/LAB	LAB			
PRINTER OKI DATA 320 230V	06/20/96	WAJ/LAB	LAB			
CARTRIDGE WATER FILTER PII	06/20/96	WAJ/LAB	LAB			\$41 00
ARGON/NL TROGEN REGULATOR	06/20/96	WAJ/LAB	LAB			\$405 00
AS 90 AUTOSAMPLER SCANDALONE	06/20/96	WAJ/LAB	LAB			\$7 560 00
NESLAB CFT03 CANALGO 220V 50HZ	06/20/96	WAJ/LAB	LAB			\$4 050 00
BLOHER 4 VENT XIT	06/20/96	WAJ/LAB	LAB			\$1 110 00
QUARTZ BONNET TORCH FOR OPTIMA 3000	06/20/96	WAJ/LAB	LAB	\$340 00	2	\$680 00
ALUN INJECTOR TUBE 2 0 MM TYPO II	06/20/96	WAJ/LAB	LAB			\$130 00
ALUN INJECTOR TUBE 0 85MM TYPO II	06/20/96	WAJ/LAB	LAB			\$130 00
QUARTZ BONNET FOR OPTIMA 3000	06/20/96	WAJ/LAB	LAB	\$81 00	2	\$162 00
O RING XIT TORCH ASSY OPTIMA 3000	06/20/96	WAJ/LAB	LAB			\$21 00
CABLE ASSEMBLY PLASMA IQNITOR	06/20/96	WAJ/LAB	LAB			\$54 00
PURGE EXTENSION WINOON PII	06/20/96	WAJ/LAB	LAB			\$135 00

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Table 4
Non Expendable Commodities

WQ/ICP 1996 Annual Progress Report

	Through December 1996					
TIP KIT NEB 009 ARGON/ OI2 SA	06/20/96	WAJ/LAB	LAB	\$91 00	2	\$182 00
SPARES KIT CROSS FLOW	06/20/96	WAJ/LAB	LAB			\$81 00
PERTISTALIC PUMP TUBING 12/PK	06/20/96	WAJ/LAB	LAB	\$54 00	10	\$540 00
TUBING KIT P40 REG 2ML/MIN	06/20/96	WAJ/LAB	LAB	\$65 00	10	\$650 00
PIFE HOSE 1 X 0 3 (1 METER 39)	06/20/96	WAJ/LAB	LAB	\$2 85	5	\$14 25
NEB POLY TUBING 10 FT AA	06/20/96	WAJ/LAB	LAB	\$27 00	2	\$54 00
TUBE 16ML POLYPROPYLENE (1000)	06/20/96	WAJ/LAB	LAB			\$79 00
SAMPLE PROBE FLAME O 6MM ID	06/20/96	WAJ/LAB	LAB			\$160 00
RIBBON CARTRIDGE OKI DATA BLK	06/20/96	WAJ/LAB	LAB	\$37 00	2	\$74 00
TEST MIX P2 WAV CAL I C P	06/20/96	WAJ/LAB	LAB	\$160 00	2	\$320 00
CARTRIDGE WATER FILTER PII OPTIMA 3000 WATER FILTER CARTRIDGE	06/20/96	WAJ/LAB	LAB			\$41 00
AIR FILTER MAIN POWER SUPPLY	06/20/96	WAJ/LAB	LAB			\$6 75
USER S MANUAL	06/20/96	WAJ/LAB	LAB			\$0 00
AIR FILTER SPECTROMETER	06/20/96	WAJ/LAB	LAB			\$6 75
UNSPECIFIED TRAIN/SUPPORT ICP	06/20/96			\$600 00	5	\$3,000 00
ESTIMATED	06/20/96					\$491 98
FREIGHT CHARGES	06/20/96					\$1 772 97
U M41001 MODULAR B MAX FILTER CUBE FITC/BODIPY/FLUO 3/DIO	06/25/96					\$936 17
SD 17SC STEP DOWN TRANSFORMER 150 WATT	06/25/96					\$0 00
ZZMFG COLE PARMER INST OAKTON 35801 71 SPARE PH/TEMP	06/17/96	JVA/LAB	IRRIG	\$71 00	2	\$142 00
PORTABLE STORAGE REEL BLACK CASAE	06/18/96	WAJ/W H	WAJ	\$75 00	8	\$600 00
FREIGHT CHARGES	06/18/96					\$116 50
PH/MV/C PORT METER KIT W/R S232E # 001	6/04/96	JVA/LAB	IRRIG			\$444 00
SIEVE VWR FULL 8 SS/BRS # LOE	6/04/96	JVA/LAB	IRRIG			\$24 85
SIVE V WR FULL 8' SS/BRS # LOE	6/04/96	JVA/LAB	IRRIG			\$24 85
SIVE V W R FULL , 8 SS/BRS # 35E	6/04/96	JVA/LAB	IRRIG			\$24 85
SIVE V W R FULL , 8 SS/BRS # 60E	6/04/96	JVA/LAB	IRRIG			\$24 85

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Table 4
Non Expendable Commodities

WQICP 1996 Annual Progress Report

Through December 1996						
SIVE V W R FULL 8' SS/BRS # 120E	6/04/96	JVA/LAB	IRRIG			\$26 60
SIVE V W R FULL 8 SS/BRS # 170E	6/04/96	JVA/LAB	IRRIG			\$31 33
SIVE V W R FULL 8 SS/BRS # 230E	6/04/96	JVA/LAB	IRRIG			\$40 08
SIVE V W R FULL 8 SS/BRS # 325E	6/04/96	JVA/LAB	IRRIG			\$60 20
PAN, V W R FULL HT 8 W/RIM BRS E # 010	6/04/96	JVA/LAB	IRRIG			\$11 73
COVER V W R 8 DIAMETER BRASS E # 011	6/04/96	JVA/LAB	IRRIG			\$6 30
FREIGHT CHARGES	6/04/96					\$7 42
DOOR TO DOOR TRANSPORTATION CHARGES	06/30/96					\$150 00
PRESSURE GAUGE GR B 4 DIAL 1/4 NPT BOTTOM 0 60 PSI	06/26/96	JVA/LAB	IRRIG	\$38 29	4	\$153 16
304SS CASE GAUGE GR B 4' DIAL 1/4 NPT BOTTOM 0 100 PSI	06/26/96	JVA/LAB	IRRIG	\$38 29	2	\$76 58
VACUM GAUGE 4 DIAL 1/4 NPT MAIL BRASS BOTTOM CONNECTION	06/26/96	JVA/LAB	IRRIG	\$19 56	4	\$78 24
RUBBER GLOVE CLASS 5 11 LENGTH, SIZE 10	06/26/96	JVA/LAB	IRRIG	\$26 41	1	\$26 41
GLOWE PROTRCTOR 9 LENGTH FOR GLOVE CLASS 0 SIZE 10	06/26/96	JVA/LAB	IRRIG	\$24 09	2	\$48 18
RUBBER GLOVE CLASS 0, 11' LENGTH, SIZE 11	06/26/96	JVA/LAB	IRRIG	\$26 40	2	\$52 80
GLOVE PROTECTOR 9 LENGTH, FOR GLOVE GLASS 0 SIZE 11	06/26/96	JVA/LAB	IRRIG	\$24 09	2	\$48 18
GLOVE STORAGE BAG RUBBER COVERED LENGTH 15 H X 8 W X 4 D	06/26/96	JVA/LAB	IRRIG	\$16 70	4	\$66 80
TAPER PIPE TAP HIGH SPEED STEEL W/BRIGHT FINISH 1/4 18PIPE	06/26/96	JVA/LAB	IRRIG	\$14 01	8	\$112 08
PLIERS SET (5 PIECE ALL PURPOSE) W/CUSHION GRIP HANDLE	06/26/96	JVA/LAB	IRRIG	\$79 27	2	\$158 54
VINYL POUCH	06/26/96	JVA/LAB	IRRIG			\$0 00
OPTIONAL POUR SPOUT F/STEEL GI JERRY CAN	06/26/96	JVA/LAB	IRRIG	\$8 19	2	\$16 38
RUBBER GLOVE CLASS 0 11" LENGTH SIZE 10 (BLACK LINEMAN S)	06/26/96	JVA/LAB	IRRIG	\$29 10	1	\$29 10
5 GAL CAP 6 WD X 13 3/4"LG X 18 1/2"HT RED	06/25/96	JVA/LAB	JVA/LAB	\$24 52	2	\$49 04
HP LASERJET 5L 220V (S/N 2333,NFG JBW003762	07/16/96	JVA/LAB	JVA/LAB	\$550 00	1	\$550 00
HP LASERJET 5 TONER CARTRIDGE	07/16/96	JVA/LAB	JVA/LAB	\$70 00	6	\$420 00
KEYSTONE KD6 DESLTOP 486DX2/ 66 COMPUTER (S/N 2318) 256K	07/16/96	JVA/LAB	IRRIG			\$330 00
CPU HEATSINK WITH FAN	07/16/96	JVA/LAB	IRRIG			\$7 00
16MB 72 PIN SIMM	07/16/96	JVA/LAB	IRRIG			\$160 00

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Table 4
Non Expendable Commodities

	Through December 1996					
SEAGATE 1GB IDE HARD DRIVE (S/N 2319 MFG HAA46889)	07/16/96	JVA/LAB	IRRIG			\$200 00
3 5 FLOPPY DRIVE 1 44MB (S/N 2320)	07/16/96	JVA/LAB	IRRIG			\$29 00
PCI SVGA ADAPTER 1MB	07/16/96	JVA/LAB	IRRIG			\$62 00
MITSUMI 4X INTERNAL CD ROM DRIVE	07/16/96	JVA/LAB	IRRIG			\$60 00
KEYTRONICS 101 KEY KEYBOARD	07/16/96	JVA/LAB	IRRIG			\$30 00
KEYSTONE MOUSEPAD	07/16/96	JVA/LAB	IRRIG			\$5 00
MICROSOFT SERIAL MOUSE 2 0A	07/16/96	JVA/LAB	IRRIG			\$34 00
MS DOSE 6 22 (NO WINDOWS)	07/16/96	JVA/LAB	IRRIG			\$43 00
CTX 15 SVGA MONITOR	07/16/96	JVA/LAB	IRRIG			\$370 00
APC BACK UPS PRO 420I	07/16/96	JVA/LAB	IRRIG			\$283 40
FIVE CARTONS 145 LBS	07/16/96	JVA/LAB	IRRIG			\$40 50
SALT EC SOIL MOIST , TEMP MTR (item # AQT EC 200)	7/10/96	JVA/LAB	IRRIG	\$757 00	4	\$3 028 00
GRADUATED CYLINDER MADE OF POLYPROPYLENE (PLASTIC) 250 ML	7/02/96	JVA/LAB	IRRIG	\$5 00	10	\$50 00
GRADUATED CYLINDER MADE OF POLYPROPYLENE (PLASTIC) 500 ML	7/02/96	JVA/LAB	IRRIG	\$7 00	10	\$70 00
USE AND INSTALLATION GUIDE	7/02/96	JVA/LAB	IRRIG			\$0 00
BEAM BALANCE,610 G CAPACITY,0 1G WEIGHING UNIT SS PLATE	7/02/96	JVA/LAB	IRRIG	\$88 07	1	\$88 07
WEIGHT SET (2 1000G AND 1 500G) WHICH BRING TOTAL CAPACITY	7/02/96	JVA/LAB	IRRIG	\$19 00	1	\$19 00
PRESSURE GAUGE OIL FIELD 0 30 PSI 2% ACCURACY 100ML MM	7/02/96	JVA/LAB	IRRIG	\$52 00	4	\$208 00
STOPWATCH BASIC VWR 6CM DIAE # 013	06/26/96	JVA/LAB	IRRIG	\$14 40	6	\$86 38
57334 272 STEVE VWR, FULL 8 SS/BRS # 35E #003	06/26/96	JVA/LAB	IRRIG	\$30 05	1	\$30 05
WLS30710 10 VOLT OHM AMMETER #012	06/26/96	JVA/LAB	IRRIG	\$170 28	2	\$340 56
MADDALENA MODEL MPD PROPORTIONAL FLOE METER 80 mm	06/26/96	JVA/LAB	IRRIG	\$155 01	2	\$310 02
DOOR TO DOOR TRANSPORTATION	8/07/96					\$1,175 00
AIR FREIGHT AND INSURANCE CHARGES (3085 lbs) 7 PIECES	07/30/96					\$12,797 46
GROUNDWATER RECHARGE & WELLS GT Aquifer Storage REC PYNE	07/30/96	MWI/LIB	WATER1	\$59 95	1	\$59 95
CRC STANDARD MATH L TABLES & FORMULAC 30TH EDITION ZWILLING	07/30/96	MWI	WATER1	\$39 95	1	\$39 95
HANDBOOK OF ENVIRONMENTAL CONTAMINANTS SCHINELDECKER	07/30/96	MWI	WATER1	\$84 95	1	\$84 95

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Table 4
Non Expendable Commodities

	Through	December	1996			
HAZARDOUS WASTE RISK ASSESSMENT ASANTE DUAH	07/30/96	MWI/LIB	WATER1	\$71 95	1	\$71 95
GROUNDWATER MODELS FOR RESCS ANALYSIS & MGMT EL KADI	07/30/96	MWI/LIB	WATER1	\$69 96	1	\$69 96
PRINCIPLES OF GROUNDWATER ENGINEERING BY C WALTON	07/30/96	MWI/LIB	WATER1	\$79 95	1	\$79 95
SHIPPING AND HANDLING	07/30/96					\$4 67
DOOR TO DOOR TRANSPORTATION	07/31/96					\$521 00
COMPREHENSIVE WATER ANALYSIS	6/07/96	MWI	WATER1			\$291 15
STANDARD METHODS FOR THE EXAMINATION OF WATER19TH ED (BOOK	6/07/96	MWI	WATER1			\$180 00
STANDARD METHODS SUPPL 18TH ED (BOOKS)	6/07/96	MWI	WATER1			\$25 00
WATER QTY QUALITY MGMT (BOOKS)	6/07/96	MWI	WATER1			\$69 50
WATER QUALITY & MGMT FOR REC (BOOKS)	6/07/96	MWI	WATER1			\$115 00
HYDROLOGY & WATER QUALITY CONT (BOOKS)	6/07/96	MWI	WATER1			\$66 38
INTRO TO WATER QUALITY MODEL (BOOKS)	6/07/96	MWI	WATER1			\$89 85
SHIPPING CHARGES	6/07/96	MWI	WATER1			\$41 66
REPLACEMENT CABLE & PROBE FOR CPR 200 AND FREIGHT	08/26/96	MWI/JIRB	WATER1			\$739 00
REPLACEMENT CABLE & PROBE FOR CPR 150	08/14/96	MWI/JIRB	WATER1	\$580 00	4	\$2 320 00
REPLACEMENT CABLE & PROBE FOR CPR 200	08/14/96	MWI/JIRB	WATER1	\$730 00	3	\$2,190 00
REPLACEMENT CABLE & PROBE FOR CPR 300	08/14/96	MWI/JIRB	WATER1	\$1 030 00	3	\$3 090 00
REPLACEMENT CABLE & PROBE FOR CPR 500	08/14/96	MWI/JIRB	WATER1	\$1 620 00	1	\$1,620 00
FREIGHT CHARGES	08/14/96					\$123 00
STEVE VWR FULL 8 SS/BR5 # 10E	11/12/96	JVA/LAB	IRRIG			\$24 85
STEVE VWR FULL,8 SS/BR5 # 140E	11/12/96	JVA/LAB	IRRIG			\$28 70
STEVE VWR FULL 8 SS/BR5 # 200E	11/12/96	JVA/LAB	IRRIG			\$35 70
STEVE VWR FULL 8 SS/BR5 # 18E	11/12/96	JVA/LAB	IRRIG			\$24 85
STEVE VWR FULL 8 SS/BR5 # 50E	11/12/96	JVA/LAB	IRRIG			\$24 85
STEVE VWR FULL 8 SS/BR5 # 100E	11/12/96	JVA/LAB	IRRIG			\$26 25
STEVE VWR FULL 8" SS/BR5 # 325E	11/12/96	JVA/LAB	IRRIG			\$60 20
STEVE VWR FULL HT 8 W/RIM BR5 E10	11/12/96	JVA/LAB	IRRIG			\$10 73

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Table 4
Non Expendable Commodities

	Through December 1996					
STEVE VWR 8 DIAMETER BRASS E11	11/12/96	JVA/LAB	IRRIG			\$9 00
PROCUREMENTS (WAITING FOR DETAILS)						\$146,600 00
PROCUREMENTS (WAITING FOR DETAILS)						\$12,681 36
TOTAL PROCUREMENT						\$877 367 37
FEE PROCUREMENT (9 89%)						\$86,801 62
TOTAL						\$964 168 99

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Table 4
Non Expendable Commodities
Through December 1996

WQICP 1996 Annual Progress Report

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TABLE 5
WQIC Publications List

WQIC Progress
1996 Annual Report

Title	Report Number	Date	Author (s)	Description
Water Quality Monitoring and Management				
Plan and SOW for Policy Agenda Team	3114-94-1a-01	Aug-94	Max Goldensohn	Action plan for policy development
Proposed Policies for the Water Sector	3114-96-1a-02	May-96	Policy Committee	Vol 1 Policy Strat Strategies Action Plan
Proposed Policies for the Water Sector	3114-96-1a-02	May-96	Policy Committee	Vol 2 Policy Profiles
Management Information Systems Report	3114-94-1b-01	Dec-94	SAIC	Unified MIS for all MWI functions
Detailed Engineering Design & Final 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 Progr
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 I Vol 6	3114-95-1c-04	Oct-95	SAIC Working Gr	Aquifer Ground Water Level
Water Monitoring System Long Term Plan	3114-95-1c-05	Dec-95	SAIC Working Gr	Recom for upgrading Water Monitoring Syst
Ground Water Level Monitoring Prog /Yarmouk Basin	3114-96-1c-06	Sep-96	SAIC Working Gr	Amman Wadi Sir & Rijam Aquifers
Ground Water Qlty Monitoring Prog /Yarmouk Basin	3114-96-1c-07	Sep-96	SAIC Working Gr	Amman Wadi Sir & Rijam Aquifers
Ground Water Level Monitoring Prog /Azraq Basin	3114-96-1c-08	Sep-96	SAIC Working Gr	Amman Wadi Sir & Rijam Aquifers
Ground Water Qlty Monitoring Prog /Azraq Basin	3114-96-1c-09	Sep-96	SAIC Working Gr	Amman Wadi Sir & Rijam Aquifers
Surface Water Res Monitoring Plan/Yarmouk Basin	3114-96-1c-10	Oct-96	SAIC Working Gr	
Surface Water Res Quality Plan/Yarmouk Basin	3114-96-1c-11	Oct-96	SAIC Working Gr	
Surface Water Res Mon /Dead Sea/Wadi Mujib/Hasa	3114-96-1c-12	Oct-96	SAIC Working Gr	
Surface Water Res Qty/Dead Sea/Wadi Mujib/Hasa	3114-96-1c-13	Oct-96	SAIC Working Gr	
Amman Wadi Sir Aquifer/GW Level Mon Prog/Mujib Dead Sea, Hasa Basins	3114-96-1c-14	Oct-96	SAIC Working Gr	
Amman Wadi Sir Aquifer/GW Qlty Mon Prog/Mujib Dead Sea, Hasa Basins	3114-96-1c-15	Oct-96	SAIC Working Gr	
Surface Water Res Mon Plan/Wadi Araba Basin	3114-96-1c-16	Nov-96	SAIC Working Gr	
Surface Water Qlty Mon Plan/Wadi Araba Basin	3114-96-1c-17	Nov-96	SAIC Working Gr	
Surface Water Res Mon Plan/Jordan River/Rift Wadis	3114-96-1c-18	Nov-96	SAIC Working Gr	

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TABLE 5
WQIC Publications List

WQIC Progress
1996 Annual Report

Title	Report Number	Date	Author (s)	Description
Surface Water Qlty Mon Plan/Jordan River/Rift Wadis	3114 96 1c 19	Nov 96	SAIC Working Gr	
Surface Water Mon Plan/Azraq Jafr Hamrad/Sirhan	3114 96 1c 20	Nov 96	SAIC Working Gr	
Amman WadiSir & Rijam Aquifer GW level Monitoring	3114 96 1c 21	Dec 96	SAIC Working Gr	
Program Plan for the Jafr Basin				
Amman WadiSir & Rijam Aquifer GW level Quality	3114 96 1c 22	Dec 96	SAIC Working Gr	
Program Plan for the Jafr Basin				
Assessment & Evaluation of the Central Laboratory	3114 94 1d 01	Aug 94	Ericdh Moghadam	Assessment and recommendations
Assessment & Evaluation of IVA Laboratory	3114 95 1d 02	Jun 95	SAIC	Eval of facility conditions personnel
Conceptual Design for CI of the WAJ	3114 95 1d 03	Aug 95	I Moghadam	Construction consolidation of CI
National Laboratory Management Assessment Report	3114 95-1d 04	Dec 95	I Moghadam	
Artificial Recharge Objectives Statement	3114 94 1e 01	Sep 94	Working Group	Program Objectives
Artificial Recharge Data Needs	3114 95 1e 02	Jan 95	Working Group	
Industrial Pollution Prevention				
Background Material Potash 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- Potash 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-Amman Mun Slaughterhouse	3114 94 2b 09	Nov 94	SAIC	
Audit Evaluation Jordan Sulpho Chemicals Co	3114 94 2b 10	Nov 94	SAIC	
Paper and Cardboard 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	}
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	}
Ic & 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

TABLE 5
WQIC Publications List

Title	Report Number	Date	Author (s)	Description
Bect Company (Rec Visit)	3114 94 2b 18	Nov 94	R Abdel Khaleq	} water conservation practices
Modern Rising Sewage 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 Manu 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 Worsted 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	May-95	Harza DA	Manual on US Short Term Training
Aqaba Indust Complex Jordan Phosphate Mining	3114 95 2b 38	Jul 95	MWI WAI	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
Irrigation Management				
Zarqa River Conveyance Study	3114-95 3a 01	Apr 95	Harza & CC	Part 1 Data Collection
Zarqa River Conveyance Study	3114-95 3a 02	May 95	Harza & CC	Part 2 Data Evaluation

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TABLE 5
WQIC Publications List

	Title	Report Number	Date	Author (s)	Description
	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 JV Farmers	3114 95 3b 04	Apr 95	D Kuhnle DAI	
	Irr Management & Water Quality in the Central JV	3114 95 3b 05	Apr 95	UOI/W&I R&S	Baseline Survey
	Achieving Sustainable Irr Water Conservation	3114 95 3b 06	Dec 95	R Hagan	
	Irrigation Water Delivery Scheduling Pilot Study	3114 96 3b 07	Nov 96	W Martin Roche	Progress on Water Delivery Sched
	Study of 14.5km Extension of King Abdullah Canal	3114 96 3b 08	Nov 96	W Martin Roche	
	Eval of Pressurized Pipeline Operation & Maint trg	3114 96 3b 09	Dec 96	W Martin Roche	
Water Management Education					
	Water Management Education Phase I Action Plan	3114 94 4a 01	Mar 94	Robert Smart	Plan for Phase I development
	Creation of a Human Resources Development Unit	3114 94 4a 02	Apr 94	Robert Smart	Discuss needs and org functions
	Human Resources Development Policy Paper	3114 94 4a 03	Apr-94	Robert Smart	Sets out proposed IIRD policies
	National Training Management Plan	3114-94 4a 04	May 94	Robert Smart	Summary of Phase I action plan
	Manpower Planning Study Proposal	3114 94 4a 05	Jun 94	Robert Smart	Approach to Phase II development
	Training Needs Assessment	3114 94 4a 06	Sep 94	Robert Smart	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

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TABLE 5
WQIC Publications List

WQIC Progress
1996 Annual Report

Title	Report Number	Date	Author (s)	Description
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
1995 Annual Progress Report	3114 95 00 12	Feb 96	WQIC Team	Accomplishments for 1995
Quarterly Progress Report January-March 1996	3114-96 00 13	Apr 96	WQIC Team	Report on progress for the 1st quarter
Quarterly Progress Report April-June 1996	3114 96 00 14	Jun 96	WQIC Team	Report on progress for the 2nd quarter
Quarterly Progress Report July-September 1996	3114 96 00 15	Sep 96	WQIC Team	Report on progress for the 3rd quarter
Review and Planning workshop	3114 96 00 16	Oct 96	Kathy Alison IRG	1997 Workplanning Workshop
1997 Work Plan	3114 96 00 17	Dec 96	WQIC Team	Accomplishments for 1996
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	
Newsletter 16				
Newsletter 17				
Newsletter 18		Mar-96	DAI Team	
Newsletter 19		Apr/May	DAI Team	
Newsletter 20		Dec 96	DAI Team	

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Table 6
Action Memoranda Log

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</i> - SOW for JVA Lab Upgrade	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	1/24/1995	4/11/1995
	<i>Amendment 1</i> - Replacing Moghadam with Sood	4/04/1995	4/06/1995	
	<i>Amendment 1</i> - Replacing Moghadam with Sood	8/29/1995	Canceled	
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	1/24/1995	4/11/1995
		4/04/1995	4/06/1995	
1-13	Candidates for Detailed Design of the MIS	3/01/1995	3/06/1995	3/12/1995
	<i>Amendment # 1</i> Rearranging staff effort levels	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	Replaced with AM 6-66
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 Reiss 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	12/16/95	12/27/1995	12/28/1995

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Table 6
Action Memoranda Log

2-19	Workshop on financial mech	10/29/1996	10/29/1996	11/07/1996
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	<i>(Amendment 1)</i> Expanding Pipeline O&M SOW	7/31/1995	8/03/1995	8/07/1995
3-10	Reiss 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 Harza employee	11/02/1995	11/04/1995	11/07/1995
3-13	Pipeline Specialist - Martin Roche	3/11/1996	3/17/1996	3/18/1996
3-14	Special Studies requested by Minister	7/24/1996	7/25/1996	7/29/1996
3-15	Consultant to Conduct the Special Studies approved in AM #3-14	9/19/1996	9/29/1996	10/01/1996
4	WATER MANAGEMENT EDUCATION			
4a 01	Recruitment of Human Resources Development (HRD) Advisor (Jordanian)	4/20/1994	4/20/1994	4/24/1994
4a 02	Third Country Training	1/03/1995	1/03/1995	1/10/1995
4a 03	Academic Training	4/21/1994	6/04/1994	7/10/1994
4a 04	Purchase order for HRD	6/07/1994	6/15/1994	6/19/1994
4a 05	HRD STTA	7/03/1994	7/07/1994	7/18/1994
4a 06	Manpower plan implementation	Canceled		
4a 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 4a-2	8/16/1994	9/13/1994	9/18/1994
4a-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

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Action Memoranda Log

	<i>Amendment # 2</i>	8/01/1995	8/08/1995	8/20/1995
4a-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
4a 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
4a-16	Curriculum Development	12/14/1994	12/14/1994	1/05/1995
4a-17	Training Center design	12/14/1994	12/14/1994	12/28/1994
	<i>Amendment # 1</i>	4/27/1995	Canceled	
4a-18	Manpower Planning for MWI	1/15/1995	1/15/1995	2/14/1995
4a-19	ASAE Micro irrigation Conference	2/18/1995	3/01/1995	3/07/1995
	<i>Amendment # 1 (canceled)</i>	3/21/1995	3/21/1995	3/23/1995
	<i>Amendment # 2</i>	3/26/1995	3/27/1995	3/27/1995
4a-20	Extension of Curriculum Dev Coordinator	3/30/1995	4/01/1995	4/02/1995
4a-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
4a-23	Contract funded travel for SG and Minister	3/26/1995	3/27/1995	3/27/1995
4a-24	Participant training - Component 2 PP/WM	4/10/1995	4/12/1995	4/11/1995
4a-25	Visit to Egyptian Drainage Res Institute	4/10/1995	4/12/1995	4/12/1995
4a 26	Egyptian Water User Association Visit	4/10/1995	4/12/1995	4/13/1995
4a-27	University Lecture Group	4/15/1995	4/15/1995	Not Approved
4a-28	Eng Language Tutoring for SG, JVA	4/19/1995	5/02/1995	5/04/1995
4a-28	<i>(Amendment 1)</i> 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
	<i>(Amendment # 1)</i>	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	Obeidat 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

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1-23	Approval of Lab Equipment Expert	2/03/96	2/07/1996	2/15/1996
1-24	Central Laboratory Refurbishment Plan	1/29/96	Canceled (DJD)	
1-25	Policy Team - Dr Summa	2/10/1996	2/18/1996	2/27/1996
1-26	Expat team and local specialists for National Policy Conference	3/31/1996	4/02/1996	4/15/1996
1-27	Approval of MIS Team for CONOPs	7/29/1996	8/3/1996	8/14/1996
1-28	Approval of Surface Water Specialist for Monitoring	6/22/1996	7/06/1996	7/11/96
1-29	Approval for Training on Varian AA Graphite Furnace	6/29/1996	6/29/1996	6/30/1996
	<i>Amendment # 1</i>	9/02/1996	9/04/1996	9/17/1996
1-30	Approval for Lab QA/QC & Operations Plan	9/02/1996	9/03/1996	9/22/1996
1-31	Approval of MIS Specialist	10/07/96	10/08/1996	10/10/1996
1-32	Approval for New Strategy for Lab QA/QC and Ops Plans	10/28/96	10/29/1996	11/10/1996
1-33	Approval of MIS Specialist	11/18/96	11/19/1996	12/01/1996
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 - Yeast	11/01/1995	11/04/1995	11/26/1995
2-15	Kodukula and Dencker	12/03/1995	12/06/1995	12/10/1995
2-16	National Conference PP Training Program	1/05/1996	1/06/1996	1/07/1996
2-17	2nd Demonstration program for IWDP - Refinery	1/17/1996	2/18/1996	2/27/1996
2-18	Local SOW to install and operate demo projects	10/01/1996	10/06/1996	10/29/1996

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Table 6
Action Memoranda Log

4a 37	JES Candidates/Public Awareness Training	10/17/1995	10/17/1995	10/20/1995
4a 38	Computer Training for JVA employees	2/03/1996	2/06/1996	2/08/1996
4a-39	Improved report writing for Engineers	1/27/1996	1/30/1996	2/08/1996
4a-40	Improved English language in MWI	1/28/1996	1/30/1996	2/08/1996
4a-41	Operation & Maintenance Training Program	2/11/1996	2/14/1996	4/07/1996
4a 42	Water Delivery Scheduling Training Program	2/11/1996	2/14/1996	4/07/1996
4a-43	Irrigation Advisory Service Training Program	2/11/1996	2/14/1996	4/07/1996
4a 44	Specialized Laboratory Equipment/Procedures Training	Pending		
4a-45	Short term trg for Artificial Recharge	2/08/1996	2/11/1996	4/23/1996
4a 46	English Language trg for JVA	2/10/1996	2/11/1996	2/15/1996
4a 47	Management of Programs, Public Awareness	Pending		
4a 48	Environmental Economics and Policy Analysis	3/11/1996	3/14/1996	Not Approved
4a 49	Environmental Economics and Policy Analysis	4/03/1996	4/04/1996	4/08/1996
4a 50	Revised Contractual Overseas Training program	4/23/1996	4/24/1996	05/02/1996
4a 51	Short Term Training for Comp 1	4/23/1996	4/24/1996	05/02/1996
4a 52	Water Monitoring Training Program/ PIOP	5/05/1996	5/07/1996	05/12/96
4a-53	Irrigation Scheduling Program (PIOP)	5/13/1996	5/14/1996	5/16/1996
4a-54	Irrigation Advisory Program (PIOP)	5/13/1996	5/14/1996	5/16/1996
4a 55	Environmental Economics & Policy Analysis Training Workshop/MWI	05/11/1996	05/12/96	05/12/96
4a-56	Environmental Economics and Policy Analysis Training Workshop/Ministry of Planning	05/11/96	05/12/96	05/12/96
4a-57	Artificial Recharge Study Tour	5/20/1996	5/21/1996	5/23/1996
	<i>(Amendment # 1)</i>	6/9/1996	6/9/1996	6/17/1996
4a-58	Central Laboratory Training	5/30/1996	5/30/1996	5/30/1996
4a-59	MIS Management Training	5/28/1996	5/28/1996	5/30/1996
4a 60	STTA scope for HRD and CIDA	6/15/1996	6/15/1996	6/24/1996
	Amendment #1 - Selection of expatriate consultant	6/20/1996	6/22/1996	6/24/1996
	Amendment #2 - Selection of Local Consultant	10/06/1996	10/07/1996	10/08/1996
4a-61	Operation and Maintenance Training Program/piop	6/18/1996	6/18/1996	6/23/1996
4a-62	Public/Private Partnership Workshop	6/20/1996	6/24/1996	6/25/1996
4a-63	Public-Private Partnership Workshop/PIOP	7/02/96	7/10/1996	7/14/1996
4a-64	Monitoring Tailor-Made Workshop	8/07/96	8/08/1996	Not Approved
4a-65	Surface Geophysical Training-Artificial Recharge	9/15/1996	9/17/1996	9/18/1996
4a 66	Training for Central Lab Personnel/Giardia Lambia	9/03/1996	9/04/1996	9/15/1996

Table 6
Action Memoranda Log

4a 67	Training for Central Lab/Giardia Lambia	9/26/1996	9/28/1996	9/30/1996
4a-68	Training for Finnigan MAT GC/MS Incos 50/Data System	10/19/1996	10/20/1996	10/22/1996
4a-69	Advanced Computer Training	10/14/1996	11/10/1996	11/13/1996
4a-70	Central Lab/Finnigan Mat/Incos 50	10/29/1996	10/29/1996	11/04/1996
4a-71	Lotus Notes Training	11/13/96		
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
4b-05	AV Workshop	7/22/1996	7/22/1996	7/29/1996
4b 05	<i>Amendment 1</i> Change in AV Workshop Implementation	12/17/1996	12/18/1996	Pending
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
5-08	Admin Staff – Accountant	3/03/1994		3/07/1994
5 09	Driver/Expediter	3/03/1994		3/07/1994
5-10	Approval for Team Building & Start-up Workshop & country clearance for staff	3/09/1994		3/09/1994
5-11	Admin Staff – Accountant	3/23/1994		Not approved
5-12	Admin Staff – Accountant	3/24/1994		3/24/1994
5-13	Guest House	5/02/1994	5/02/1994	5/05/1994
5-14	Muller Resignation	5/02/1994	5/02/1994	Concurred
5-15	Project Support Staff	5/07/1994	5/07/1994	5/08/1994
5 16	Working hours for Expatriates	5/04/1994	5/04/1994	5/09/1994
5 17	Void	Void		
5-18	Six-day work week for STTA (Faxed to DAI/B June 13)	6/06/1994	6/07/1994	6/08/1994
5-19	Rental Computers	6/05/1994		6/23/1994

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5-19a	Rental Computers	6/16/1994		6/19/1994
5-20	Salary approval/ST Lab Upgrade Specialist	5/19/1994		6/02/1994
5-21	Travel authorization & country clearance for SAIC rep	5/19/1994		5/26/1994
5-22	Local Hire Salaries	6/01/1994	6/01/1994	6/02/1994
5-23	Approval for ST Management Info Specialist	6/01/1994	6/01/1994	6/01/1994
5-24	Travel Auth & Country Clearance for John Leo	6/08/1994	6/08/1994	6/12/1994
5-25	Travel Auth & Country Clearance for Pollution Prevention Spec 's Dependents	6/08/1994	6/08/1994	6/16/1994
5-26	Approval for Del-Santo as LTTA (HO action)	6/13/1994		6/19/1994
5-27	Task 7 of Subcomponent 3b, Water Pricing Study	6/13/1994	6/14/1994	Concurred
5-28	Void	Void		
5-29	Baseline Survey	6/29/1994	7/11/1994	7/18/1994
5-30	Freight for Dario Dal Santo	6/22/1994	6/22/1994	6/23/1994
5-31	Kern Country Clearance	6/28/1994	-	6/30/1994
5-32	Training Report Approval	7/06/1994	7/06/1994	Concurred
5-33	Dario's country clearance	7/12/1994	-	7/17/1994
5-34	Appointment of a Deputy COP	7/17/1994	7/31/1994	8/08/1994
5-35	R&R Travel for R Smal	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	Canceled		
	Travel Auth for Industrial Auditor	8/03/1994	-	8/07/1994
5-41	MIS Specialist Departure from Post (John Leo)	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	Canceled
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

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Action Memoranda Log

5-51	Rest and Recreation Travel (Coleen 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 Mayenkar	2/23/1995	-	2/28/1995
5-62	Approval of MLC Subcontract	3/6/1995	3/6/1995	5/15/1995
5-63	Darryl Kuhnle as Ag Communication s 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 Conveyance 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	Canceled	
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 Lisle	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	Conveyance 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

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5-85	Pipeline Specialist - Martin Roche approval	7/04/1995	7/08/1995	7/20/1995
5-86	Smail - leave monetization	7/18/1995	7/18/1995	7/20/1995
5-87	Approval to hire permanent secretary-L Shabaan	7/27/1995	8/03/1995	8/15/1995
5-88	Curriculum Development Subcontract	7/10/1995	7/28/1995	8/09/1995
	<i>Amendment 1</i> - Funding of Phase II of curriculum development	12/20/1996	12/22/1996	Pending
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
	<i>(Amendment # 1)</i> Water Device Sub-Contract	11/07/1995	11/09/1995	1/20/1996
5-91	Smail-permission send all HHE by air	8/12/1995	8/14/1995	8/24/1995
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 Mckone and Hanney	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 Farideh Moghadomi	9/23/1995	-	9/25/1995
5-100	CC/TA for SAIC Senior System Engineer	9/23/1995	-	Canceled
5-101	WQIC Work planning workshops	9/27/1995	9/30/1995	10/01/1995
5-101a	Revised Administrative Budget for WQIC Work planning Workshop	12/5/1995	-	12/12/1995
5-102	Abu Ajamieh 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 Chehata	10/11/1995	-	10/12/1995
5-106	CC/TA for Sophia Khlifi	10/21/1995		10/30/1995
5-107	CC/TA for Kathy Ahson	11/01/1995	-	11/05/1996
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	-	12/31/1996
5-111	Tech Support to Design US Study Tour	12/30/1995	1/02/1996	Not Approved
	<i>Amendment # 1</i>	2/28/1996	3/05/1996	3/17/1996
5-112	Sophia Khlifi as AA	2/27/1996	2/27/1996	3/12/1996
5-113	WERSC training materials	3/04/1996	3/03/1996	4/01/1996
5-114	Workshop Development	3/10/1996	3/11/1996	3/12/1996

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5-115	CC/TA for Kathy Alison	3/12/1996	-	3/12/1996
5-116	Substitution of personnel on DA subcontract	3/26/1996	3/30/1996	Not Approved
	<i>Amendment no 1</i>	4/23/1996	4/23/1996	Not Approved
	<i>Amendment no 2</i>	5/14/1996	5/15/1996	5/16/1996
5-117	Artificial Recharge Workshop	5/04/1996	5/05/1996	30/05/1996
	<i>Amendment no 1</i>	8/7/1996	8/7/1996	8/7/1996
5-118	CC/TA for Sophia Khlifi	5/02/1996	-	5/02/1996
5-119	CC/TA Reiss and Blank	5/09/1996	-	5/13/1996
5-120	Employment of Driver - Faraj Abu Nofal	5/23/1996	5/23/1996	5/27/1996
5-121	CC/TA for Dr Neven Kresic	6/11/1996	Canceled	
5-122	MIS for Network and Notes	6/17/1996	6/20/1996	6/24/1996
	<i>Amendment 1</i> McMeekin second trip			
5 123	Office Space for Artificial Recharge	6/25/1996	6/25/1996	6/25/1996
5-124	Country Clearance for LaPorte and McMeekin	6/26/96	6/26/1996	6/27/1996
	<i>Amendment no 1</i>	7/29/96		8/04/1996
5-125	Country Clearance for Jeffrey Rhodes	7/3/96	-	7/08/1996
5-126	Substitution of personnel on the DA subcontract	7/29/96	31/7/1996	8/14/1996
5-127	Country Clearance for Richard Thorpe	8/7/96		8/15/1996
5-128	Approval to Ship Ring's HHE Air freight	8/12/96		9/02/1996
5-129	Approval for Emergency Travel for Coleen Brown	8/12/96		8/14/1996
5 130	CC/TA for Chehata and Bouwer	8/21/1996	-	8/25/1996
5 131	CC/TA for Jeffrey Rhodes	8/22/1996	-	8/25/1996
5 132	CC/TA for Beeman, Demmert, Druse and Roche	8/24/1996	-	8/25/1996
5-133	Financial Officer and HRD Manager	9/11/96	-	Canceled
5 134	1997 Work Plan Workshop	9/21/1996	9/23/1996	9/30/1996
	<i>Amendment # 1</i>	10/08/1996	10/08/1996	10/10/1996
5-135	CC/TA for W Toth, S Wruck	9/25/1996	-	9/30/1996
5-136	CC/TA for Dan Vasiliu	10/01/1996		10/02/1996
5-137	CC/TA for K Alison and K Beeman	10/08/1996	-	10/14/1996
5-138	INPIM Seminar	12/2/1996	12/2/1996	12/01/1996
5 139	CC/TA for Mundher Chehata	11/12/1996	-	11/17/1996
5 140	Chief of Party travel to the DAI Staff Conference	11/18/96	11/19/1996	11/26/1996
5-141	CC/TA Ken and Bill	11/19/1997		11/26/1996
5-142	Contract Extension for the Irrigation Management Specialist	12/16/1996	12/18/1996	12/22/1996

Table 6
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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
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	Remodeling part of MWI 2 nd floor	4/11/1994	4/11/1994	4/11/1994
6-06	Remodeling 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 data show (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 Hats	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 JVA 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

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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-061 1	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	Canceled	Void		
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
	<i>Amendment # 3 Books</i>	4/3/1996	4/04/1996	4/07/1996
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	Waiver issued 2/23/1996
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 Conveyance 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	Spares for computers	10/06/1995	10/08/1995	10/09/1995
6-48	Equipment for the JVA Lab	10/14/1995	10/14/1995	10/28/1995
6-49	Equipment for Chamber of Industry	11/05/1995	11/05/1995	11/06/1995
6-50	Duckweed Ponds	11/23/1995	Canceled	
6-51	Procurement of database package for Mac Computers	1/15/1996	1/25/1996	2/28/1996
6-52	Irrigation Advisory Equipment	3/21/1996	3/21/1996	3/27/1996
6-53	MIS equipment for MWI	1/15/1996	2/11/1996	2/15/1996
6-54	Surface Water Station Installation	3/05/1996	3/19/1996	4/10/1996

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	<i>Amendment 1 Modification no 1</i>	8/21/1996	8/27/1996	Not Approved
6-55	Purchase of Water Savings Devices	3/12/1996	3/14/1996	3/17/1996
6-56	Purchase of 2 RICOH copiers for Minister and Project	3/21/1996	3/21/1996	3/27/1996
	<i>Amendment 1 Authorization to purchase feeder</i>	7/31/1996	7/31/1996	7/31/1996
6-57	Procurement of Demo Program Equip for IWDP	4/09/1996	4/20/1996	5/02/1996
	Amendment 1, approval of IFB	6/17/1996	6/17/1996	6/18/1996
6-58	Purchase of Maintenance Equipment for JVA	5/21/1996	6/8/1996	7/14/1996
	Amendment 1, approval of equipment RFQ	7/30/1996	7/31/1996	9/22/1996
	Amendment 2, approval of hydraulic press IFB	9/4/1996	9/04/1996	9/22/1996
	Amendment 3, approval of ???			
6-59	Waiver -- Origin Requirements for Stomacher Blender	6/9/1996	6/9/1996	7/08/1996
6-60	Mercury Analyser competition	6/6/1996	6/9/1996	6/25/1996
6-61	Procurement of Second Demonstration Program Equipment Industrial Wastewater Discharge Prevention (IWDP)	7/17/1996	7/17/1996	8/4/1996
	Amendment 1, approval of IFB	9/3/1996	9/07/1996	9/18/1996
6-62	Wastewater Poster for PA	7/23/1996	7/24/1996	9/04/1996
6-63	WQIC/MWI File Server	9/17/1996	9/18/1996	10/03/1996
6-64	Diluter for JVA Lab	8/26/1996	8/28/1996	8/28/1996
6-65	Benchmarks for Water Monitoring System Network	10/27/96	10/29/1996	11/10/1996
6-66	Procurement of computers for MWI - Phase I	11/11/96	12/5/1996	12/09/1996
6-67	JES maintenance contract	11/21/1996	11/23/1996	12/18/1996
6-68	Computers & Peripherals procurement for JVA	14/15/96	12/14/1996	12/31/1996
6-69	Purchase of equipment for JES	23/12/96	12/18/1996	Pending
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 Rao	9/23/1995	9/24/1995	Canceled
7-06	AR Phase I Senior Review	10/10/1995	10/10/1995	10/11/1995
7-07	Procurement of ARCVIEW software	2/25/1996	2/25/1995	2/26/1996
7-08	Environmental Assessment Specialist	3/14/1996	3/17/1996	3/19/1996
7-09	Phase II Work Plan	5/28/1996	6/30/1996	8/13/1996

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7-10	Phase II Local Tech Support Subcontract	5/28/1996	5/28/1996	Concurred
7-11	Phase II Surface Geophysical Surveys Subcontract	5/28/1996	5/28/1996	5/30/1996
7-12	Jeffrey Rhodes for AR	7/03/1996	7/03/1996	7/07/1996
7-13	Geophysical subcontract approval	7/18/1996	7/18/1996	concurrred
7-14	Environmental and engineering support subcontract approval	7/18/1996	7/18/1996	concurrred
7-15	Richard Thorpe for AR	8/7/1996	8/7/1996	8/14/1996
7-16	Artificial Recharge Component Phase 2 Senior Review	8/17/1996	8/18/1996	8/25/1996
7-17	AR STTA - Dan Vasiliu	8/24/1996	9/01/1996	9/22/1996
7-18	Jeffrey Rhodes for AR	8/21/1996	8/22/1996	8/25/1996
7-19	Alex Livnat Technical	10/17/1996	10/17/1996	10/22/1996
7-20	Mondher Chehata Senior Review	11/12/1996	11/13/1996	11/17/1996
7-21	Selection of Wadi Madoneh site / Need for EA	12/02/1996	12/22/1996	Not Approved

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