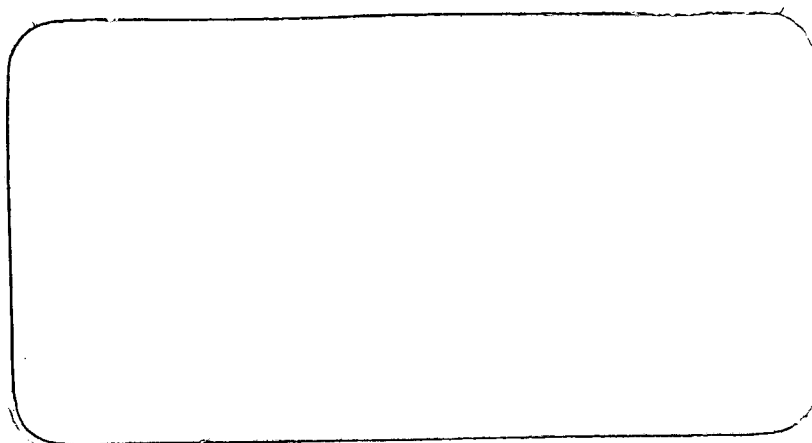




Institute of Geological Sciences

OVERSEAS DIVISION



WC/OR/82/13

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Report on a Visit to Kenya

11-17 June, 1982

by

I.G. Hughes

Report No. 82/13

Diary

Friday 11 June: arrive Nairobi Airport: met by Dr Hackman and briefed by him on the general situation
1400 hours: meeting at BHC with Messrs Crompton and Stump followed by brief discussions with Mr P.C. Duff, Head, SADD, Mr P.H. Charters, SADD and Dr J.R. Goldson, Agriculture Adviser, SADD.

Saturday 12 June: a.m. meeting with Mr J.W. Wachira, Ag. Chief Geologist, Mines and Geology Department followed by discussions with team-members.
Lunch hosted by Dr Hackman for project counterpart geologists at Nairobi Club.

Monday and Tuesday
14 and 15 June: formal review of SM Project at MGD

Wednesday 16 June: a.m. Roundup meeting with Commissioner of Mines and Geology
p.m. informal meeting with Commissioner of Mines and Geology. Discussion with team-members.

Thursday 17 June: meeting with Chief Geologist, Ministry of Energy (Mr Wairegi); telephone discussion with Director, Water Resources Department (Mr Kirori). Visit to Geosurveys International laboratory. Group discussion with UK team. Roundup meeting at BHC with Mr Crompton.
Midnight, depart Nairobi for London

Acknowledgements

I wish to thank Dr B.D. Hackman for the efficient arrangements made for my visit and for the Review. Mr Toulmin was very helpful in briefing me and in looking after the arrangements at the London end for my visit. Generous hospitality was extended to me by Messrs. Charsley, Key and Hackman and by Mr Charters of EADD and for this I am most grateful.

Review of the Kenya Samburu-Marsabit Project

Report on a Visit to Kenya, 11-17 June, 1982

- A. Purpose of Visit The Samburu-Marsabit (SM) Geological and Mineral Exploration Project, a collaborative programme between the Kenya Mines and Geology Department (MGD) and the Institute of Geological Sciences (IGS) the latter's work funded by the Overseas Development Administration (ODA), Foreign and Commonwealth Office, was originally planned to be in two-phases each phase to be of two years' duration. The second phase would be dependent on a number of factors and these would be reviewed towards the end of Phase I.
- B. Project Organisation and Progress to date The UK team is composed of a Team Leader, Dr B.D. Hackman, three geologists and one cartographic draughtsman, all on secondment from IGS. They are on two-year appointments dated from the period November 1980 - February 1981. Working in collaboration with the UK team are a Kenyan Project Co-leader and three geologists and all the technical and supporting staff are supplied by the MGD. Phase I of the project, as was forecast in the report on my visit to Kenya between the 15 and 24 November last year, is certain to over-run its allotted span of 2 years and it now appears that this over-run will amount to 12 months making its completion date the end of 1983. There is therefore now a disparity between the length of the TCOs tours and the duration of the first phase of the project. However, if it is accepted that the overall life of Phase I and Phase II will be 5 years there is a ready solution to the problem.
- C. Composition of Review Team and Agenda There had been no general acceptance of the review team's membership prior to the meeting but Dr Hackman had proposed to the Commissioner of Mines and Geology the following representation:
- Commissioner of Mines and Geology (Mr C.Y.O. Owayo)
 - Acting Chief Geologist (Mr J Wachira)
 - Project Co-leader (Mr W.S.S. Siambi)
 - A representative of the Kenya Ministry of Finance (MF)
 - A representative of the Ministry of Environment and Natural Resources (MENR)
 - A representative of the British High Commission (BHC)/ East Africa Development Division (EADD)
 - Project Leader (Dr B.D. Hackman)
 - Head, Overseas Division, Institute of Geological Sciences (IGS) (Mr I.G. Hughes)

In the event the membership turned out as follows:

Monday, 14 June, morning session:

- Acting Chief Geologist
- Project Co-leader
- Dr J.R. Goldson, EADD
- Project Leader
- Head, Overseas Division, IGS

afternoon session:

- Acting Chief Geologist
- Project Leader
- Head, Overseas Division, IGS

Tuesday, 15 June, morning session:
Acting Chief Geologist
Project Co-Leader
Mr W.D. Stump, BHC
Project Leader
Head, Overseas Division, IGS

afternoon session:
Acting Chief Geologist
Project Co-Leader
Project Leader
Head, Overseas Division, IGS

Wednesday, 16 June, Round-up Meeting:
Commissioner of Mines and Geology
Acting Chief Geologist
Project Co-Leader
Mr W.D. Stump, BHC
Project Leader
Head, Overseas Division, IGS

Dr Hackman had proposed an agenda for the meeting and this was accepted at the first session of the review. The agenda is attached as Appendix 1 to this report.

- D. Consideration of Agenda Items The Review was opened by Mr Wachira who welcomed the delegates on behalf of the Commissioner of Mines and Geology. Mr Wachira explained that there would be no representation from the Ministries of Finance and Environment and Natural Resources as it was felt that most of the points that would be discussed fell within the Commissioner's jurisdiction. In my opening remarks I emphasised the importance ODA attached to the Review and this briefly amounted to the question of whether Phase II would go ahead. Bound up with this question was the matter of the Phase I over-run and the problem of the UK team's tours of duty and I suggested that, if no insurmountable obstacles were identified during discussion of the Agenda items, the solution would be to view the project, while having two phases, to be of 5 years' duration. This would enable the UK team's current tour to be extended by 6 months and the members after enjoying home leave, would return to Kenya to complete the remainder of Phase I and then go on to Phase II.

The agenda proposed by Dr Hackman was accepted and the following notes relate to its items and sub-items:

Phase I - Achievements

- 1.1 It was noted in particular that the counterpart geologists' progress had been remarkably good: they were now mapping independently and 3 of their geological maps were on display.
- 1.2 Interesting occurrences of economic minerals had been found and recently a nickeliferous gossan had been discovered in the Archers Post area.
- 1.3 Attention was drawn to dam-site possibilities in the project area and the importance of a catalogue of the area's boreholes and other sources of water was recognised.

- 1.4 The introduction of new methods in the drawing office was noted as was the fact that the cartographers have so far kept up with the material submitted by the project geologists.
- 1.5 I informed the meeting that arrangements for the attachment of two Kenyan geologists to IGS, one for a 3 months' course in photogeology and remote sensing techniques and the other for on-the-job training in applied geochemistry, had been finalised. Two other geologists had been nominated for MSc courses in Mineral Exploration and for a MSc Applied Geophysics course but the outcome of these applications were not yet known.

Phase I - Constraints

- 2.1(a) I was able to inform the meeting that ODA had agreed to meet the cost of analysing 1000 heavy mineral samples in the UK and that IGS was arranging for this to be done. ODA had also agreed to provide a suitable mill for grinding the samples before despatch to the UK.
- 2.1(b) I informed the meeting that if the suggestion described in paragraph 4.1 above were accepted, ODA had indicated its preparedness to supply a geochemist for the MGD. Mr Wachira said that there was a possibility of one or two vacancies in the laboratory and he would ask the Commissioner whether these could be filled.
- 2.2 It was stated that temporary imprests had been provided by the M & GD but these were often subject to arbitrary cuts and interruption particularly in the case of those granted to the counterpart geologists. That the project's funding be under the control of the Project Leader and Co-leader appeared to the meeting to be an obvious way of solving some of the financial problems.
- 2.3(a) There are vacancies for cartographers and the Commissioner is to be pressed to fill two posts so that advantage can be taken of the training capacity available and so that the build-up of work expected soon can be coped with.
- 2.3(b) See 2.1(b) above.
- 2.4(a) The cost of repair has been estimated at £2,000. Delay has been caused by administrative difficulties between the MENR and the MF the latter being responsible for issuing authority for accident repairs. The servicing of the Project Landrovers generally was giving concern in view of the difficult terrain that has to be traversed, and it was accepted that a supply of certain basic items should be provided for field repairs.
- 2.4(b) The registration of the caravans was now being effected and tenders for their fitting out are shortly to be invited. The Project Leader and Co-leader are to decide on the type of fitments required.
- 2.5 The ground lying east of the Archers Post-Marsabit main road and that lying west of the Maralal-Barsagoi road, all in the Phase I project area, present security problems at present and

work in the former area has been suspended. Mr Wachira said that he would request the Commissioner to consider whether the Office of the President should be approached to provide escorts from the Police General Service Unit to enable fieldwork in the insecure areas to be completed. Present indications are that there are no serious security problems in the Phase II project area.

I - Debate on Completion

Mr Stump enquired whether the Kenya Government would provide the necessary funds were it accepted that Phase I would over-run until the end of 1983. Mr Wachira replied that sufficient money was available and that no problem was envisaged. The MGD's forward planning includes counterpart funding until June 1986: detailed provision on a year-to-year basis has to be requested - that for 1983-84 (July to June) will be requested in the October estimates exercise. Mr Wachira went on to say that the extension of Phase I was required and was requested.

With regard to the optimum rate of mapping, I said that in my opinion 1000 km² a month was too low a figure for 7 or 8 field parties. An average of something like 125 km² a month per geologist seemed too little and ways and means of increasing output should be examined. The question of the density of geochemical sampling was discussed and the importance a properly executed geochemical prospecting programme plays in a project of this nature was emphasised. However, a balance has to be struck between the rate of geological mapping and the density of sampling and one way of ensuring that the latter does not suffer at the expense of the former is to have more trained samplers available. Mr Wachira promised to examine this possibility.

On the general question of an extension of Phase I by one year, Mr Stump said that the MOU could probably be suitably amended by an exchange of letters and he foresaw no major difficulties.

Dr Hackman explained that helicopter support would be used to establish suitably located base-camps from which geologists could move out and fly-camp. On the completion of the traverses personnel would return to base-camp and there be recovered by helicopter. The meeting accepted that this would be an efficient - and probably in the circumstances the only way of mapping and prospecting certain areas but Mr Wachira said that it was unlikely that the MGD would be able to meet the resultant cost. This would only be possible if there were savings in the project vote and this would not be known until the end of the financial year. No figures of the likely cost were available though something between £3000 and £5000 was mentioned: I informed the meeting that ODA has indicated that it will be willing to provide some financial assistance for helicopter here should the Kenya Government not be able to meet any or all of the cost.

The future programme is to be the four 1:50,000 sheets comprising the south-east quadrant of degree square No. 27 and the western half of degree square No. 28 comprising eight 1:50,000 sheets.

- 3.5(a) As indicated in the comment on agenda item 2.1 above, ODA has agreed to supply a geochemist should Phase I be extended and be followed by Phase II.
- 3.5(b) See discussion on agenda item 2.1 above.
- 3.5(c) See discussion on agenda item 2.3(a) above.
- 3.6 I strongly supported the proposition that a SM project planning committee be established and I suggested that it comprise the Commissioner (or his representative), the Chief Geologist, the Project Leader and Co-leader and the MGD administrative officer.
- 3.7 As was pointed out in the report on my November 1981 visit to Kenya (paragraph 7.2) the Bedford lorry is expensive to run and is too large for project purposes. It was therefore agreed that the question of exchanging it for one or two smaller vehicles be discussed with the BHC.
- 3.8 An agreed list of equipment is attached as Appendix 2.
- 3.9 This was left to the Chief Geologist and the Project Leader and Co-leader to discuss. Financial provision for printing and publication to be included in the MGD's 1983-84 estimates which will be submitted in October of this year.

Phase II - Debate for Recommendation

- 4.1 The meeting recognised that Phase II would require 2 years for its completion and that this would make the whole project last for 5 years, i.e. until the end of 1985.
- 4.2 A photogeological/remote sensing imagery interpretation of the Phase II area prior to the commencement of fieldwork would be valuable. I informed the meeting that ODA was prepared to meet the cost of such a study but I was uncertain whether the Overseas Division's Photogeology and Remote Sensing Unit would have the capacity to undertake the work. Dr Hackman enquired whether, in the event the study is undertaken, members of the team who might be on leave at that time could partake in the study.
- 4.3 Dr Hackman will discuss the question of topographic maps with the DOS Regional Survey Officer in Nairobi and I am to raise the matter with DOS Directorate.
- 4.4 The meeting accepted the arguments for additional transport and I said that ODA was willing to provide an additional Landrover should it be agreed that Phase II go ahead.
- 4.5 An agreed list of equipment is attached as Appendix 2.
- 4.6 It was additionally recognised that (a) it might be sensible to introduce new counterpart geologists for training during Phase II and (b) it might be necessary to change the composition of the UK team though this would be avoided if at all possible.

- E. Round-up Meeting The Commissioner for Mines and Geology apologised for the fact that he had not been able to attend the review on the previous dates. He had however, been briefed by the Acting Chief Geologist on the discussions and he was now glad to be present so that decisions could be arrived at.

I gave the meeting a resumé of our previous days' discussions and said that ODA was agreeable to continue funding Phase I of the project under the terms of the MOU, until its new completion date, i.e. the end of 1983. ODA was further willing to fund Phase II and to provide a geochemist for a tour of duty to cover the remainder of Phase I and part of Phase II. Mr Owayo expressed his pleasure that the UK Government was prepared to proceed to Phase II. He asked that the Kenya Government be accorded the right to have some say in the selection and retention of the UK team members and if that were accepted then there was no problem as far as he was concerned. Mr Stump and I pointed out that every receiving government had the right to reject nominations for TCO posts: the Kenya Government would have the opportunity to pronounce on the current team when the formal request for the implementation of Phase II was submitted. The Commissioner asked that the geochemist to be provided should not have his remit confined to the SM Project but that his services should also be available for the Department's other projects. I agreed with this and the Commissioner then said that the arrangement should work very well as a Kenyan geochemist (a Mr Muonga) is reading a post-graduate course in Canada and is expected to return to Nairobi in the second half of 1983. He could therefore work alongside the British geochemist for a year or so before assuming control of the laboratory himself. I agreed that this would be a good arrangement and suggested that Mr Owayo submit an official request for the geochemist as soon as possible.

I then brought up the various points, discussed during the previous two days, which required resolving. The main constraint so far had been over the availability of funds, as was indicated in item 2.2 of the agenda, and I enquired whether it could not be arranged that the project funds be under the control of the Project Leader and Co-leader. Mr Owayo explained that the main reason for the holdup in providing money was owing to central government liquidity problems which had affected all departments and not just the MGD. He did not think that it would be possible to let the SM Project handle its own funds: if this were agreed to the arrangement would have to be applied to all the other TC projects within the Department, and there were several, and the system would therefore become unworkable. However, he acknowledged that there were bottlenecks within the present system and he promised to examine, with the Acting Chief Geologist, ways and means of eliminating as many of these as possible. The suggestion that a SM project planning committee be set up was acceptable and with regard to additional staff - field, laboratory and drawing office - Mr Owayo said that if funds will allow he would do his best to have vacant posts filled: the Acting Chief Geologist would be expected to follow up this point.

With regard to the project's counterpart training commitments I informed the meeting that five applications had been received in London, three for post-graduate courses, one for in-service training with IGS and the fifth for the IGS Photogeology and Remote Sensing course.

The IGS training attachments were firm but the position regarding the university applications were not resolved as final selections had not been made when I left the UK. I did however, mention that with the fierce competition for places on the Mineral Exploration MSc. course, it might not be possible to place all three of the candidates this year. One of the candidates who had had his studies interrupted during the Amin regime in Uganda has a degree which may not be of a suitable standard for acceptance for a British post-graduate course and I suggested that he might instead be considered for placing on a Honours course as has been done for Malawian and Swazi students recently. It was agreed that this possibility be looked at when the outcome of the postgraduate applications was known.

It was also agreed, in response to a request by Mr Owayo, that the SM project's filing arrangement be integrated with the Department's filing system as soon as possible. The Commissioner in explaining the need for this said that in view of the number of aid projects within the Department, every effort had to be made to streamline its work.

The question of the need to revise the MOU was discussed and it was accepted that for the extension of Phase I an exchange of letters should suffice. In the case of Phase II however, a modified MOU might be required though hopefully this also could be arranged through an exchange of letters.

APPENDIX 1

SAMBURU-MARSABIT - GEOLOGICAL

MAPPING AND MINERAL EXPLORATION PROJECT

PROPOSED AGENDA

1 PHASE I - ACHIEVEMENTS

- 1.1 Progress in geological mapping, with exhibit of draft maps - training of Kenyan staff in the field and office.
- 1.2 Indications of mineral resources, illustrated by draft map of degree squares 36, with particular reference to industrial minerals. Progress in geochemical exploration: consultant geochemist's reports.
- 1.3 Water resources in the project area: - potential dam sites in the Ewaso Ng'iro Basin.
- 1.4 Cartography, illustrated by exhibit of progress organised by the project cartographer, and demonstration of the upgrading of the cartographic equipment.
- 1.5 Training of Kenyan staff: arrangements for postgraduate courses in UK for 4 geologists and 1 geophysicist.

2 PHASE I - CONSTRAINTS

- 2.1 Delays encountered in the analytical programme for the geochemical exploration samples.
 - (a) The necessity for heavy mineral concentrates to be analysed outside M & GD.
 - (b) The need for increased support for the M & GD laboratory to improve throughput and precision of sample analysis. The rate of collection is about 180 samples per month, the analytical throughput about 100 per month.
- 2.2 GK financial support, in terms of availability of imprest to cover fuel and costs, has been intermittently interrupted. Records show that money was not available over a total period of about 10 weeks during the first 18 months of the project. In August, 1981 about 18 geologist man-days were lost due to consequent non-availability of fuel to field camps. The MOU (22.10.80) stipulates that an imprest account should have been made available to the project leader/co-leader to finance the recurrent costs of the project: however GK has not provided such an imprest.
- 2.3 Staff
 - (a) The project cartographer has the capacity to train two more draughtsmen - these will certainly be needed in the future if map production is to keep pace with rate of draft submission.
 - (b) Understaffing in the chemical laboratory appears to be a contributory factor to 2.1.

2.4 Vehicles

- (a) KST 554 has been out of service for 9 months because approval for repair is still awaited.
- (b) Caravans - provided by GK, have awaited internal fittings and registration for over a year.

2.5 Security

Delays to the mapping programme have been encountered, particularly on the eastern fringes of the Phase I area, due to the suspected activity of bandits and/or shifta.

3

PHASE I - DEBATE ON COMPLETION

- 3.1 Is the rate of progress established in 1981-82, actually a ground coverage of approximately 1000 km² per month, to be regarded as a fair index for future planning? Should density of geochemical sampling be increased?
- 3.2 The unmapped areas in the remainder of Phase I amount to just over 9,000 km². Allowing for 8 operative teams, at a combined rate of 1000 km² per month, an extra year is likely to be required to complete Phase I, taking into consideration that: although another 15000km² may require geochemical sampling, 6000km² of that area is in Rift Valley volcanics already mapped by EAGRU, and access to another 300km² in the east may be restricted by security problems.
- 3.3 The area of northern Samburu and the Ndoto Mountains in particular, is rugged and difficult of access. Could consideration be given for limited helicopter support to established bases?
- 3.4 Mapping priorities to complete Phase I should be as follows:-
 - (a) Degree square 27 (south-west quadrant)
 - (b) Degree square 28 - delayed because of potential security problems.
- 3.5 Staff
 - (a) Consideration should be given to appointing an expatriate TCO geochemist to assist with co-ordination of procedures in the M & GD chemical laboratory.
 - (b) He should be supported by recruiting two extra laboratory assistants.
 - (c) Consideration should be given to recruiting two extra draughtsmen.
- 3.6 Administration - an SM project planning committee should meet every three months, to debate the routine quarterly reports and discuss future plans: the Commissioner of Mines and Geology or his representative should be requested to attend.

- 3.7 Consideration be given to replacing the Bedford truck by two smaller, more mobile vehicles.
- 3.8 Approval is requested from ODA to purchase the equipment listed in the appendix which is needed to complete Phase I.
- 3.9 Decisions are required on the format for the relevant publications, also the responsibility for editing and final printing of maps and bulletins.

4

PHASE II - DEBATE FOR RECOMMENDATION

- 4.1 The completion of Phase II, up to the Ethiopian frontier, will require a further two year's operations following the end of Phase I. This would extend the project until the end of 1985.
- 4.2 IGS photogeology and remote sensing unit might be requested to consider undertaking a photogeological/imagery reconnaissance interpretation of the phase II area, on the scale of 1:250,000 before ground work is commenced.
- 4.3 If the go-ahead for Phase II is approved, ODA will have to be requested to meet requirements to prepare topographic bases.
- 4.4 Irrespective of whether KST 554 is repaired or not, an additional land-rover is required for Phase II. This is considered necessary because:-
 - (a) British landrovers are already showing signs of wear and tear, and longer breakdowns can be predicted for the future.
 - (b) The geochemist will require a vehicle from time to time to monitor the exploration programme.
- 4.5 As under 3.3, some planned helicopter support for Phase II would be desirable.
- 4.6 Consideration should be given to purchasing those items of equipment recommended for Phase II in the appendix.
- 4.7 Staff: given that the recommendations for recruitment of staff under Phase I are approved (see 3.5) it is assumed that the project establishment would continue into Phase II with no further alterations.

APPENDIX 2

Phase 1

LABORATORY EQUIPMENT

from:	Oertling Ltd., Orpington, Kent BR5 2HA England	£
	1 Oertling top-pan balance, with draughtshield HB 63 - 01 d	1200.00
from:	International Aeradio (E.A.) Ltd Sales Office, Kijabe Street, Nairobi PO Box 19012	
	50 MSE graduated centrifuge tubes (50 ml capacity) @ Kshs 25	66.00
	1 Fluorimeter model 26000 with 6 spare lamps, calibrating sources and spare transformers	2500.00
from:	A Gallenkamp & Co Ltd., PO Box 290 Technico House, Christopher Street London DC2P 2ER U/V Lamps (LCF - 690-T)	50.00
from:	T.L. Elliot Ltd PO Box 31074, Moktar Daddah Street, Nairobi	
	1 Eclipse variable magnet (Model E930) J Neill (Sheffield) Ltd	60.00

TRANSPORT EQUIPMENT

from:	Hughes Ltd., Koinange Street, Nairobi	
	4 x three-ton hydraulic bottle jacks @ Kshs 668.25	142.00
	5 x four-foot high-lift jacks @ Kshs 1380	355.00
from:	Scottorn Trailers, Ltd Chartridge, Chesham, Bucks HP5 2SH	
	4 x 250 gallon tanker-trailers @ £1520	6080.00

LABORATORY EQUIPMENT (Cont)

from:	Bruce Ltd., Gilgil Road, Nairobi	£
	1 X Landrover wheel rim @ Kshs 4301.15	222.00

from	Westland Automobile Co., Moktar Daddah Street, Nairobi	
	5 x "Emperor" foot pumps, heavy duty @ Kshs 1600 (British made)	412.00

DRAWING OFFICE EQUIPMENT AND SUPPLIES

from:	Heidelberg Graphic Equipment Ltd., Berthold Phototype Division 578 Chiswick High Road, Chiswick London W4 5RP	
	1 x Semi-automatic table-top Phototypesetting machine, data sheet "berthold diatype"	4805.00

from:	Heffers Drawing Office Centre 26 King Street, Cambridge CB1 1LN	
	1 x Diazit Dart dry plan printer (Gem Reprographic Sales Ltd)	750.00

fromL	Pacer Graphics, Berechurch Road Colchester, England (Keuffel & Esser Co Materials)	
	100 sheets sensitised peel coats (Ref. 45 3497) size 24 x 32	600.00
	10 sheets sensitised peel coats, size 24 x 36	60.00
	2 gallons developer for peel coat (ref.582365)	25.00
	35 quarts etching solution (ref. 582370)	40.00
	1 etching block (ref. 582371)	10.00
	5 pints masking solution (ref. 582376)	30.00

from:	Micro-Scientific Techniques, PO Box 3 Ashtead, Surrey	
	10 sapphire chisel cutters (.006")	13.70
	10 " " " (.005")	13.70
	10 " " " (.004")	13.70
	10 " " " (.003")	13.70

CAMPING EQUIPMENT

£

from: Modern Sanitary Stores, Nanyuki

4 x 1/8" mild steel oven (18" x 12" x 9")
@ Kshs 600 126.00

4 x 1/8" mild steel hot plates with collapsible
legs (30" x 12") @ Kshs 300 63.00

from: Low & Bonar (EA) Ltd., Addis Ababa Road
PO Box 42759, Nairobi

4 x toilet tents @ Kshs 1256 261.00

4 x canvas camp baths (ref. 1468F) @ Kshs 782 161.00

4 x shower bucket (CN 1465F) @ Kshs 523.25 112.00

4 x Filopur water filters @ Kshs 80 17.00

2 x hanging meat safe/larder (SN 1163F @ Kshs 328) 35.00

1 x Royal Doulton water filter with 2 candles
@ Kshs 1500 79.00

8 x Country Club chairs @ Kshs 301.10 127.00

8 x Hanging Hold-alls (SN 1162F) @ Kshs 356.56 150.00

4 x Tables - Sheet metal top (SN 1415G) @ Kshs 423 90.00

4 x Camp Bed type 'O' (SN 1272F) @ Kshs 708 150.00

from: Black and Edgington (Sidcup) Ltd
Murray House, Murray Road, Orpington
Kent BR4 3QY

4 x fluorescent "Overlander" lighting strips @ £7.69 30.76

from: Racal-Tacticom Ltd., PO Box No. 112
472 Basingstoke Road, Reading

4 x co-axial cables to fit dipole antenna for
VRM 455 A mobile radios 250.00

4 x connectors for dipole antenna for VRM 455 A
mobile radios 50.00

CAMPING EQUIPMENT (Cont)

£

from: Black & Edgington (Sidcup) Ltd
Murray House, Murray Road,
Orpington Kent BR5 3QY

12 x tent poles for the Safari frame 100 tent

126.00 *

from: Car and General (Kenya) Ltd
PO Box 20001
Nairobi

4 x 2 cu ft gas/electric refrigerators
@ Kshs 7300

1535.00

* inclusive of airfreight

VEHICLES AND TRANSPORT

£

1 x long wheel base right hand drive
diesel landrover (12 seater)

10000.00

Phase II

from: Firestone Ltd., Nairobi

30 tyres @ Kshs 4781 (1200 x 20)

7384.00

120 x inner tubes @ Kshs 34.50

2400.00

Appendix 3

Pre and Post Review Discussions

- A. I had a briefing session with Mr R.G. Toulmin, EWAD, ODA on the 8 June 1982. ODA were agreeable to fund an extension of Phase I and the carrying out of Phase II. Provided the Kenyan authorities so requested a geochemist would be provided and an extra Landrover could be supplied. Mr Toulmin also said that if necessary, ODA would meet the cost of a photogeological and remote sensing interpretation of the Phase II area before the commencement of fieldwork. We discussed the suggestion that a reasonable amount of helicopter time be provided to enable fieldwork to be carried out in remote, road-less areas and Mr Toulmin agreed that up to £5,000 could be made available if the Kenya Government were unable to meet any or all of the cost. I said that a similar provision for Phase II might be valuable so as to save geologists' time, to cut down on wear and tear on vehicles, and to save on fuel costs. The inordinate delay in repairing a damaged project Landrover was discussed and I was asked to raise the matter with our Post in Nairobi. Fitting out of project caravans was to be raised with the Kenyans. On the question of an imprest for the project leader, Mr Toulmin asked me to discuss the problem with the Post should the Kenyans be unwilling to provide one.

Mr Toulmin had previously informed me that the analysis of heavy mineral specimens could be undertaken in the UK up to a total cost of £5,000 and that a grinding mill could be bought for dispatch to Kenya. Arrangements for both these items will be undertaken by IGS, Overseas Division. I was also told that sympathetic consideration would be given to the provision of replacement and/or additional equipment for the project.

Counterpart training commitments were reviewed and Mr Toulmin obtained information regarding the status of applications in British Council hands. I followed this up later by telephoning Leicester and Birmingham Universities.

- B. In Nairobi on the afternoon of the 11 June 1982 Dr Hackman and I had a pre-Review briefing session with Mr M.R. Crompton and Mr W.D. Stump of the British High Commission. We discussed progress so far and we recognised that Phase I would over-run until the end of 1983. The attendant problems with regard to the team-members' tours of duty was discussed and it was accepted that these could be overcome if the Kenyans were in favour of Phase II going ahead. Mr Crompton confirmed that the High Commission was in favour of Phase II. I informed the meeting of my briefing by Mr Toulmin in ODA and mentioned the salient points which are noted in paragraph A above. I emphasised that the presence of a resident geochemist was vital to the project but that one could not be provided unless Phase I extension and Phase II also were agreed to.

Mr Crompton said that he would not be able to join the Review and Mr Stump said that he would join the meeting as much as possible. I said that it would be valuable if a member of EADD could attend particularly if Mr Stump was unable to be present at any of the sessions and we later saw Dr J.R. Goldson who said that he would join the Review whenever possible.

- C. Dr Hackman and I called on Mr Crompton at the BHC again late in the afternoon of the 17 June 1982 for a round-up discussion. Mr Stump had already briefed Mr Crompton on the main points covered during the

course of the Review and we noted that the Kenyans wish a geo-chemist to be provided under TC arrangements, for Phase I to be completed as planned, and for Phase II to go ahead. With regard to the damaged, unrepaired Project Landrover, Mr Crompton agreed to write once more to the Ministry of Environment and Natural Resources to request an early resolution of the problem. The question of overhauling the rest of the Project's Landrover fleet was also discussed and the desirability of having this carried out at Cooper Motors was agreed to. We discussed the need for new equipment, as replacements or additions, and Mr Crompton thought that this could be supplied under the Small Capital Grants scheme. Details regarding the items required are given in Appendix 2 which lists those required for the completion of Phase I and those for Phase II.

We noted that the Commissioner of Mines and Geology had not been optimistic regarding the imprest position and in the circumstances Mr Crompton agreed that Dr Hackman should be granted an imprest facility.

Clearance for the visit of an IGS geochronologist Mr C.C. Rundle had been received from the Kenya Government and his arrival is scheduled for the 2 September next. The cost, about £200, of grinding specimens (before despatch to London for isotopic analyses) at a commercial laboratory in Nairobi would be met by the High Commission.

- D. We then turned to other matters not connected with the SM Project and I informed Mr Crompton of my discussions that morning with Mr J Wairegi at the Ministry of Energy as a follow-up to the meeting between him and Mr Crompton and Dr E.P. Wright, Hydrogeological and Geothermal Adviser last month. I had delivered to Mr Crompton an advance copy of Dr Wright's report on his geothermal proposals and I gave Mr Wairegi a brief verbal account of its contents. Mr Wairegi confirmed that Dr Wright's proposals were those discussed between them in May: he had put the proposals to the UNDP Office in Nairobi (the ODA/IGS input would be a bilateral contribution to a UNDP project) and he was awaiting their response. Mr Crompton remarked that while Dr Wright's proposals were larger than expected, in terms of money, the energy sector in Kenya rated a very high priority so that it was likely that support would be forthcoming from the High Commission.
- E. As I had also brought out advance copies of Dr Wright's preliminary report on his investigation of the Mzimia Spring Catchment Region, I informed Mr Crompton that I had telephoned Mr Kirori of the Ministry of Water Affairs that day regarding the follow-up data to be supplied for compilation of the final report. Mr Kirori had also been provided with an advance copy of the preliminary report but had not read it when I spoke to him. However, he promised to have the information to be provided by his Department sent by mail to Dr Wright as soon as possible.

I had in addition, raised with Mr Kirori the matter of the Tiwi Aquifer proposal also mentioned in Dr Wright's report. The position still appeared to be confused and it will probably require the intervention of the SADD Engineering Adviser to resolve it.

Appendix 4

Discussion at the Ministry of Energy

I called by appointment on Mr J.W. Wairegi, Chief Geologist, Ministry of Energy at 0900 hours on the 17 June 1982 to discuss progress with regard to the proposal for UK bilateral participation in the UNDP geothermal project in the Central Rift (Phase III). The outcome of our discussion is described in section D of Appendix B to this report.

Mr Wairegi informed me that a Landsat imagery interpretation of the whole of Kenya is about to be started (in the USA): this study with compilation at 1:250,000 scale, is to be funded from a World Bank loan and its prime objective is to delineate the country's sedimentary basins, i.e. potential sources of hydrocarbons, which may possibly be more extensive than hitherto thought. I told Mr Wairegi of the SM Project's interest in the imagery of the Phase II area and he agreed that it would be sensible for the relevant data to be made available to Dr Hackman who is to liaise with the Chief Geologist on this matter.

I was informed by the Chief Geologist that petroleum exploration concessions are to be offered covering ground in the Tana Basin. Bids are being invited by the 1 October next. A new Hydrocarbons Law was being introduced in the Kenya Parliament.