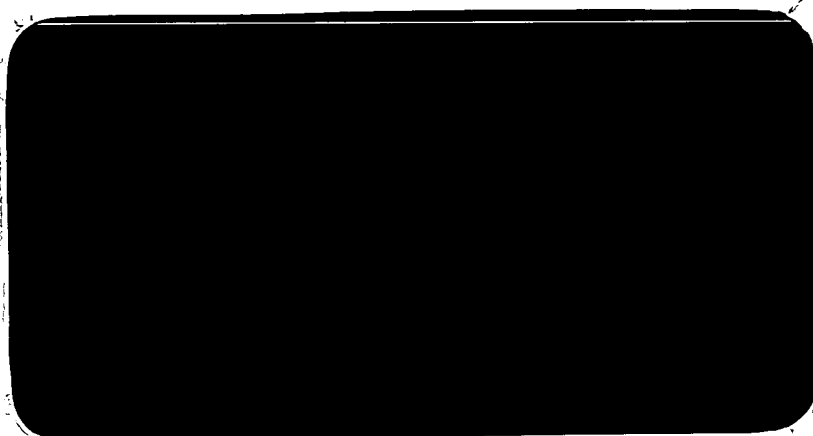




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REPORT ON ADVISORY/LIAISON VISIT TO

ZIMBABWE, BOTSWANA AND ZAMBIA

BY MR I.G. HUGHES

January/February 1981 Report No: 1981/1

Report on a Visit to Zimbabwe, 29 January - 2 February 1981

1. My visit to Zimbabwe arose initially from a discussion with that country's Director of Geological Survey at the International Geological Congress in Paris in July 1980. The Director, Mr Ewen Morrison, rehearsed the difficulties his department had encountered since the UDI, which had led to the present situation where only 9 of his 26 professional posts were filled and asked whether there was any possibility of U.K. assistance. I raised this matter with ODA on my return to the U.K. and subsequently had a discussion with Mr P.D. Freeman who was shortly to go out to Zimbabwe as Aid Secretary. At that meeting it was agreed that a visit by me to Salisbury would be useful and this was confirmed at a subsequent meeting with Mr David Sands Smith at ODA.
- X 2. There was further contact with Zimbabwe Government officials through the visit of my colleague Mr Alan Archer, Head of the IGS Special Surveys Division, to the International Economic Resources Conference held in Salisbury last September. At that meeting Mr Archer was approached by the Deputy Director of the Geological Survey and by the Permanent Secretary, Ministry of Mines regarding aid possibilities and these approaches were reported to Mr Freeman who by then had assumed duty in Salisbury.
- X 3. My briefing at ODA with Mr Sands Smith took place on the 22 January. I was told that of the £75 million available in the aid programme for assistance to Zimbabwe over the first 3 years of independence, some £2.3m was provisionally earmarked to pay for an aerial geological survey of selected areas of the country. (This possibility had been raised with the U.K. Aid Mission during its visit to Salisbury in June 1980). It was also confirmed to me that ODA had no intention of introducing any arrangement of the OSAS type to assist Zimbabwe with its manpower problems but TC appointments could be considered in suitable circumstances.
- ✓ 4. A further briefing took place at the British High Commission in Salisbury shortly after my arrival on the 29 January when I reported to Mr Peter Freeman, Aid Secretary. He informed me that no formal approach had as yet been made by the Zimbabwe Government with regard to the proposed aerial geophysical survey and he explained to me the lengthy processes through which applications had to go through in the Government machinery.
5. My first meeting with Mr Morrison, Director of the Geological Survey took place on the 30 January 1981 in his office. His present establishment is as follows:
 - 1 Director
 - 1 Deputy Director
 - 4 Senior Geologists
 - 19 Geologists
 - 1 Mineralogist

The Deputy Director post was being vacated that day by Mr Neil Harrison (British) who had served in Zimbabwe for 20 years. A Zimbabwean supernumery Deputy Director (Mr Bwerinofa) had been appointed a few weeks earlier and this had precipitated Mr Harrison's resignation. (Mr Bwerinofa who is aged 33, graduated at the Massachusetts State University and obtained a Mineral Economics M.Sc. at Queens University, Ontario. He worked in the Zambian copperbelt until the achievement of Zimbabwe's independence). The Senior Geologist posts all of which are filled, are deployed as follows:

9

1 in charge of Mashonaland)	duties mainly concerned with
1 in charge of Matabeleland)	private sector mining activities
1 in charge of the mapping branch		
1 in charge of the economic geology branch		

Three of the 19 Geologist posts were filled at the time of my visit and four others were on offer, 3 to U.K. geologists (on local terms) and 1 to a Zimbabwean geophysicist transferring from the Water Supply Department. I was told that there is no likelihood of any recruitment from the University of Zimbabwe until 1982 at the earliest as there are no Honours students this year (there were 6 in 1980 of which 5 went into industry with only one joining the Geological Survey Department).

6. The Geological Survey has a three-fold responsibility viz: the production of basic geological maps covering the whole country (this includes fundamental geophysical data); the provision of professional advice for the country's "small mines" industry and; the provision of laboratory services for prospectors and mine operators. Basic geological mapping (65% of the country is already covered) has been at a stop for over 3 years but the Director expects a limited restart when the 3 British geologists arrive (though unfortunately, they are all inexperienced) and the plan is to have a mapping branch of 12 geologists as soon as possible. The Department's laboratory services, as could be expected, require considerable updating but it has no appreciable back-log of work and the same holds for the drawing office: this is the consequence of the cessation of field-work during the last 3 years.

7. An offer to modernise the Department's laboratories has been forthcoming from the West German Government who have earmarked Zimbabwe dollars 200,000 to supply equipment, mainly a new optical quartz spectrograph, and operators during the next 2 years. X-Ray equipment is not included in the package so it is understood, presumably because the University's Institute of Mining Research already possesses several items of this type of apparatus. West Germany had also tentatively offered the services of three geologists, one to be a coal expert, but no decision had been made with regard to these.

8. The French BRGM had also offered to assist the Geological Survey Department, but on repayment: I gathered that this approach had been declined. There is however, to be French involvement, possibly in association with our NCB, and financed by the EDF or EIB in the Sengoa thermal power project study.

9. As will be appreciated from the above the Zimbabwe Geological Survey Department's most pressing needs are for staff to restart the geological mapping programme which provides the basic data on which all development is based, particularly mining on which Zimbabwe's economy is so heavily dependent. The Director and I accordingly discussed ways and means whereby assistance to this end could be afforded under the U.K.-Zimbabwe technical cooperation arrangement and the results of our considerations are summarised in a note which is attached as Appendix A to this report. (Copies of this note were handed to the Director of Geological Survey and to Mr Freeman, BHC before I left Salisbury).

10. Section 1 of the note outlines a proposal for an integrated geological mapping and mineral exploration programme in the Darwin-Rushinga-Mudzi region of north-east Zimbabwe to start in early 1982 and to be completed within 3 years by a four-man team. The programme outlined is straightforward and is similar in

most respects to projects successfully carried out by the Overseas Division, IGS on behalf of ODA in other parts of the developing world, e.g. Indonesia and Bolivia and the one recently started in Kenya. On this occasion however, it is proposed that the geochemical analyses of stream sediment samples be carried out at the University of Zimbabwe's Mining Research Institute which has built up a very considerable expertise in geochemical prospecting methodology and which hopes to install X-Ray Fluorescence equipment later this year provided adequate funding can be generated. So far Z\$90,000 out of an estimated total cost of Z\$135,000 have been promised leaving a balance of Z\$45,000. Professor Viewing, Director of the Institute of Mining Research enquired whether ODA would be prepared to contribute the balance in support of the geological mapping and mineral exploration project but I suggested that as the XRF equipment is likely to be of West German manufacture, that Government might be prepared to consider a contribution as part of, or as an addition to the laboratory equipment package mentioned in paragraph 7 above. It was therefore left that I should contact my counterpart in the BGR, Hanover to investigate the possibilities: if the West German authorities are unable to make a contribution then it is suggested that ODA consider subscribing the sum of £30,000 towards the cost of the equipment.

Hunt's?
RJM? 11. Section 2 of Appendix A refers to other requests for aid put forward by the Director of Geological Survey and which I felt might be met from U.K. sources. (Mr Morrison also enquired whether an experienced mining geologist could be provided to be stationed at Gwelo: I was unable to be optimistic about this as it would be almost impossible to recruit a suitable man in the U.K. at the present time).

12. With regard to Section 3, Appendix A, the Director of Geological Survey, had spent two weeks in Canada, at that Government's invitation, to discuss the question of an aerial geophysical survey (he was accompanied by a senior lecturer in Geophysics from the University of Zimbabwe who acted as technical adviser). All the indications are that CIDA will fund this survey particularly as the Canadian contractors in this field are very powerful lobbyists. I did however, say to the Director that IGS through ODA, would be happy to supply the services of an experienced geophysicist, on a short-term basis, to act as the Government's consultant and to monitor operations.

13. I gave Mr Freeman an account of my discussions with the Director of Geological Survey on the 31 January and a copy of the note given as Appendix A to this report was handed to him at a further meeting on the 2 February 1981.

14. Acknowledgments I wish to express my thanks to Mr P.D. Freeman, Mr E.R. Morrison and Professor Keith Viewing for their help and hospitality and I am also grateful to Professor J Wilson who conducted me on a field-trip to the Great Dyke on the 2 February.

Appendix A

1. PROPOSAL FOR AN INTEGRATED GEOLOGICAL MAPPING AND MINERAL EXPLORATION PROJECT

Following discussions on the 30 January, 1981, between Mr E.R. Morrison, Director, Zimbabwe Geological Survey Department, and Mr I.G. Hughes, Head, Overseas Division, Institute of Geological Sciences, U.K. the following programme of work is proposed. This proposal is only in outline at this stage: if there is agreement in principle that it is acceptable, a detailed plan of operation will be drawn up following further discussions.

Scope of work: (a) to provide the Zimbabwe Government with geological maps on a scale of 1:100 000 of an area approximately 11 000 sq. km. in extent lying in the Darwin-Rushinga-Mudzi region, and to provide a mineral inventory of that area; (b) to provide training in geological mapping and mineral exploration methods for Zimbabwean geologists working as counterparts with the U.K. team-members who will almost certainly have postgraduate qualifications.

Geological Mapping would be carried out on a scale of 1:50 000 using existing Zimbabwean topographical survey maps and air photographs. (Field work would be preceded by the examination and interpretation of remote sensing imagery for the region). The final maps would be on a scale of 1:100 000 to accord with the Zimbabwean Geological Survey format.

Mineral exploration would include the collection of heavy mineral samples on a pattern to be determined and so that overall coverage of the drainage system is obtained. The samples would be examined in the field initially and subsequently in the laboratories where chemical determinations would be considered, e.g. if the occurrence of tin might be suspected.

Geochemical Prospecting would involve the collection of stream sediment samples to achieve a coverage of approximately one per sq. km. Analyses would be carried out in the laboratories of the University of Zimbabwe's Institute of Mining Research (by arrangement with Professor Viewing). Analytical results would be published as overlays to the 1:100 000 geological maps.

Time Schedule The programme of work as outlined above would cover a period of 3 years starting in early 1982 or as soon thereafter as possible. The final report or reports would be in a form to be decided in consultation with the Zimbabwe Government authorities, who would be responsible for the printing and publishing.

Personnel The Overseas Development Administration through the Institute of Geological Sciences' Overseas Division would provide a team comprising a team-leader and three geologists experienced in mapping and mineral exploration methods, for the duration of the project. The team's work would be monitored by the Director of the Geological Survey of Zimbabwe and through periodic visits by the I.G.S.'s Overseas Division Regional Geologist responsible for cooperation programmes in Africa. Advice on geochemical prospecting aspects would be sought from the Professor of Mining Research, University of Zimbabwe.

The Government of Zimbabwe would provide, if possible, up to 4 Zimbabwean counterpart geologists to work alongside the U.K. team-members, and would also

provide such field support personnel as considered necessary for the effective execution of the project. The Zimbabwean Government would also provide such secretarial and typing services as necessary.

Equipment and Transport The ODA would provide 4 landrovers and 4 caravans for the use of the U.K. team and would also provide such field equipment as required for the effective carrying out of the team's work. The ODA would also give sympathetic consideration to the supply of such laboratory equipment and reagents as cannot be provided by the Zimbabwe Government and, in particular, will examine in conjunction with the Government of the Federal Republic of Germany the possibility of upgrading the X-Ray Fluorescence equipment of the Institute of Mining Research to facilitate the analyses of geochemical samples.

The transportation and accommodation of Zimbabwean personnel would be the responsibility of the Zimbabwe Government.

Training Counterpart training is an important and integral part of all U.K. technical cooperation projects in the earth sciences field and wherever possible Zimbabwean geologists should work as counterparts to the U.K. team-members. If Zimbabwean geologists are not available at any stage of the project consideration should be given to attaching students reading advanced geology at the University to the U.K. team in order that they may gain experience of field-work, and mineral exploration methodology. Post-graduate schemes of study in the U.K. would be arranged wherever possible for suitable counterpart geologists during the tenure of the project.

Estimate of Expenditure The cost of the U.K.'s Overseas Development Administration contribution to the proposed project is very approximately reckoned to be as follows:

Team-members	£360 000
Vehicles and Caravans	70 000
Field Equipment	10 000
Laboratory equipment and reagents	5 000 ^x
(U.K. training awards	20 000)

^x Possible £35 000 depending on discussions with Federal Republic of Germany.

2. Discussions were also held between Mr E.R. Morrison, Director, Zimbabwe Geological Survey Department, and Mr I.G. Hughes, Head, Overseas Division, U.K. Institute of Geological Sciences regarding the following possibilities:

- (a) provision of an experienced geologist, under U.K. technical cooperation arrangements to supervise geological mapping in the Bulawayo area; and
- (b) the provision of an experienced geologist to undertake the compilation of a geological map and report covering the Salisbury area.

Mr Hughes agreed that in principle he would recommend that two geologists be provided to undertake the above assignments. The rough cost would be as follows:

- (a) one geologist for 3 years: £90 000
- (b) one geologist for 2 years: 60 000

The Zimbabwe Geological Survey Department would provide transport and caravans for these two geologists and such secretarial, typing and drawing office facilities as necessary.

3. AERIAL GEOPHYSICAL SURVEYS

A suggestion put to the British Aid Mission during its discussions in Zimbabwe in June 1980, that an aerial magnetic survey of selected areas of the country be carried out as part of the U.K. aid programme, was discussed. Mr Hughes said that a sum of £2.3 million was, as a consequence, earmarked by the ODA for such a survey and as far as he knew this was still the position. Mr Morrison said that there had been some discussions with the Canadian Government aid authorities regarding the same subject but that no definite arrangement had as yet been arrived at. He would therefore be prepared to advise his Government that in the event that Canadian aid for an aerial geophysical survey was not forthcoming the offer of British aid be accepted.

I.G. HUGHES

31 January, 1981

Salisbury
Zimbabwe

REPORT ON A VISIT TO BOTSWANA, 3 - 6 FEBRUARY 1981

1. I proceeded to Botswana from Zimbabwe and was met at Gaborone Airport by Dr G.C. Clark, Director of Geological Survey. The main purposes of my visit was to discuss the difficult staffing situation in the Geological Survey Department and to review progress on the Molopo Farms TC project which was started in 1980.

1.1 Geological Survey Department The Department's establishment is as follows:

(a) Directorate

Director	G.C. Clark ²
Deputy Director	(C.D.G. Black) ²
Assistant Director	
(Economic Geology and Field Mapping)	(C Mortimer) ²

(b) Operational Divisions

Geology Division

PR 1 Principal Geologist (Asst. Director)	(C Mortimer) ²
PR 2 Senior Geologists	W Gwosdz
	(D Aldiss) ²
PR 3 Geologists	N Lock ⁶
	T.P. Machacha ^{1*}
	M.P. Modisi ^{1*}
	Vacant
Assistant Geologist	A Tombale ¹

Hydrogeology Division

PR 1 Principal Hydrogeologist	G Goldberg ⁴
PR 2 Senior Hydrogeologist	C Neumann-Redlin ⁴
PR 3 Hydrogeologist	M Sekwale ^{1*}
	Vacant
	Vacant

(c) Technical Services Branches
Geophysics Branch

PR 1 Principal Geophysicist	D.G. Hutchins ³
PR 2 Senior Geophysicist	R Peart ²
PR 3 Electronics Engineer	E Milner ³

Laboratory Branch

PR 1 Principal Chemist	J.S. Butterworth ³
PR 3 Chemists	P.L. Francks ⁵
	M.H. Sutcliffe ³
Senior Technical Officer	R.J. Malejanie ¹
Mineral Dresser	H Kara ¹

Drawing Office

Senior Cartographer	K Jennings ³
Cartographers	N.R.J. Gohil ⁶
	Vacant

Library and Records

Technical Records Officer
Library Assistant
Publications Officer

G McEwen³
S Marope (Mrs)¹
C.P. Matshaba¹

Resources Investigation Drilling Unit

Senior Diamond Drillers:

R Lewis³
A Hodgkinson³

1. Permanent Establishment
2. I.G.S. seconded officer
3. OSAS contract officer
4. West German seconded officer
5. USAID
6. Local Contract
- * On overseas post-graduate course

- 1.2 Fifteen of the Department's posts are OSAS designated at present but 1, the Technical Records Officer post, is to be given up when Mr McEwen's contract expires in 1982. Ten of the OSAS posts are encumbered and appointments to three others are underway viz, Deputy Director (Black), Assistant Director (Mortimer), and Geologist (Aldiss). The remaining 2 posts are earmarked for an hydrogeologist and a coal geologist and indents for these are in preparation.
- 1.3 The Deputy Director post has been vacant since the departure of Dr Walshaw in November 1980 and despite strenuous efforts to have the formalities dealt with the appointment of Mr C.D.G. Black has still not been finalised. Mr Black was nominated as Dr Walshaw's successor, under the arrangement for filling the Department's senior posts by secondment from I.G.S., as long ago as June 1980 but OSAS cutbacks complicated the issue resulting in lengthy delays in processing the appointment. The same is also true of Dr Mortimer, who was nominated for the Assistant Director vacancy in mid 1980, whose appointment has been delayed by the OSAS difficulties and also through procedural problems arising in the Crown Agents who are responsible for the initial selection of candidates. The Permanent Secretary, Ministry of Mineral Resources and Water Affairs expressed concern, when I met him on the 4 February, at the delays particularly as Dr Clark is due for end-of-tour leave within a matter of months and his deputy must have adequate time to pick up the threads.
- 1.4 The several causes of delay in finalising the appointments of Black and Mortimer were reviewed with Dr Clark and it was recognised that holdups should in future be of shorter duration as the OSAS position is now stabilised. Of the two remaining vacancies carrying OSAS designation one had been allocated by the Directorate of Personnel for a Cartographer and the Crown Agents had been instructed to recruit. Dr Clark was not aware of this and certainly did not agree with it as he had proposed that the Cartographer vacancy be filled by an internal promotion thus enabling the OSAS designation to be transferred to one of his two vacant Hydrogeologist posts. We obtained his Permanent Secretary's and the Directorate of Personnel's agreement to such an arrangement and the instruction to the Crown Agents was accordingly rescinded. Dr Clark then asked whether Mr J.L. Farr, presently Team-Leader GS10 Project, would be available to fill the OSAS designated Hydrogeologist post when the project is completed at the end of March 1981; Dr E.P. Wright, Hydrogeological Adviser who was in Botswana at the time of my visit, agreed that this would be a sensible move in view of Mr Farr's experience in the country and as Farr is prepared to accept the post it was decided to proceed on that basis.

Dr Clark hopes that the second Hydrogeologist vacancy will be filled under Dutch aid auspices.

- 1.5 The remaining vacancy carrying OSAS designation is required for a coal geologist and I informed Dr Clark that I will have a suitably experienced officer available in September/October of this year. The officer concerned is presently a member of the ODA/IGS Kalimantan Coal Project team in Indonesia.

2. Molopo Farms TC Project

- 2.1 Despite delays caused by the abrasion of helicopter compressor vanes owing to the intake of sand grains, the first field season's work has progressed remarkably well and it is confidently expected that the slight back-log of gravity measurements will be eradicated during the 1981 season. Processing of data obtained during the 1980 programme is proceeding in London and it is anticipated that targets for strategic drilling can be identified at the close of the forthcoming period of fieldwork. The question of a drilling contract must therefore be given consideration fairly soon as a start may be possible by the end of this year.
- 2.2 The resident team comprising Dr Gould (Team-Leader) and Dr Rathbone continue with the geological fieldwork of geochemical and heavy mineral sampling.
- 2.3 Interest on the part of mining houses in the project activities is already becoming evident.

3. British High Commission

- 3.1 Dr E.P. Wright, Hydrogeological Adviser and I were received by H.E. Mr W Turner on the 4 February; Dr G.C. Clark and Mr John Austin were also present.
- 3.2 We reviewed the staffing situation in the Geological Survey Department and Mr Turner proposed that Mr Austin or Mr Brian Robertson should accompany me to the meeting arranged with the Directorate of Personnel on the 5 February.
- 3.3 The likelihood that U.K. aid would not after all be requested for the implementation of the Lobatse sewerage scheme was discussed in brief; a consequent possibility that a considerable sum of money might be available for other projects was noted.

4. Ministry of Mineral Resources and Water Affairs

- 4.1 I met Mr Charles Tibone, Permanent Secretary of the Ministry of Mineral Resources and Water Affairs on the 4 February; Dr E.P. Wright and Dr G.C. Clark were also present.
- 4.2 Mr Tibone explained the position then prevailing regarding the posts of Deputy and Assistant Director. The papers concerning Mr C.D.G. Black, our nomination for the Deputy Director post were with the Head of the Civil Service (as the DDGS post is superscale) and they would be forwarded to the Crown Agents as quickly as possible. Dr Mortimer's nomination had been approved and the Crown Agents had been notified. Dr Clark explained again why speed was necessary, in view of his planned departure

on leave in mid-year, in processing the papers and I added that the Director is working under great difficulties as not only has he no deputy but the Assistant Director post had been vacant since last May. Mr Tibone said that he appreciated the situation and he hoped that from now on there would be no untoward delays in filling the Department's vacancies.

4.3 The Permanent Secretary mentioned the need for a geologist with experience of coalfield geology. I said that Dr D Aldiss who had recently been nominated for a Geologist vacancy had no such experience but otherwise was well versed in economic geology and should prove an asset to the Department. I went on to say that Dr Clark had stated that there was another Geologist post vacant and that I would nominate an I.G.S. man with coal geology experience for this post.

4.4 Mr Tibone enquired about developments regarding the proposal for training in earth sciences which was originally discussed with me in 1979 and then again last year vide paragraph 2.4.2.4 of report by Dr G.M. Brown and me on that visit. I reminded Mr Tibone of our discussion last year when we informed him that ODA had agreed in principle to the proposal I put forward; Mr Tibone said that as far as he knew, the Botswana authorities had not been appraised of this and there had therefore been no progress at all. I promised to investigate the situation. We noted that Mr Sekwale had indeed been accepted for M.Sc. post-graduate training in the U.K. and was now in residence at University College, London (vide paragraph 2.4.2.5 of our February 1980 report). Messrs. Modisi and Machacha having failed to obtain places on economic geology post-graduate courses in U.K. universities are now in the United States on training schemes.

4.5 The meeting noted that the Molopo Farms project is proceeding satisfactorily and I thanked the Permanent Secretary for the excellent cooperation afforded to the ODA/IGS team by the Geological Survey Department.

4.6 The Permanent Secretary informed me in private that the hand-over of the directorship of the Geological Survey Department to Dr G.C. Clark has gone well and he was completely satisfied with Dr Clark's performance since taking over. I repeated the point I had made earlier that Dr Clark had been working under great pressure owing to the absence of his senior officers.

5. Directorate of Personnel

5.1 Dr Clark, Mr Robertson, BHC and I had a brief meeting with the Deputy Director, Personnel Division on the 5 February. We examined the reasons for the delays in processing the appointments of Mr Black and Dr Mortimer and noted that the difficulties now appeared to have been overcome. The question of cancelling the recruitment of a Cartographer and transferring the OSAS supplementation to a Hydrogeologist post was raised and the Deputy Director of Personnel agreed to this course of action.

6. British Council

6.1 Following the meeting at the Directorate of Personnel, we paid a visit to the British Council office in Gaborone to enquire whether any information was available there relating to the proposal for training Botswana nationals in the earth sciences in the U.K. We were told that nothing had been heard of the proposal.

7. Staffing Matters

- 7.1 Messrs E Milner and M.H. Sutcliffe, OSAS contract officers were interviewed at their request. The former wished to know whether there was a danger that OSAS supplementation for his post would be withdrawn; I assured him that this was most unlikely to happen during the tenure of an officer's tour of duty. In the case of Mr Sutcliffe I have already contacted PSE, ODA about his query.
- 7.2 Career interviews were held with Messrs. Peart, Farr and Cheyney and with Drs Gould and Rathbone, all seconded officers from IGS.
- 7.3 Mr A Tombale, Assistant Geologist, sought information regarding the forthcoming IGS Photogeology Course for which he had been nominated. He also enquired about other post-graduate training courses.

8. Other Aid Donors

- 8.1 Japan: a mineral exploration programme is being carried out on a short-term basis by a Japanese team who have pin-pointed a copper anomaly in the Matsitama schist belt, north west of Francistown, for detailed examination. The team is due to return to Botswana from Japan in June and is expected to bring with it two diamond core-drills. Apparently the Japanese offered to undertake a second project should U.K. aid for this Geological Survey come to an end!
- 8.2 Canada: the follow-up drilling programme to the CIDA financed aerial magnetic survey was getting underway at the time of my visit to Botswana and the drilling rigs were being deployed to their sites in the Kalahari. A sum of Canadian \$1.9 million is available to meet the cost of drilling between 17 and 20 boreholes with a total depth of 7,000 metres. Two rigs will be operating on a 6 day week basis with two 12 hour shifts each day. The rigs will be handed over to the Geological Survey Department when the drilling is completed.
- 8.3 West Germany: the first field-season of the mineral exploration programme has been completed and the decision has been taken to concentrate future attention to an area south of the Aha Hills in Ngamiland. Their interest in the Tshabong area in south-west Botswana has evaporated following interpretation of an aerial geophysical survey which indicated a considerable cover of Kalahari sands. For their work in the Aha Hills region the W German team will be 3 to 4 strong resident in Botswana for 12 to 18 months plus a number of short-team experts.
- 8.4 France: the BRGM's attempts to set up a mineral exploration project funded from European Community sources, have been unsuccessful and the Bureau has abandoned its interest in Botswana.
- 9. Private Sector Mineral Exploration There is very considerable activity by the private sector in mineral exploration in Botswana and there are at present 73 active licences on issue. The total private sector expenditure on prospecting work in 1979 amounted to 6 million Pula and there is no evidence of any slackening of effort.
- 9.1 Diamonds continue to be the major factor in Botswana's mineral industry and by 1984 it is estimated that production will amount to 10 million

carats per year as Jwaneng mine will by then be in full production. Four Kimberlite (the host rock for diamonds) fields have now been identified with 30 pipes in the Tshabong area alone and another 12 in the Ngalakadi district. Falconbridge Nickel Mines are very active in the diamond exploration field.

- 9.2 Coal This is another field where there is considerable activity with Shell, BP, Esso, Amax, Charbonnage de France, and Sunbase Minerals of South Africa all either prospecting or seeking prospecting rights. Shell's plans are apparently well advanced with a mining lease application submitted for a mine in the Moropule area. Shell have also been granted prospecting rights for 2 years over ground in the Mmamabule area on condition that they apply for a mining lease within that period with production in 1985. They plan to mine 5 million tons per year and to export this quantity a railway eastwards to the Republic of South Africa is envisaged. Production could be as high as 10 million tons a year were there an outlet westwards through Namibia and a railway across the Kalahari may become a possibility once that country achieves independence. In that situation Shell would be in a position to export washed coal to Europe, provided adequate supplies of water can be assured.
- 9.3 Copper Further work on the Ghanzi Ridge prospect is planned by a consortium comprising US Steel, BRGM and Outokompo Oy of Finland which has been granted a 3 year lease. It is understood that US \$2 million are earmarked for the investigation. Falconbridge Nickel Mines are thought likely to proceed to the mining stage in the Matsitama-Bushman area provided they can obtain a commitment from the Botswana Government with regard to power and transport facilities.
- 9.4 Gold Several small scale workers are active in the Francistown area with 3 mining lease applications submitted. Old mine dumps are apparently the main attraction.
- 9.5 Lead-Zinc Billiton Minerals (Shell) are investigating in a minor way, lead-zinc mineralisation in the Transvaal Dolomites.
- 9.6 Radio-active Minerals The Anglo-American Corporation are continuing with their investigations in the Mahalapye district and an airborne radiometric survey has been completed. Other organisations have not been so successful and CEEB/Union Carbide will probably abandon their lease this year while the Japanese and Falconbridge are also likely to relinquish theirs.
- 9.7 Oil and Gas The Esso Corporation has applied for a prospecting right covering a large sector of the western Kalahari and it is understood that some US \$10 million is earmarked for the first 3 years' work mainly to be devoted to seismic surveys.
10. Acknowledgements I am grateful to Dr G.C. Clark for arranging my programme in Botswana and for his hospitality.

Report on a Visit to Zambia 7 - 12 February 1981
I.G. Hughes, Assistant Director, Head, Overseas Division,
Institute of Geological Sciences

1. Introduction

- 1.1 I arrived in Lusaka from Botswana on the 7 February 1981 and was met by Mr R Mackenzie of the British High Commission. The main purpose of my visit was to carry out a manpower review of the Geological Survey Department, Ministry of Mines which the Joint UK/Zambia Manpower Review in the Public Works and Engineering Sector in August 1980 had not been able to complete satisfactorily owing to various factors beyond their control. I was also asked to visit the Zambia Industrial and Mining Corporation Ltd (ZIMCO) to review the question of extending BESS support to posts filled by U.K. personnel.
- 1.2 I had preliminary discussions at the British High Commission on the 9 February and then a meeting with officials of the Personnel Division at 0900 hours. Following that meeting I was received by H.E. Mr J.R. Johnson, CMG, the High Commissioner who asked me to emphasise in my discussions with Zambian officials, the objective of localising posts. Mr Johnson also made the point that there was appreciable over-manning in many of the Zambian departments and that there should have been considerable pruning of the establishment in the past.
- 1.3 My report and recommendations with regard to the Geological Survey Department's OSAS supplemented posts is at Appendix A.

2. Zambia Industrial and Mining Corporation (ZIMCO)

- 2.1 In company with Mr R Mackenzie I attended a meeting at 0930 hours on the 11 February 1981 with officials of ZIMCO to discuss their request that three of their geological posts attract BESS designation. (This request was originally conveyed to our post in Lusaka in a letter dated the 24 April 1980 from the Permanent Secretary, Personnel Division).
- 2.2 The ZIMCO Chief Geologist, Dr Podemski described the work of the Corporation in the mining field and he assured me that there was no significant overlap with the activities of the Geological Survey Department. The Corporation's geological/mineral exploration unit has a staff of 112 of which 18 are professional officers. Six of these are Zambian geologists and there are also 2 Ugandan, 2 Polish, 1 Indian and 1 British geologists, the latter on local terms. Dr Podemski said that his unit requires urgently to recruit a senior geologist and a senior geophysicist and he would like U.K. nationals for these posts but without supplementation the chances are remote.
- 2.3 I formed the opinion that ZIMCO's involvement in the mineral exploration field is of a very practical nature and is likely, given adequate support, to benefit the country in several ways at a fairly early date, e.g. battery production from locally mined manganese. I therefore recommend that BESS designation be accorded to the posts of Senior Project Geophysicist, Senior Project Geologist and Project Geologist. The latter post is already filled by Dr Andrews-Speed and Dr Podemski is most anxious that he should remain on the staff of ZIMCO; I am satisfied that Dr Andrews-Smith is suitably qualified for such designation. Recruitment of the other two men will be effected by the Personnel Division through the Zambia High

Commission in London and I offered my assistance in the interviewing of candidates.

3. Dr M.A.K. Yusufi

- 3.1 Dr Yusufi commenced his first tour in Zambia as Senior Geologist on the 1 November 1977 at the age of 47 having had a varied career mainly in the university teaching and research field. His work in Zambia has been of a sedentary nature and as early as October 1978 this attracted strong criticism by the supervising Principal Geologist. In August 1979 there was further and more severe criticism by the Department's three Principal Geologists and in his 1978-79 Annual Confidential Report he was described as basically inefficient and lacking in a sufficient depth of knowledge: his performance had been poor and he was said to be unsuitable for the post there being serious doubts about his qualifications. His reporting officer stated quite categorically that he should not be offered a renewal of his contract should he apply for one. These comments were repeated in Dr Yusufi's 1979/80 ACR and on the 5 June 1980 the Director of Geological Survey informed the Permanent Secretary, Ministry of Mines that Yusufi "singularly lacks organising ability and is unsuitable for supervising tasks. His petrological knowledge is inadequate Incapable of completing tasks breadth of geological knowledge cannot be considered good not recommended for further tour".
- 3.2 On the 1 August 1980 the Permanent Secretary, Ministry of Mines informed Dr Yusufi in writing that a second contract would not be granted this being, it would appear, a response to a request from him to proceed on leave in the following October and for the renewal of his contract thereafter. Dr Yusufi duly departed to the U.K. on leave on the 13 October 1980 his passage having been paid one-way by the Zambian Government. He however, purchased with his own money the return ticket to Lusaka.
- 3.3 On the 15 October 1980 the Director of Geological Survey was informed by the Ministry of Mines that Dr Yusufi had applied for an extension of his contract until the 30 April 1981. The letter confirmed that Dr Yusufi was not to be reengaged for a second tour but it is not clear whether the extension until the end of April had been agreed to. The DGS enquired about the extension on the 5 November 1980 and this prompted an approach to ODA who replied declining to continue designation for the 6 months requested. The DGS was informed of this on the 13 November 1980 but as Dr Yusufi was by then in the U.K. there is no confirmation that he was aware that his request for an extension had been turned down. Nonetheless he had returned to Zambia and taken up occupation of his office in the Geological Survey Department at the end of January and I gathered that he was negotiating a new contract with the Personnel Division and the Ministry of Mines at the time of my visit!
- 3.4 I discussed his situation in some detail with Dr Yusufi on the morning of the 11 February. An air of lethargy permeated his office (he was reading a newspaper when I arrived for the pre-arranged interview) and his discourse - vague, rambling and evasive, was in keeping with his environment. His answers to my questions indicated quite clearly that he had sought to evade any form of responsibility in the Department and he denied ever receiving instructions from his senior officers which I knew to be untrue. On being asked to show me examples of his work in Zambia all he was able to produce was an air-photograph catalogue, the type of task a technician should carry out but one that I gathered from papers on his personal file had had to be redone more than once before achieving an acceptable standard.

- 3.5 My recommendation is that Dr Yusufi should not under any circumstances be designated under OSAS and I further recommend that in future all designation requests submitted by High Commissions in London be examined by the appropriate advisers. (See also my letter No. 1 of the relating to Mr P.K. Verma).

4. British Council

- 4.1 Mr R Mackenzie and I had a short discussion with the Deputy Representative at the British Council Office in Lusaka on the afternoon of the 11 February 1981. Mrs Maughan of the BC was also present and she informed us that no requests for post-graduate training courses in the earth sciences had been received in 1980. I asked whether details of the IGS Photogeology course, sponsored by ODA, had been received: Mrs Maughan confirmed that these had been received last December and she had forwarded them to the Directorate of Manpower Training but without result.
- 4.2 The Deputy Representative noted that the only awards recommended in the August 1980 Manpower Review Report were for two Cartographic courses and I expressed doubts as to the justification for this in view of the number of cartographers already trained, or in training, at DOS.

5. University of Zambia

- 5.1 Mr Mackenzie and I met Professor David Turner, Professor of Geology at the University of Zambia over lunch on the 11 February 1981. Professor Turner who was formerly in the IGS, said that of 10 Honours Geology graduates this year only 1 will be a potential recruit to the Geological Survey Department the others all being committed to the mining sector. Present indications are that it will not be until late 1984 that 4 or 5 candidates will be available for the Geological Survey.

6. Staff Interviews

- 6.1 Interviews were held with all the OSAS officers in post at the Geological Survey Department and Job Appraisal Reports were completed in respect of each officer. (Mr Ian Breingan was present at all the interviews). The interviews indicated that all the officers were performing worthwhile scientific roles and I was on the whole favourably impressed with their morale. There were naturally, some complaints the most common ones being the difficulties over housing and the number of burglaries/hold-ups in Lusaka. A certain amount of apprehension as to the Department's future under the new Director was evident but generally it appeared to me that there was plenty of goodwill towards him.
- 6.2 The following points emerged during the individual interviews:
- 6.2.1 Dr R.A. Agar, Geologist In his first tour which is due to end in July 1982. A very able geologist with excellent training who has fitted in well in Zambia and who has contributed substantially on the intellectual level. Is well suited for promotion to one of the vacant Senior Geologist posts and this would encourage him to return for a second tour which I think would be very much in Zambia's interests.
- 6.2.2 Mr M.C. Daly, Geologist Now on his second tour; intends to leave the Department in August/September 1982 to go to Leeds University so as to fulfil the residence obligation for the award of a Ph.D based on an

aspect of his work in Zambia.

- 6.2.3 Mr A.L. Dawson, Senior Geochemist Has worked in Africa for 16 years and has been with the Zambia Geological Survey since October 1979. His tour therefore ends in October 1982 when he will be 40 years of age and he feels that he should then seek a post with more job security. The Czech geochemist expected to arrive shortly in Zambia could take over as Senior Geochemist on Dawson's departure, as there is no Zambian understudy, but Czechs are not allowed by their Government to serve overseas for more than 3 or 4 years so this important post needs to be watched carefully.
- 6.2.4 Mr D Green, Principal Geologist A practising geologist since 1948 with service in Botswana, Fiji and Kenya before coming to Zambia and is therefore of great value in a department short of experienced men. Has had difficulties over accommodation in Lusaka but will probably return for a further tour of duty after his UK leave which is due to start in April 1981.
- 6.2.5 Mr A.E. Harding, Geologist Started his second tour of duty in November 1980 but is unlikely to complete this as he is unwilling to spend protracted periods in the field. It is therefore likely that he will resign his appointment later this year.
- 6.2.6 Mr N.S. Hunjan, Senior Cartographer Is 47 years of age (born 9 November 1933) and will therefore only be 50 in 1983 and not over 60 as indicated in Annex 11:7 of the August 1980 Manpower Review Report. In the absence of a Chief Cartographer has been in charge of the Department's Drawing Office for the last 2 years. Is considered a very good cartographer but does not have the forcefulness necessary to fill the Chief Cartographer post substantively.
- 6.2.7 Mr C.D. Kerr, Principal Geologist Has worked for 15 years in Africa, 12 of them in Zambia and next to the Deputy Director is the most widely experienced in the country's geology. Lack of further promotion prospects and job insecurity will probably force him to seek a post elsewhere at the end of his present tour (October 1981). His departure would be a most serious loss to the Department.
- 6.2.8 Mr W.P. Loughlin, Geologist In his second tour of duty and is enjoying his work in the field. He is less enthusiastic about life in Lusaka owing to the fear of burglaries and hold-up - he has already been held up once and had his car stolen.
- 6.2.9 Mr B.A. McGrail Completes his second tour of duty in March 1981 and will not be seeking a renewal of his contract. His first tour was devoted to fieldwork and most of his second to laboratory work under the Senior Geologist (Tether). He was however, redeployed to fieldwork last September against his wishes and this strengthened his resolve to leave Zambia. Has done a useful job particularly in the laboratories and the experience has also done him good.
- 6.2.10 Mr J.I. Malik, Geologist Will complete his second tour of duty (of 32 months duration) in July 1981 and would like to return for another tour. Works in the industrial minerals (salt, talc, clays, etc) section of the Department and is enthusiastic and energetic. His senior officers are anxious that he should be given a third tour and were very concerned that the August 1980 Manpower Review Report recommended the discontinuance of OSAS supplementation for his post. The arrangement I agreed with the

Zambian authorities will ensure that supplementation will remain available for a third tour.

6.2.11 *Nick?*
(in hanks) Mr N.J. Money, Deputy Director Has served in Zambia since 1966 and the Department relies very heavily on him. Is enthusiastic, industrious and ambitious and very knowledgeable about Zambia's post-basement geology.

6.2.12 Mr J.G.C. Tether, Senior Geologist Has been in Zambia since 1974 and is at present on a 2-year tour. He could not explain why he has a 2-year tour and would like this extended to 3 years in the same manner as his colleagues in the Department. An able mineralogist who has served the Department well; under his guidance and supervision an impressive new laboratory building has been erected and equipped. Does not have an understudy since McGrail's transfer back to fieldwork (vide supra).

6.2.13 Mr G Vallance, Senior Geologist Has been in Zambia since 1977, with previous service in Guyana and Sierra Leone and has just started his second tour. Had several complaints - 3-year tours are too long; leave rate @ 3 days per month inadequate; local leave in addition to end-of-tour leave, should be provided; problems with housing; etc. Apart from complaints, rather unforthcoming and does not appear to have the makings of a leader of men. His senior officers say that he is a careful and painstaking worker best left on his own.

7. Acknowledgements I am most grateful to Mr Mackenzie, British High Commission for arranging my programme, meeting me and taking me to the Airport and for all his other kindnesses. Mr Ian Breingan who accompanied me throughout my review of the Geological Survey also offered me much kindness and I am very grateful to him. My thanks are also due to the Director and staff of the Geological Survey Department for their hospitality and help. I also record my appreciation of H.E. the High Commissioner's hospitality. Finally I should like to thank Messrs. Abraham and Whiting of ODA for the briefing afforded me in preparation for my visit.

APPENDIX A

Geological Survey Department Manpower Review by I.G. Hughes Head, Overseas Division, Institute of Geological Sciences

1. At the opening discussion at the Personnel Division (present Mr L.C. Daka, Mr K.G. Kasapatu, Mr Singocha, Mr Lungu, Mr Breingan, Personnel Division and Mr Mackenzie, British High Commission) on the 9 February 1981 Mr Daka noted the difficulties the Ministry of Mines was encountering in recruiting geologists and mining engineers and he was glad that proper attention was now to be given to the Geological Survey Department. The Department was very important in the eyes of the Zambia Government in view of the vital position the mining industry played in the economy of the country and the cut back in OSAS posts meant that recruitment from the traditional U.K. market was being restricted. He mentioned that Dr Mwanang'onze had, in accordance with the Zambianisation policy, been appointed Director of the Geological Survey and he also noted that Mr W.C. Fairbairn, an Englishman, had been appointed Chief Mining Engineer, Mines Development Department but that the post of Commissioner of Mines was still vacant. The Chief Inspector of Mines, Mines Safety Department had recently retired and Mr P.D. Harmer was now acting in the post (we were later informed by the Permanent Secretary, Ministry of Mines that Mr Harmer was being promoted substantive Chief Inspector). Mr Daka went on to ask that in addition to considering the overall staffing position in the Geological Survey Department, I also interview Dr M.A.K. Yusufi of that Department and Mr P.K. Verma who had been offered a post of Senior Inspector of Mines. In reply to a question from Mr Daka, I said that the reason why I.G.S. had ceased to second geologists to the Geological Survey Department (at one time there were a total of six such secondments) was that there had been no request for us to continue to do so but we would still be prepared to consider such a request within the OSAS framework. Mr Daka noted this and said that the housing situation in Lusaka was expected to improve following the raising of the salary threshold at which Zambian officers became eligible for Government accommodation.
2. My first meeting with the Director of Geological Survey (Dr Mwanang'onze) was at 11.30 hours on the 9 February; I was accompanied by Mr Mackenzie and by Mr Ian Breingan of the Personnel Division. I explained to the Director the reasons for my visit and we then briefly reviewed the general geological scene in Zambia. The Director, the first Zambian to hold the post having been appointed last August, said that there were 13 professional posts vacant and the position was worsening as several resignations were impending. The proposal that OSAS supplementation be withdrawn from all the 8 Geologist posts when the present incumbents' tours ended was extremely serious as it meant in fact that in 1982 he would only have 4 geologists in the field, in 1983 3 and in 1984 only one unless other aid donors provided geologists. He wished to recruit expatriates with 4 to 5 years' experience to fill his vacancies; there was very little likelihood of more than 1 or 2 geologists being recruited from the University of Zambia for the next few years. His policy was to continue and to complete the Department's regional geological mapping programme and to up-grade the mapping in certain areas of particular importance from the economic standpoint. I asked about the ZIMCO involvement and queried whether there was the possibility of overlapping as that organisation was also involved in mineral exploration and from all accounts was expanding its role in this field. The Director said

that while there might be some slight duplication of effort, in general ZIMCO carried on where his Department left off and their activities were therefore complementary. The allocation for geological mapping in the current financial year amounted to Kwacha 600,000 out of a total allocation of Kwacha 2.5 million. I mentioned to the Director that I would again be happy to assist in the recruitment of staff in the U.K. as I had done in the past and I also said that the I.G.S. would again be prepared to consider seconding geologists to OSAS posts in his Department should he so desire.

3. In subsequent discussions with the Deputy Director and the Principal Geologists, Dr Mwanang'onze's fears were strongly reinforced and it was impressed upon me that the regional mapping programme will be severely delayed if not completely halted, if the proposed cuts in OSAS posts goes ahead. It was also recognised that services to the Government, to private sector bodies and to individuals would almost certainly be reduced and useful economic investigations abandoned. The possibility that European or North American geologists would be prepared to work for the basic salary offered in Zambia was thought to be so remote as not to be worth considering. Local Zambian graduates, even if they were available, rarely stay in the Civil Service when far better rewards are offered in the private sector.
4. The point was also made to me that there would almost certainly be very considerable difficulty in recruiting suitably qualified and experienced personnel to fill the proposed new OSAS supplemented posts in the Mines Safety Department (from my own experience of recruitment I know this to be true) and that it would therefore be sensible to leave matters as they are.
5. That there is a need to strengthen the Mines Safety Department is undeniable and I agree in general with the views expressed in paragraph 2 of Section IV, Manpower Review Report, August 1980. However, in my view the phasing out of the Geologist and technical posts should be more gradual than is proposed in the above-mentioned Report. The Deputy Director made a strong case for the retention of 6 of the OSAS supplemented posts leaving 4 to be transferred to the Mines Safety Department but on balance I think that it should be the other way around. The effect in man years (cf Table A of the Dinham Report, December 1980) would be that the Ministry of Mines' allocations would be as follows:

<u>Department</u>	<u>1981/2</u>	<u>1982/3</u>	<u>1983/4</u>
Geological Survey	17*	16*	16*
Mines Safety)	18	18	15
Mines Development)	—	—	—
Total	35	34	30
	—	—	—

* includes one Cartographer post.

The Geological Survey Department posts would comprise 9 Principal and Senior Geologists each year with the number of Geologists falling from 7 in 1981/2 to 5 in 1983/4. Annex 11:7 of the August 1980 Manpower Review Report would accordingly be up-dated as hereunder:

Officer and Post	1980/81	1981/82	1982/83	1983/84	Comments
Money N.J., Deputy Director					
Kerr C.D., Principal Geologist					
Green D "					
Vacant Senior Geologist					Recruit
Tether J.G. "					
Vacant "					Recruit
Vallance G "					
(Yusufi M.A.K.)"	---				Recruit
Dawson A.L., Senior Geochemist					
Agar R.A., Geologist					
McGrail B.A., Geologist					Replace
Malik J.I., "					Re-engage
Daly M.C. "					Discontinue
Harding A.E. "			---		Discontinue
Loughlin W.P., "					Discontinue
Vacant "					Recruit
Vacant "					Discontinue
(Lynam, Miss A.P.) Tech. Records Officer					Discontinue
Vacant, Tech. Records Officer					Discontinue
Hunjan N.S., Senior Cartographer					Discontinue
Total man-years		17	16	15	
End of Tour		Green (R) Kerr (R) Malik(R) McGrail(R)	Tether(R) Dawson(R) Agar (R) Daly (D)	Harding(D) Loughlin(D) Hunjan (D) Vallance(R)	

R = Replace D = Discontinue

6. A case for the continued supplementation of the Technical Records Officer post in which Miss A.P.M. Lynam is presently serving was also put to me by the senior staff of the Geological Survey Department. Miss Lynam was on OSAS terms until the end of her last tour but is now over 60 years' of age; she returned to Zambia on local terms to help out but is unlikely to remain for very long. Her departure will be a most severe loss to the Department (there is no-one capable and available to take over her duties) as it is essential that data from mines and exploration companies and from the department's own staff are properly organised and catalogued. I asked whether there was anyone available to understudy her but there was no immediate answer otherwise I would recommend that Miss Lynam be given supplementation for a limited period of say 18 months to enable her to

train up a successor: with the large number of unfilled OSAS posts the financing of such an arrangement should not pose any problems.

7. I informed the Director of Geological Survey in a meeting on the morning of the 12 February of the recommendation that we would be putting forward i.e. that only 6 posts cease to be supplemented and not 10 as originally proposed. I also suggested that he consider promoting Dr Agar to one of the Senior Geologist vacancies and this he said he would consider. We reviewed the procedure for recruiting OSAS geologists and I reminded him of my earlier offer to advise the Zambia High Commission in London and also of my suggestion that he considers requesting the secondment of I.G.S. officers. Dr Mwanangonze displayed some slight reluctance regarding the secondment possibility and said that he would prefer testing the open market in the first instance (his reluctance was apparently due to the erroneous impression that the allegiance of seconded officers would not lie in his department). Thereafter he would be happy to compare the open market response with the credentials of I.G.S. officers proposed for secondment.
8. I put our recommendation to Mr Masananga, Permanent Secretary, Ministry of Mines on the morning of the 12 February and he accepted that the Geological Survey Department should retain four supplemented posts. Initially he was only prepared to agree to the retention of three but in view of the Zambianisation of the post of Deputy Chief Inspector of Mines (by Mr Sweta presently in Canada reading for a Ph.D degree) consequent on the promotion of Mr P.D. Harmer vide paragraph 1 above, our recommendation was accepted.
9. Mr Masananga then introduced Mr W.C. Fairbairn recently appointed Chief Mining Engineer, Mines Development Department, apparently on OSAS terms. Originally this post had been filled by CIDA; it now appears as if one of the Mines Safety Department OSAS designations has been transferred to the Mines Development Department (c.f. paragraph 2a, Section IV of the August 1980 Manpower Review Report).
10. At 1430 hours on the 12 February we had a round-up meeting at the Personnel Division with Mr K.G. Kasapatu in the chair. I outlined our recommendation that the Geological Survey Department should retain OSAS designation for 4 of the 10 proposed for transfer to the Mines Safety Department and I informed the meeting that the Permanent Secretary, Ministry of Mines had concurred with this. Our discussions with the OSAS officers of the Geological Survey Department were briefly reviewed and I said that we were satisfied that each officer was gainfully employed and was carrying out his duties to the best of his abilities. (I emphasised that this did not apply to Dr Yusufi who was not at that time an OSAS designated officer). I informed Mr Kasapatu that I had not been able to talk to Mr P.K. Verma who was apparently out of the country; Mr Kasapatu asked that I interview Mr Verma in London and said that he would ask the High Commission there to arrange a date.