DIRECTORATE OF WATER SUPPLY
DIRECTORATE GENERAL CIPTA KARYA
MINISTRY OF PUBLIC WORKS
REPUBLIC OF INDONESIA

DIRECTORATE GENERAL
INTERNATIONAL COOPERATION
MINISTRY OF FOREIGN AFFAIRS
KINGDOM OF THE NETHERLANDS

MDP PRODUCTION TEAM

TRAINING MATERIALS FOR WATER ENTERPRISES

FINAL REPORT

- GUIDE FOR USERS OF TRAINING MATERIALS
- TRAINING MODULES
  - GENERAL
  - ORGANISATIONAL
    - Basic knowledge / skills
    - Processes/procedures
    - Equipment/materials
  - TECHNICAL
    - Basic knowledge/skills
    - Processes/procedures
      - withdrawal
      - treatment
      - distribution
      - consumption
    - Equipment/materials
- TAPE / SLIDE PROGRAMMES

MDP PRODUCTION TEAM
DHV - IWACO - TGI

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our ref : GI/JHO/N/78/314
subject : FINAL REPORT MDP PRODUCTION TEAM.

Jakarta, 9th May, 1985.

Dear Sirs,

We have the pleasure to submit herewith the Final Report, supported by 12 volumes, of the MDP Production Team which implemented its Phase II assignments during the period March, 1984 - April, 1985.

The twelve supporting volumes contain a Guide for users of training materials (Volume 1), a series of 10 books with reviewed and upgraded training modules (Volumes 2-8), and printed reproductions of four tape/slide programmes (Volume 9).

We trust the Final Report will meet your requirements and approval. We are available at any time to provide more information if you would require so.

Yours faithfully
MDP Production Team

Ir. J. Oomen
Project Manager

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MDP PRODUCTION TEAM

TRAINING MATERIALS FOR WATER ENTERPRISES

FINAL REPORT

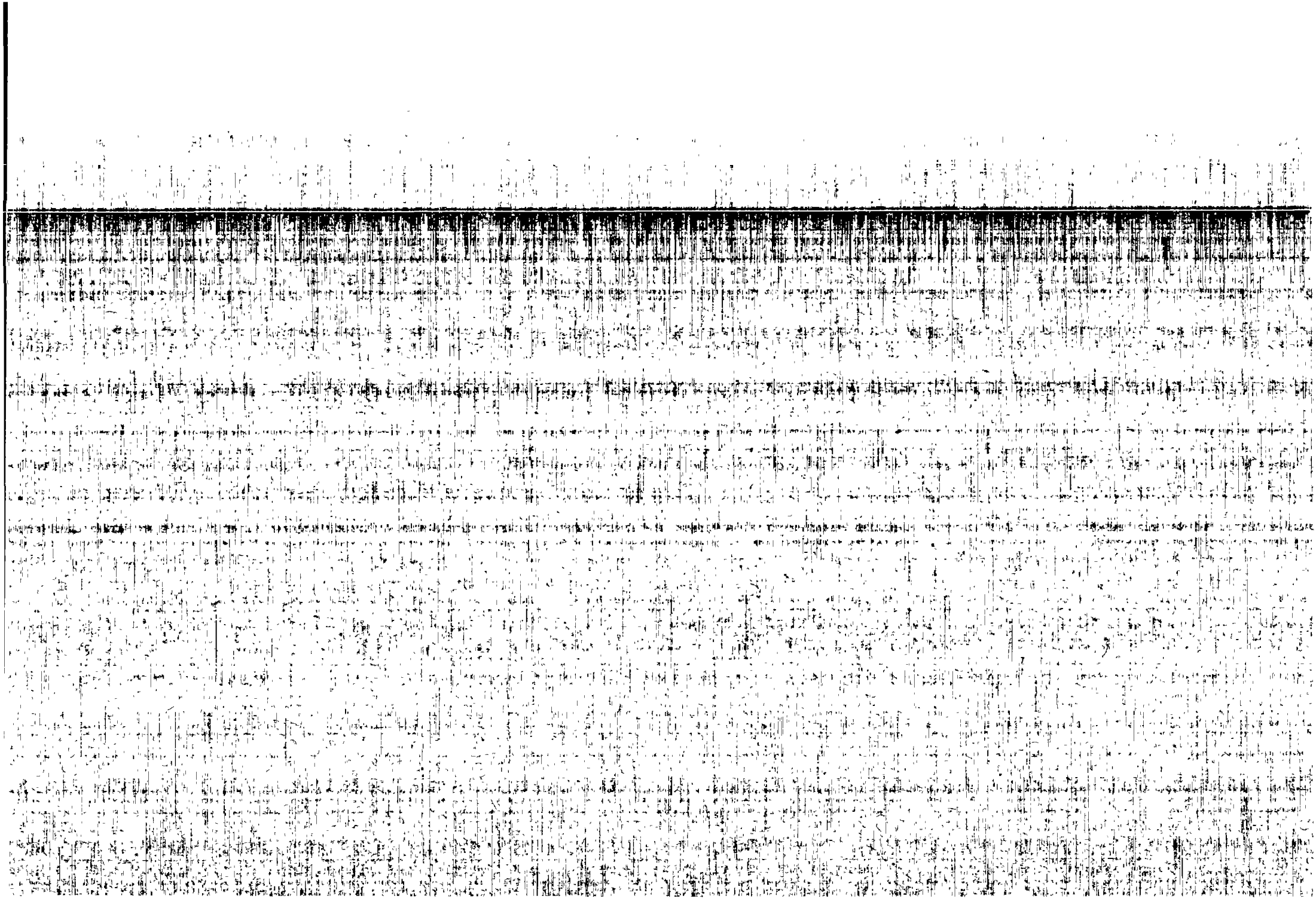
DHV CONSULTING ENGINEERS
IWACO B.V.
T.G. INTERNATIONAL

JAKARTA
APRIL 1985

P R E F A C E

This Final Report of the MDP Production Team, which produced Training Materials for Water Enterprises as part of a project under the bilateral cooperation programme between the Government of the Republic of Indonesia and the Government of the Kingdom of the Netherlands, is supported by 12 volumes. These Volumes are:

Volume 1	Guide for users of training materials	
Volume 2A	Training Modules,	GENERAL + ORGANIZATIONAL (basic knowledge/skills)
Volume 2B	Training Modules,	GENERAL + ORGANIZATIONAL (basic knowledge/skills)
Volume 3	Training Modules,	ORGANIZATIONAL (processes/procedures; equipment/materials)
Volume 4	Training Modules,	TECHNICAL (basic knowledge/skills)
Volume 5A	Training Modules,	TECHNICAL (processes/procedures)
Volume 5B	Training Modules,	TECHNICAL (processes/procedures)
Volume 6A	Training Modules,	TECHNICAL (Withdrawal + Treatment)
Volume 6B	Training Modules,	TECHNICAL (Withdrawal + Treatment)
Volume 7	Training Modules,	TECHNICAL (Distribution + Consumption)
Volume 8	Training Modules,	TECHNICAL (equipment/materials)
Volume 9	Tape/slide programmes	



FINAL REPORT MDP PRODUCTION TEAM PROJECT

TABLE OF CONTENTS

1. INTRODUCTION

1.1 Brief history of the "MDP Production Team" project

The MDP Production Team was established in April 1982 as a task force to produce training materials in support of the Manpower Development Programme (MDP) of Cipta Karya. The project was part of the bilateral cooperation programme between the Governments of Indonesia and The Netherlands and funded from the Netherlands Technical Assistance programme.

The project team, consisting of consultants from DHV, IWACO and TGI, was familiar with the various aspects of manpower development and training in water enterprises following similar activities for other Netherlands assisted projects in Indonesia (i.e. six cities, eleven cities, fifteen cities water supply projects). Based on this experience and additional training need analyses a number of subject matters were identified which required the production of training materials. These subject matters included managerial, financial/administrative and technical aspects of water enterprise opeations. For each field one or more consultant was engaged in the production of training materials. Based on initial surveys the project team opted for production of training materials in the format of training modules, whereby a training module was defined as a standardized unit of training material (on a particular task) that may be used by a trainer during one or more training sessions. The training modules produced by the MDP Production team consisted of 5 sections, i.e. information sheet, instructor notes, full text, hand-out, and viewfoil originals.

During a period of approximately 10 months the team produced a considerable amount of valuable training material consisting of some 240 training documents, i.e. 100 training modules on managerial and technical subjects, and 140 instruction documents on the financial/administrative operations pertaining to the various financial/administrative procedures in water enterprises.

The training material was presented in 25 volumes out of which 3 volumes contained training modules on managerial subjects, 12 volumes contained training modules on technical subjects, and 10 volumes contained instruction documents on financial/administrative procedures.

After completion, submission, and first review of this comprehensive set of training material it was agreed that the materials would be tested and validated in ongoing training programmes after which further review and upgrading would be undertaken. The Government of the Netherlands agreed to set aside an additional budget for these review works under the Technical Assistance Programme.

2.2 Scope of works of MDP Production Team, Phase II (or MDPP)

In the course of using the training material it became apparent that certain adjustments had to be made with regard to aspects such as format, contents, coding and organization of the training material.

The formats of the modules lacked sufficient uniformity and the modules were not coded systematically. These two matters were probably caused by the great number of module writers who operated from different offices in different cities obstructing adequate communication during the relatively short project implementation period. The contents of the majority of the modules appeared to be of adequate quality technically, but language and didactic aspects could be further improved.

As to the organization of the training material in the different volumes it appeared to be better to arrange modules according to their subject matters based on an appropriate coding system. Use of MDPP training modules in combination with training materials from other sources (STD and in particular HRDP) will then facilitate the compilation of specific jobtitle oriented Training Manuals containing all modules required for the implementation of a particular training course.

In consultation between the DGIS project supervision mission, Cipta Karya and the Consultants it was agreed that a team of Consultants would be established to undertake the necessary review and upgrading activities. The new "MDPP team" started its assignment in March 1984 in close cooperation with the Human Resources Development Project which had started its activities in February 1984. The MDPP team implemented its activities in the HRDP office.

The scope of works of the MDPP team contained the following activities:

(i) development of logical organization of modules, complete with systematic coding system;
(ii) development of uniform module format for all training modules;
(iii) preparation of trainer/user guide;
(iv) implementation of required adjustments, complete with an appropriate organization of the training material in a logical set of training documentation volumes.

The activities carried out by the MDPP team are described in chapter 2, whereas the output of the team is discussed in chapter 3. The composition of the project team is given in chapter 4.

2. DESCRIPTION OF MDPP ACTIVITIES

In accordance with the scope of works as set out in par. 1.2 the MDPP team undertook an overall reorganization, reformatting and upgrading of the training material developed by the MDP Production team. The main activities can be summarized as follows:

- **Step 1 : Development of a logical organization for modules**

  1. Establishing overview of available modules.
  2. Grouping in main categories.
  3. Developing comprehensive coding system.
  4. Adapting grouping of modules according to coding system.
  5. Testing compatibility of coding system.

- **Step 2 : Development of uniform module format**

  1. Assessing existing module formats and module contents.
  2. Designing new module format.
  3. Testing and validating of new module format.

- **Step 3 : Preparation of trainer/user guide**

  1. Writing introduction to the system.
  2. Writing description of the system.
  3. Developing training design matrix (modules vs. tasks of jobholders).

- **Step 4 : Implementation of required adjustments**

  1. Review of training material with regard to:
     - general appearance, language;
     - format consistency;
     - completeness/correctness of contents;
     - applicability for training purposes and didactic value.
  2. Processing of reviewed training material on word processor (IBM PC + Epson LQ 1500 Printer; Wordstar 3.3. programme).
  3. Developing and processing of complementary material (illustrations, drawings, viewfoil originals, etc.) using standard format and appropriate production equipment (e.g. lettering machine 3M 7402).
  4. Organization of training material in a logical set of training documentation volumes.

The abovementioned activities were successfully completed during the period March-October, 1984.
Some additional adjustments to the training material were carried out during the period November, 1984 - April, 1985, based on results of testing and validation of training modules in consultation with HRDP during the STD training programme for Fy 84/85.
The output of the MDPP team is described more in detail in the next chapter.

3. DESCRIPTION OF MDPP'S OUTPUT

Training material has been reviewed, reformatted, recoded and reproduced (on word processor), in accordance with the activities and selected approach as described in chapter 2.

The output of the MDPP team can be briefly summarized as follows:

(i) production of new module format;
(ii) production of coding system;
(iii) review (c/w reformatting and reproduction on wordprocessor) of the 100 training modules and regroupment into 92 training modules;
(iv) production of 2 additional training modules on technical subjects, and 11 training modules on financial/administrative procedures as a replacement for the instruction documents on financial/administrative operations;
(v) production of a guide for users of training materials (training modules and tape/slide presentations);
(vi) production of a Training Aids Manual containing all texts and prints of all slides of the tape/slide presentations.

The new module format and coding system are described in Annexes 1 and 2 to this Final Report. A comparative listing of old codes/module titles and new codes/module titles is given in Annex 3.

Some statistical data on the MDPP training modules is presented in Table 3-1.

Table 3-1 Some statistical data on MDPP Training Modules.

1.	Number of modules:	
	- total number of modules	: 105
	- number of modules with 45 min. duration	: 72
	- number of modules with 90 min. duration	: 24
	- number of modules with 135 min. duration	: 9
	- recommended cumulative delivery time (min)	: 6615
2.	Number of pages:	
	- total number of pages + viewfoils	: 1458
	- total number of pages	: 1033
	- total number of viewfoils	: 425
	- average of pages per module (incl. viewfoils)	: 13.9
	- average number of pages per module (excl. viewfoils)	: 9.8
	- average number of viewfoils per module	: 4.0

The 105 MDPP training modules are grouped systematically in training documentation manuals in accordance with the developed coding system. These training documentation manuals, or **Master Manuals**, serve as a training material resource library for training courses to be implemented.

There are three kinds of **Master Manuals**:

- Information manuals, providing general information;

- Training module manuals, containing training modules. The training module manuals are arranged according to the coding system: general, organization & management, technical;

- Training aids manuals, containing the different training aids which are to be used during the training sessions.

The MDPP **Master Manuals** include the following volumes:

- Information manuals:

  Volume 1 Guide for users;

- Training module manuals:

  Volume 2A General + Organizational (basic knowledge/skills);
  Volume 2B General + Organizational (basic knowledge/skills);
  Volume 3 Organizational (processes/procedures; equipment/materials);
  Volume 4 Technical (basic knowledge/skills);
  Volume 5A Technical (processes/procedures);
  Volume 5B Technical (processes/procedures);
  Volume 6A Technical (Withdrawal + Treatment);
  Volume 6B Technical (Withdrawal + Treatment);
  Volume 7 Technical (Distribution + Consumption);
  Volume 8 Technical (equipment/materials);

- Training aids manuals:

  Volume 9 Tape/slide programmes.

Use of MDPP training materials in combination with training materials from other sources (STD and in particular HRDP) will enable the compilation of specific jobtitle oriented **Training Manuals** containing all modules required for the implementation of a particular training course.

The attachment to this Final Report contains all volumes of **Master Manuals** mentioned above.

Volume 1, Guide for users of training materials, presents a comprehensive description of the training modules, the coding system, the application of the training modules, etc. It also includes a listing of all keywords contained in the training modules enabling easy access to modules from selected subjects.

Volumes 2-8 (10 pieces) contain complete copies of the 105 training modules. The grouping of the training modules in the 10 training module manuals is listed in Annex 4 to this Final Report. Annex 5 provides more comprehensive data on the modules. Statistical data on the amount of training modules available for particular jobtitles are presented in Annex 6. A matrix of training

modules versus trainee selection (jobtitles) is given in Annex 7. These data can also be found in Volume 1, Guide for Users of Training Materials.

Volume 9, Tape/slide programmes contains the full text and copies of all corresponding slides for the following presentations:

1. The role of the local government in the development of water enterprises.
2. Administrative and financial procedures.
3. Principles of water supply.
4. Water treatment facilities.

4. PROJECT TEAM

During the first phase of the project (April, 1982 - March, 1983) the MDP Production Team consisted of the following teammembers:

Ir. D. Bleyerveld	Project Manager
Drs. H. Wittenberg	Team Coordinator; T/S Programmes
Drs. F. Hijmans	Managerial Subjects
Drs. H. Heckman	Financial/Administrative Subjects
Mr. A. Vincent	Technical Subjects
Ir. A. Budde	Technical Subjects
Ir. H. van Wieringen	Technical Subjects
Ir. M. van Melick	Technical Subjects
Ir. H. Hofman	Technical Subjects
Mr. F. de Jager	Tape/slide Programmes

During the second phase of the project (March, 1984 - April, 1985) the MDPP team consisted of the following teammembers:

Ir. J. Oomen	Project Manager
Drs. H.J. van Houten	Team Coordinator/Managerial Subjects
Drs. P.H. van Heesewijk	Production Coordinator/Editor
Drs. H. Heckman	Financial/Administrative Subjects
Ir. R. Trietsch	Technical Subjects
Ir. M. van Melick	Technical Subjects
Ir. W. van Nooijen	Technical Subjects
Ir. E. Roek	Technical Subjects
Mr. F. de Jager	Tape/slide Programmes

ANNEXES

ANNEX 1

DESCRIPTION OF MODULE FORMAT

ANNEX 1 DESCRIPTION OF MODULE FORMAT

In training situations trainers not only use texts, they also make use of supporting material. They use classrooms, whiteboards, flipovers, view-foils, wall charts, exercises, etc. All this material - or rather these materials - are used to support trainers in getting their messages accross.

The MDPP project has developed a number of 105 Training Modules. Each training module contains the material the trainer may use in training water enterprise staff. So a training module is a set of training material which can be used in training people in the skills and the processes and procedures required in water supply enterprises.

It has been decided that training sessions should in principle last 45 minutes. So the training modules contain the training material a trainer may use during a training session of 45 minutes. And in some cases, during 90 or 135 minutes. Each training module consists of four sections. We will discuss this below.

1. Section 1 : **Information sheet** (light blue paper)

   Each training module contains an information sheet. This sheet can be used by the trainer in preparing a training session. The sheet gives all the information the trainer needs:
   - the title of the module;
   - the module code;
   - the actuality (date);
   - the page;
   - the total number of pages;
   - the duration;
   - the training objectives;
   - the trainee selection;
   - the training aids;
   - the special features;
   - the keywords.

   Although most of these elements need no further explanation, we will shortly discuss them.

   - Module title: Full name of the module. Preferably the title already indicates the subject and the contents of the module. For example: if the title is water supply, we will not know what is in the module. This title is too general. But if the title is how to repair a submersible pump, we will know what is in the module.

   - Module code: Full code. This subject has been dealt with extensively in the chapter on coding (Chapter 4).

   - Edition: Date of production or latest revision. This is an information item, as it is expected that the module content needs to be updated in a number of cases. For example, if the

module title is: Repelita objectives for water supply, and the Edition is 30-03-1984, we will know that the module is outdated and that updating is required.

- Page: Each section has one or more pages. This is indicated in the form of page 01 of 02 pages, page 02 of 02 pages. On the information sheet also is indicated the total number of pages of the training module: 01 of 01/10 means that the module has 10 pages.

- Section: Name of the module element. There are four sections:
  1. Information sheet;
  2. Session notes;
  3. Training aids;
  4. Handout.

- Duration: Time in minutes. The training will last 45, 90, 135, etc. minutes. This item is important during training design. The designer will now how many modules he can include in his training programmes.

- Training objectives: Here are mentioned the objectives the training pursues. These objectives have to be phrased in a measurable way. The item starts with the sentence: After the session the trainees will be able to .....

- Trainee selection: Here are mentioned the jobtitles for which the module is intended. So the formulation will be: Head of Finance/Administration Department. And not: Any person with administrative responsibilities. Of course more than one jobtitle can be indicated.

- Training aids: This item includes the codes of all training aids that may be used during the training session. Since some training aids need no coding, e.g. Sand, Water, these aids will be mentioned in full. The codes used are: Full module code + first letter of training aid + sequential number. The item has been discussed in the chapter on coding.

- Special features: Here are indicated references to other modules, and all other elements that may be of interest during training design, such as the location of the training.

- Keywords: In this item the most important words of the training module are mentioned. In this way some kind of abstract of the module content is made. For example, the keywords in the module Principles of management are: Management; Planning; Directing; Organizing; Coordinating; Controlling.
  For the index on keywords see Appendix 1.

2. Section 2 : **Session notes** (pink paper)

This section contains the training outline and the media the trainer has to use during the training session. The media are coded in a simple way. Viewfoil OBM 100/V 1 will be indicated as V 1. Etc. The pages contain at the left what the trainer has to say, and at the right what the trainer should do and which media he has to use.

3. Section 3 : **Training aids** (yellow paper)

This section contains reduced copies of all training aids to be used during the training session (these aids are of course mentioned in the right column of section). The sequence of the training aids during the session decides their placement in this section. The same code is used as in the previous section.

4. Section 4 : **Handout** (white paper)

In this section the complete text, including figures, drawings, and the like is reproduced. The tainer may use full text during training preparation. After the session, the full text may be handed out to the trainees for further reference.

5. Annex : **Viewfoils** (green/white paper)

The annex contains a listing (on green paper) of all viewfoils to be used during the training session, and original size reproductions (on white paper) of the viewfoils. These reproductions can be used to prepare new viewfoils. The same codes are used as in the previous section.

* * *

ANNEX 2

DESCRIPTION OF CODING SYSTEM

ANNEX 2 DESCRIPTION OF CODING SYSTEM

1. WHAT IS A CODING SYSTEM

A coding system will consist of a number of codes. A code consists of a number of letters and/or figures. If it only consists of letters, it is called an alphabetical coding system. If it only consists of figures, it is called a numerical coding system. If it consists of a combination of letters and figures, it is called an alpha-numerical coding system.

A coding system for training modules, which contain different kinds of materials, must meet a number of specific requirements:

- the system should indicate the type of training for which the module is designed (general, organizational, technical);
- the system should indicate the nature of the know how contained in the module (skills, procedures, equipment);
- the system should indicate the activity for which the module can be applied (management, administration, finance);
- the system should indicate the subject of the module (pipe laying, cutting);
- the system should indicate the type of training material (viewfoil, handout, chart, drawing).

A coding system that meets all the above requirements to a large extent, can be used by different categories of people. It can be used by trainers for training design and training preparation. It can be used by the administrative staff of training centre for filing, recording, and adapting the training material. And it can also be used by module developers during module production, and - last but not least - by consultants to test coverage of available material. Such a system will clearly identify blank spots, i.e. areas that are not yet or not sufficiently covered, etc.

2. DESCRIPTION OF MDPP CODING SYSTEM

The coding system developed for use in the MDPP as well as HRDP training material production is of an alpha-numerical nature. This means that the codes consist of a combination of letters and figures. The letters indicate the type of training (letter 1), the nature of the know how (letter 2), and the activity (letter 3). The figures indicate the specific subjects. This will be explained below (see also attached code matrixes):

a. Letter code

As has been described above, the letter code consists of three letters:

- letter 1 indicates the general type of training for which the training module is designed:
  - general training - G
  - organizational training - O
  - technical training - T

- letter 2 indicates the nature of the know how contained in the training module:
  - general - G
  - basic knowledge/skills - B
  - processes/procedures - P
    - withdrawal - W
    - treatment - T
    - distribution - D
    - consumption - C
  - equipment/materials - E

- letter 3 indicates the activity for which the module can be applied:
  - within G:
    - general - G
  - within O:
    - general - G
    - management - M
    - finance - F
    - administration - A
    - personnel - P
    - consumer relation - C
  - within T:
    - general - G
    - survey - S
    - design - D
    - construction/repair - C
    - operation - O
    - maintenance - M
    - inspection/supervision - I
    - research/development - R

Now, if you take the three letters of the coding system, it must become clear what kind of module it is. Some examples are given below in section 4. However, the code also consists of a number of figures.

b. **Figure code**

This part of the code consists of three figures, ranging from 000 - 999. These figures indicate the specific subject dealt with in the module.

c. **Letter/figure code for training aids**

With the above, nearly all requirements for the coding system have been met. Only the type of training aids contained in a training module still has to be indicated. To that end, the

full code will be completed with a letter and a sequential number:
A - for all Audio-visual presentations and slides;
D - for all Demonstration models, regardless whether they are simple taps or complicated cut-away models, or pipe/distribution systems;
E - for all Exercises and exhibitis;
H - for all Handouts;
M - fôr all Materials and equipment (machines, etc.);
P - for all Photos, posters, and wallcharts;
Q - for all Questionnaires tests, etc.;
R - for all Reference materials, books, report, etc.;
T - for all Tools;
V - for all Viewfoils.

So, if the module OBM 100 also contains one viewfoil, the code number of the viewfoil will be : OBM 100/V 1. The first chart in this module will have the full code : OBM 100/P 1. Etc.

3. EXAMPLES OF CODES

As has been mentioned before, if you take the three letters of the module code, it must be clear what kind of module it is. This will be illustrated with a few examples:

- module code: OBM; This means:
  . O = Organizational (type of training)
  . B = Basic knowledge/ skills (nature of know how)
  . M = Management (activity)

- module code: TCC; This means:
  . T = Technical
  . C = Consumption
  . C = Construction

- module code: TEM; This means:
  . T = Technical
  . E = Equipment/material
  . M = Maintenance

- module code: GGG; This means :
  . G = General
  . G = General
  . G = General

Of course the full code also includes the three figures to indicate a specific subject.

* * *

G	GENERAL	GGG (3)

O	ORGANIZATIONAL	General	Management	Finance	Administration	Personnel	Consumers
	Basic knowledge/ skills	OBG (3)	OBM (15)	OBF (0)	OBA (3)	OBP (4)	OBC (1)
	Processes/ Procedures	OPG (0)	OPM (0)	OPF (11)	OPA (0)	OPP (0)	OPC (0)
	Equipment/ Materials	OEG (0)	OEM (0)	OEF (0)	OEA (1)	OEP (0)	OEC (0)

T	TECHNICAL	General	Survey	Design	Construction	Operation	Maintenance	Inspection	R & D
	Basic knowledge/ skills	TBG (8)	TBS (0)	TBD (0)	TBC (0)	TBO (0)	TBM (0)	TBI (0)	TBR (0)
	Processes/ Procedures (Gen.)	TPG (6)	TPS (0)	TPD (0)	TPC (16)	TPO (0)	TPM (0)	TPI (0)	TPR (0)
	. Withdrawal	TWG (3)	TWS (0)	TWD (0)	TWC (0)	TWO (0)	TWM (0)	TWI (0)	TWR (0)
	. Treatment	TTG (8)	TTS (0)	TTD (0)	TTC (0)	TTO (2)	TTM (1)	TTI (0)	TTR (0)
	. Distribution	TDG (1)	TDS (0)	TDD (1)	TDC (0)	TDO (7)	TDM (0)	TDI (0)	TDR (0)
	. Consumption	TCG (0)	TCS (0)	TCD (0)	TCC (3)	TCO (0)	TCM (0)	TCI (0)	TCR (0)
	Equipment/ Materials	TEG (3)	TES (0)	TED (0)	TEC (0)	TEO (4)	TEM (1)	TEI (0)	TER (0)

(x) = number of available Training Modules in this cell.

ANNEX 3

LIST OF OLD/NEW CODES AND TITLES OF TRAINING MODULES

ANNEX 3 LIST OF OLD/NEW CODES CODES AND TITLES OF TRAINING MODULES

OLD		NEW	
CODE	TITLE	CODE	TITLE
MAN 1	Water supply and public health	GGG 100	Water supply and public health
MAN 2	Repelita objectives for water supply	GGG 210	Water supply development target in Indonesia
MAN 3	Function of the water enterprise	OBG 101	The water enterprise - its functions
MAN 4	The environment of water enterprise	OBG 610	The water enterprise - its environment
MAN 5	Water enterprise development	OBG 300	Establishment of a water enterprise
MAN 6	Introduction to the task of the manager	OBM 001	Principles of management
MAN 7	Planning	OBM 100	Planning
MAN 7.1	Exercise Planning	--	integrated in OBM 100 --
MAN 8	Organizing	OBM 200	Organizing
MAN 8.1	Exercise Cooperation	--	integrated in OBM 200 --
MAN 9	Delegation	OBM 210	Delegation
MAN 10	Tools of coordination	OBM 220	Coordination
MAN 11	Job description	OBP 100	Job descriptions
MAN 12	Recruitment and selection	OBP 200	Recruitment and selection
MAN 13	Training for new staff	OBP 300	Training for new staff
MAN 14	Job performance and training	OBP 400	Job performance and training
MAN 15	Directing	OBM 300	Directing
MAN 16	Motivation	OBM 310	Motivation
MAN 17	Authority	OBM 320	Authority
MAN 18	Communication process	OBM 330	Communication - the process
MAN 19	Effective communication	OBM 331	Effective communication
MAN 20	Communication system	OBM 332	Written communication
MAN 21	How to hold a meeting	OBM 334	How to hold a meeting
MAN 22	Reporting	OBM 333	How to write a report
MAN 23	Customer information	OBC 300	Customer information
MAN 24	Controlling	OBM 400	Controlling
MAN 25	Introduction to office management	OBM 650	Office management - introduction
MAN 26	Office layout	OBA 400	Office lay-out
MAN 27	Office equipment	OEA 001	Office equipment - introduction
MAN 28	Filing	OBA 110	Filing
MAN 29	Working climate	OBA 300	Working climate
MAN 50	Introduction to distribution management		
PRO 8	Review of water treatment facilities for surface water	TTG 051	Water treatment facilities - surface water
PRO 9	Raw water supply; General: raw water source, intake, flow measuring	TWG 023	Surface water intake methods

OLD		NEW	
CODE	TITLE	CODE	TITLE
PRO 10.1	Water purification; General: coagulation, alum, rapid mixing	TTG 200	Coagulation/flocculation
PRO 10.2	Water purification; General: flocculation	--	integrated in TTG 200 --
PRO 10.3	Water purification; General: sedimentation	TTG 250	Sedimentation
PRO 10.4	Water purification; General: rapid filtration	TTG 311	Rapid gravity sand filtration
PRO 11	Neutralization, general	TTG 400	Neutralization
PRO 12	Disinfection, general	TTG 150	Disinfection
PRO 13.1	Chemical dosing - units and checking methods	--	integrated in TTG 500 --
PRO 13.2	Chemical dosing - dosing alum, soda ash, kaporit	--	integrated in TTG 500 --
PRO 13.3	Jar test	TTO 205	Jar test
PRO 13.4	Chemical dosing - nature, safety and handling of chemical	TTG 500	Chemical handling, mixing & dosing
PRO 13.5	Chemical dosing - lime dosing	--	integrated in TTG 500 --
PRO 14	Operation of water treatment plants	TTO 051	Operation of water treatment facilities - surface water
PRO 15	Maintenance of water treatment plants	TTM 050	Maintenance of water treatment facilities
PRO 16	Maintenance of centrifugal pumps	TEO 320	Centrifugal pump operation and maintenance
PRO 17	Maintenance of submersible pumps	TEO 330	Submersible pump operation and maintenance
PRO 18	Adjustment and maintenance of chemical dosing	---	
PRO 19	Maintenance of air blower	TEO 620	Compressor operation and maintenance
DIS 1.1	The water cycle	TWG 010	The water cycle
DIS 1.2	Principles of water supply	GGG 300	Principles of water supply
DIS 1.3	Water transmission	--	integrated in TDG 001 --
DIS 1.4	Principles of water distribution	TDG 001	Principles of water transmission, store and distribution
DIS 2.1	Concrete technology	TBG 512	Concrete technology
DIS 2.5	Concrete testing	TBG 513	Concrete testing
DIS 2.7	Excavation, bedding and backfilling	TPC 120	Excavation, bedding and backfilling
DIS 2.8	Setting out	TPC 110	Setting out
DIS 3.1	Introduction to mainlaying	TPC 170	Mainlaying - introduction
DIS 3.2	Pipe cutting uPVC pipe	TPC 151	Pipe cutting - uPVC pipes
DIS 3.3	Pipe cutting spun (grey) iron pipe	TPC 155	Pipe cutting - grey cast iron pipes

OLD		NEW	
CODE	TITLE	CODE	TITLE
DIS 3.4	Pipe cutting AC pipe	TPC 152	Pipe cutting - asbestos cement pipes
DIS 3.5	Pipe cutting ductile iron pipe	TPC 156	Pipe cutting - ductile iron pipe
DIS 3.6	Pipe jointing - introduction	TPC 160	Pipe jointing - introduction
DIS 3.7	Pipe jointing uPVC pipe	TPC 161	Pipe jointing - uPVC pipe
DIS 3.8	Pipe jointing AC pipe	TPC 162	Pipe jointing - AC pipe
DIS 3.9	Pipe jointing spun and ductile iron pipe	TPC 164	Pipe jointing - spun and ductile iron pipe
DIS 3.10	Pressure testing pipes	TPC 180	Pressure testing pipes
DIS 3.11	Mainlaying safety	TPC 179	Mainlaying safety
DIS 3.12	Anchor blocks	TDD 260	Anchor blocks
DIS 3.13	Identification of pipes and fittings	TEG 100	Identification of pipes and fittings
DIS 3.15	Pipe cutting G.I. pipe	TPC 153	Pipe cutting - GI pipe
DIS 3.16	Pipe jointing G.I. pipe	TPC 163	Pipe jointing - GI pipe
DIS 3.17	Handling and stacking of pipes	TEG 120	Handling and stacking of pipes
DIS 4.4	Flushing water mains	TDO 170	Flushing water mains
DIS 38	Operation of sluice valves	TEO 222	Operation of gate valves and butterfly valves
DIS 39	Operation of butterfly valves	--	integrated in TEO 222 --
DIS 46	Tapping mains	TPC 190	Tapping mains
DIS 50	Meter connections	TCC 210	Installation of water meters
DIS 57	Causes of leakages	TDO 610	Causes of leakages
DIS 58	Methods for leakage control	TDO 630	Methods for leakage control
DIS 60	Step testing	TDO 634	Step testing
DIS 61	Listening surveys	TDO 635	Listening surveys
DIS 66	Maintenance of sluice valves	TEM 222	Maintenance of gate valves
DIS 71	Reasons for leakage control	TDO 620	Reasons for leakage control
DIS 71	Repair of uPVC mains	---	
DIS 72	Determination of the leakage factor	TDO 631	Determination of the leakage factor
DIS 72	Repair of A.C. pipes	---	
DIS 73	Introduction to service laying	TCC 100	Introduction to service connections
DIS 74	Laying service pipes	TCC 170	Laying service pipes
PLA 2.6	Reading drawings	--	integrated in TBG 509 --
PLA 3.3	Reporting	TBG 508	Progress reports in construction
PLA 15	Fundamental equations of pipeline hydraulics	TBG 360	Fundamental equations of pipeline hydraulics
PLA 16	Frictional losses in pipe-lines	--	integrated in TBG 360 --

OLD		NEW	
CODE	TITLE	CODE	TITLE
PLA 17	Local losses in pipelines	TBG 365	Local losses in pipelines
PLA 18	Maps	TBG 701	Maps
PLA 19	Plans	TBG 514	Plans
PLA 20	Drawings + Annexes	TBG 509	Engineering drawings
.....	Water quality standards	TPG 110	Water quality standards
.....	Water quality control	TPG 120	Water quality control
.....	Information on water quality control	TPG 121	Water quality control - quality parameters
.....	Clear water quality control	TPG 125	Clear water quality control
.....	Water quality control information routing for water treatment processes	TPG 135	Water quality control information routing for water treatment processes
.....	Evaluation of water sources	TWG 030	Evaluation of water sources
	Water treatment efficiency	TTG 060	Water treatment efficiency

NEW MODULES:

TPG 400	Water treatment
TEG 501	Hydrophore
OPF 010	Introduction to the Accounting Procedures
OPF 011	Introduction to the Procedure for Preparing water bills
OPF 012	Introduction to the Procedure for collecting water bills
OPF 013	Intr. to Procedure for req. purchase and ord.of mat.& sup.
OPF 014	Introduction to Procedure for receiving mat. and supplies
OPF 015	Introduction to Procedure for Paying Materials and Supplies
OPF 016	Introduction to Procedure for issuing materials and supplies
OPF 017	Introduction to Procedure for receiving new customers
OPF 018	Introduction to Procedure for installing service connections
OPF 019	Introduction to the procedure for salary payments
OPF 020	Introduction to the Procedure for Petty Cash

ANNEX 4

GROUPING OF TRAINING MODULES IN TRAINING MODULE MANUALS

ANNEX 4 GROUPING OF TRAINING MODULES IN TRAINING MODULE MANUALS

VOLUME 2A:

CODE	TITLE
GGG 100	Water supply and public health
GGG 210	Water supply development targets in Indonesia
GGG 300	Principles of water supply
OBG 101	The water enterprise - its functions
OBG 300	Establishment of a water enterprise
OBG 610	The water enterprise - its environment
OBM 001	Principles of management
OBM 100	Planning
OBM 200	Organizing
OBM 210	Delegation
OBM 220	Coordination
OBM 300	Directing
OBM 310	Motivation
OBM 320	Authority

VOLUME 2B:

OBM 330	Communication - the process
OBM 331	Effective communication
OBM 332	Written communication
OBM 333	How to write a report
OBM 334	How to hold a meeting
OBM 400	Controlling
OBM 650	Office management - introduction
OBA 110	Filing
OBA 300	Working climate
OBA 400	Office layout
OBP 100	Job descriptions
OBP 200	Recruitment and selection
OBP 300	Training for new staff
OBP 400	Job performance and training
OBC 300	Customer information

VOLUME 3:

OPF 010	Introduction to the Accounting Procedures
OPF 011	Introduction to the Procedure for Preparing water bills
OPF 012	Introduction to the Procedure for collecting water bills
OPF 013	Intr. to Procedure for req. purchase and ord.of mat.& sup.
OPF 014	Introduction to Procedure for receiving mat. and supplies
OPF 015	Introduction to Procedure for Paying Materials and Supplies
OPF 016	Introduction to Procedure for issuing materials and supplies
OPF 017	Introduction to Procedure for receiving new customers
OPF 018	Introduction to Procedure for installing service connections
OPF 019	Introduction to the procedure for salary payments
OPF 020	Introduction to the Procedure for Petty Cash
OEA 001	Office equipment - introduction

VOLUME 4:

TBG 360 Fundamental equations of pipeline hydraulics
TBG 365 Local losses in pipelines
TBG 508 Progress reports in construction
TBG 509 Engineering drawings
TBG 512 Concrete technology
TBG 513 Concrete testing
TBG 514 Plans
TBG 701 Maps

VOLUME 5A:

TPG 110 Water quality standards
TPG 120 Water quality control
TPG 121 Water quality control - quality parameters
TPG 125 Clear water quality control
TPG 135 Water qual. control inform. routing for water treat. proc.
TPG 400 Water treatment
TPC 110 Setting out
TPC 120 Excavation, bedding, and backfilling

VOLUME 5B:

TPC 151 Pipe cutting - uPVC pipes
TPC 152 Pipe cutting - asbestos cement pipes
TPC 153 Pipe cutting - GI pipes
TPC 155 Pipe cutting - grey cast iron pipes
TPC 156 Pipe cutting - ductile iron pipe
TPC 160 Pipe jointing - introduction
TPC 161 Pipe jointing - uPVC pipes
TPC 162 Pipe jointing - AC pipes
TPC 163 Pipe jointing - GI pipes
TPC 164 Pipe jointing - spun and ductile iron pipes
TPC 170 Mainlaying - introduction
TPC 179 Mainlaying safety
TPC 180 Pressure testing pipes
TPC 190 Tapping mains

VOLUME 6A:

TWG 010 The water cycle
TWG 023 Surface water intake methods
TWG 030 Evaluation of water sources
TTG 051 Water treatment facilities - surface water
TTG 060 Water treatment efficiency
TTG 150 Disinfection
TTG 200 Coagulation/flocculation
TTG 250 Sedimentation

VOLUME 6B:

TTG 311 Rapid gravity sand filtration
TTG 400 Neutralization
TTG 500 Chemicals handling, mixing and dosing
TTO 051 Operation of water treatment facilities - surface water
TTO 205 Jar test
TTM 050 Maintenance of water treatment facilities

VOLUME 7:

TDG 001 Principles of water transmission, storage and distribution
TDD 260 Anchor blocks
TDO 170 Flushing water mains
TDO 610 Causes of leakage
TDO 620 Reasons for leakage control
TDO 630 Methods of leakage control
TDO 631 Determination of leakage control
TDO 634 Step Testing
TDO 635 Listening surveys
TCC 100 Introduction to service connections
TCC 170 Laying service pipes
TCC 210 Installation of water meters

VOLUME 8:

TEG 100 Identification of pipes and fittings
TEG 120 Handling and stacking of pipes
TEG 501 Hydrophore
TEO 222 Operation of gate valves and butterfly valves
TEO 320 Centrifugal pump operation and maintenance
TEO 330 Submersible pump operation and maintenance
TEO 620 Compressor operation and maintenance
TEM 222 Maintenance of gate valves

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ANNEX 5

COMPREHENSIVE DATA ON MLPP TRAINING MODULES

F.EDIT	L.DATE	CODE	MODULE TITLE	TRAINING SELECTION*	D	P	I	S	T	H	VF**
120784	120784	GGG 100	Water supply and public health	ALL	45	8	1	2	2	3	11
030784	030784	GGG 210	Water supply development targets in Indonesia	ALL	45	7	1	2	1	3	5
120784	250285	GGG 300	Principles of water supply	ALL	45	6	1	2	2	1	7
110784	110784	OBG 101	The water enterprise - its functions	DIR HDT HDF	45	7	1	2	1	3	2
030385	030385	OBG 300	Establishment of a water enterprise	DIR HDT HDF	45	8	1	3	1	3	2
090784	090784	OBG 610	The water enterprise - its environment	DIR HDT HDF	45	8	1	2	2	3	6
110784	110784	OBM 001	Principles of management	DIR HDT HDF	45	10	1	3	2	4	10
090784	090784	OBM 100	Planning	DIR HDT HDF	90	9	1	2	1	5	3
110784	260285	OBM 200	Organizing	DIR HDT HDF	45	6	1	1	2	2	6
120784	120784	OBM 210	Delegation	DIR HDT HDF	45	7	1	2	1	3	1
120784	260285	OBM 220	Coordination	DIR HDT HDF	90	7	1	2	1	3	3
110784	260285	OBM 300	Directing	DIR HDT HDF	45	5	1	2	1	1	3
120784	260285	OBM 310	Motivation	DIR HDT HDF	45	6	1	2	1	2	2
120784	260285	OBM 320	Authority	DIR HDT HDF	45	6	1	2	1	2	1
110784	260285	OBM 330	Communication - the process	DIR HDF HDT ASE	90	8	1	2	1	4	1
110784	260285	OBM 331	Effective communication	DIR HDT HDF ASE	45	7	1	2	1	3	1
130784	260285	OBM 332	Written communication	DIR HDT HDF	45	5	1	1	1	2	3
120784	260285	OBM 333	How to write a report	DIR	45	7	1	2	1	3	1
120784	030385	OBM 334	How to hold a meeting	DIR HDT HDF	90	8	1	2	1	4	4
120784	260285	OBM 400	Controlling	DIR HDT HDF	45	8	1	2	1	4	2
120784	060485	OBM 650	Office management - introduction	DIR HDT HDF	45	6	1	2	1	2	4
110784	260285	OBA 110	Filing	DIR HDF HAP HBB HCB HCR	45	7	1	1	2	3	6
030385	030385	OBA 300	Working climate	DIR HDT HDF	45	8	1	2	1	4	1
110784	260285	OBA 400	Office layout	DIR HDF HAP	90	8	1	1	1	5	0
120784	260285	OBP 100	Job descriptions	DIR HDT HDF ASE	45	7	1	2	1	3	2
120784	250285	OBP 200	Recruitment and selection	DIR HDT HDF	45	6	1	2	1	2	4
250285	250285	OBP 300	Training for new staff	DIR HDT HDF HAP	45	8	1	2	1	4	1
250285	250285	OBP 400	Job performance and training	DIR HDT HDF HAP	45	6	1	2	1	2	3
250285	250285	OBC 300	Customer information	DIR HDF HCR	45	7	1	2	1	3	1
090385	090385	OPF 010	Introduction to the Accounting Procedures	DIR HDT ASE	45	15	1	6	2	6	6
090385	090385	OPF 011	Introduction to the Procedure for Preparing water bills	DIR HDT HDF ASE	45	11	1	5	1	4	4
090385	090385	OPF 012	Introduction to the Procedure for collecting water bills	DIR HDT HDF ASE	45	10	1	4	1	4	3
090385	090385	OPF 013	Intr. to Procedure for req. purchase and ord.of mat.& sup.	DIR HDT HDF ASE	45	11	1	4	1	5	5
110385	110385	OPF 014	Introduction to Procedure for receiving mat. and supplies	DIR HDT HDF ASE	45	13	1	6	1	5	5
270285	270285	OPF 015	Introduction to Procedure for Paying Materials and Supplies	DIR HDT HDF ASE	45	9	1	4	1	3	3
070385	070385	OPF 016	Introduction to Procedure for issuing materials and supplies	DIR HDT HDF ASE	45	11	1	5	1	4	4
080385	080385	OPF 017	Introduction to Procedure for receiving new customers	DIR HDT HDF ASE	45	10	1	5	1	4	3
080385	080385	OPF 018	Introduction to Procedure for installing service connections	DIR HDT HDF ASE	45	10	1	4	1	4	4
090385	090385	OPF 019	Introduction to the procedure for salary payments	DIR HDT HDF ASE	45	8	1	3	1	3	2
070385	070385	OPF 020	Introduction to the Procedure for Petty Cash	DIR HDT HDF ASE	45	11	1	5	1	4	3
250285	250285	OBA 001	Office equipment - introduction	DIR HDF HAP	45	6	1	2	1	2	1
260984	260984	TBG 360	Fundamental equations of pipeline hydraulics	HDT HTD HPS SPL	135	14	1	1	2	10	6
270884	270884	TBG 365	Local losses in pipelines	HDT HTD SDC HPS SPL TPA	90	17	1	1	3	12	12
170984	170984	TBG 508	Progress reports in construction	HPS SSU CSU	45	6	1	2	1	2	4
170984	170984	TBG 509	Engineering drawings	AST SST PIN DRA TPA CSU	90	29	1	3	3	22	11
200984	200984	TBG 512	Concrete technology	HPS SSU CSU	135	21	1	3	2	15	8
190984	190984	TBG 513	Concrete testing	HPS SSU CSU	45	6	1	1	1	3	2
170984	170984	TBG 514	Plans	MBS HDT AST SST PLA PIN DRA TPA CSU	45	16	1	2	2	11	7
170984	170984	TBG 701	Maps	MBS HDT HTD SDC PIN HPS SPL TPA JNE	90	13	1	2	2	8	7
281284	281284	TPG 110	Water quality standards	DIR HDT HTD SDC SWT SLA	45	8	1	2	1	4	1
291284	291284	TPG 120	Water quality control	DIR HDT HMR SWT HTD SDC HPS SLA	45	14	1	3	1	9	5
281284	281284	TPG 121	Water quality control - quality parameters	DIR HDT HPR SLA	45	10	1	3	1	5	5
281284	281284	TPG 125	Clear water quality control	HPR SWT SLA	45	10	1	3	1	5	3

* For description of jobcodes see Annex 6;

** D = duration (min); P = total pages; I = pages Information Sheet; S = pages Session Notes; T = pages Training Aids; H = pages Handout; VF = number of viewfoils

F.EDIT	L.DATE	CODE	MODULE TITLE	TRAINING SELECTION*	D	P	I	S	T	H	VF**
291284	291284	TPG 135	Water qual. control inform. routing for water treat. proc.	DIR HPR SWT HTD SDC HPS SLA	45	11	1	4	1	5	2
100185	100185	TPG 400	Water treatment	ALL	90	16	1	6	2	8	8
280784	280784	TPC 110	Setting out	HTD SDC PLA PIN SSU CSU	45	8	1	2	1	4	2
280984	280984	TPC 120	Excavation, bedding, and backfilling	HDT HTD SDC PLA PIN SSU CSU	45	11	1	2	2	6	6
190984	190984	TPC 151	Pipe cutting - uPVC pipes	PLA PIN CSU	90	5	1	1	1	2	1
200984	200984	TPC 152	Pipe cutting - asbestos cement pipes	PLA PIN CSU	45	5	1	1	1	2	1
210984	210984	TPC 153	Pipe cutting - GI pipes	PLA PIN CSU	90	5	1	1	1	2	1
190984	190984	TPC 155	Pipe cutting - grey cast iron pipes	PLA PIN CSU	90	10	1	3	1	5	1
200984	200984	TPC 156	Pipe cutting - ductile iron pipe	PLA PIN CSU	90	9	1	2	1	5	1
200984	200984	TPC 160	Pipe jointing - introduction	PLA PIN CSU SDC SSU	45	5	1	2	1	5	2
190984	190984	TPC 161	Pipe jointing - uPVC pipes	PLA PIN CSU	135	11	1	3	1	6	3
200984	200984	TPC 162	Pipe jointing - AC pipes	PLA PIN CSU	135	10	1	2	1	6	1
210984	210984	TPC 163	Pipe jointing - GI pipes	PLA PIN CSU	135	10	1	2	1	6	3
200984	200984	TPC 164	Pipe jointing - spun and ductile iron pipes	PLA PIN CSU	135	10	1	3	1	5	2
180984	180984	TPC 170	Mainlaying - introduction	HTD SDC PLA PIN SSU CSU	45	6	1	2	1	2	1
180984	180984	TPC 179	Mainlaying safety	HTD SDC PLA PIN SSU CSU	45	4	1	1	1	1	1
200984	200984	TPC 180	Pressure testing pipes	PIN CSU SDC	90	6	1	2	1	2	2
180984	180984	TPC 190	Tapping mains	SDC PLA PIN	135	8	1	1	1	5	4
210984	210984	TWG 010	The water cycle	ALL	45	4	1	1	1	1	1
270884	270884	TWG 023	Surface water intake methods	HPR SWT TPO IAT	45	13	1	2	2	8	6
291284	291284	TWG 030	Evaluation of water sources	HDT HPS HPR SWT SPL	45	10	1	2	2	6	2
230884	230884	TTG 051	Water treatment facilities - surface water	ALL	90	9	1	4	1	3	1
291284	291284	TTG 060	Water treatment efficiency	DIR HDT HPS SLA	45	12	1	4	1	7	4
240984	180385	TTG 150	Disinfection	HDT HPR SWT TPO SLA LAS	90	13	1	4	1	7	4
240984	240984	TTG 200	Coagulation/flocculation	HDT HPR SWT SLA	90	22	1	7	2	12	10
280984	280984	TTG 250	Sedimentation	HDT HPR SWT TPO SLA	90	14	1	4	1	8	5
311284	311284	TTG 311	Rapid gravity sand filtration	HDT HPR SWT TPO	45	19	1	5	2	11	8
030385	030385	TTG 400	Neutralization	HDT HPR SWT TPO SLA	90	10	1	2	1	6	4
280984	180385	TTG 500	Chemicals handling, mixing and dosing	HDT HPR SWT TPO SLA	135	21	1	4	2	14	10
240885	180385	TTO 051	Operation of water treatment facilities - surface water	SWT TPO PAT IAT	90	15	1	4	2	8	7
180385	180385	TTO 205	Jar test	HDT HPR SWT TPO SLA LAS	45	20	1	3	2	14	9
160385	160385	TTM 050	Maintenance of water treatment facilities	HDT	45	18	1	5	1	11	0
190385	190385	TDG 001	Principles of water transmission, storage and distribution	DIR HDT HPR HTD HPS HMR	45	13	1	3	2	7	6
210984	210984	TDD 260	Anchor blocks	HDT HPR SDC PIN HPS SPL TPA SSU CSU	45	10	1	2	1	6	5
290984	190385	TDO 170	Flushing water mains	HDT HTD SDC PLA PIN	45	5	1	1	1	2	3
290984	190385	TDO 610	Causes of leakage	HDT HTD SDC PIN LOF	45	7	1	2	1	3	1
290984	290984	TDO 620	Reasons for leakage control	HDT HTD SDC PIN LOF	45	6	1	2	1	2	1
190984	190984	TDO 630	Methods of leakage control	HDT HTD SDC PIN LOF	45	7	1	1	1	4	5
190984	190984	TDO 631	Determination of leakage control	HDT HTD SDC PIN PLA	45	8	1	2	1	4	4
190984	190984	TDO 634	Step Testing	HDT HTD SDC PIN LOF	45	8	1	2	1	4	4
260984	190385	TDO 635	Listening surveys	HTD SDC PIN	45	12	1	2	2	7	7
260984	260984	TCC 100	Introduction to service connections	HTD SDC PLA PIN SWM HCR SCS SMR	45	11	1	2	2	6	8
180984	180984	TCC 170	Laying service pipes	SDC PLA PIN	135	7	1	1	1	4	4
180984	180984	TCC 210	Installation of water meters	SDC PLA PIN	90	4	1	1	1	1	1
200385	200385	TEG 100	Identification of pipes and fittings	PLA PIN CSU SPU SWA HTD SDC SSU	90	11	1	2	1	7	0
210984	210984	TEG 120	Handling and stacking of pipes	PLA PIN CSU SWA	90	11	1	3	1	6	3
080485	080485	TEG 501	Hydrophore	HMR HTD MME	45	15	1	2	2	10	6
200385	200385	TEO 222	Operation of gate valves and butterfly valves	TPO PAT IAT PIN LOF	45	8	1	2	1	4	2
180385	180385	TEO 320	Centrifugal pump operation and maintenance	HPR HMR HPS	45	11	1	2	3	5	15
190385	190385	TEO 330	Submersible pump operation and maintenance	HMR	45	14	1	3	3	7	17
180385	180385	TEO 620	Compressor operation and maintenance	HMR	45	15	1	3	2	9	8
200385	200385	TEM 222	Maintenance of gate valves	SDC PLA PIN	90	5	1	1	1	2	2

* For description of jobcodes see Annex 6;

** D = duration (min); P = total pages; I = pages Information Sheet; S = pages Session Notes; T = pages Training Aids; H = pages Handout; VF = number of viewfoils

ANNEX 6

STATISTICAL DATA ON AMOUNT OF TRAINING MODULES FOR SPECIFIC JOBTITLES

ANNEX 6 STATISTICAL DATA ON AMOUNT OF MODULES FOR SPECIFIC JOBTITLES

JOB CODE	JOBTITLE	AMOUNT MODULES
	GENERAL MANAGEMENT	
MBS	Member of Board of Supervisors	2
DIR	Director PDAM/Head BPAM	50
	TECHNICAL DEPARTMENT	
HDT	Head of Technical Department	78
HPR	Head of Section Production	55
HTD	Head of Section Transmission & Distribution	66
HPS	Head of Section Planning & Supervision	78
HMR	Head of Section Maintenance & Repairs	38
SWT	Head of Sub-section Water Treatment	15
TPO	Water Treatment Plant Operator	9
PAT	Plant Attendant	1
IAT	Intake Attendant	3
SLA	Head of Sub-section Laboratory	13
LAS	Laboratory Assistant	2
SDC	Head of Sub-section Distribution & Connections	26
PLA	Pipelayer	22
PIN	Pipeline Inspector	34
LOF	Leakage Officer	5
SWM	Head of Sub-section Water Meters	2
SPL	Head of Sub-section Planning	6
DRA	Draughtsman	2
TPA	Technical Planning Assistant	5
SSU	Head of Sub-section Supervision	11
CSU	Construction Supervisor	23
MME	Mechanic	1
	FINANCE & ADMINISTRATION DEPARTMENT	
HDF	Head of Finance & Administration Department	44
HCB	Head of Section Cash & Bill Collection	21
HBB	Head of Section Bookkeeping & Billing	21
HAP	Head of Section General Administration & Personnel	28
HCR	Head of Section Consumer Relations	22
SPU	Head of Sub-section Purchasing	1
SWA	Head of Sub-section Warehousing	2
SCS	Head of Sub-section Consumer Services	1
SMR	Head of Sub-section Meter Reading	1
	OTHERS	
JNE	Junior Engineer	1

ANNEX 7

MATRIX TRAINING MODULES VERSUS JOBTITLES

ANNEX 7 MATRIX TRAINING MODULES VERSUS JOBTITLES

CODE	TITLE	DIR	HDT	HPR	HTD	HPS	HMR	HDF	HBB	HAP	HCB	HCR	*
QGQ 100	Water supply and public health	x	x	x	x	x	x	x	x	x	x	x	ALL
QGQ 210	Water supply development targets in Indonesia	x	x	x	x	x	x	x	x	x	x	x	ALL
QGQ 300	Principles of water supply	x	x	x	x	x	x	x	x	x	x	x	ALL
OBQ 101	The water enterprise - its functions	x	x					x					
OBQ 300	Establishment of a water enterprise	x	x					x					
OBQ 610	The water enterprise - its environment	x	x					x					
OBM 001	Principles of management	x	x					x					
OBM 100	Planning	x	x					x					
OBM 200	Organizing	x	x					x					
OBM 210	Delegation	x	x					x					
OBM 220	Coordination	x	x					x					
OBM 300	Directing	x	x					x					
OBM 310	Motivation	x	x					x					
OBM 320	Authority	x	x					x					
OBM 330	Communication - the process	x	x	x	x	x	x	x	x	x	x	x	
OBM 331	Effective communication	x	x	x	x	x	x	x	x	x	x	x	
OBM 332	Written communication	x	x					x		x			
OBM 333	How to write a report	x											
OBM 334	How to hold a meeting	x	x					x					
OBM 400	Controlling	x	x					x					
OBM 650	Office management - introduction	x	x					x		x			
OBA 110	Filing	x						x	x	x	x	x	
OBA 300	Working climate	x	x					x		x			
OBA 400	Office layout	x						x		x			
OBP 100	Job descriptions	x	x	x	x	x	x	x	x	x	x	x	
OBP 200	Recruitment and selection	x	x					x		x			
OBP 300	Training for new staff	x	x					x		x			
OBP 400	Job performance and training	x	x					x		x			
OBC 300	Customer information	x						x				x	
OPF 010	Introduction to the Accounting Procedures	x	x	x	x	x	x	x		x	x	x	
OPF 011	Introduction to the Procedure for Preparing water bills	x	x	x	x	x	x	x	x	x	x	x	
OPF 012	Introduction to the Procedure for collecting water bills	x	x	x	x	x	x	x	x	x	x	x	
OPF 013	Intr. to Procedure for req. purchase and ord.of mat.& sup.	x	x	x	x	x	x	x	x	x	x	x	
OPF 014	Introduction to Procedure for receiving mat. and supplies	x	x	x	x	x	x	x	x	x	x	x	
OPF 015	Introduction to Procedure for Paying Materials and Supplies	x	x	x	x	x	x	x	x	x	x	x	
OPF 016	Introduction to Procedure for issuing materials and supplies	x	x	x	x	x	x	x	x	x	x	x	
OPF 017	Introduction to Procedure for receiving new customers	x	x	x	x	x	x	x	x	x	x	x	
OPF 018	Introduction to Procedure for installing service connections	x	x	x	x	x	x	x	x	x	x	x	
OPF 019	Introduction to the procedure for salary payments	x	x	x	x	x	x	x	x	x	x	x	
OPF 020	Introduction to the Procedure for Petty Cash	x	x	x	x	x	x	x	x	x	x	x	
OEA 001	Office equipment - introduction	x	x					x					
TBQ 360	Fundamental equations of pipeline hydraulics	x		x	x	x							SPL
TBQ 365	Local losses in pipelines	x		x	x	x							SDC SPL TPA
TBQ 508	Progress reports in construction					x							SSU CSU
TBQ 509	Engineering drawings	x	x	x	x	x	x	x					SST PIN DRA TPA CSU
TBQ 512	Concrete technology	x				x							SSU CSU
TBQ 513	Concrete testing	x				x							SSU CSU
TBQ 514	Plans	x	x	x	x	x	x	x					MBS SST PLA PIN DRA TPA CSU
TBQ 701	Maps	x		x	x	x							MBS SDC PIN SPL TPA JNE
TPQ 110	Water quality standards	x	x	x	x								SDC SWT SLA
TPQ 120	Water quality control	x	x	x	x	x	x	x					SWT SDC SLA

* For description of jobcodes see Annex 6

CODE	TITLE	DIR	HDT	HPR	HTD	HPS	HMR	HDF	HBB	HAP	HCB	HCR	*						
TPG 121	Water quality control - quality parameters	x	x	x	x								SLA						
TPG 125	Clear water quality control		x	x	x								SWT	SLA					
TPG 135	Water qual. control inform. routing for water treat. proc.	x	x	x	x	x							SWT	SDC	SLA				
TPG 400	Water treatment	x	x	x	x	x	x	x	x	x	x	x	ALL						
TPC 110	Setting out				x	x							SDC	PLA	PIN	SSU	CSU		
TPC 120	Excavation, bedding, and backfilling	x			x	x							SDC	PLA	PIN	SSU	CSU		
TPC 151	Pipe cutting - uPVC pipes		x	x	x	x							PLA	PIN	CSU				
TPC 152	Pipe cutting - asbestos cement pipes		x	x	x								PLA	PIN	CSU				
TPC 153	Pipe cutting - GI pipes		x	x	x	x							PLA	PIN	CSU				
TPC 155	Pipe cutting - grey cast iron pipes		x	x	x								PLA	PIN	CSU				
TPC 156	Pipe cutting - ductile iron pipe		x	x	x								PLA	PIN	CSU				
TPC 160	Pipe jointing - introduction		x	x	x	x							PLA	PIN	CSU	SDC	SSU		
TPC 161	Pipe jointing - uPVC pipes		x	x	x	x							PLA	PIN	CSU				
TPC 162	Pipe jointing - AC pipes		x	x	x								PLA	PIN	CSU				
TPC 163	Pipe jointing - GI pipes		x	x	x	x							PLA	PIN	CSU				
TPC 164	Pipe jointing - spun and ductile iron pipes		x	x	x								PLA	PIN	CSU				
TPC 170	Mainlaying - introduction		x		x	x							SDC	PLA	PIN	SSU	CSU		
TPC 179	Mainlaying safety		x		x	x							SDC	PLA	PIN	SSU	CSU		
TPC 180	Pressure testing pipes		x		x	x							PIN	CSU	SDC				
TPC 190	Tapping mains		x		x	x							SDC	PLA	PIN				
TWG 010	The water cycle	x	x	x	x	x	x	x	x	x	x	x	ALL						
TWG 023	Surface water intake methods		x	x		x							SWT	TPO	IAT				
TWG 030	Evaluation of water sources		x	x		x							SWT	SPL					
TTG 051	Water treatment facilities - surface water	x	x	x	x	x	x	x	x	x	x	x	ALL						
TTG 060	Water treatment efficiency	x	x	x		x							SLA						
TTG 150	Disinfection		x	x									SWT	TPO	SLA	LAS			
TTG 200	Coagulation/flocculation		x	x									SWT	SLA					
TTG 250	Sedimentation		x	x									SWT	TPO	SLA				
TTG 311	Rapid gravity sand filtration		x	x									SWT	TPO					
TTG 400	Neutralization		x	x									SWT	TPO	SLA				
TTG 500	Chemicals handling, mixing and dosing		x	x									SWT	TPO	SLA				
TTO 051	Operation of water treatment facilities - surface water		x	x									SWT	TPO	PAT	IAT			
TTO 205	Jartest		x	x									SWT	TPO	SLA	LAS			
TTM 050	Maintenance of water treatment facilities		x	x			x												
TDG 001	Principles of water transmission, storage and distribution	x	x	x	x	x	x	x	x	x	x	x							
TDD 260	Anchor blocks		x	x	x	x	x						SDC	PIN	SPL	TPA	SSU	CSU	
TDO 170	Flushing water mains		x		x								SDC	PLA	PIN				
TDO 610	Causes of leakage		x		x								SDC	PIN	LOF				
TDO 620	Reasons for leakage control		x		x								SDC	PIN	LOF				
TDO 630	Methods of leakage control		x		x								SDC	PIN	LOF				
TDO 631	Determination of leakage control		x		x								SDC	PIN	PLA				
TDO 634	Step Testing		x		x								SDC	PIN	LOF				
TDO 635	Listening surveys				x								SDC	PIN					
TCC 100	Introduction to service connections		x	x								x	SDC	PLA	PIN	SWM	SCS	SMR	
TCC 170	Laying service pipes		x	x									SDC	PLA	PIN				
TCC 210	Installation of water meters		x	x									SDC	PLA	PIN				
TEG 100	Identification of pipes and fittings		x	x	x								PLA	PIN	CSU	SPU	SWA	SDC	SSU
TEG 120	Handling and stacking of pipes		x	x									PLA	PIN	CSU	SWA			
TEG 501	Hydrophore	x	x	x	x	x							MME						
TEO 222	Operation of gate valves and butterfly valves				x		x						TPO	PAT	IAT	PIN	LOF		
TEO 320	Centrifugal pump operation and maintenance		x	x	x	x													
TEO 330	Submersible pump operation and maintenance		x	x			x												
TEO 620	Compressor operation and maintenance		x	x			x												
TEM 222	Maintenance of gate valves				x		x						SDC	PLA	PIN				

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