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Lesotho Highlands Development Authority Annual Report 1994/5

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# LHDA Organisation Structure



# CHAIRMAN'S STATEMENT



B. T. Pekeche, Chairman

Planning for the Lesotho Highlands Water Project was begun in 1983. For almost a decade, planning was the only activity to be pursued, and the man in the street saw no tangible evidence of the Project.

Now, 13 years further on, active construction has been going on for four full years, and no one in the Kingdom of Lesotho is unaware of the fact that his or her life will be affected in one way or another. Very often, however, it is only a dim awareness. By and large, people fear change and are suspicious of any development which they perceive as a threat to their established traditional way of life.

The benefits which will accrue from the Lesotho Highlands Water Project are considerable. Expressed in the simplest of terms, the implementation of the Project will result in an economic improvement which will mean a higher standard of living for every inhabitant. But the success of the Project largely depends on public awareness of this basic fact, so a very important part of the Lesotho Highlands Development Authority's on-going responsibility is to ensure that the population is kept informed of developments, and to ensure that negative issues - such as the necessary re-location of some dwellings and villages - are seen in the overall context of the scope of the Project and its benefits.

As the Project proceeds, it becomes more difficult – and more necessary – to present an overview. We have now reached a stage where the end of Phase IA is in sight – scheduled for 1997 – and Phase IB is already gathering momentum.

When reporting on the progress of the Project, it is convenient to express it in terms of percentages and kilometres. But a phrase such as "77.99% financing complete", referring to the progress on a delivery tunnel, is a coldly clinical statement. The true scenario, hidden behind that statement, is one of complex planning, complicated logistics, technical problems, dayto-day frustration, and a considerable amount of sheer sweat and toil.

It is in fact quite appropriate to see the continued development of the Project as a classic example of mankind's ingenuity and industry brought to bear in the interests of the betterment of the community; one more step on the never-ending path of improvement.

What is particularly uplifting is that a prerequisite for such a step is teamwork on a massive scale. The Lesotho Highlands Development Authority gratefully acknowledges that the Project's continued satisfactory progress is due to the concerted efforts of almost 400 LHDA personnel with the continued input of many hundreds of international bankers and financiers, engineers and construction workers, social scientists, agriculturists and environmentalists, and many others. The Lesotho Highlands Water Project is a tribute to man's capability for cooperation and teamwork.



# CHIEF EXECUTIVE'S REPORT

The year ending 31 March 1995 was another year of sustained progress on the Lesotho Highlands Water Project. It was the fourth full year since construction began, and abundant physical evidence of the Project's development is now there for all to see.

It is interesting how each of the various major components – engineering and construction, funding and financial, social and environmental – grows and expands in scope while all three components remain closely interdependent. Progress or setbacks in any one area will have a ripple effect throughout the entire organisation.

It also becomes progressively more difficult to give a clear overview, because the mechanisms of cause and effect have become so complex.

Broadly speaking, the end of Phase IA is in sight, and the emphasis is swinging increasingly towards the complexities and challenges of Phase IB. Whilst this may be a natural tendency, it could be disastrous if the shift in emphasis were to be reflected in the day-to-day construction activities. Only an unremitting attention to measurement of progress compared to plans, to vigilant supervision and inspection, to fast response to emerging problems, ensures that the necessary overall pace of the Project is sustained.

I am happy to report that with regard to construction, overall progress has been encouraging and no unforeseen obstacles have posed a serious threat. Steady progress has been made on the construction of the Katse Dam, a major engineering component of the total Project. Following on the diversion of the Malibamats'o River through twin tunnels, over half of the total volume of concrete placement in the Arch Dam has been placed. (In March 1995, the placing of 97 251m3 of concrete represented eight percent more than the monthly target). Substantial progress was also made on associated activities, namely the Tailwater Dam, the Mashai and Mohale Tunnel Outlets, and the Mohale Tunnel Outlet Access Road.

A major construction component is the 45km Transfer Tunnel, with a diameter of almost five metres, drilled through hard basalt rock at depths of up to 1 200m. Once excavated, the entire tunnel has to be concrete lined. A dramatic moment occurred on 23 September 1994 when the Katse Intake north drive met up with the Katse south drive. The underground

conditions impose their own discipline on man's plans, and it is



T. Putsoane, Acting Chief Executive

extremely difficult to forecast tunnelling progress with any degree of accuracy. In the event, the tunnelling was completed three months ahead of schedule, due to the fact that rapid progress on the south drive sector more than compensated for delays in completing the north drive.

Another memorable occasion was the 13 October 1994, when an invited audience was treated to the spectacle of the 'Muela south drive holing through into the Katse south drive.

The Delivery Tunnel South is a 14km tunnel with a diameter of over five metres. Excavation was completed on 23 August 1993, as described in the 1994 Chief Executives Report, and since then some 5 860m of the tunnel have been lined with concrete. This contract is 80% complete and scheduled for completion by the end of 1996.

With regard to the 'Muela Dam, planned for 55m in height with a crest length of 200m, actual excavation was carried out according to plan. Progress has, however, been disappointing with the associated Operations Building, due to the non-availability of an approved contract. This problem has been addressed and the delay will not impact the critical path of the Project.

The planning, excavation and boring of dams and tunnels is a necessary first step, but of equal importance is the associated technology which will ensure their working efficiency. All of these various sub-contracted activities are on schedule, and include the manufacture of turbines and generators (12% complete), and transformers and switchgear (37%). Overall progress on the detailed design and drawings for the construction of the 'Muela Hydropower project has been hindered by the late awarding of some of the contracts.

The function of technical monitoring of progress is initially the responsibility of the LHDA Planning and Design Division. Responsibility is transferred to the Construction Division at a suitably advanced stage, and this



has now happened for the remaining major engineering design aspects of Phase IA. The Planning and Design Division's focus has now shifted to Phase IB, though the Division continues to provide planning and design support to the Construction Division for the major Phase IA construction contracts.

With respect to Phase IA funding, one or two setbacks to the planned sourcing of funds were addressed and alternative arrangements made in certain instances, and funding was also secured for the additional tunnel lining costs of the Transfer Tunnel.

Turning to Phase IB, an initial funding of M22 million was raised from Lesotho Bank to finance the Maseru by-pass road, and international negotiations commenced to raise M1 billion, an amount which will need to be increased closer to the start of construction. The merchant bank of Morgan Grenfell was selected to act as financial advisors for Phase IB funding.

The essential teamwork between the different parties involved in planning, design, construction and other activities is reflected in the truly international composition of the various agencies which play a part in the total funding. Their venues tend to be boardrooms rather than the dust and noise of the construction sites and the rock face, but their role is every bit as crucial.

The close attention paid to construction and technical matters, and to establishing the necessary funding structure, would be largely negated if social and environmental implications were to be neglected or given less than their necessary share of consideration. LHDA has endeavoured to ensure that this does not happen, because the real aim of the whole Project is community and national upliftment.

Progress on the replacement of houses, shops and schools was hindered for the first half of the year under review, due to difficulties in identifying suitable alternative sites, but this problem was finally resolved in late 1994. First priority was given to replacement housing for the Katse shoreline, a priority which was reinforced by a World Bank directive that inpounding of the dam should not commence until all residents within the area designated for the reservoir had been relocated. The problem has not yet been satisfactorily overcome, due to the so far unacceptably high tender prices for the construction of houses. Maintaining a proper balance is important because just as LHDA has a responsibility to houseowners to provide satisfactory alternative accommodation, it has an equal duty to safeguard the community in general from excessive expense.

The Environmental Division's responsibilities are now also switching focus to Phase IB, evaluating contract proposals for the Phase IB Resettlement and Development Study.

While re-housing is an important consideration, the impact of the Project on the total environment continues to be the subject of considerable study and planning. Design work was undertaken and completed for infrastructural projects such as feeder roads, accommodation and amenities for construction communities, and village water supply and sanitation. Nursery beds were constructed with a production capacity of 100 000 seedlings and 10 000 young trees were planted. Irrigation systems were designed and commissioned, a fisheries consultant was engaged to work on fish protection and conservation strategies, and livestock breeding programmes were implemented. Training progressed under the Rural Training and Income Generation Programme, including courses in literacy, building, entrepreneurial studies, poultry farming, horticulture, knitting and sewing.

The Project's compensation policy was pursued vigorously, with over 700 tonnes of fodder distributed and with over 1 400 households receiving some 870 tonnes of maize and 25 tonnes of beans.

Health education has been provided for primary schools, and community health workshops conducted at Katse. The Leribe Trauma Unit treated more than 2 000 out-patients and performed more than 500 operations.

Nor has preservation of the natural environment been neglected. Herdboys and school children have received tuition on their natural heritage, and cleaning campaigns conducted. Plant materials to be inundated by the dam have been catalogued and a long-term biological monitoring programme planned. Scientific observation of archaeological and palaeontological aspects was conducted at all construction sites.

The year 1994-95 has certainly been a year which has seen continued integration and cooperation between the key players in one of the world's most ambitious and exciting water engineering projects. These key players include LHDA's Board of Directors, the Authority's employees, the employees of the many contractors and sub-contractors engaged in construction or technological projects, the members of the Lesotho-South African Joint Permanent Technical Commission, the fraternity of internationally involved bankers and financiers, and the Basotho nation to whom the Project is dedicated.



# CONSTRUCTION

# MAJOR WATER TRANSFER CONTRACTS

### **CONTRACT LHDA 123**

# - KATSE DAM AND APPURTENANT WORKS

TECHNICAL CHARACTERISTICS	<ul> <li>Concrete Arch Dam, 182m high, crest length 710m, concrete volume 2 300 000m<sup>3</sup></li> </ul>
ESTIMATED FINAL COST	- M1 316 000 000
VALUE OF WORK COMPLETE	– M789 230 532
FINANCIAL PERCENT COMPLETE	- 56.10%
CONTRACT COMPLETION DATE	– 31 January 1998
CONTRACTOR	<ul> <li>Highlands Water Venture</li> </ul>

SIGNIFICANT ACHIEVEMENTS

Since the contractor mobilised in early 1991, the following has been achieved:

### TEMPORARY WORKS

All temporary works have been completed.

#### PERMANENT WORKS

The Malibamats'o River has been diverted through twin tunnels, the arch dam excavation has been completed and concreting of the arch dam has progressed to over 53% completion with concrete placement of 90 000m<sup>3</sup> per month. The construction of the tailwater dam is nearing completion. The construction of the Mohale Outlet access road is continuing. The lining of Mohale Tunnel Outlet shaft has been completed. The excavation of Mashai Tunnel Outlet and shaft has been completed and lining of the tunnel is ongoing.

- During the period 1 April 1994 to 31 March 1995 the following have been achieved:
  - Arch Dam
  - By May 1995 concrete placement had exceeded one million cubic metres with 1 266 667m<sup>3</sup> placed by the end of March 1995 which is 53.8% of the total concrete in the Arch Dam. The concrete placed in the Arch Dam during March 1995 was 97 251m<sup>3</sup> which is 108% of the monthly target. Consolidation grouting continued as well as water testing of river-bed grout compartments. Installation of dam instrumentation continued as appropriate to dam progress. Prolonged cooling delayed start of joint grouting. Joint grouting commenced on the first river bed compartment. Embedment of the low level outlets downstream section continued.

Construction of the reinforcement of the autobrecciated layer is progressing as planned.

#### Tailwater Dam

• Work continued on the Tailwater Dam, which is not yet critical. Work was re-programmed for substantial completion in second quarter of 1995.

#### Mashai Tunnel Outlet

Shaft and tunnel excavations are complete. Lining of tunnel to commence in early 1995.

### Mohale Tunnel Outlet

Lining of shaft has been completed.

Mohale Tunnel Outlet Access Road

• Work continued on earthworks, layerworks and culverts for this road. Progress improved but the forecast completion date is currently under review.



#### CONTRACT LHDA 124/5 - TRANSFER TUNNEL

TECHNICAL CHARACTERISTICS	-	45km long, 4.95m diameter tunnel excavated by three tunnel boring machines (TBMs) through primarily basalt rock with a maximum rock cover of 1 200m. Concrete lining of the entire excavated tunnel (45km long) as per the Modifying Agreement signed in September, 1994.
ESTIMATED FINAL COST	-	M1 357 270 000
VALUE OF WORK COMPLETE		M860 050 233
FINANCIAL PERCENT COMPLETE	-	57.34%
CONTRACT COMPLETION DATE	-	30 September 1996
CONTRACTOR	-	Lesotho Highlands Project Contractors
SIGNIFICANT ACHIEVEMENTS		

- Since the contractor mobilised in early 1991, the following has been achieved:

TEMPORARY WORKS All temporary works at all sites have been completed.

#### PERMANENT WORKS

#### Katse Intake North Drive

On 23 September 1994 the Atlas Copco TBM holed into the Hlotse south drive. The Atlas Copco machine in the Katse Intake north drive completed 10 673m in 28.25 months giving an average progress of 377.8m per month. The drive was completed some three months ahead of schedule even though the Atlas Copco machine was 6.5 months behind programme at the time of hole through. This was because the Robbins machine in the 'Muela south drive finished its section 8.5 months ahead of schedule and continued driving south to meet the Atlas Copco machine driving north.

The removal of the Robbins and Atlas Copco TBMs from the Pelaneng Adit was carried out on 5 and 18 November respectively. These are now being stored at a temporary storage area at the Pelaneng/Kao mine road junction. Removal of the Robbins back-up system commenced on 23 November 1994 and was substantially complete by the end of 1994.

In the Intake north drive, excavations to the enlargements of the ventilation shafts' air traps were completed. Work on the post-excavation works commenced on 14 November 1994. By the end of the year, the removal of loose rock and degraded material was approximately 60% complete and the upgrading of support approximately 75% complete. At the beginning of 1995 work commenced on the removal and replacement of invert segments. A 70m long continuous production concrete shutter was erected in the drive in February/March and the first pour took place on 17 March 1995.

In Transfer Tunnel 1, 14 pours, each of 2.5m length, have to date been placed between the Tower and the Gate Shaft transition. Concrete lining has now progressed to within five metres of the start of the gate shaft transition. In Transfer Tunnel II the installation of the waterproof membrane has commenced.

#### Intake Structure

Construction of the Intake structure and appurtenant works progressed during the period with the last pour having been placed in early March 1995. The structure is now constructed to elevation 2 060m. Work is currently in progress on construction of the tower platform. The contractor is still anticipating completion of the structure in October 1995. This is some 3.5 months later than the Clause 14 programme date of 30 June 1995, but still ahead of the Contract key date of 1 March 1996. The first pour of the box beams to Span 1 of the bridge



# CONSTRUCTION (CONTINUED)

### CONTRACT LHDA 124/5 - TRANSFER TUNNEL (Continued)

deck was carried out on 6 March 1995. Installation of the mechanical built-in parts is progressing slowly but work is expected to pick up now that the concrete to the tower shaft is complete. The gate shaft structure is complete and erection of the transition shutter for the gate started on a rail sliding near the portal. Work on the abutment is now concentrated around the access ramp, septic tank, draw pits and electrical conduits. The precast parapet balustrades were erected and soffit slab cast.

#### Pelaneng Adit

The Phase II adit has been completed including sliping, cleaning and concreting of the invert.

The post-excavation works in the Pelaneng north drive have progressed with rough cleaning now 45% complete and upgrading of support 63% complete.

#### Hlotse South Drive

The Robbins TBM excavating south in the Hlotse south drive reached the theoretical end of the Hlotse south drive on 21 January 1994 at Chainage Ch 16 032m. This TBM continued south excavating the Pelaneng north drive and on 9 September 1994 this TBM was halted to allow the holing through to be effected by the Katse Intake TBM driving north. This section was originally to have been excavated by the Intake TBM driving north but due to the slower than scheduled progress in the Intake drive this section of tunnel was completed by the Hlotse TBM driving south. The Robbins machine in the Hlotse south drive completed 16 538m in 26.3 months giving an average progress of 628.8m per month.

At the waterway junction with the adit, the drilling and blasting of the junction excavation has been completed and the concreting of the invert to accommodate the contractor's rail network is also complete. The 'Muela TBM and all backup system units left at the breakthrough have been transported out of the tunnel as well as all of the 32 backup system units of the Hlotse TBM.

On the post-excavation works in this drive rough cleaning is now 98% complete.

The stripping out of the ventilation ducting from Ch 1 196 to 18 500 has been completed.

#### Hlotse North Drive

On the post-excavation works in this drive rough cleaning is now 78% complete.

#### 'Muela South Drive

The Robbins TBM in the 'Muela south drive was halted on 9 September 1994 just eight metres short of holing through into the Hlotse south drive. This was to allow a ceremonial breakthrough to take place on 13 October 1994 when this TBM bored the final few metres viewed by an audience of dignitaries. The Robbins machine in the 'Muela south drive completed 17 440m in 27 months giving an average progress of 645.9m per month. This drive was completed eight months ahead of schedule.

Disassembly and removal of the Robbins TBM and backup system units in the Hlotse south drive were completed prior to the end of 1994. Post-excavation works are now completed involving rough cleaning, upgrading of support and replacement of invert segments. Concrete lining commenced on 14 March 1995 moving towards 'Muela.

#### CONTRACT LHDA 126 - DELIVERY TUNNEL SOUTH

TECHNICAL CHARACTERISTICS

- 17km long tunnel with 5.10m diameter section (excavated using one TBM) and two steel lined inverted syphons under rivers at 3.4m diameter (excavated by drill and blast method).
- M334 858 000
- VALUE OF WORK COMPLETE

ESTIMATED FINAL COST

- M298 118 258



FINANCIAL PERCENT COMPLETE	- 82.11%
CONTRACT COMPLETION DATE	– 31 December 1996
CONTRACTOR	<ul> <li>Lesotho Highlands Project Contractors</li> </ul>

#### SIGNIFICANT ACHIEVEMENTS

- Since the Contractor mobilised in early 1991, the following has been achieved:

TEMPORARY WORKS

All temporary works at all sites have been completed.

#### PERMANENT WORKS

Concrete lining of the first TBM drive from Hololo to 'Muela involving 320m of lining and the second drive from Ngoajane to Hololo involving 540m of lining have both been completed. Work was completed on the concrete lining of the third and last TBM drive from Ngoajane to Vent Shaft 5 on 23 January 1995. Overall some 5 860m have been concrete lined.

At 'Muela Intake, drilling for cavity and consolidation grouting commenced along tunnel No.2 waterway and cavity grouting of the deration chamber commenced. Preparation works for the installation of the invert liner at the intake bend commenced. Cleaning and preparation works of the blinding concrete of the intake weir started. Installation of the embedded mechanical parts for gate shaft No.1 was completed between El 1 739.0m and El 1 777.5m and installation of the embedded mechanical parts of gate shaft No.2 commenced. The conveyance and associated equipment in the air shaft for personnel and materials was installed and tested.

At Hololo, concrete lining of the south section of the river crossing is complete except for the 30m in the interface grouting section. Lining of the intersection itself has started with 33m out of the 105m completed. Surface preparation works for the interface grouting section at the north end of the steel lining using shotcrete infill continued. Contact grouting of the steel lining is now complete.

At Ngoajane, repair works to the concrete lining of the north section of the drill and blast section of the river crossing were completed and drilling of holes for cavity grouting was completed in both north and south sections. For the steel lining, the stemming of grout holes was completed after finalisation of consolidating grouting.

# HYDROPOWER CONTRACTS

#### CONTRACT LHDA 129A – CONSTRUCTION OF UNDERGROUND POWER FACILITIES

TECHNICAL CHARACTERISTICS

- 9.0m diameter by 116m high upstream surge shaft with lower and intermediate surge chambers excavated in rock with concrete lining.
- 3.35/2.5m diameter power tunnel/steel lined vertical shaft and penstock – total length 258.4m.
- 14.5m wide x 58.8m long x 27.5m high underground powerhouse cavern for three turbine generator units.
- 4.10m x 1 350.7m long tailrace tunnel and channel.

#### ESTIMATED FINAL COST

VALUE OF WORK COMPLETE

– Nil

- M172 901 000



# CONSTRUCTION (CONTINUED)

CONTRACT LHDA 129A (Continued)

FINANCIAL PERCENT COMPLETE

CONTRACT COMPLETION DATE

### CONTRACTOR

- 'Muela Hydropower Project Contractor (MHPC)

22 September 1998

# SIGNIFICANT ACHIEVEMENTS

- The contract was awarded to MHPC on the 22 March 1995. As such there are no significant events to be reported at this point in time.

- Nil

TEMPORARY WORKS

Temporary works are in the process of starting.

#### PERMANENT WORKS

Works have commenced for the construction of the contractor's housing requirements, site facilities and the establishment of construction roads.

### CONTRACT LHDA 129B – CONSTRUCTION OF 'MUELA DAM AND APPURTENANT WORKS AND OPERATIONS BUILDING

TECHNICAL CHARACTERISTICS

- 55m high, 200m crest length concrete double curvature arch tail pond dam.
- Surface works, site infrastructure and temporary housing.

M139 444 000

M41 380 060

12 May 1998

28.54%

 Surface Operations Complex with control, administration and service areas, civil works for workshop and substation.

#### ESTIMATED FINAL COST

VALUE OF WORK COMPLETE

FINANCIAL PERCENT COMPLETE

CONTRACT COMPLETION DATE

CONTRACTOR

- 'Muela Hydropower Project Contractor (MHPC)

# SIGNIFICANT ACHIEVEMENTS

- Since the contractor mobilised in mid February 1994 the following have been achieved:

# TEMPORARY WORKS

Construction of temporary works is continuing.

# PERMANENT WORKS

### 'Muela Dam

The excavation of the central section of the dam foundation using drill and blast techniques was carried out. The operation included the excavation for stilling basin and cascades. The majority of the bulk and controlled excavations were completed. Some small amounts of local excavation and hand trimming remain in the vicinity of the stilling basin and cascades to accommodate individual walls or slabs.



Work has continued in the right bank adits. Some progress has been made on the drainage adit and at the end of the reporting period the excavation was 80% complete. In the existing exploration adit progress has been made on the enlargement to form shear keys.

### Operations Building & National Control Centre

Progress has been poor at the Operations Building. Although preparations were completed earlier on in the reporting period, there was a delay to the commencement of concreting caused by the non-availability of an approved concrete. Nevertheless, all of the column bases for the operations building have been cast using concrete from the Contract 125 batching plant.

### CONTRACT LHDA 134 - TURBINES, GENERATORS AND ANCILLARY PLANT

TECHNICAL CHARACTERISTICS	<ul> <li>Three Francis Turbines, three Turbine Govern- ors, Turbine Inlet Spherical Valves, three Draft Tube Flap Gates, three Synchronous Generators.</li> </ul>
ESTIMATED FINAL COST	- M132 342 000
VALUE OF WORK COMPLETE	- M11 103 245
FINANCIAL PERCENT COMPLETE	- 12.48%
CONTRACT COMPLETION DATE	– 16 October 1997
CONTRACTOR	<ul> <li>ABB Kvaerner Boving</li> </ul>
CONSTRUCTION STATUS (Procurement/Fabrication)	<ul> <li>The contractor has commenced to manufacture Draft Tubes, Draft Tube Flap Gates, Spiral Casings and Stay Rings at his own risk.</li> </ul>

### CONTRACT LHDA 135 - TRANSFORMERS AND 132 kV SWITCHGEAR

TECHNICAL CHARACTERISTICS	-	Three Unit Transformers having rated output of 32MVA, rated low voltage of 11 kV, rated high voltage (no-load) of 138kV, Regional Transformer 132/33kV, 20MVA, Area Transformers 5MVA.
ESTIMATED FINAL COST	-	M18 472 000
VALUE OF WORK COMPLETE	-	M7 918 798
FINANCIAL PERCENT COMPLETE	-	39.71%
CONTRACT COMPLETION DATE	-	1 May 1997
CONTRACTOR	-	ABB Calor Emag Schaltanlagen Ag

CONSTRUCTION STATUS-Factory testing of the transformers was carried<br/>out in December 1994. Procurement for the<br/>Gas Insulated Switchgear is continuing.

### CONTRACT LHDA 136 - TRANSMISSION LINE AND SUBSTATION BAYS

TECHNICAL CHARACTERISTICS	<ul> <li>132kV Double Circuit Transmission line (62km), three Line Bays, Complete Protection System for substation.</li> </ul>
ESTIMATED FINAL COST	- M30 263 000
VALUE OF WORK COMPLETE	– Nil



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# CONSTRUCTION (CONTINUED)

### CONTRACT LHDA 136 - TRANSMISSION LINE AND SUBSTATION BAYS (Continued)

Nil

FINANCIAL PERCENT COMPLETE

CONTRACT COMPLETION DATE

CONTRACTOR

- Work has not yet started.

Yet to be agreed.

NORELEC

CONSTRUCTION STATUS (Procurement/Fabrication)

SUPERVISION OF MAIN CONSTRUCTION CONTRACTS

# CONTRACT LHDA 45 - KATSE DAM AND TRANSFER TUNNEL

Supervision continues on both tunnel and dam construction. Overall the actual cost of site supervisory staff is in line with the budget. Design work continues in accordance with the programme. The issue of construction drawings has continued in accordance with the programme for both the tunnel and the dam.

### CONTRACT LHDA 46 - DELIVERY TUNNEL SOUTH

Testing for concrete durability study (VO#) is ongoing with samples still being soaked in the Malibamats'o River.

A detailed design of the ventilation system to the following permanent work areas is in progress:

- the dewatering shafts
- flow measurement chamber and 'Muela gate operating gallery

Revised drawings were issued to show:

- 1) minor amendments to 'Muela Intake Structure
- 2) the new arrangement of the access adit/tunnel intersection at Hololo

New drawings were issued showing:

- 1) details of the commissioning plug
- 2) details of the adit doors

All of the consultant activities are ahead of schedule and completion is currently forecast to be at least one month ahead of schedule resulting in a modest saving on staff costs.

### CONTRACT LHDA 51 – PREPARATION OF CONSTRUCTION DRAWINGS AND SUPERVISION OF CONSTRUCTION OF 'MUELA HYDROPOWER PROJECT'

The consultant continues to mobilise personnel in line with the requirements of the construction schedule.

Progress on the detailed design and preparation of construction drawings is continuing and timeous issuing of information to the contractor is being maintained. However, the overall progress is being affected by the late award of some contracts.

# 2 Studies and Engineering Design

In 1994/95, LHDA Planning and Design Division transferred the supervision and administration of the remaining major engineering design consultancies for Phase IA to the Construction Division. The main responsibilities of the Planning and Design Division have consequently shifted to Phase IB activities as well as providing planning and design support to the Construction Division in the continuing supervision of the major Phase IA construction contracts. This has included continued involvement in discussions with the consultants on the requirements for design of the Transfer Tunnel lining, Katse and 'Muela dams, hydro-power and bypass facilities, and coordination of design reviews by LHDA's Panel of Experts. On Phase IB, the division has been involved in completion of the planning studies and investigations for Mohale Dam and preparations for selection and appointment of design consultants for the major components of the Phase IB works. This included completion of the dam type selection and feasibility studies and cost estimates. Detailed scopes of work and proposal documents were also prepared for the Mohale Dam, Mohale Tunnel and Matsoku Diversion consultancies, together with the associated construction power and communications facilities.

# HYDROPOWER

The transition of 'Muela Hydropower Project from planning and design phase to construction phase was completed and the primary responsibility of supervision of all Hydropower contracts was transferred to Construction Division.

Documents and drawings from the contractors for the following contracts, that were effective during the year, were reviewed and commented on through the consultants, Lahmeyer MacDonald Consortium (LMC):

LHDA 129B	'Muela Dam, Infrastructure and
	Operations Building
LHDA 134	Turbines, Generators and
	Ancillary Plant
LHDA 135	Transformer and 132kV
	Switchgear

Re-tendering for Contract LHDA 129A – Underground Power Facilities was completed, evaluations done, contract negotiations completed and an award made. Financial negotiations for Contract 136 – 132kV Transmission Line and Substation Bays, however, were not concluded. Further reviews of LMC's designs and drawings for 'Muela Dam were also undertaken under contract LHDA 129B in consultation with the LHDA Panel of Experts.

Design issues raised relating to dam design and foundation stability led to the identification of the need for specialist external review of the overall stability of the right abutment. This in turn led to proposals to convert portions of the arch dam to a gravity section. Design review remains ongoing in repect of the need for additional drainage and shear keys in this abutment together with assessment of the postcooling and grouting requirements of the arch.

Other issues raised by the panel were:

- Design of the upstream surge shaft.
  - Design of the Station Bypass and its impact on the environment for a number of alternatives.
  - Modifications to the design of arch dam foundation and treatment of the right abutment and spillway cascade.

Other key design problems for 'Muela power facilities that were also reviewed and discussed with the relevant parties included:

- Improvements in the layout and detailed design of the generating equipment in the powerhouse for convenience in operation and maintenance.
- The layout of the underground transformer gallery.
- The layout and services of the Operations Building at the 'Muela Site.
- The layout and services of the National Control Centre at Mabote.
- The Supervising Control and Data Acquisition (SCADA) system and water management software.

Close coordination with LEC was also maintained on matters of mutual interest and operational interfaces.

# WATER TRANSFER

The principal activity relating to water transfer was the administration and on-going review of consultant designs during construction of the works and related interaction with the LHDA Panel of Experts.



# STUDIES AND ENGINEERING DESIGN (CONTINUED)

# KATSE DAM

For Katse Dam and Appurtenant Works, the review of drawings included excavation and construction aspects such as foundation grouting and drainage, concrete and reinforcing details, and instrumentation. This, for example, led to modification of the lift shaft to accommodate a rack elevator enabling improvement of access to more galleries within the dam.

Particular attention was paid to the contractor's laboratory at Katse with the assistance of the specialist advisor to the Panel of Experts. Many irregularities in sample preparation and testing procedures were identified, most of which gave a lower reporting of concrete strength. Once rectified, as indicated by a marked reduction of scatter in testing results, the cementitious content in the dam concrete could be reduced with no lowering in design requirement.

Following comments by the Panel of Experts, a review of the drainage system in relation to the abutment shear keys was carried out resulting in the adoption of an improved grout curtain and drainage system on the right (west) bank of the river. The panel also provided valuable input and guidance to the consultant on the post-cooling of concrete and the parameters for contraction joint grouting. This led to improvements in site construction practice to maintain progress of the works.

# **TRANSFER TUNNEL**

In the case of the Transfer Tunnel, several issues were addressed by design review and Expert Panel comments. Among these were the methodology developed to identify nondegradable lengths of the tunnel which might be left unlined, the review of cost and programme advantages of omitting up to eight kilometres of concrete lining following the decision to adopt full lining and the identification of portions of the tunnel having good rock quality. The additional hydrofracture and hydro splitting tests carried out in the 'Muela ridge to confirm the consultant's recommendations for the installed length of special water-retaining steel, membrane and reinforced concrete lining were also reviewed. Additionally, the Panel recommended the adoption of bypass adits in the area of the Hlotse and Pelaneng access tunnel intersections to accelerate construction progress associated with the steel bulkhead lining.



This recommendation was not adopted by LHDA, however, as the potential additional cost was considered to outweigh the envisaged time saving.

Separate studies were made of the impact of Kao diamond mine waste tailings disposal upstream of Katse intake. These studies involved review of the consultant's report on the potential effects related to sedimentation of Katse reservoir and the quality of water to be transferred. Preliminary cost estimates of remedial treatment measures which would be required by the GOL Ministry of Natural resources were also reviewed.

# **DELIVERY TUNNEL**

Design activities reviewed for the Delivery Tunnel related to the monitoring of the design and manufacture of the flow measurement equipment, the need for additional lowering control mechanisms for the intake gate, the dewatering equipment and the review of the consultant's recommendations on sedimentation. As a result, rock traps upstream of the tunnel syphons were eliminated and a recommendation made to install a safety boom to protect the 'Muela intake and dam areas.

# **CONSTRUCTION POWER**

Monitoring of operation and maintenance of the Phase IA construction power facilities for the Hololo and Katse systems and of LEC activities in this regard continued without serious interruptions.

### **TELECOMMUNICATIONS**

Monitoring of the operation of the Phase IA LHWP Telecommunications System through LTC continued. The response time by LTC for service interruptions and other subscriber complaints remained unsatisfactory. Many requests for LHDA intervention were received from the consultants and contractors who complained of resulting impacts on their operating efficiency.

### **REPLACEMENT HOUSING**

The Division provided assistance to the Environment Division in organising construction of replacement housing. Progress on the replacement of houses, shops, schools, etc., under the existing transmission lines (Contracts 155 and 158) has stagnated for much of the year, mainly due to lack of

Lesotho Highlands Development Authority

availability of sites. This problem was resolved late in 1994. However, replacement housing for Katse shoreline (Contracts LHDA 174A and B) was given first priority due to the World Bank directive (October 1994) that impounding, scheduled for 1 September 1995, may not commence until all residents within the reservoir have been relocated.

The consultant, in collaboration with the Division, prepared Tender Documents, and called for tenders for Contracts LHDA 174A and 174B as well as for 158D Power lines in the Lejone - Katse area. These tenders were all rejected by the JPTC and the LHDA Board on 16 February 1995 due to high tender prices. All replacement housing has since been on hold pending agreement by all parties of an acceptable and reasonably priced process for construction of the houses.

A small contract (LHDA 171), for replacement housing at 'Muela, was restarted to construct three additional houses following the decision to run the permanent road to the access tunnel through 'Muela Village.

# PHASE IB

Updated cost estimates were prepared for the water transfer components of Phase IB, the Mohale Dam, the Mohale-Katse interconnecting tunnel and the Matsoku Diversion. These estimates were based on the 1993-1994 Planning Studies and the April 1986 Feasibility Study, and made use of the experience gained by the Authority in administering the Phase IA construction.

### MOHALE DAM

The final report covering the dam type selection within the Phase IB Main Works Planning Study was issued for endorsement early in the year. The principal study recommendation was to construct a 150m high concrete face rock fill dam (CFRD) at the Mohale location identified in the Feasibility Study. Approval of this recommendation was given by JPTC in June 1994, further endorsed by the Expert Panel the same month and accepted by IBRD (World Bank) in February 1995.

The geotechnical field investigation of Mohale Dam and the associated report, carried out as part of the Main Works Planning Study, was substantially completed during the year. The long term testing programme, however, still continues. This work was identified and executed as a variation to the original contract. The investigations included examination of the long term durability of the materials recommended in the report for use as concrete or rockfill aggregate within the proposed dam works or associated structures. A series of small test quarries were also developed to recover aggregate for on-going field exposure and standard and long term concrete tests.

Following approval of selection procedures by the JPTC, a shortlist of four international joint ventures were selected as prospective consultants for the design with an option for construction supervision of Mohale Dam. Four pre-qualified RSA consulting groups were also selected by the JPTC. Concurrently, a Request for Proposal (RFP) document for the relevant consultancy services contract was prepared. Formal approval of the document was obtained from JPTC and subsequently from the IBRD on 23 March 1995, allowing LHDA to issue the formal RFP documentation at the end of the formal reporting year with a planned submission date of early June 1995.

#### MOHALE TUNNEL

The RFP for the Consulting Services Contract for the Mohale tunnel was prepared and, following approval by JPTC, was issued in early June to four shortlisted joint ventures. After discussions with JPTC in September 1994 to ratify the procedures, evaluation of the proposals took place over a period of three months. Following the approval of the LHDA Executive, the JPTC and IBRD as the funding agency for international currencies, negotiations with the recommended consultant took place in March 1995 with a view to appointing them to commence tender design early in the next reporting year.

#### MATSOKU DIVERSION

An RFP for the design of Matsoku Diversion was drafted during the first half of the year and revised during the third quarter following the decision to restrict eligibility for the services contract to regional consultants. Following approval by JPTC, the document was issued to the shortlisted consultants with a proposal submission date of 3 March 1995. Technical and financial evaluation in accordance with agreed procedures to select the preferred candidate was in progress at the end of the reporting year.



# STUDIES AND ENGINEERING DESIGN (CONTINUED)

#### TELECOMMUNICATIONS

An RFP for Contract LHDA 1018 – Phase IB Consultancy Services for Communication System was under preparation for issue later during 1995.

### CONSTRUCTION POWER

An RFP for Contract LHDA 1014 – Phase IB Consultancy Services for Construction Power – was issued and four proposals received. These were under adjudication for an award by the middle of July 1995.

### RESETTLEMENT

Planning and Design division provided assistance to the Environment Division in the evaluation and contract negotiations of the RFP for the Phase IB Resettlement and Development study. This took place in the second half of the reporting year with the object of awarding a consultant services contract in May 1995.

#### IMPLEMENTATION OF OPERATIONS DEPARTMENT

The Operations and Maintenance Specialist (OMS) joined LHDA on 25 August 1994 after the award of Contract LHDA 554 to Manitoba Hydro. Two major tasks under the Contract were completed and the following reports issued and subsequently approved by the Executive and JPTC.

- Report on Organisation and Staffing for Operations.
- Report on Recruitment and Training of Operations Staff.

Advertisements were placed in the local newspapers for the recruitment of technicians for training under the implementation plan for Operations Department. The response was very encouraging and about 70 good applications were received. The screening and arrangements for interviews with the selected candidates is currently in progress.

Protracted negotiations were held with EU and ODA on finalising the RFP document for the Contract LHDA 538A – Training Utility (with EU General Conditions). Derogations for the use of EU funds for a part of the training to be carried out in RSA were also secured. The document is to be issued for tendering by the end of April 1995. As a safeguard against last minute difficulties in securing funds from EU, a similar RFP document was prepared for Contract LHDA 538B – Training Utility based on World Bank General Conditions.

### ORGANISATION AND MANPOWER STUDY

The study is covenant to the World Bank loan. The Terms of Reference were drafted and discussed with both the World Bank and the JPTC. RFPs were issued, proposals received and the evaluation process in coordination with JPTC completed in time to put the contract in place, with the study commencing on 5 October 1994. The winning bid was submitted by the Snowy Mountains Engineering Company of Australia in association with Price Waterhouse Meyernel of RSA.

# ECONOMIC IMPACT OF LHWP

The study is a requirement of the IBRD for financing of Phase IB. Terms of Reference for the study were finalised and a Prequalification Request was sent out to a number of firms both nationally and regionally before processing a shortlist. Bids were received in September 1994.

An RFP was prepared and approved by the JPTC and the IBRD. Five firms pre-qualified and were sent the RFP. Three proposals were received and the evaluation process commenced in December with the finalisation and approval of the evaluation procedures by the relevant parties. The contract for the study is not yet in place. The econometric part of the study is being handled by a sole-sourced consultant who was instrumental in developing the macroeconomic model of Lesotho under the sponsorship of the Central Bank of Lesotho. The process of finalising his sponsorship was completed and the World Bank agreed to finance his contract.

#### ROYALTIES

The Royalties Committee was established and is made up of Lesotho and RSA representatives under the auspices of JPTC as per the Treaty. Members of the committee are drawn from the JPTC (RSA), Hydrology Section, TCTA and LHDA Economics Section. The first meeting was held early in October and a programme of monthly meetings has been organised.



#### IMF

The IMF team paid visits to LHDA as part of their annual country missions to monitor the Enhanced Structural Adjustment Programme with Lesotho and requested the latest Capital Expenditures of the Project for both Water Transfer and Hydropower components. Economics Section provided core figures for the mission, for Lesotho's Balance of Payments. This information was broken down into expenditure on both Imported Goods and Services, and Local Goods and Services categories.

Forecasting multipliers for data needed by the IMF, which are sourced from WEFA in the United States of America, are the responsibility of Economics Section.

#### POWER IMPORT/EXPORT AGREEMENT

A follow-up meeting with ESKOM on the next plan of action between Lesotho (LHDA/LEC) and RSA (ESKOM) was initiated during the month of June. The Committee discussing the agreement for 'Muela power import and export met, and major discussion has begun on the Transmission Report submitted by ESKOM. Meetings are held every three months.

# PHASE IB ADVANCED

# INFRASTRUCTURE – ACCESS ROADS

#### Contract 2000 – Construction of Mountain and Mobale Access Roads

The construction contract was awarded in October 1994. Construction is scheduled to take 30 months.

#### Contract LHDA 1002 – Maseru Bypass and Rebabilitation of Masianokeng to St Michaels Road

Proposals for design services were received in December 1994. It is anticipated to award the design contract in May 1995. The design period is nine months. Construction is expected to take 18 months.

### Contract LHDA 1001 – Mobale Advance Infrastructure

The planning and design contract for Mohale Advance Infrastructure was awarded in January 1995. The design is scheduled to take 12 months. Construction is scheduled for 18 months.



The Intake Tower Structure.





# **ROYALTY HYDROLOGY STUDIES**

Institute of Hydrology Wallingford has been employed on the review of the hydrology of the LHWP – Contract LHDA 557 study for the ultimate production of the Royalty Hydrology.

Services of the Hydraulic Research were sought to correct problems associated with calibration of the weir on the Senqu River at Whitehill under the sub-consultancy of the Institute of Hydrology.

### WATER RESOURCES MANAGEMENT STRATEGY

The VO to the existing contracts with LHDA to execute the Water Resources Management Strategy has been abandoned in favour of transferring the contract to Government due to taxation problems.

Revised TOR for the Water Resources Management Strategy was prepared with assistance from the World Bank.

# **ROYALTY COMPUTATION**

Royalties work group was established in August 1994 comprising members from LHDA Finance, Treasury, Water Resources and Information Systems Division on the Lesotho side, and JPTC – RSA and TCTA on the RSA side.

A programme of tasks has been produced by the work group and agreed upon. A seminar was conducted on the 9 February 1995 for the working level individuals of the work group to equip them with the basic knowledge for the computation of royalties.

# RESERVOIR OPERATIONS AND MANAGEMENT

A stochastic model for reservoir operation and management is being developed to add user interface and graphics support.

# **ROUTINE WORK**

A campaign to collect data and maintain and supervise hydro-metric network is continuing to ensure more reliable data.

Updating of database for inclusion of new data and for revising suspicious historic records is continuing in collaboration with DWA/RSA as an input to Contract LHDA 557.



The Red-Hot Poker (Knipbofia northiae) is unique to the bigh altitude areas of Lesotho and is the largest of the species.



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# LENVIRONMENT

# **RURAL DEVELOPMENT**

Detailed design work for infrastructure projects (i.e. Feeder Roads, Construction Communities and Village Water Supplies/Sanitation) was undertaken and completed for the first two projects, viz Contract LHDA 150 A,B,C and Contract LHDA 531.

Five nursery beds were constructed to give a capacity for production of 100 000 seedlings. Over 10 000 trees were planted as part of compensation and tree planting day activities.

An irrigation system for Sentelina was designed. Two systems at Lejone and Beresi became operational. Cropping for highland maize seed, potatoes and cabbages was continued with more farmers.

A fisheries consultant from the Institute of Ichthyology, Grahamstown, RSA commenced work on fish sampling and inventory taking.

Communities around the Katse local catchment area were mobilized to participate in an additional Range Management Area. A vegetation survey in Katse area was undertaken to establish the carrying capacity. One hundred and sixty cows and 24 heifers were brought to 4 bulls. Architectural designs for the Malibamats'o RMA headquarters were prepared.

A long-term management contract for the Rural Training and Income Generation Programme was entered into with Training and Rural Development Consultants Ltd in February. Training undertaken in March included literacy (437), building (205), entrepreneurial studies (103), poultry farming (97), horticulture (60), knitting (65), sewing (31).

Requests for proposals to undertake design work for the Katse and 'Muela information centres were prepared.

Workshops at which participatory planning sessions were undertaken with the affected communities were conducted at Lejone and Mallane. On the spot planning was undertaken for Rafanyane and Thibeli villages.

# **BASOTHO PARTICIPATION**

### ASSOCIATION; COOPERATIVES; COMPANIES.

#### Hatooa-Mose-Mosali (HMN)TY

The backward linkage with Ithabeleng Multi-Purpose Co-op is fully operational and provides all of the HMM requirements for spun yarn. Hegoats have been acquired to be donated to Ithabeleng Multi-Purpose Society to improve the breeding strain. A donation of M140 000 has been received from MMU for the construction of a workshop and showroom. A donation of M8 000 from Canada Fund has been set aside to purchase cut stone. A new market has been identified for various products.

#### Bosiu-Bosele-Mosali Bokong

Ten members benefited from advanced training in sewing at Thaba Rural Skills Training Centre. All 28 members received basic training in sewing, embroidery, knitting and silk-screening, and a M40 000 donation was received from MMU to purchase sewing machines and fast food trailers. During training M5 000 was mobilised from the sale of articles as a counterpart contribution to donated funds from MMU.

#### Phahamang Basali at Ha Lejone

Basic training in sewing and knitting has been completed and members continue to train each other in handicrafts such as pottery and grasswork, etc. Through LHDA assistance a MMU donation of M60 000 has been made for the construction of a showroom. M6 000 has been mobilised from the sale of crafts, as a counterpart contribution. Progress has been made with the local Chief on the acquisition of a suitable site.

### Itbabeleng Multi-Purpose Society at Ha Soai

The construction of the workshop built with funds donated by MMU is 90% complete. Goats for improving breeding stock have been received from Hatooa-Mose-Mosali TY, as noted above.



# ENVIRONMENT (CONTINUED)

### Kboblonts'o Pony Trekking Association Bokong

A donation of M26 000 was received from MMU for the purchase of saddlery and for training in horse management and tourism related skills, and five members have so far benefited from this training. M2 000 was mobilised as a counterpart contribution to MMU – donated funds.

# Khokhoba Nursery School

Rules, regulations and teaching guides have been developed for the nursery school, and parents have contributed M5 000 for the schools construction.

# Mutton Sheepfarmers Association

A stock fattening programme has been embarked on.

### COMPENSATION

Fodder compensation of more than 730 tonnes was delivered to six communities whose range land was taken by the Project. About 870 tonnes of maize and 25 tonnes of beans were distributed to over 1 439 households in both Katse and 'Muela local catchments. Cash payments were made throughout the year in lieu of small parcels of land, gardens and trees.

A first draft of the proposed amendment to the Phase IA Compensation Policy was produced in March. A second socio-economic census was under preparation and is to be pre-tested.

Tenders for construction of replacement houses under the powerlines for Contracts LHDA 155 and 158 were issued in February 1995. Tenders for construction of houses under Phase I of the Katse Shoreline Resettlement Project were issued in February 1995. Community mobilization was undertaken and six kraals were completed.

# NATURAL ENVIRONMENT AND HERITAGE

Environmental awareness was continued in the Project area. Key achievements included the production of an English version of a brochure. Over 300 copies have been distributed. A Sesotho version is under preparation. Education was given to herdboys and school children, while cleaning campaigns were successfully conducted. Traditional healers were sponsored in their annual conference which included a trip to the Katse Dam area.

A germplasm collection exercise was undertaken in order to record the plant materials to be inundated by Katse Dam. A long-term biological monitoring contract is under preparation.

Monthly sampling for water quality analysis was continued in all stations in the Phase IA area. The erosion/sedimentation monitoring programme could not start off, but a sampling station was constructed in phase IB and will be commissioned in April 1995.

Hydroseeding of eroded post-construction areas was successfully completed.

Baseline studies for archaeology and palaeontology monitoring of construction work sites were completed. No major fossils were found in the tunnels.

Additional equipment for the Geographical Information System was procured in order to improve the analytical capability of the system.

Monitoring of construction work for environmental and social impacts continued for all contracts. Annual environmental and health and safety audits were conducted as planned.



# PUBLIC HEALTH

The Public Health teams stationed in the Project area continued their outreach programmes. In the Lejone area, health education was provided to three primary schools and 32 students and 21 teachers were trained as trainers for STD/HIV-AIDS education. At Katse the focus was on community health workshops for village health workers and traditional birth attendants. Three schools were provided with VIPs and 11 VIPs were completed by 31 local latrine builders. Two vaccination campaigns were conducted at which 269 children under five years old were immunized. Over 25 000 condoms were distributed. In Butha-Buthe, two Community Health Committees were established and trained. Health education was provided to nine schools and 72 health and safety inspections were done on construction sites.

The Leribe Trauma Unit saw a total of 2 209 outpatients (85 Project related). Intensive Care admissions were 164 in total (77 Project related). Most common causes for admission were road traffic accidents (26%), surgical (24%), medical emergencies (20%), industrial injuries (16%) and assaults (10%). A total of 524 operations were performed. Physiotherapy was received by 600 patients (13 Project related).

# PHASE IB

The negotiated contracts for baseline studies in Water Quality, Biology, Epidemiology and Resettlement & Development were approved by the LHDA Board, JPTC and World Bank. A first draft of the EIA document was prepared.

# CARTOGRAPHY AND SURVEYING

Surveys were completed for 11 fields at 'Muela, 37 sites at Katse, 29 archaeological sites in Butha-Buthe, 163 tree clusters and cross sectioning for a crump weir.

The LHWP map 1:300 000 was revised and draughting continued.



Horseman on the left bank of Katse Dam.



# HUMAN RESOURCES

# PERSONNEL

In March 1994 LHDA had 312 members of staff. In March 1995 the strength had moved to 378 and stood as follows:

Division	Locals	Expatriates	Total
Executive	19	2	21
Treasury	25	6	21
Environment	67	3	31
Administration	37	. 3	70
Finance	29	-	5/
Legal	8	4	33
Human Resources	15	1	9
Construction	23	10	16
Planning & Design	63	10	33
Infrastructure	10	0	69
Water Resources	11	-	10
Public Relations	25	1	12
Information Systems	25	_	25
intornation systems	11	1	12
TOTAL	343	35 3	378

# TRAINING

Modules 3 to 10 of Management Development Programme were conducted.

Development Programmes for counterparts were developed.

1994/95 Training was implemented.

A successful in-house training in telephone etiquette for switchboard operators was run from 16 - 17 October, 1994.

Successful workshops on communications for secretaries were run from 14 - 19 November, 1994.

Manager/secretary workshop was conducted on 28 February, 1995.

A course for office assistants was conducted from 16 - 17 February, 1995.

A course on defensive driving launched on 18 February, 1995.

Training conducted during the period of reporting is summarised hereunder:



First concrete pour of 'Muela Dam.

DIVISION

NUMBER

Administration	20
Construction	29
Environment	22
Finance	42
I mance	20
Human Resources	19
Information Systems	18
Infrastructure	10
Legal	9
Planning & Design	20
Public Relations	20
Treasury	21
Water Resources	33
Frances	24
Executive	7
TOTAL	273



# ) PROJECT FINANCING

# WATER TRANSFER - PHASE 1A

### CONTRACT 124/5 – ADDITIONAL TUNNEL LINING

Following the identification of a currency mismatch arising from Contract 124/5 additional tunnel lining work, all the off-shore banks who are part of the Trust Security Structure were approached to provide further finance in various European currencies in the order of M500 million equivalent. A delegation consisting of LHDA and JPTC officials held negotiations with the relevant banks which resulted in the agreement that the existing export credit as well as commercial facilities should be amended to accommodate additional amounts and extended loan dates. The Government of RSA was satisfied with the terms of the export credit facilities but had reservations as to the terms of commercial loans, and in this connection follow-up negotiations are proceeding aimed at having the additional facilities operational by the middle of the year. To assist with legal review of these amended facilities the services of Clifford Chance, the LHDA legal advisors based in the UK, were engaged under a World Bank funded short-term contract. The off-shore banks have retained the services of Allen & Overy, who were involved with the original loan processing.

Further funding required for the supervision of work will be obtained from the World Bank under the Phase 1A facility which in the overall sense will not be fully utilised. Arrangements are underway to cancel that portion which is not committed so as to eliminate the commitment charge related thereto. It has been found necessary to extend the completion date of this loan in line with what is being proposed with other banks.

### CAPITAL MARKET FUNDING

A public relations exercise was carried out jointly by LHDA and TCTA for the investors and banks who support the LHWP bond issue so as to create the necessary confidence by demonstrating to that group of financiers how well their money was being put to use. The exercise involved a guided tour of all key project installations from Katse Dam to Clarens outfall. No substantial issues were made into the capital market during the period under review for the simple reason that rates were not very favourable. New strategies are being considered to reactivate this funding programme in order to reach the critical mass of R1.5 billion.

# 'MUELA HYDROPOWER PROJECT

#### **CONTRACT LHDA 129A**

A decision was made at the Government level to forego the ADB funding secured for Contract LHDA 129A, when it proved difficult for the differences of opinion on the procurement issues to be reconciled. In order to permit the contract to start, alternative funding arrangements were entered into with Lesotho Bank culminating in the signing of an all-inclusive loan agreement for an amount of M200 million in December 1994. A parallel process of securing export credit and concessionary finance was initiated in order to alleviate the strain that may be placed on the country's foreign reserves. Offers of finance have been received from European Export Credit Agencies and are being appropriately pursued to become available for drawdown by the middle of the year.

#### **CONTRACT LHDA 129B**

The facility of M32 million provided by DBSA became operational during the year. The identification of projects which could be considered for funding out of the portion remaining from the allocation of M45 million that DBSA made to MHP is currently in process.

The EIB Risk Capital facility will become effective as soon as the remaining conditions precedent are satisfied, particularly the establishment of the Power Sector Committee as recommended by LHDA/LEC Interface Study.

#### **CONTRACT LHDA 136**

The Government-to-Government Financing Protocol was signed in December 1994 by the French treasury representative and Lesotho's Charge D'Affaires in Bonn, to make available a soft loan to over 60% of the contract costs.



# PROJECT FINANCING (CONTINUED)

The related implementation agreement, the purpose of which is simply to activate the Protocol, is soon to be signed by the Minister of Finance. The Buyer Credit to finance the remainder of the costs has been negotiated and should be ready for signing, again by the Minister of Finance, to allow the contract to commence in June.

# PHASE IB FUNDING

# MASERU BY-PASS AND MASIANOKENG TO ST. MICHAEL ROAD

An amount of M22 million has been raised from Lesotho Bank to finance the Lesotho portion of costs relating to the Maseru by-pass road, which is part of the Phase IB advance infrastructure.

# PHASE IB CMA FINANCING

An invitation for submission of offers was sent to all major banks in the CMA for provision of financing amounting to M1 billion. This funding will be used to meet the expenditures to related infrastructure activities as well as environmental studies. A larger and more permanent facility will be raised closer to commencement of the construction activity.

# PHASE IB FINANCIAL ADVISORS

In accordance with the instructions of the Phase IB Finance Committee, the process of recruiting financial advisors whose mandate would be to assist LHDA in the mobilisation of foreign funding amounting to M1 billion equivalent, was set in motion. After putting together a shortlist and receiving the necessary approvals, the following merchant banks were invited to submit proposals:

- West Merchant Bank
- Hill Samuel
- Morgan Grenfell
- Morgan Stanley/Standard Merchant Bank
- Barclays de Zoete

When the evaluation of the offers was completed, Morgan Grenfell emerged as the preferred bidder, and approval was given to LHDA for negotiations to proceed and contract concluded accordingly.

The World Bank has agreed to make funding available for this contract under the Phase 1A loan agreement.



Katse Dam wall at night.



# FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995

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# DIRECTORS' APPROVAL

The financial statements which appear on pages 27 to 40 were approved by the Board of Directors on 28 June 1995 and are signed on its behalf by:

Galela.

B.T.Pekeche CHAIRMAN

tocane

T. Putsoane ACTING CHIEF EXECUTIVE



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# REPORT OF THE INDEPENDENT AUDITORS TO THE MEMBERS OF THE BOARD OF THE LESOTHO HIGHLANDS DEVELOPMENT AUTHORITY

We have audited the annual financial statements set out on pages 27 to 40.

# Respective responsibilities of directors and auditors

These financial statements are the responsibility of the Authority's directors. Our responsibility is to report on these financial statements.

# Basis of opinion

We conducted our audit in accordance with generally accepted auditing standards. These standards require that we plan and perform the audit to obtain reasonable assurance that, in all material respects, fair presentation is achieved in the financial statements. The audit included an evaluation of the appropriateness of the accounting policies, an examination, on a test basis, of evidence that supports the amounts included in the financial statements, an assessment of the reasonableness of significant estimates and a consideration of the appropriateness of the overall financial statement presentation. We consider that our audit procedures were appropriate to enable us to express our opinion presented below.

# Opinion

To the best of our knowledge and belief and on information supplied to us, the financial statements reflect a true statement of the assets and liabilities of the Authority at 31 March 1995.



KPMG PEAT MARWICK CHARTERED ACCOUNTANTS (Lesotho) 29 June 1995.

# STATEMENT OF ACTIVITIES AND ACCOUNTING POLICIES FOR THE YEAR ENDED 31 MARCH 1995

# STATEMENT OF ACTIVITIES

The Authority is entrusted with the responsibility for the implementation, operation and maintenance of the Lesotho Highlands Water Project as defined in the Treaty on the Lesotho Highlands Water Project signed by the Government of the Kingdom of Lesotho and the Government of the Republic of South Africa on 24 October 1986.

The Authority is also conferred with general functions in relation to water resources, electricity, education and training of its employees, monitoring activities and land transactions.

The Authority is presently engaged upon construction of Phase IA and the planning and construction for Phase IB of the Lesotho Highlands Water Project. At this time progress on Phase IA is satisfactory and the Authority envisages completion in 1998. The principal physical features of Phase IA in Lesotho are:

- a) A 182m high concrete arch dam on the Malibamats'o River at Katse.
- A 45km transfer tunnel north from the Katse reservoir to the Hydropower complex at 'Muela.
- c) A 72 MW underground Hydropower complex at 'Muela.
- d) A 17km delivery tunnel north from 'Muela to the Mohokare (Caledon) River, which forms the border between the Kingdom of Lesotho and the Republic of South Africa. This tunnel will link up through an underground syphon at this location with the South African portion of the transfer tunnel system.
- Associated infrastructure, including construction of new roads, upgrading and rehabilitation of existing roads, three major road bridges, upgrading of border crossing facilities and new river crossings, camps, communications, power supply, communication systems, etc.
- f) Associated conservation, environmental and rural development activities.

The principal physical features of Phase IB are:

- a) The 146m high Mohale Dam.
- b) A 30km transfer tunnel from the Mohale intake to the Katse reservoir.
- c) The Matsoku Weir and a six kilometre diversion tunnel from the weir to the Katse Reservoir.
- Associated infrastructure, including construction of new roads, upgrading and rehabilitation of existing roads, camps, communications and power supplies.
- Associated conservation, environmental and rural development activities.

# PRINCIPAL ACCOUNTING POLICIES

The financial statements are prepared on the historical cost basis and incorporate the following principal accounting policies:

# 2.1 CAPITAL WORK-IN-PROGRESS

Costs incurred on the implementation of the Lesotho Highlands Water Project, including costs incurred prior to the establishment of the Authority on 24 October 1986, are capitalised and shown as fixed assets on the Balance Sheet of the Authority. As construction will not be completed before 1997, no depreciation is charged.

Costs comprise all attributable costs of bringing the asset or group of assets to working condition for their intended use, and include inter alia:

- all costs of investigations, surveys, feasibility studies, engineering studies, preparation of designs, construction, construction supervision, procurement and commissioning;
  - the establishment and administration costs of the Authority;

b)



# STATEMENT OF ACTIVITIES AND ACCOUNTING POLICIES FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# PRINCIPAL ACCOUNTING POLICIES (CONTINUED)

- c) the costs of any land or interest in land, and any improvements to such lands;
- d) the costs of measures taken, in order to ensure that members of local communities in Lesotho are not adversely affected by Project-related activities, including the cost of providing compensation;
- all finance charges (including interest payments, financing and foreign exchange cover charges and other charges) relating to finance raised to fund capital expenditure.

All costs incurred are apportioned to one or more of the following activities:

- generation of hydro-electric power in the Kingdom of Lesotho ("Hydropower")
- ii) delivery of water to South Africa ("Water Transfer")
- iii) ancillary developments in the Kingdom of Lesotho ("Ancillary Developments")

The Government of the Kingdom of Lesotho is, by way of Cost Related Payments, responsible for the costs of the Hydropower and Ancillary Development Activities. The Government of the Republic of South Africa is, by way of Cost Related Payments, responsible for the costs of the Water Transfer activities.

#### 2.2 INVESTMENTS

Investments are stated at market value.

### 2.3 FOREIGN CURRENCIES

Assets and liabilities in foreign currencies are translated to Maloti at rates of exchange ruling at the end of the financial year or, where applicable, at forward cover rates.

Transactions in foreign currencies are translated to Maloti at rates of exchange ruling at the date of the transaction or, where appropriate, at forward cover rates. Premiums on forward exchange contracts are amortised over the period of the contract.

Under the terms of the Treaty covering the project and the Ancillary Agreement to the Treaty of 13 November 1991, the Government of the Republic of South Africa is obligated to effect debt service payments on all loans guaranteed by it.

The forward cover contracts have been effected by the Government of the Republic of South Africa.

Exchange differences are allocated to the cost of the related activities.

### 2.4 COST RELATED PAYMENTS

Cost Related Payments from the Governments of Lesotho and South Africa are recognised and credited to the Capital Fund on the date due for payment.

Cost Related Payments become due when the relevant cost falls due for payment; provided that Cost Related Payments may be paid directly to contractors or consultants, or, wher costs have been financed by way of loans, shall be due for payment at the time such loans become redeemable.

Funds obtained on concessionary terms for the Water Transfer component are, for the purpose of Cost Related Payments, deemed to be loans at the interest rate and redemption terms applicable to loans of the International Bank for Reconstruction and Development.

#### 2.5 ROYALTIES

Royalties arising from the Lesotho Highlands Water Project, including advance royalty payments through the Southern Africa Customs Union, accrue to the Government of Lesotho and are therefore not reflected in the financial statements of the Authority.

### 2.6 OTHER INCOME

Other income arising, such as interest earned, exchange gains and miscellaneous income, is credited to the cost of the activity to which it relates.



# BALANCE SHEET AT 31 MARCH 1995

	Notes	1995 M'000	1994 M'000
Assets Employed			
FIXED ASSETS	1	4 643 595	3 304 336
INVESTMENT	2	14 325	14 315
		4 657 920	3 318 651
CURRENT ASSETS			
Advance Payments		128 494	171 256
Other Debtors and Prepayments		82 130	37 658
Cash and Bank		42 410	58 459
		253 034	267 373
CURRENT LIABILITIES			
Contracts' Payables and Accruals	93 1	293 774	228 289
Retentions		104 497	84 373
Other Payables and Accruals		75 541	52 332
Current Portion of Long Term Liabilities	6	41 440	355 984
		515 252	720 978
NET CURRENT LIABILITIES	9	(262 218)	(453 605)
		4 395 702	2 865 046
FINANCED BY:			
CAPITAL FUND	3	967 555	704 876
GOVERNMENT OF LESOTHO FUND	4	111 050	70 127
GOVERNMENT OF SOUTH AFRICA FUND	5	3 408	—
LONG TERM LIABILITIES	6	2 619 254	1 390 555
FUNDS FROM CAPITAL MARKET	7	694 435	699 488
		4 395 702	2 865 046



# STATEMENT OF CHANGES IN FINANCIAL POSITION FOR THE YEAR ENDED 31 MARCH 1995

# SOURCE OF FUNDS

	1995	1994
	<b>M'000</b>	M'000
Government of Lesotho	86 432	10 51 2
Government of Republic of South AG	211 673	10 513
Net Increase in Long Term Link link	1 228 699	112 25/
Increase in Net Current Liabilities	_	09.579
Funds from Capital Market		94 258
a dom Capital Market		699 488
	1526 804	994 095
USES OF FUNDS		
Expenditure on Capital Work in Progress		
Administration	68 178	60 520
Construction	834 081	558 846
Engineering	81 262	83 / 52
Environment	17 312	16 253
Financing	328 346	260 708
		200708
	1 329 179	979 780
Investment	-	14 315
Decrease in net current liabilities	191 387	
Decrease in capital market funds	6 238	-
	1 526 804	994 095



# Notes to the Financial Statements for the Year ended 31 March 1995

# **7 FIXED ASSETS**

# CAPITAL WORK IN PROGRESS

	Balance	Increase	Balance
PHASE 1A	1/4/94	During Year	31/3/95
Hydropower	M'000	M'000	M'000
Administration	16 986	4 158	21 144
Construction	18 750	46 902	65 652
Engineering	52 418	13 417	65 835
Environmental	4 214	(826)	3 388
Financing	1 650	1 1 2 8	2 778
	94 018	64 779	158 797
Ancillary Developments			
Administration	7 540	313	7853
Construction	86 587	(37)	86 550
Engineering	7 140	788	7 928
Environmental	4 417	4 284	8 701
Financing	3 930	(2006)	1924
	109 614	3 342	112 956
Water Transfer			
Administration	265 838	63 629	329 467
Construction	1 822 291	770 626	2 592 917
Engineering	299 839	64 508	364 347
Environmental	40 973	13854	54 827
Financing	667 312	339 304	1 006 616
	3 096 253	1 251 921	4 348 174
PHASE 1B			
Water Transfer			
Administration	_	78	78
Construction	-	16 590	16 590
Engineering	4 451	2 5 4 9	7 000
18 - 19 - 19 - 19 - 19 - 19 - 19 - 19 -	4 451	19 217	23 668
Total Fixed Assets	3 304 336	1 339 259	4 643 595



# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# 7 FIXED ASSETS (CONTINUED)

- i) Included in financing of Phase 1A Fixed Assets is M56 004 265 representing the finance costs attributable to funds obtained on concessionary terms of the Water Transfer Component, deemed to be loans with interest rates and redemption terms applicable to loans of the International Bank for Reconstruction and Development.
- Phase 1B costs to date relate wholly to water transfer and are a Republic of South Africa cost responsibility.

The above allocation of costs between Hydropower, Ancillary Developments and Water Transfer is subject to agreement by the parties to the Treaty.

# 2 INVESTMENT

The Authority holds zero coupon United States Treasury Bonds, at a cost of US\$3 983 808. The Bonds mature between August 1995 and February 2005, at a value of US\$7 208 000.

The bonds were purchased to provide security for a loan, obtained from the European Investment Bank, to finance the 'Muela Hydropower component of the Project, per note 6 (vi).

# CAPITAL FUND

	Government of Lesotho M'000	Government of South Africa M'000	Total M'000
Balance at 1 April 1994 Reversal of prior year transfers	144 173	560 703 (5 091)	704 876 (5 091)
Cost Related Payments: Hydropower and Ancillary Development Water Transfer	56 097	211 673	56 097 211 673
Balance at 31 March 1995	200 270	767 285	967 555

Total Water Transfer costs at 31 March 1995 amount to M4 371 842 000 of which M767 285 000 has been paid as shown above.

The balance of M3 604 557 000 will be discharged through future cost related payments.



Total Hydropower and Ancillary Development costs at 31 March 1995 amount to M271 753 000 of which M200 270 000 has been paid as shown above.

The balance of M71 483 000 will be discharged through future cost related payments.

# Notes to the Financial Statements for the Year ended 31 March 1995 (Continued)

# GOVERNMENT OF LESOTHO FUND

	1995 M'000	1994 M'000
Balance at beginning of year Reversal of prior year transfers to Capital Rund	70 127	17 069
Amounts provided by the Government of Lesotho	93 434	41 601 23 356
Net Financing Income Accrued	8 905	15 422
Cost Related Payment paid to Government of South Africa	1 683	-
Cost Related Payment received from Government of South Africa	(7 002)	(4 843)
Cost Related Payments on Hydropower and Ancillary Developments transferred to Capital Fund	(56 097)	(22 478)
Balance at end of year	111 050	70 127
This Balance comprises:		
Funding of Water Transfer Costs (i)	44 586	
Concessionary Finance Income (i) Hydropower Funding contributed	27 495 38 969	
	111 050	

(i) These sums will be discharged by future Cost Related Payments by the Government of South Africa.

The total amount provided by the Government of Lesotho during the period is analysed by original source as follows:

# ANALYSIS OF FUNDS PROVIDED BY THE GOVERNMENT OF LESOTHO

	Balance 1 April 1994 M'000	Increase During Year M'000	Balance 31 March 1995 M'000
European Development Fund	52 995	46 715	99710
European Investment Bank	7 132	1 661	8 793
Government of France	70 723	-	70 723
Government of Lesotho	24 425	20 562	44 987
International Development Association	25 311	_	25 311
Overseas Development Administration	8 462	7 998	16 460
United Nations Development Programme	2 664		2 664
U.S.A.I.D.	612	-	612
Centre for International Migration	764		764
Government of Ireland	375	_	375
Svenska Handelsbanken		16 498	16 498
	193 463	93 434	286 897

The terms and conditions on which these amounts have been provided have not yet been determined.



# Notes to the Financial Statements for the Year ended 31 March 1995 (Continued)

# 5 GOVERNMENT OF SOUTH AFRICA FUND

			1995 M'000	1994 M'000
	Revers	al of prior year transfers to capital fund	5 091	_
	Cost re transfe	lated paym <mark>ents</mark> during the year on water r paid to:		
	- Gove	rnment of Lesotho	7002	1 - 1 -
	– Third	Parties	204 671	4 843 107 414
	Cost re.	lated payment received from Government		
	of Leso	tho	(1683)	121
	Cost rel	ated payments on water transformed	10 ISO	
	to Capi	tal Fund		
	Sharoosala a		(211 673)	(112 257)
	Balance	e at end of year	2 400	
			5408	-
	This bal	ance comprises funds contributed		
	for Hyd	ropower and Ancillary Developments		
	and will	be discharged by future cost related		
	paymen	its by the Government of Lesotho.		
6				
0	LONG	TERM LIABILITIES		
	FACILII COVER	TES FOR WHICH FOREIGN EXCHANGE FORWARD	1995	1994
		CONTRACTS HAVE BEEN EFFECTED	M'000	M'000
1	i) Fa	cilities specific to Katse Dam		
	an	d appurtenant works, Transfer Tunnels		
	an	d Delivery Tunnel South.		
	BA	NQUE NATIONALE DE PARIS		
	Exp	bort Credit Loans		
	a)	Katse Dam	67 124	21 112
	b)	Transfer Tunnels	194 614	118 446
	C)	Delivery Tunnel South	69 433	57 656
	Con	mmorcial Loans		27 090
	d)	Katse Dam		÷
	e)	Transfer Tunnels	21 116	21 250
	Ð	Delivery Tunnel South	32 508	32 714
	10.20470.0	- onvery runner south	15 353	15 450
1	CRI	EDIT LYONNAIS		
	Exp	ort Credit Ioan		
	g)	Katse Dam	182 750	100.005
			104 /30	100 897
	Con	nmercial Loan		
1	h)	Katse Dam	57 483	16 010



# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# **6** LONG TERM LIABILITIES (CONTINUED)

		1995 M'000	1994 M'000
DRESDNER BANK AG		and the second second second	
Export Credit Loans			
i) Katse Dam		58 317	28 576
J) Transfer Tunne	els	122 854	73 412
K) Delivery Tunne	el South	47 009	36 574
DRESDNER BANK LUXEM	IBOURG SA		
Commercial Loans			
D Katse Dam		14 406	14 469
m) Transfer Tunne	ls	21 286	21 379
n) Delivery Tunne	el South	10 058	10 102
HILL SAMUEL BANK LIMIT	ГЕD		
o) Export Credit Lo	Dan	243 331	160 066
p) Commercial Loa	in	55 525	44 774
The above loans are 1 Katse Dam, Transfer 7 Tunnel South.	multi-contract and relate to Tunnels and Delivery		
KREDITANSTALT FUR WIE	DERAUFBAU (KFW)		
Export Credit Loans			
q) Katse Dam		20 122	14 161
r) Transfer Tunne	els	61 114	36 229
s) Delivery Tunne	el South	23 296	18 035
Commercial Loans			
t) Katse Dam		7 203	7 235
u) Transfer Tunne	ls	10 644	10 690
v) Delivery Tunne	el South	5 028	5 051
COMMONWEALTH DEVELO	DPMENT CORPORATION		
w) Commercial Loa	an	125 850	124 607
The above loan is mult	i-contract and relates to		
Delivery Tunnel South.	innels and		
ii) Facility specific to pr	ovision of communication		



# COMMONWEALTH DEVELOPMENT CORPORATION

Commercial Loan

22 005



# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# 6 LONG TERM LIABILITIES (CONTINUED)

		1995 M'000	1994 M'000
FAC FOR HAV	ILITIES FOR WHICH CONTRACTS FOR PARTIAL EIGN EXCHANGE FORWARD COVER /E BEEN EFFECTED		
iii)	Facility specific to provision of consultancy, training and project preparation.		
	INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT		
	World Bank Loan	293 985	101 546
		1 791 425	1 155 326
	Less provision for unamortised cost of forward cover	403 342	233 844
		1 388 083	921 482

### FACILITIES FOR WHICH FOREIGN EXCHANGE FORWARD COVER CONTRACTS HAVE NOT BEEN EFFECTED

### *iv)* Facilities for provision of Infrastructure and Institutional Support

DEVELOPMENT BANK OF SOUTHERN AFRICA

In rea	spect of		
a)	Southern Access Road	22 675	23 721
b)	Northern Access Road, Northern Portion	151 966	156 542
c)	Katse Bridge	2 373	2 469
d)	Northern Access Road, Southern Portion	55 223	56 483
e)	Border Crossing Facilities	7 976	8 154
Ð	Infrastructure Management	258	304
g)	North End Access Road	43 010	44 304
h)	Katse Village Engineering Works	25 522	26 0 37
i)	Communication System	1 305	1 494
i)	Butha-Buthe Engineering		
1	Supervision Compensation	17 934	18 273
k)	Civil Construction Training Needs		
	Preparation Costs and Accommodation	726	772
D	Civil Construction Training Needs		
	Establishment Cost	174	195
m)	Accounting Systems Computerisation	3124	3 237
n)	Upgrading existing roads	31 302	, 29 112



# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# LONG TERM LIABILITIES (CONTINUED)

			1995 M'000	1994 M'000
v)	Faci	lities for overall project implementation		
	a)	CMA II FACILITY – ABSA CONSORTIUM	_	346 773
	b)	CMA III FACILITY – Standard Bank/First National Bank	105 004	87 712
	c)	CMA IV – ABSA/First Corp.	766 310	_
vi)	Faci	lities for 'Muela Hydropower implementation	n	
	(a)	European Investment Bank	20 124	19 475
	(b)	West Merchant Bank	634	-
	(c)	Development Bank of South Africa	13 966	_
	(d)	Svenska Handelsbanken	3 005	
		Less: Current Portion	2 660 694 <u>41 440</u>	1 746 539 355 984
			2 619 254	1 390 555

#### i) Facilities specific to Katse Dam and appurtenant works, Transfer Tunnels and Delivery Tunnel South.

(Refer to pages 34 - 35)

- a) Repayable in 20 semi-annual instalments commencing at the earlier of six months after the date of delivery of the provisional acceptance certificate or 31 July 1997, and bearing interest at fixed rates.
- b) Repayable in 20 semi-annual instalments commencing at the earlier of six months after the date of delivery of the provisional acceptance certificate or 31 July 1997, and bearing interest at fixed rates.
- c) Repayable in 20 semi-annual instalments commencing at the earlier of six months

after the date of delivery of the provisional acceptance certificate or 31 July 1997, and bearing interest at fixed rates.

- d) Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- g) Repayable in 20 semi-annual instalments commencing at the earlier of six months after substantial completion or 31 July 1997 and bearing interest at fixed and varying rates.



# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# () LONG TERM LIABILITIES (CONTINUED)

- h) Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in 20 semi-annual instalments commencing at the earlier of six months after date of substantial completion of contract or 31 July 1997, and bearing interest at a varying rate.
- Repayable in 20 semi-annual instalments commencing at the earlier of six months after date of substantial completion of contract or 31 July 1997, and bearing interest at a varying rate.
- k) Repayable in 20 semi-annual instalments commencing at the earlier of six months after date of substantial completion of contract or 31 July 1997, and bearing interest at a varying rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- m) Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in 20 semi-annual instalments commencing at the earlier of six months after commissioning or 31 July 1997, and bearing interest at a fixed rate.
- P) Repayable in one instalment on the last business day in June 1997 and bearing interest at a varying rate.
- q) Repayable in 20 semi-annual instalments commencing at the earlier of six months after substantial completion or 31 July 1997, and bearing interest at a fixed rate.
- Repayable in 20 semi-annual instalments commencing at the earlier of six months after substantial completion or 31 July 1997, and bearing interest at a fixed rate.

- s) Repayable in 20 semi-annual instalments commencing at the earlier of six months after substantial completion or 31 July 1997, and bearing interest at a fixed rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- Repayable in one instalment on 30 June 1997 and bearing interest at a varying rate.
- w) Repayable in 28 semi-annual instalments commencing on 30 January 1998 and bearing interest at a varying rate.

# ii) Facility specific to provision of communication systems to the project.

(Refer to page 35)

Repayable in eight semi-annual instalments commencing on 31 January 1997 and bearing interest at a fixed rate.

### iii) Facility specific to provision of consultancy, training and project preparation.

(Refer to page 36)

Repayable in 24 semi-annual and increasing instalments commencing on 1 November 1997, and bearing interest at a varying rate.

### iv) Facilities for provision of Infrastructure and Institutional Support

(Refer to page 36)

- a) Repayable over 20 years commencing 31 March 1993 and bearing interest at 8% p.a.
- b) Repayable over 22.5 years commencing 30 September 1991 and bearing interest at 8% p.a.



Lesotho Highlands Development Authority

# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# LONG TERM LIABILITIES (CONTINUED)

- c) Repayable over 20 years commencing 31 March 1991 and bearing interest at 8% p.a.
- Repayable over 20 years commencing September 1992 and bearing interest at 8% p.a.
- e) Repayable over 20 years commencing 30 September 1992 and bearing interest at 11% p.a.
- Repayable over 10 years commencing 30 September 1993 and bearing interest at 4% p.a.
- g) Repayable over 20 years commencing 31 March 1993 and bearing interest at 8% p.a.
- h) Repayable over 20 years commencing 30 September 1993 and bearing interest at 12% p.a.
- Repayable over 10 years commencing 30 September 1993 and bearing interest at 4% p.a.
- Repayable over 20 years commencing 31 March 1994 and bearing interest at 12% p.a.
- k) Repayable over 13 years commencing 31 March 1993 and bearing interest at 8% p.a.
- Repayable over 10 years commencing 31 March 1993 and bearing interest at 4% p.a.
- m) Repayable over 10 years commencing 31 March 1995 and bearing interest at 4% p.a.
- Repayable over 15 years commencing 31 March 1996 and bearing interest at 6% p.a.

### v) Facilities for Overall Project Implementation

(Refer to page 37)

- a) The CMA II facility was repaid in 1994 and bore interest at varying commercial rates.
- b) The CMA III facility is repayable in ten equal annual instalments commencing on the earlier of the first anniversary of completion of Phase IA of the project or 1 July 1997, and bearing interest at varying commercial rates.
- c) The CMA IV facility is repayable in 20 semi-annual instalments commencing on the earlier of the six months after completion of Phase IA of the project or 1 July 1997, and bearing interest at varying commercial rates.

All of the above loans are guaranteed by the Government of South Africa.

# vi) Facility for 'Muela Hydropower Implementation

(Refer to page 37)

- a) Repayable over 10 years commencing 20 August 1999 and bearing interest at 3% p.a. This facility is secured as stated in note 2.
- b) Repayable in 20 semi-annual instalments commencing 15 December 1997 and bearing interest at 6.85%. This facility is guaranteed by the Government of Lesotho.
- c) Repayable over 17 years commencing 30 September 1998 and bearing interest at 13% p.a. This facility is guaranteed by the Government of Lesotho.
- d) Repayable in 20 semi-annual instalments commencing 15 December 1997 and bearing interest at 8.035% p.a.



# NOTES TO THE FINANCIAL STATEMENTS FOR THE YEAR ENDED 31 MARCH 1995 (CONTINUED)

# FUNDS FROM CAPITAL MARKET

During 1993/94 the Authority initiated the issue of capital market bonds and upon its instructions, Trans Caledon Tunnel Authority (TCTA), as the issuer, issued on LHDA's behalf together with a portion on its own behalf, bonds "in association", the proceeds of which were to be utilised partly by each party. The registered nominal value of the stock is R5 000 million which is guaranteed by the Government of South Africa. The bonds carry a coupon of 12% p.a., payable semi-annually in arrears, and are repayable on 1 December 2005, by the issuer.

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EVELOPMENT AL

OBITI

Details of the nominal value issued and successive issues are undernoted:-

	Total Issue M'000	LHDA Issues M'000	TCTA Issues M'000
Nominal value	862 000	721 558	140 442
Net proceeds inclusive of capitalised finance costs	825 504	694 435	131 069

# FORWARD COVER

All foreign currency denominated loans, except that of the European Investment Bank, Svenska Handelsbanken and West Merchant Bank, are the subject of forward cover.

# CAPITAL COMMITMENTS

Outstanding capital expenditure contracted for at 31 March 1995 amounted to M2 396 million. Finance has been secured as at 31 March 1995 to meet all of these commitments, including current liabilities.

# CONTINGENT LIABILITIES

The Authority has been notified of the intention of various contractors to submit claims for additional costs, currently estimated by them at M165 million, arising from legislative changes in Lesotho, relating to taxation and employment practice.

The Authority is of the opinion that the results of ongoing discussions and representations are likely to substantially set aside such claims.

# TAXATION

In accordance with Section 29(1) of the Lesotho Highlands Development Authority Order (No.23) of 1986, the Authority is exempt from sales tax payable under the Sales Tax Act 1982, tax on any income or profits, transfer duties payable under the Transfer Duty Act 1966, stamp duties payable under the Stamp Duties Order 1972 and any fees payable under the Deeds Registry Act 1967.

# INCOME STATEMENT

An Income Statement has not been prepared as all expenditure and related income for the period has been charged to Capital Work-in-Progress.



