

PD-71314-5.79

INFO COPY

MEMORANDUM

[Redacted]

DATE: March 4, 1988

TO : Mr. Jay Johnson, Director USAID/Yaounde

FROM : CARE-CAMEROON

SUBJECT : Final Report on the AID/CARE/CD
Northern Wells Project

RECEIVED
USAID YAOUNDE
MAR 7 5 37 11 1988

Please find enclosed herewith original of the Final report on the AID/CARE/CD Northern Wells Project Phase II which was implemented between 1985 and 1987.

2023/11

Mbessang
Executive Secretary
CARE-Cameroon



[Handwritten notes and stamps on the left side, including 'CARE-CAMEROON' and other illegible text.]

ORIGINAL ATTACHED TO ENCLOSEURES
SENT TO JOURNAL OFFICE
DATE MAR 1988

PROJECT FINAL REPORT

NORTHERN WELLS CONSTRUCTION AND HEALTH EDUCATION PROJECT, PHASE II (PN6) CARE International in Cameroon

Prepared by Mark Henderson
January 1988

I. INTRODUCTION

The Northern Wells Project was implemented jointly by CARE International in Cameroon and the Ministry of Agriculture through the Department of Community Development in the Extreme North Province of Cameroon from 1980 to 1987.

During this period 163 water points equipped with handpumps were installed in 140 villages in the Departments of Mayo Tsanaga, Mayo Sava, and Diamare.

Funding for the project came from USAID in the form of an OPG grant, from CARE-USA, and from the Government of Cameroon, as shown below.

	<u>Phase I (1980-1984)</u>	<u>Phase II (1985-1987)</u>
CARE-USA	US\$ 763,000	US\$ 522,922
USAID	US\$ 1,460,000	US\$ 820,000
GOC	FCFA 29.000.000	FCFA 86.000.000

This report is limited to discussing the accomplishments and difficulties of Phase II.

II. PROJECT SETTING

The project was headquartered at Mokolo, in the Mandara Mountains. The project zone is a mixture of rugged mountains interspersed with wide valleys and grading to plains as one moves north and east. The basic hydrographic features are the streams and rivers which flow only during the rainy season. The climate is Sudano-sahelian with a rainy season from June to September and an annual rainfall of 600 to 900 mm depending on latitude and elevation. The long dry season is marked by a particularly hot period during March and April when daytime temperatures of over 40 C are common.

The Extreme North Province is one of the country's poorest regions, and in the Mandara Mountains there is a population density of over 100 persons/km². At least eight language groups are found in the project area.

III. PHASE II OBJECTIVES AND ACCOMPLISHMENTS

Planned Objectives

As presented in the project proposal prepared in 1984, the essential elements of Phase II were :

- 1) To construct 135 permanent potable water points each capable of meeting the needs of an average estimated population of 500 users.
- 2) To successfully transfer water hygiene knowledge and practices to these individuals such as water usage, handling and storage, waste disposal, and routine upkeep and protection of the water system.

The construction component envisioned a collaborative relationship with the Groundwater Project (PES) of the Ministry of Mines and Energy in Garoua which would involve the use of their drilling rig and technicians to complete 90 drilled wells. The remaining 45 were to be handdug.

The health education program (HEED) was to be extended to all new project areas and villages, with activities including seminars for training village leaders, development of a curriculum on hygiene and sanitation for primary schools, the establishment of primary health care facilities, and a training program for village maintenance crews in the upkeep of wells.

How well did the project do in attaining these stated objectives?

Well Construction Targets

The total number of completed water points at the end of Phase II was 96, leaving a shortfall of 39. (Phase I had 67 completed water points.)

	F i s c a l Y e a r			Total	Target
	1985	1986	1987		
Handdug Wells	27	26	29	82	45
Hand-drilled	--	4	6	10	0
Machine-drilled	--	4	--	4	90
TOTALS	27	34	35	96	135

This shortfall is directly related to the failure of the proposed joint drilling program. The drilling rig and compressor made available by the PES were in poor shape. A year and a half was wasted trying to refurbish them and waiting for spare parts. The equipment was finally fielded in April 1986, but only after a replacement compressor was located and rented.

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A two-month drilling exercise in the mountain zone resulted in four productive wells. This effort was discontinued by the project manager with AID concurrence due to continuing equipment failure and the high cost of operations and personnel.

By FY 1987 the PES had acquired new equipment, but offered the project another rig in questionable condition. CARE decided not to pursue this offer.

The failure of the drilling program was not solely a matter of defective equipment. Although the necessary letters of agreement were signed by the Ministry of Mines and Energy, the relationship with the Northern Wells Project remained a low priority for the Director of PES in Garoua. He saw no advantage to loaning out good equipment when it could be used for lucrative contracts with other organizations.

Meanwhile, the teams for handdug wells were beefed up and annual output increased. Forty-five were planned and 82 were completed. Additionally, in 1986 the project received a Dutch hand-bore rig which enabled the project to install 10 tubewells.

During Phase II an estimated 30,000 project participants gained access to clean water. The average population served by each new water point was around 300 rather than the 500 estimated in the proposal. Three hundred was found to be a more realistic figure for the carrying capacity of a typical well in the project zone. As a result, there was a steady decrease in the average number of persons per well over the course of the project. While initially large communities were targeted, increasingly the project concentrated on smaller villages.

Technology Used

The handdug wells are lined with prefabricated reinforced concrete rings. The top is covered by a concrete slab to prevent contamination and serves as the base for the pump. The slab has a built in manhole through which visual inspections and water level measurements can be made, as well as allowing water to be drawn by bucket in case of pump failure. A concrete apron surrounds the well and spillwater is drained away through an underground PVC pipe to a soak pit or watering trough.

Air driven jackhammers were often used to penetrate cemented sediments and rock. The depths of the wells range from 6 to 30 meters with an average depth of 10 meters. The hand-powered drilling rig could go to 20 m but only under limited geologic conditions. Most of the 10 tubewells were on the plains, near "mayos" or basins where alluvial sediments and a shallow water table can be found.

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While machine drilling makes possible the installation of a water point even in difficult terrain, there is less advantage to this technology when you are seeking to maximize the participation of the community in this effort. Hand-dug wells, moreover, are labor-intensive investments which fit well into CARE's development philosophy. Tubewells have an additional disadvantage of absolutely requiring a pump for drawing water.

During the seven years of the project, water points installed by CARE gained a reputation as being well-made and dependable. Villagers were sure that when a team came to their community, they wouldn't leave until a productive well was completed.

Health Education (HEED)

The animation and health component was a key element in the project's ability to gain the acceptance and active participation of the communities. A measure of its success is its evolution into a multi-faceted community development and primary health care program capable of standing on its own as the Community Health Care project.

The HEED program was headed by Toukour Haman Seyo, a university-trained health officer seconded by the MOPH to CD and CARE. His role was to coordinate the animation and health education activities in the three departments in concert with the CD and MOPH personnel. During the last 2 years he was joined by a Dutch SNV health specialist, Peter Majoor, who reinforced the primary health care activities.

Their field staff was made up of 22 community development agents (CDAs) and 4 supervisors. Some of the CDAs were CD employees giving 50% of their time to the project, while others were hired directly by CARE. Distinctions between the two categories with regards to their duties and lines of authority were kept to a minimum, although obviously the project could press the latter for greater accountability. The supervisors worked part-time for HEED, except for the Weaning Practices supervisor who was seconded by MOPH to the project. (In 1986 CARE, in collaboration with the U.S.-based consulting firm Manoff International, began the development of an intensive education program focused on weaning practices. This is an AID Washington funded project.)

The CDAs in each administrative department worked under the CD section chief. The active involvement in the project of these CD chiefs varied, with Abdoulaye Seni in Mokolo giving the most time and energy, a result of his proximity to the CARE-Mokolo office and his close participation from the beginning of the project.

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Requests from villages for assistance were submitted to the CD section chiefs and then the sites were reviewed by CARE for technical feasibility. If positive, the villagers were asked to meet the following conditions:

- 1) To gather local building materials (sand, gravel, etc.).
- 2) To lodge and feed the well construction team.
- 3) To volunteer unskilled labor (6 workers per day).
- 4) To erect a protective enclosure around the well site at the end of construction.
- 5) To nominate local leaders who would be the focal point of subsequent health education activities.
- 6) To select a pump caretaker with mechanical abilities to be trained by the project.
- 7) To collect 12.000 FCFA for the purchase of a tool kit for the caretaker.

The CDAs visited the villages which had been selected for a new well several times prior to the arrival of the well construction team. Village preparation included the signing of a contractual agreement between CARE/CD and the village defining each partner's obligations. While the construction work was underway, the CDAs were expected to continue their supervision to maximize the village input and prevent unnecessary delays. The CDAs were all equipped with motorcycles to complete their field work.

The animation activities during the construction phase generally followed this plan, but constant follow-up was needed to ensure that the work was being done. During the last two years of the project a Dutch Volunteer was recruited in an effort to expand CARE's supervisory capability. Toukour's time was increasingly taken up by the primary health activities and he was unable to also fully cover animation.

Recruiting capable animators with the desired educational level, language skills, and motivation was a constant struggle. Training was done mostly on-the-job with a series of animation and health education sessions held at the CARE office with close field supervision as a follow-up. This was a time consuming task for the HEED coordinator and the SNV technical assistant.

The project was plagued by a high attrition rate among animators. One contributing factor was that Community Development was unable to take on project-trained animators as had been planned. The most promising agents were often drawn away by other attractive government job offers.

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Leader Training

The principal method used to impart notions of water hygiene and sanitation after completion of the well was the village leader seminar. Four to six members of each community were selected to attend a 2-day workshop during which various subjects were discussed: the role of CD and CARE, well site cleanliness, latrine construction, diarrhea and its treatment, and intestinal parasites.

An in-house HEED evaluation assisted by CARE primary health care specialists Kathy Tilford and Sue Toole was held in July 1986. One of the main points which came out of it was that the village leader training was being neglected as the health team became preoccupied with the creation and supervision of community health posts. Consequently, during FY 87 a concerted effort was made to catch up. Seminars were held throughout the project zone which reached 375 leaders from 77 villages.

One HEED activity initiated in Phase I, that of working with primary school teachers to promote hygienic practices, was not continued. Although student response was excellent, this activity required a disproportionate amount of staff time. As the Ministry of Education was supposedly developing its own program, the decision was made to drop this activity.

Primary Health Care

In 1985 the HEED coordinator began setting up village health posts and training community health workers (CHWs) and traditional birth attendants (TBAs). By the end of the project 24 posts had been created in the departments of Mayo Tsanaga and Mayo Sava.

This kind of work requires a full schedule of training and re-training, and regular village follow-up visits. The CARE health team worked closely with government health personnel and mission hospitals in this effort. During FY 87 seven CHW training sessions from 3 days to 2 weeks in length were held.

The initiation of primary health care activities raises many questions which the CHC project must now tackle:

- 1) Does the Community Development mandate include PHC activities, and how long will they be willing to fund and sponsor such a project?
- 2) How appropriate are CDAs as the principal health extension workers?
- 3) How can CHWs be motivated to work without being paid? What system of pharmacy product replenishment should be set up?
- 4) How can CARE's PHC work best be coordinated with similar government and mission endeavors in the same zone?

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Improved Weaning Practices (IWP)

Improved Weaning practices was a component of HEED which started up during FY 86. It sought to combine the structure of HEED already in place with technical assistance in social marketing provided by Manoff International to promote sound nutritional practices in participating villages.

A supervisor for this component was seconded by the MOPH and 5 animators (4 female) were hired in April 1986.

Numerous reports documenting in exhaustive detail the design and investigation phase of this project have been prepared, so no more will be added here.

IV. PUMP MAINTENANCE

Pump performance

The project installed two models of handpumps: the Robbins & Myers Moyno pump (from 1981 to 1984) and the Monolift pump (from 1985 to 1987). Both are positive displacement pumps, using a progressive cavity element (helical steel rotor in rubber stator) to move water. The project in 1985 switched to Monolift because of its lower cost, the promise of parts availability from a local distributor, and its higher output.

The R&M pump has proven to be the more trouble-free. The principal problem with the Monolift pumps was the rapid deterioration of the plastic gears and bushings in the drive head. However, the manufacturer supplied the project with retro-fit kits of steel gears for all 100 pumps free of charge following a visit by the project manager to their Manchester, England factory to discuss the problem. About 25% of the pump drive heads had been modified by August 1987.

The R&M pump has given reasonably good service. The drive head is durable and solid, but problems have included crank arms working loose, and the anti-reversing clutch braking, causing the rod to unscrew. Below-ground problems have been broken rods and pipes and pump cylinder wear due to abrasive silt.

Spare parts procurement for both of the pumps has been problematic. The in-country Monolift distributor proved to be interested solely in initial sales and was not a reliable source of spare parts at a reasonable price. R&M parts can only be acquired through direct purchase from the U.S..

Maintenance Infrastructure

The project fell short of the desired goal of having all handpump maintenance responsibility taken over by the GOC or firmly in the hands of each local community.

This was due to the following factors:

1) Counterpart capabilities - The collaboration with DCD was generally very good. Their cash contribution (targeted principally for animation and health activities) increased each year. It also provided excellent support through the secondment of high quality staff. Nevertheless, CD lacks the technical capabilities required to take on the well maintenance and pump repair work which was covered by the project to the end. The agency within the Ministry of Agriculture best suited for these activities is the Genie Rural (Rural Works), with which the project had only an informal, consultative relationship.

2) Lack of government policy - Great efforts have been made by the GOC to improve the rural water supply situation in the Extreme North. The FSAR (Fond Special pour Action Rural) and Programme d'Urgence have both launched large well drilling campaigns, but little progress has been made regarding the development of a pump maintenance infrastructure.

A high-level government commission was appointed to debate and make recommendations on the problems of rural water system maintenance but no firm policies have been forthcoming on such pressing issues as standardization of pump types and the establishment of user fees. To avoid the risk of running contrary to an eventual government directive, CARE-Cameroon has been reluctant to institute its own maintenance systems without a clear policy.

3) Underdeveloped private sector - Businesses have been slow to set up pump parts outlets in Maroua or Garoua, and this has blocked the option for the project of establishing relationships between the rural communities and entrepreneurs.

The Cameroonian Monolift distributor provides no services in the North and even his spare parts stock in Yaounde is meager and overpriced.

Village Pump Caretaker Training

Faced with this situation, the project carried out a training program for village pump caretakers, who could be considered the lowest common denominator of any eventual maintenance system. One-day workshops were held for 6 to 12 caretakers to learn about the pump operation and simple repairs. Each village was asked to collect 12.000 FCFA to pay for a small toolkit for the caretaker.

By August 1987 over 90% of the 140 villages with CARE/CD wells had a trained caretaker. About 80% had raised the money and had received a toolkit.

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Current Situation

The Director of CD in Yaounde made an official request in 1986 to FSAR to incorporate the CARE/CD installations into their service infrastructure. To date, no response has been received.

CARE proposed to CD two options for the short-term (one year) solution to the maintenance question. An increase in the counterpart contribution could cover a) the operating cost of the pump technician, vehicle and driver (5 million FCFA), or b) in addition, two well deepening teams for well maintenance (10 million FCFA.) Unfortunately, this proposal was made at the moment of the announcement of the national austerity budget.

While waiting for some development on this front, CARE-Mokolo approached MIDIMA (Mission de Developpement Integre des Monts Mandara) a special fund for development activities in the area. Sufficient funds were received to re-hire the pump technician in October to continue basic repairs within the framework of the health project.

V. PHASE II EVALUATIONS

In early 1985 a WASH consultant spent a month in Mokolo evaluating the health education component of the Northern Wells Project. His report was not received in Cameroon until one year later and it was not found to be useful by any of the staff.

An in-house evaluation of HEED was carried out in July 1986 (see Leader Training above).

A technical evaluation was done by USAID engineer Dan Jenkins of the REDSO Abidjan office in October 1986. His report was largely enthusiastic about CARE's water project. He felt that it was meeting an urgent need in the region, and proposed that it be continued for another 3 years. He further recommended that the machine-drilling option be dropped and that a village pump caretaker training program be implemented. Both these latter recommendations were subsequently carried out.

USAID Cameroon, however, was unable to fund the extension of the project.

VI. RECOMMENDATIONS FOR THE FUTURE

The following changes might be considered for any possible extension of the Northern Wells Project:

1) Recruit a counterpart engineer - This idea was spelled out in the project paper and followed up by the Country Director, but was never realized. A similar position was successfully filled at the Bertoua sub-office.

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2) Reevaluate the primary school education program - I accepted the HEED coordinator's decision to discontinue assisting teachers with water hygiene education, but regretted it. It is an effective way to reach the greatest number of young water users. If the project activities reach a point where more staff time is available, serious consideration should be given to restoring this activity.

3) Start caretaker training earlier in project - Steps should be taken early in the project to organize water user groups to insure that the nuts and bolts of keeping the well and pump functioning are understood by all. Caretaker workshops reached 90% of the villages in the final year, a notable accomplishment, but more time should have been allowed for follow-up supervision and the development of a network of pump mechanics.

These suggestions on ways the project might be improved should not detract from the conclusion that the Northern Wells Construction and Health Education Project made an invaluable contribution to the improvement of the standard of living of tens of thousands of rural residents of the Extreme North Province. It was a project of which the donors, the counterparts, and CARE should be very proud.

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ATTACHMENTS

- Summary of Water Sites Completed 1981-1987
- Site Listing by Location
- Site Data Spreadsheet
- Site Repairs and Maintenance Data

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CARE
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INTERNATIONAL IN CAMEROON
INTERNATIONAL AU CAMEROUN

Délégation de Bertoua
B.P. 26 BERTOUA
Tél. 24-16-96

Siège
B.P. 422 YAOUNDE
Tél. 23-20-54--23-17-14
Telex: 8610 KN

Délégation de Mokolo
B.P. 306 MAROUA
Tél. 29-51-32

PROGRAMME D'ASSISTANCE POUR LE DEVELOPPEMENT

NORTHERN WELLS CONSTRUCTION PROJECT
RECORD OF WELL COMPLETIONS 1980-1987

CONTENTS

- I. INTRODUCTION
- II. EXPLANATION OF TERMS
- III. SECTION 1 - SITE LISTING BY LOCATION
- IV. SECTION 2 - SITE DATA SPREADSHEET BY ORDER OF COMPLETION

I. INTRODUCTION

This is a record of the results of the Northern Wells Construction Project which was implemented jointly by CARE International in Cameroon and the Department of Community Development (MINAGRI) in the Extreme North Province of Cameroon from 1980 to 1987.

During this period 163 water points equipped with handpumps were installed in 140 villages, in the Departments of Mayo Tsanaga, Mayo Sava, and Dismare.

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PROJECT FINANCING

Principal funding for the project came from USAID in the form of an OFG grant with additional cash contributions from CARE-USA and the Government of Cameroon, as shown below.

	<u>Phase I (1980-1984)</u>	<u>Phase II (1985 - 1987)</u>
CARE-USA	US\$ 763,000	US\$ 522,921
USAID	US\$ 1,460,000	US\$ 820,000
GOC	FCFA 29.000.000	FCFA 86.000.000

WELL COMPLETIONS

F i s c a l Y e a r

	<u>1981</u>	<u>1982</u>	<u>1983</u>	<u>1984</u>	<u>1985</u>	<u>1986</u>	<u>1987</u>	<u>TOTAL</u>
HANDDUG	6	14	20	23	27	26	29	145
DRILLED	-	-	-	4	-	8	6	18
TOTAL	6	14	20	27	27	34	35	163

II. EXPLANATION OF TERMS

Section one is a summary listing of sites by geographical location-- department, arrondissement, and canton.

The following information is included in Section 2, page A:

Column 1) Site name: name of village. An A in parantheses, (A), indicates that despite repeated well deepening operations the site has dried up and is considered abandoned.

Column 2) Site completion report number (SCR#): Letter prefix indicates whether water point is a well (puits) P, or a tubewell (forage) F. The fiscal year is then followed by the order of completion. Example: P87-35.

Column 3) Department: The project operated in the administrative Departments of Mayo Tsanaga, Mayo Sava, and Diamare.

Column 4) Arrondissement: Mokolo, Koza, Bourha (Mayo Tsanaga); Mora, Tokombere, Kolofata (Mayo Sava); Maroua, Meri (Diamare).

Columns 5 and 6) Canton and Quartier

Column 7) Puits/Forage: Handdug well/tubewell. Puits (captage) is an infiltration gallery design tried early in project. Forage Manuel is a hand-drilled tubewell. Eight tubewells were machine-drilled with borrowed equipment.

Column 8) Pump type: Robbins & Myers Moyno pump (installed 1980 to 1984); Monolift pump (installed 1985 to 1987). Both are progressive cavity, positive displacement type pumps.

Column 9) Aquifer material

Column 10) Date of completion

Column 11) Village participation: Percentage of community participation in construction phase. Requirements: 6 laborers per day, food and lodging for well team, provision of sand and gravel.

Column 12) Enclosure, yes/no: After completion of the well, the community is expected to construct an enclosure around the site.

Column 13) Population served: An estimate of number of users.

The following information is included in Section 2, page B:

Columns 1 and 2) - same as page A -

Column 14) Name of village pump caretaker: Village resident trained to perform maintenance and simple repairs to pump.

Column 15) Contribution received, yes/no: Twelve thousand francs (12.000 fcfa) collected by community to purchase caretaker toolkit.

Column 16) Toolkit given, yes/no: Toolkit received by caretaker.

Columns 17 to 19) Water level measurements: date, total depth, water depth.

Columns 20 and 21) Interventions: date, description of operation (well deepening, pump repair). Early records are incomplete.

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PROJET HYDRAULIQUE VILLAGEOISE
CARE/DEVELOPPEMENT COMMUNAUTAIRE
 27/08/87 DEPARTEMENT DU MAYO-TSANAGA

<u>SITE</u>	<u>SCR =</u>	<u>ARRONDISSEMENT</u>	<u>CANTON</u>	<u>QUARTIER</u>
BETCHE HOSSERE	P85-26	MOKOLO	ZAMAI	CHEFFERIE
SABONGARI	P83-05	MOKOLO	ZAMAI	CHEFFERIE
WAFANGO	P85-08	MOKOLO	ZAMAI	CHEFFERIE
ZAMAI	P84-26	MOKOLO	ZAMAI	CHEFFERIE
GATA ZAMAI	P87-31	MOKOLO	ZAMAI	GATA
TOUROU B (A)	P82-06	MOKOLO	TOUROU	VALLEE
TOUROU A	P82-05	MOKOLO	TOUROU	VALLEE
LIBAM	P87-35	MOKOLO	TOUROU	
MOSSO	P87-33	MOKOLO	MOKONG	
DIMEO	P83-08	MOKOLO	MOKONG	MAYO
MOKONG I	P82-14	MOKOLO	MOKONG	GADA-MAYO
MOKONG PEPINIERE	P87-01	MOKOLO	MOKONG	PEPINIERE
KATAMSA A	P82-11	MOKOLO	MOKONG	
KATAMSA B	P83-01	MOKOLO	MOKONG	
MAYO LEGGA	P83-20	MOKOLO	MOKOLO	MAYO
MAVOUMAI I	P83-04	MOKOLO	MOKOLO	AVANT MARCHÉ
MAVOUMAI II	P85-01	MOKOLO	MOKOLO	FOULBE
KOSSEHONE	P82-08	MOKOLO	MOGODE	MISSION PROTES
MOGODE MOURIWA	P83-19	MOKOLO	MOGODE	MOURIWA
KILA	P85-27	MOKOLO	MOGODE	FOULBE
SIRAKOUTI	P86-29	MOKOLO	MOGODE	DJIDDA
TEKI	P86-34	MOKOLO	MOGODE	TEKI
RHOUMZOU	P82-07	MOKOLO	MOGODE	TEREMTE
MOGODE LACKWA	P83-10	MOKOLO	MOGODE	LACKWA
KARANCHI	P86-01	MOKOLO	MOGODE	
SIR (A)	P83-09	MOKOLO	MOGODE	LDAKA
OUJAVA II	P86-26	MOKOLO	MOGODE	
ROUFTA	P83-12	MOKOLO	MOGODE	MARCHE
ZAMBOU	P83-06	MOKOLO	MOGODE	MAYO
VITTE	P82-04	MOKOLO	MOGODE	MARCHE
OUJAVA I	P86-25	MOKOLO	MOGODE	
SIRAK NDILANG	P86-24	MOKOLO	MATAKAM-SUD	NDILANG ECOLE
MOKOLA	P87-02	MOKOLO	MATAKAM-SUD	MAZAWAL
ROUA	P84-27	MOKOLO	MATAKAM SUD	MAYO
MANDAKA	P82-10	MOKOLO	MATAKAM SUD	GUIMSAK
MAGOUMAZ	P84-03	MOKOLO	MATAKAM SUD	ECOLE
MOUHOUR	P82-02	MOKOLO	MATAKAM SUD	
MAYO KABBA B	P81-04	MOKOLO	HINA	
ZOUVOUL	P84-24	MOKOLO	HINA	MAYO
BARENG	P84-19	MOKOLO	HINA	MAYO
MAYO KABBA A	P81-03	MOKOLO	HINA	
MOULDAR	P81-06	MOKOLO	HINA	
HINA WINDE	P81-02	MOKOLO	HINA	
PALVA	P81-01	MOKOLO	HINA	
MAYO HINE	P85-20	MOKOLO	HINA	
MAYO MBANA	P84-15	MOKOLO	HINA	MAYO-JARDIN
BAMGUEL	P86-33	MOKOLO	HINA	
MOUVOULOVA	P87-32	MOKOLO	GAWAR	
GAWAR WINDE	P82-01	MOKOLO	GAWAR	
PARAWAI	P82-13	MOKOLO	GAWAR	
GADALA	P83-07	MOKOLO	GAWAR	MARCHE
OURO BOKI	P84-16	MOKOLO	GAWAR	MAYO
ASSIGACHIA NORD	P83-14	KOZA	MOZOGO	MARCHE
MOZOGO III	P84-22	KOZA	MOZOGO	ECOLE PRIMAIRE
TALAKATCHI	P84-06	KOZA	MOZOGO	PEPINIERE

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27/08/87

TALATOUFA II	P87-09	KOZA	MOZOGO	
KARAZAWA	P86-22	KOZA	MOZOGO	
MOZOGO II	P84-21	KOZA	MOZOGO	MAYO
GOLDAVI	P83-11	KOZA	MOZOGO	FORGERON
TALATOUFA I	F86-31	KOZA	MOZOGO	
MOZOGO I	P84-20	KOZA	MOZOGO	CHEFFERIE
ASSIGACHIA SUD	P83-18	KOZA	MOZOGO	MARCHE
MATAMAYA II	P87-25	KOZA	KOZA	
DJINGLIYA	P81-05	KOZA	KOZA	BARRAGE
MAWAK	P82-12	KOZA	KOZA	
MATAMAYA (A)	P83-15	KOZA	KOZA	CHEFFERIE
GUEDJELE	P83-16	KOZA	KOZA	CHEFFERIE
DAKOTCHER	F87-21	KOZA	GABOUA	
NGONGA	P86-28	BOURHA	TCHEVI	
TELEKI	P85-22	BOURHA	TCHEVI	MARCHE
OUDAVOUNA	P84-12	BOURHA	TCHEVI	MAYO
GOUMABA	P87-34	BOURHA	TCHEVI	
BOUKOULA II	P84-18	BOURHA	TCHEVI	MARCHE
DOUVA	P86-23	BOURHA	TCHEVI	
BOUKOULA I	P84-14	BOURHA	TCHEVI	MAYO-CHEFFERIE
WAZHLA (A)	P85-25	BOURHA	GUILI	MAYO
BOURHA I	P83-13	BOURHA	BOURHA	POSTE AGRICOLE
YOUMDOUM	F86-32	BOURHA	BOURHA	YOUMDOUM
TIRPOU	P86-27	BOURHA	BOURHA	
BOURRAH II	P84-17	BOURHA	BOURHA	DERRIERE MARCHE
MICHIME	P85-23	BOURHA	BOURHA	MAYO
BOURHA PEPIN.	P87-30	BOURHA	BOURHA	PEPINIERE
DJIMI	P84-25	BOURHA	BOURHA	
DOUBOULBAI	P86-30	BOURHA	BOURHA	

PROJET HYDRAULIQUE VILLAGEOISE
CARE/DEVELOPPEMENT COMMUNAUTAIRE
DEPARTEMENT DU MAYO-S A V A

27/08/87

<u>S I T E</u>	<u>S C R #</u>	<u>A R R O N D I S S E M.</u>	<u>C A N T O N</u>	<u>Q U A R T I E R</u>
BALA (A)	P83-03	TOKOMBERE	TOKOMBERE	CHEFERIE
TALLA-MADA	P82-03	TOKOMBERE	TOKOMBERE	
MORAKA	P82-09	TOKOMBERE	TOKOMBERE	
TOKOMBERE ECOLE	P83-17	TOKOMBERE	TOKOMBERE	ECOLE PRIMAIRE
SERAWA	P84-05	TOKOMBERE	SERAWA	GADA-MAYO
GAZAYAKA	P86-06	TOKOMBERE	MAKALINGAI	
MANGAVE I	P85-09	TOKOMBERE	MAKALINGAI	OURO GALE
MANGAVE III	P85-14	TOKOMBERE	MAKALINGAI	LOPERE
MANGAVE IV	P85-13	TOKOMBERE	MAKALINGAI	OURO DOGARE
MANGAVE II	P85-11	TOKOMBERE	MAKALINGAI	OURO HACHIMI
MADA	P83-02	TOKOMBERE	MADA	MARCHE
JERE	P85-07	TOKOMBERE	GUEMDJEK SERAWA	
GOUDOUBA	P86-19	MORA	WARBA	
PODOKO CENT. (A)	P84-04	MORA	PODOKO	MARCHE
NDOUBOU	P87-06	MORA	MEME	
IGAWA MEME	P84-07	MORA	MEME	
MEME	F84-02	MORA	MEME	DISPENSARE
MANGAVE BIRI	P87-11	MORA	MEME	
WAFIKE	P87-05	MORA	MEME	
MEHE DJIDERE	P87-07	MORA	MEME	
MAVARE	P86-03	MORA	MEME	TCHABA TCHABA
ZAKAMTEGUE	P86-17	MORA	MADA	
TCHAKAMARI	F86-18	MORA	LIMANI	
WAMBACHE	P85-02	MORA	LIMANI	MAYO
BOUDOUA	P85-03	MORA	LIMANI	MAYO
GOUDOUBOUL	P86-13	MORA	KOUYAPE	
GOUMOULDI	P86-11	MORA	KOURGUI	
PIVOU	P85-24	MORA	KOURGUI	MAYO
KOSSA	F84-11	MORA	KOSSA	ECOLE
KILLISAWA	P85-21	MORA	KOSSA	MAYO
GOULOULEM	P86-20	MORA	DOULO	
TAYERE	P87-08	MORA	DOULO	
MALIKA KATAWAI	P87-23	MORA	BOUJOURMELE	
MALIKA	P87-17	MORA	BOUJOURMELE	
BOURVARE	P86-07	KOLOFATA	KOLOFATA	
KIDJI KERAWA II	F87-20	KOLOFATA	KERAWA	
GANGAWA I	F87-13	KOLOFATA	KERAWA	
SANDA WADJIRI	P87-28	KOLOFATA	KERAWA	
GANGAWA III	F87-19	KOLOFATA	KERAWA	
GANGAWA II	F87-15	KOLOFATA	KERAWA	
KIDJI KERAWA I	P87-14	KOLOFATA	KERAWA	
KODIGO	P86-10	KOLOFATA	GREA	
KOTRICHE	P86-16	KOLOFATA	GREA	

3

PROJET HYDRAULIQUE VILLAGECISE
CARE/DEVELOPPEMENT COMMUNAUTAIRE
DEPARTEMENT DU D I A M A R E

27/08/87

<u>SITE</u>	<u>S C R #</u>	<u>ARRONDISSEMENT</u>	<u>C A N T O . N</u>	<u>Q U A R T I E R</u>
MBOZO	P87-29	MERI	WAZANG	
MEFTEK	P85-15	MERI	WAZANG	MISSION
MAKABAYE WAZANG	P85-12	MERI	WAZANG	JARDIN
TAKADJABE BIM	P86-02	MERI	TCHERE	TAKADJABE BIM
MARKABA	P86-05	MERI	TCHERE	MARKABA
MERI CENTRE	F84-10	MERI	MERI	MAYO
HOULOUM	P84-23	MERI	GODOLA	GA-E MAYO
MAGAWA	P86-09	MERI	GODOLA	
GODOLA	F84-01	MERI	GODOLA	LAMORDE-GARE
MENGUIRLDA	P85-17	MERI	DOUROUM	
MENGLIYA	P85-16	MERI	DOUROUM	CHEFFERIE
GUIVEL	P84-08	MERI	DOUROUM	CHEFERIE
MAYAK	P84-09	MERI	DOULEK	GADA-MAYO
DOULEK	P84-13	MERI	DOULEK	MAYO
YOLDEO OURO MOU	P86-04	MAROUA	YOLDEO	MOUSTAPHA
MAKABAYE	P85-06	MAROUA	MAROUA	GADA MAYO
NDABALA	F87-03	MAROUA	KONGOLA	
YAMBARAM	P87-04	MAROUA	KONGOLA	
KONGOLA SAID	P86-08	MAROUA	KONGOLA	
KONGOLA MOUDA	P86-12	MAROUA	KONGOLA	MOUDA
DJARENGOL AL I	P87-16	MAROUA	KODEK	ALIOUM
DJARENGOL LAWANE	P87-24	MAROUA	KODEK	
GADABOUEL	P87-22	MAROUA	KODEK	
DJARENGOL AL II	P87-18	MAROUA	KODEK	ALIOUM
TOUPERE	F87-10	MAROUA	KODEK	
MAZA	P85-10	MAROUA	KATAWAL	CHEFFERIE
MIZILING	P86-21	MAROUA	GAZAWA	
GAZAWA BANTADJE	P85-05	MAROUA	GAZAWA	BANTADJE
GAZAWA GOUDOUROU	P85-04	MAROUA	GAZAWA	GOUDOUROU
POURTAMAI	P86-14	MAROUA	GAZAWA	
MAYAL NAOUDE	F86-15	MAROUA	GAZAWA	
MOGAZANG FOULBE	P87-26	MAROUA	GAYAK	FOULBE
MOGAZANG MONT.	P87-27	MAROUA	GAYAK	MONTAGNE
MANGAVE VI	P85-19	MAROUA	DOGBA	WIRDYO
MANGAVE V	P85-18	MAROUA	DOGBA	NANAJAM
MANGAVE WIRDIO 2	P87-12	MAROUA	DOGBA	

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SITE	SER. #	DEPARTMENT	AEDIFICATION	CATION	QUARTER	PUTS/FOUR	PROPHOUD	TRE POWER	MITHR. FOOD	DATE ACHEV	FAC VILLOR	CLOTHUR	POJ SERVICE
PALVA	181-01	MATO TSAMAGA	MICULO	NIVA	NIVA	PUTS	6.00 ROBBINS	QUANTIE PRLABE		02/13/81	80X 001		150
KAMA WINDS	181-02	MATO TSAMAGA	MICULO	NIVA	NIVA	PUTS	14.00 ROBBINS	E/CHE DURE		02/16/81	70X 007		850
MATO KARRA A	181-03	MATO TSAMAGA	MICULO	NIVA	NIVA	PUTS	4.00 ROBBINS	M/CHE DURE		05/15/81	100X 001		750
MATO KARRA B	181-04	MATO TSAMAGA	MICULO	NIVA	NIVA	PUTS	5.00 ROBBINS	BOCUE DURE		06/15/81	100X 00W		300
TANHATA	181-05	MATO TSAMAGA	A A	BOCA	BARBAR	PUTS	12.00 ROBBINS/MORE TRE DURE			07/15/81	75X 001		2.215
M-DUAR	181-06	MATO TSAMAGA	BOCULO	NIVA	NIVA	PUTS	6.10 ROBBINS	BARIE GROS GRAINS		07/07/81	85X 001		650
MATO WINE	182-01	MATO TSAMAGA	MICULO	CAVAR	CAVAR	PUTS	15.10 ROBBINS	SABIE & ANGLIE		09/15/81	85X 00T		450
TALAMIA	182-02	MATO TSAMAGA	TOCOMBEE	MATYAN SIB	MATYAN SIB	PUTS(CAPT.)	4.00 ROBBINS	ANGLIE		02/10/82	70X 00W		750
	182-03	MATO SAYA	TOCOMBEE	TOCOMBEE	TOCOMBEE	PUTS	2.80 ROBBINS	SABIE & ANGLIE		09/21/82	95X 001		800
	182-04	MATO TSAMAGA	MICULO	MORODE	MORODE	PUTS	6.00 MOW	BOCUE DURE		03/25/82	150X 00W		500
	182-05	MATO TSAMAGA	MICULO	TOUCOU	VALLER	PUTS	3.50 ROBBINS	BOCUE DURE		04/15/82	80X 00W		3.500
	182-06	MATO TSAMAGA	MICULO	TOUCOU	VALLER	PUTS(CAPT.)	2.50 ABANDONNE	BOCUE DURE		06/18/82	80X		3.500
	182-07	MATO TSAMAGA	MICULO	MORODE	TEBERYR	PUTS	4.80 ROBBINS	ANGLIE		04/15/82	75X 001		2.000
	182-08	MATO TSAMAGA	MICULO	MORODE	MISSION PROTIST	PUTS	4.50 ROBBINS	SABIE & ANGLIE		04/15/82	80X 00W		1.250
	182-09	MATO SAYA	TOCOMBEE	TOCOMBEE	PUTS	16.00 ROBBINS	SABIE(G.C.) & ANGLIE		04/24/82	80X 001		500	
	182-10	MATO TSAMAGA	MICULO	MATYAN SIB	GUINSAK	PUTS(CAPT.)	4.40 ROBBINS(1)	SABIE		04/28/82	60X 001		2.400
	182-11	MATO TSAMAGA	MICULO	MORODE	PUTS	9.50 MOW	CEANTIE PRLABE		04/30/82	120X 00T		300	
	182-12	MATO TSAMAGA	K ZA	KOTA	PUTS	5.50 ROBBINS	SABIE(G.C.)		05/22/82	75X 00W		500	
	182-13	MATO TSAMAGA	MICULO	CAVAR	PUTS	6.80 ROBBINS	SABIE		06/25/82	80X 001		450	
	182-14	MATO TSAMAGA	MICULO	MORODE	GALE MATO	PUTS	8.50 ROBBINS	SABIE		06/28/82	120X 00W		2.800
	182-15	MATO TSAMAGA	MICULO	MORODE	PUTS	5.50 ROBBINS	CEANTIE PRLABE		20/07/82	100X 001		325	
	183-02	MATO SAYA	TOCOMBEE	MICA	MACHE	PUTS	23.00 ROBBINS	BOCUE DURE		30/09/82	25X		750
	183-03	MATO SAYA	T. FICHE-55	T. FICHE-55	CHRE-55	PUTS	19.00 ABANDONNE	ATTE-55		10/10/82	25X		500
	183-04	MATO TSAMAGA	MICULO	MORODE	AYANT MACHE	PUTS	5.50 ROBBINS	CEANTIE PRLABE		23/11/82	100X 001		1.850
	183-05	MATO TSAMAGA	MICULO	ZAMAI	CHEFFERIN	PUTS	10.70 ROBBINS	ANGLIE		27/12/82	80X 001		400
	183-06	MATO TSAMAGA	MICULO	MORODE	MATO	PUTS	9.40 ROBBINS	BOCUE DURE		06/01/83	100X 00T		750
	183-07	MATO TSAMAGA	MICULO	CAVAR	MATYAN	PUTS	14.80 ROBBINS	BOCUE DURE		21/01/83	5X 00W		1.700
	183-08	MATO TSAMAGA	MICULO	MORODE	MATO	PUTS	1.90 ROBBINS	BOCUE PRLABE		10/02/83	75X 001		2.400
	183-09	MATO TSAMAGA	MICULO	MORODE	LOATA	PUTS	15.10 ABANDONNE	BOCUE DURE		16/02/83	100X		2.000

MOROLA	181	MAYO TSANAGA	MOROLO	MATAYAN SID	MAYABE	181-78	10.80 MOND	GRAIN AIT. FEATHERS	25/11/86	20X MON	500
MOROLA	181	DIAMABE	MOROLA	EDOTOLA		181-78 MAR.	16.70 MOND	ARGILE	26/11/85	100X OUI	125
YANBARAN	181	DIAMABE	MOROLA	KOMOLA		181-78	10.80 MOND	ARGILE	26/11/85	100X OUI	350
WATER	181	MAYO SAVA	MORA	MEK		181-78	10.50 MOND	ARGILE & SABLE	29/11/86	85X MON	200
MOROLO	181	MAYO SAVA	MOEA	MEK		181-78	15.50 MOND	ARGILE & SABLE	03/12/86	80X OUI	200
MOROLO	181	MAYO SAVA	MOEA	MEK		181-78	19.50 MOND	ARGILE & SABLE	18/12/86	80X	150
TAVER	181	MAYO SAVA	MOEA	BOUO		181-78	14.50 MOND	SABLE	20/12/86	100X OUI	350
TALATOUA II	181	MAYO TSANAGA	MOEA	MOZOU		181-78	11.50 MOND	SABLE & PIERRES	07/01/87	75X MON	100
TOUPRE	181	DIAMABE	MOROLA	KOUK	HAURE YEM	181-78 MAR.	12.50 MOND	SABLE	08/01/87	90X OUI	500
MANGAYE BIRI	181	MAYO SAVA	MOEA	MEK		181-78	15.00 MOND	SABLE GROS GRAIN	16/01/87	100X OUI	300
MANGAYE VIRBIO 2P	181	DIAMABE	MOROLA	DOGEA		181-78	12.00 MOND	SABLE GROS GRAIN	30/01/87	100X OUI	400
GANGAYA I	181	MAYO SAVA	KOLOPATA	KEBAYA		181-78 MAR.	7.00 MOND	SABLE GROS GRAIN	09/02/87	100X	300
KIOTI EBAYAY I	181	MAYO SAVA	KOLOPATA	KEBAYA		181-78	6.35 MOND	SABLE	13/02/87	25X	115
GANGAYA II	181	MAYO SAVA	KOLOPATA	KEBAYA		181-78 MAR.	10.00 MOND	SABLE GROS GRAIN	17/02/87	100X	300
OUAREGOL AL I	181	DIAMABE	MOROLA	KORER	NIYOK	181-78	14.75 MOND	ARGILIER & SABLE	19/02/87	100X OUI	800
MALIK	181	MAYO SAVA	MOEA	BOUDJIMBELE		181-78	19.50 MOND	ARGILIER & SABLE	24/02/87	100X MON	600
DJAREGOL AL II	181	DIAMABE	MOROLA	KOUK	ALYON	181-78	13.00 MOND	ARGILIER & SABLE	03/03/87	100X OUI	300
GANGAYA III	181	MAYO SAVA	KOLOPATA	KEBAYA		181-78	10.00 MOND	ARGILIER	10/03/87	100X	175
KIOTI EBAYAY II	181	MAYO SAVA	KOLOPATA	KEBAYA		181-78	9.50 MOND	ARGILIER	10/03/87	100X	200
DAROTCHER	181	MAYO TSANAGA	MOROLA	KORER		181-78	21.50 MOND	SABLE GROS GRAIN	30/03/87	100X MON	500
GADROUDEL	181	DIAMABE	MOROLA	BOUDJIMBELE		181-78	17.00 MOND	ARGILIER	21/02/87	75X OUI	700
MALIKI EAYVAL	181	MAYO SAVA	MORA	KORER		181-78	17.50 MOND	ARGILIER & SABLE	10/04/87	90X OUI	300
DJAREGOL LAKAREBE	181	DIAMABE	MOROLA	EOTTE		181-78	15.00 MOND	ARGILIER & SABLE	16/04/87	100X MON	500
MATAPAYA II	181	MAYO TSANAGA	MOEA	KOZA		181-78	15.50 MOND	SABLE GROS GRAIN	21/04/87	100X OUI	125
MONGAZANG FOUURE	181	DIAMABE	MOROLA	GATYK	FOURRE	181-78	12.00 MOND	ARGILIER & SABLE	23/04/87	100X OUI	100
MONGAZANG MONT.	181	DIAMABE	MOROLA	GATYK	MONTABRE	181-78	30.00 MOND	ARGILIER & SABLE	23/04/87	100X	400
SANIA VAOUJINI	181	MAYO SAVA	KOLOPATA	EEKAY		181-78	8.00 MOND	SABLE	15/05/87	100X	250
MRIZO	181	DIAMABE	MOROLA	WAZAN		181-78	8.70 MOND	ARGILIER & SABLE	01/06/87	100X OUI	170
BOURBA PEPIN.	181	MAYO TSANAGA	MOROLA	BOURBA	PEPINIERE	181-78	5.60 MOND	ARGILIER	11/06/87	90X MON	125
GATA ZAMAI	181	MAYO TSANAGA	MOROLA	ZAMAI	GATA	181-78	5.80 MOND	SABLE	15/06/87	90X MON	120
KOIVOULOUA	181	MAYO TSANAGA	MOROLA	GAYAR		181-78	8.00 MOND	ARGILIER & SABLE	27/06/87	50X MON	150
MOSSO	181	MAYO TSANAGA	MOROLA	MORONG		181-78	7.50 MOND	ARGILIER & SABLE	30/06/87	100X MON	150
GOUMKAMA	181	MAYO TSANAGA	MOROLA	TCHAVI		181-78	4.00 MOND	ARGILIER & SABLE	15/07/87	75X MON	250
LIBAN	181	MAYO TSANAGA	MOROLA	TOUROU		181-78		ROCHE DURRE			

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SITE	DATE	NOM OPERATEUR	INTELE	RESEAU	ISOLAGE	DATE	PROFOND	DIAMETRE	DEBIT (L/S)	DESCRIPTION DE L'INTERVENTION
PALVA	1981-01	ERNAUDU SIEU	OUI							Apr-80 REPARATION SERVOIT
ELWA WENDE	1981-02									1981-02 REPARATION SERVOIT
MATI SASSA A	1981-03									1981-03 REPARATION SERVOIT
MATI SASSA B	1981-04	DAJJI KARAYE	OUI							1981-04 REPARATION SERVOIT
	1981-05									1981-05 REPARATION SERVOIT
	1981-06									1981-06 REPARATION SERVOIT
	1981-07									1981-07 REPARATION SERVOIT
	1981-08									1981-08 REPARATION SERVOIT
	1981-09									1981-09 REPARATION SERVOIT
	1981-10									1981-10 REPARATION SERVOIT
	1981-11									1981-11 REPARATION SERVOIT
	1981-12									1981-12 REPARATION SERVOIT
MOULGAR	1981-05	DAJJI TOHOUOOU	OUI							1981-05 REPARATION SERVOIT
	1981-06									1981-06 REPARATION SERVOIT
	1981-07									1981-07 REPARATION SERVOIT
	1981-08									1981-08 REPARATION SERVOIT
	1981-09									1981-09 REPARATION SERVOIT
	1981-10									1981-10 REPARATION SERVOIT
	1981-11									1981-11 REPARATION SERVOIT
	1981-12									1981-12 REPARATION SERVOIT
YALLA-NADA	1982-03	SADI ABANG	OUI			10/05/87	13	0,5		10/05/87 REPARATION SERVOIT
	1982-04									1982-04 REPARATION SERVOIT
	1982-05									1982-05 REPARATION SERVOIT
	1982-06									1982-06 REPARATION SERVOIT
	1982-07									1982-07 REPARATION SERVOIT
	1982-08									1982-08 REPARATION SERVOIT
	1982-09									1982-09 REPARATION SERVOIT
	1982-10									1982-10 REPARATION SERVOIT
	1982-11									1982-11 REPARATION SERVOIT
	1982-12									1982-12 REPARATION SERVOIT
VITE	1982-04	ISA HANGI	OUI							1982-04 REPARATION SERVOIT
	1982-05									1982-05 REPARATION SERVOIT
	1982-06									1982-06 REPARATION SERVOIT
	1982-07									1982-07 REPARATION SERVOIT
	1982-08									1982-08 REPARATION SERVOIT
	1982-09									1982-09 REPARATION SERVOIT
	1982-10									1982-10 REPARATION SERVOIT
	1982-11									1982-11 REPARATION SERVOIT
	1982-12									1982-12 REPARATION SERVOIT
TOUGOU A	1982-05	NGANTS RAMBA	OUI			10/07/87	6,8	1,8		10/07/87 REPARATION SERVOIT
	1982-06									1982-06 REPARATION SERVOIT
	1982-07									1982-07 REPARATION SERVOIT
	1982-08									1982-08 REPARATION SERVOIT
	1982-09									1982-09 REPARATION SERVOIT
	1982-10									1982-10 REPARATION SERVOIT
	1982-11									1982-11 REPARATION SERVOIT
	1982-12									1982-12 REPARATION SERVOIT
TOUGOU B (A)	1982-06		NON							1982-06 REPARATION SERVOIT
	1982-07		NON							1982-07 REPARATION SERVOIT
	1982-08		NON							1982-08 REPARATION SERVOIT
	1982-09		NON							1982-09 REPARATION SERVOIT
	1982-10		NON							1982-10 REPARATION SERVOIT
	1982-11		NON							1982-11 REPARATION SERVOIT
	1982-12		NON							1982-12 REPARATION SERVOIT
ZOISSERONE	1982-08		NON							1982-08 REPARATION SERVOIT
	1982-09		NON							1982-09 REPARATION SERVOIT
	1982-10		NON							1982-10 REPARATION SERVOIT
	1982-11		NON							1982-11 REPARATION SERVOIT
	1982-12		NON							1982-12 REPARATION SERVOIT
MURARA	1982-09	MOUSSOUA	OUI							1982-09 REPARATION SERVOIT
	1982-10									1982-10 REPARATION SERVOIT
	1982-11									1982-11 REPARATION SERVOIT
	1982-12									1982-12 REPARATION SERVOIT
HANGARA	1982-10	DOUM DAMA	NON							1982-10 REPARATION SERVOIT
	1982-11		NON							1982-11 REPARATION SERVOIT
	1982-12		NON							1982-12 REPARATION SERVOIT
BATANSA A	1982-11	MAKHA DIBI	NON			14/05/87	3,5	2		14/05/87 REPARATION SERVOIT
	1982-12									1982-12 REPARATION SERVOIT
	1983-01									1983-01 REPARATION SERVOIT
	1983-02									1983-02 REPARATION SERVOIT
	1983-03									1983-03 REPARATION SERVOIT
	1983-04									1983-04 REPARATION SERVOIT
	1983-05									1983-05 REPARATION SERVOIT
	1983-06									1983-06 REPARATION SERVOIT
	1983-07									1983-07 REPARATION SERVOIT
	1983-08									1983-08 REPARATION SERVOIT
	1983-09									1983-09 REPARATION SERVOIT
	1983-10									1983-10 REPARATION SERVOIT
	1983-11									1983-11 REPARATION SERVOIT
	1983-12									1983-12 REPARATION SERVOIT
KAKA	1982-12	RAMADOU ISSIF	OUI			08/05/87	5,5	0		08/05/87 REPARATION SERVOIT
	1983-01									1983-01 REPARATION SERVOIT
	1983-02									1983-02 REPARATION SERVOIT
	1983-03									1983-03 REPARATION SERVOIT
	1983-04									1983-04 REPARATION SERVOIT
	1983-05									1983-05 REPARATION SERVOIT
	1983-06									1983-06 REPARATION SERVOIT
	1983-07									1983-07 REPARATION SERVOIT
	1983-08									1983-08 REPARATION SERVOIT
	1983-09									1983-09 REPARATION SERVOIT
	1983-10									1983-10 REPARATION SERVOIT
	1983-11									1983-11 REPARATION SERVOIT
	1983-12									1983-12 REPARATION SERVOIT
PARAKA	1982-12		NON			15/06/82	7,5	2		15/06/82 REPARATION SERVOIT
	1983-01									1983-01 REPARATION SERVOIT
	1983-02									1983-02 REPARATION SERVOIT
	1983-03									1983-03 REPARATION SERVOIT
	1983-04									1983-04 REPARATION SERVOIT
	1983-05									1983-05 REPARATION SERVOIT
	1983-06									1983-06 REPARATION SERVOIT
	1983-07									1983-07 REPARATION SERVOIT
	1983-08									1983-08 REPARATION SERVOIT
	1983-09									1983-09 REPARATION SERVOIT
	1983-10									1983-10 REPARATION SERVOIT
	1983-11									1983-11 REPARATION SERVOIT
	1983-12									1983-12 REPARATION SERVOIT
MOUNG I	1982-14	MICHEL FANOUKO	OUI							1982-14 REPARATION SERVOIT
	1982-15									1982-15 REPARATION SERVOIT
	1982-16									1982-16 REPARATION SERVOIT
	1982-17									1982-17 REPARATION SERVOIT
	1982-18									1982-18 REPARATION SERVOIT
	1982-19									1982-19 REPARATION SERVOIT
	1982-20									1982-20 REPARATION SERVOIT
	1982-21									1982-21 REPARATION SERVOIT
	1982-22									1982-22 REPARATION SERVOIT
	1982-23									1982-23 REPARATION SERVOIT
	1982-24									1982-24 REPARATION SERVOIT
	1982-25									1982-25 REPARATION SERVOIT
	1982-26									1982-26 REPARATION SERVOIT
	1982-27									1982-27 REPARATION SERVOIT
	1982-28									1982-28 REPARATION SERVOIT
	1982-29									1982-29 REPARATION SERVOIT
	1982-30									1982-30 REPARATION SERVOIT
	1982-31									1982-31 REPARATION SERVOIT
	1982-32									1982-32 REPARATION SERVOIT
	1982-33									1982-33 REPARATION SERVOIT
	1982-34									1982-34 REPARATION SERVOIT
	1982-35									1982-35 REPARATION SERVOIT
	1982-36									1982-36 REPARATION SERVOIT
	1982-37									1982-37 REPARATION SERVOIT
	1982-38									1982-38 REPARATION SERVOIT
	1982-39									1982-39 REPARATION SERVOIT
	1982-40									1982-40 REPARATION SERVOIT
	1982-41									1982-41 REPARATION SERVOIT
	1982-42									1982-42 REPARATION SERVOIT
	1982-43									1982-43 REPARATION SERVOIT
	1982-44									1982-44 REPARATION SERVOIT
	1982-45									1982-45 REPARATION SERVOIT
	1982-46									1982-46 REPARATION SERVOIT
	1982-47									1982-47 REPARATION SERVOIT
	1982-48									1982-48 REPARATION SERVOIT
	1982-49									1982-49 REPARATION

Commune	Code	Nom	Stat	Stat	Date	Vol	Surf	Notes
MOGOGBE LACINA	283-10	DEA TISSI	OUI	OUI				Sep-84 REPARATION POMPE: CYLINDRE CALÉ
	283-10							01/12/85 REMP. CYLINDRE ET TIGE
	283-10							15/04/86 REMP. CYLINDRE, NETTOYER TUYAU
SOULAFI	283-11	SA. THISTINE	OUI	OUI	30/12/86	5,2	4	
ASSIGACHIA NORD	283-12	TAGAMA SADI	OUI	OUI	12/10/86	13	1,6	
	283-14				08/05/87	14	1	
KATAMATA (AI)	283-15	DIGA TIGI	OUI	OUI				
GURDIBLS	283-16	BOUGE THOMAS	OUI	OUI				
MOGOGBE BOULE	283-17	AB. MAL. MATE	OUI	OUI				
ASSIGACHIA SUD	283-18	TAGAMA SADI	NON	NON	22/04/87	16,6	1,6	
MOGOGBE MOUTOUA	283-19	PERRI ROBA	NON	NON				
KATO LIGGA	283-20		OUI	NON				
MODOLLE	284-01	SALI ALDINA	OUI	OUI	03/03/87	10	0	
KERB	284-02	MEGOULE	OUI	OUI	18/02/87	22	0,5	
MAI	284-03	DABA BEVNE	NON	NON				
POUCEL INT.	284-04		NON	NON				
SEBANA	284-05	ALI SAMAN	OUI	OUI	12/05/87	6,9	6,2	
TALAKATONI	284-06	MUSSA MAL. AL	OUI	OUI	04/05/87	4,2	1,2	
JOUA SEME	284-07	DISSA TIGI	OUI	OUI	12/05/87	15,7	1	
OUVEL	284-08	DAMAN HANATA	OUI	OUI				
KATIE	284-09	TELPADA. MAREE	OUI	OUI				
MBRI CENTRE	284-10	KALABAI TAGAMA	OUI	OUI				
BOSSI	284-11	MADADI MATI	OUI	NON				
OUAPOUNA	284-12	SEDOULAYE SADOU	OUI	NON	08/01/87	6,4	1,4	
DOULEA	284-13	AMACOU SIBA	OUI	OUI				
BOUELOLA	284-14	M. S. S. S. S.	NON	NON				
MATU NGANI	284-15	RIEBA HANNA	OUI	OUI				
BOUELOLA II	284-16	M. S. S. S. S.	NON	NON				
BOUELOLA III	284-17	M. S. S. S. S.	NON	NON				
BAKEMU	284-18	M. S. S. S. S.	NON	NON				
M. S. S. S.	284-19	M. S. S. S. S.	NON	NON				
M. S. S. S.	284-20	M. S. S. S. S.	NON	NON				

NO	NOM	PRENOM	DATE	HEURE	PROBLEME	REPARATION	REMARQUES
785-01	YELKE		08/04/87	8	0,4		19/04/87 DEPARNADE; POMPE S'EST BLOQUEES AVEC SABLE; DIMINUER TUYAU
785-02							19/04/87 TUYAU RECESSIVE
785-03							19/04/87 ET RESEMENT 1000
785-04							19/04/87 REINSTALLATION APRES SECURISAGE
785-05							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-06							19/04/87 PETITE DALLE SOULEVEE
785-07	KICHINE	KALI KANDA	10/04/87	8,0	0,0		19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-08	KIDOU	LACE KAYA	10/04/87	8,0	0,0		19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-09							19/04/87 REMPLACEMENT DE LA PETITE DALLE
785-10	WAZELA IBI						19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-11	LETTRE KISSERE						19/04/87 REMPLACEMENT DE LA PETITE DALLE
785-12							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-13							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-14							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-15							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-16							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-17							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-18							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-19							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-20							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-21							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-22							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-23							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-24							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-25							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-26							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-27							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-28							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-29							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-30							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-31							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-32							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-33							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-34							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-35							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-36							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-37							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-38							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-39							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-40							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-41							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-42							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-43							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-44							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-45							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-46							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-47							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-48							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-49							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-50							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-51							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-52							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-53							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-54							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-55							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-56							19/04/87 SOULEVEMENT DE LA PETITE DALLE
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785-58							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-59							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-60							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-61							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-62							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-63							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-64							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-65							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-66							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-67							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-68							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-69							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-70							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-71							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-72							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-73							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-74							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-75							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-76							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-77							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-78							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-79							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-80							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-81							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-82							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-83							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-84							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-85							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-86							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-87							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-88							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-89							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-90							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-91							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-92							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-93							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-94							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-95							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-96							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-97							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-98							19/04/87 SOULEVEMENT DE LA PETITE DALLE
785-99							19/04/87 REMPLACEMENT ENGRENAGE PLASTIQUE
785-100							19/04/87 SOULEVEMENT DE LA PETITE DALLE

M	887-02	BALDAGAI PHIL.	OUI	OUI					
M	887-03	BELLO SALI	OUI	OUI					
M	887-04	OUSMANOU BAKARI	OUI	OUI					
M	887-05	BOUBA RAMBA	OUI	OUI	02/12/86	10,5	3,2		
M	887-06		NON	NON	13/02/87	10,5	1,3		
M	887-07	KARI MASSOUCOU	OUI	OUI	19/02/87	15,5	1,2		
M	887-08	ABBA YAGAMA	OUI	OUI	22/10/86	13,5	3		Apr-87 RECREUSEMENT 2,50 m, 5 BUSES DE 0,80 m
M	887-08		OUI	OUI	23/12/85	14,5	2,5		
M	887-08		OUI	OUI	19/02/87	14,5	2		
M	887-09	ANDRE MOUTSIMA	NON	NON					
M	887-10	BAPPA GARGA	OUI	OUI					
M	887-11	SIERBA ATSLIMAN	OUI	NON	19/02/87	15	0,8		Mar-87 PROCESEMENT
M	2887-12	OUSMANOU ALHADI	OUI	NON	12/02/87	12	1,2		
M	887-13	ADJI BOUKAR	NON	NON					
M	887-14	BOUEAR ALI	NON	NON					
M	887-15	ADJI BOHEAR	NON	NON					
M	887-16	OUMAROU HEMAN	OUI	OUI					
M	887-17	DALIDAI MATHEOU	OUI	OUI	18/08/87	19,5	4,1		20/07/87 INSTALLATION ENGRENAGE EN ACIER
M	887-18	OUMAROU HAMAN	NON	NON					10/09/87 ACTIVATION CLIMATISE, CHANGEMENT CERTIFIE, ENGRENAGE
M	887-19	ADJI SOUHEAR	NON	NON					
M	887-20	ELAMA NEMATE	NON	NON					
M	887-21	DIWELDE BOUBA	OUI	OUI					
M	887-22	HAMADJAM EZZI	OUI	OUI					
M	887-23	MATYVE BARBA	OUI	OUI					
M	887-24	ARASSI DANDI	OUI	OUI					
M	887-25	DIGA ZIBI	OUI	OUI					
M	887-26	SADOU KOUJIDA	OUI	OUI					
M	887-27	KATYAN TALIGA	OUI	OUI					
M	887-28	OUMASSO CHETIMA	NON	NON					
M	887-29	ADAMA MAILLE	OUI	OUI	04/06/87	8	5		
M	887-30	DAOUDA KIDJIBIH	OUI	OUI					
M	887-31	TEERE MOUYANAN	NON	NON	18/06/87	9,6	4		Jun-87 INSTALLATION ENGRENAGE EN ACIER
M	887-32	KASSOUNA TINDPE	NON	NON	23/08/87	5,8	1,5		Jun-87 INSTALLATION ENGRENAGE EN ACIER
M	887-33								
M	887-34	HAYATOU HAMEDOU	NON	NON					Jul-87 INSTALLATION ENGRENAGE EN ACIER
M	887-35	COFFE PIERRE	NON	NON					