

3-2-3 Hydrogeology

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1. Characteristics of Existing Boreholes

The records on geoelectric prospecting survey point collected from Ministry of Water Resources and Development Midlands/Masvingo Office are approximately total 350. Out of 350, 287 contained data on drilling. 31 dry boreholes were included within 287 records.

The locations of boreholes drilled by Ministry of Water Resources and Development are shown in Fig. A.3-2-54. A summary of borehole records per geological formation is given in Table A.3-2-10. Characteristics of boreholes drilled by Ministry of Water Resources and Development are shown based on the Data Sheets which are shown in Table A.3-2-11 through 3-2-57.

(1) Distribution of Boreholes

The Boreholes drilled are distributed with specific characteristics, as some areas are densely covered and the other areas are sparsely covered. The densely covered areas are found, for instance, in southern part of Chilimanzi C.L., northern and southern part of Chibi C.L., middle part of Matibi No.1 C.L., and eastern part of Chilimanzi C.L., western part of Runde C.L., middle part of Chibi C.L., and northern to western part of Mberengwa C.L. The sparsely covered areas mentioned above, seem to coincide with mainly Younger Granites Formation area.

(2) Depth of Borehole

The recommended maximum depth of Borehole by Ministry of Water Resources and Development's Geophysical (G/P) survey is average 52m. The shallower boreholes (less than 50m deep) were recommended in the areas which consist of Younger Granites Formation and Older Gneiss Formations. And the deeper ones more than 50m were recommended in

Great Dyke Formation, Limpopo mobil belt Formation and Basement Schist Complex Formation.

In practice the recommended depths corresponded well with the actual depths. Drilled boreholes into the banded foliated Geniss Formation are the shallowest (average 36.4m) of all. On the other hand, the average depth of borehole in the Area of Basement Schist Complex Formation is the deepest with 46.3m.

The average depth of all the boreholes drilled up to now in the Project Area is 42.8m. The maximum and minimum are 76m and 21m respectively. The boreholes were on an average lined for about 20m by blank steel casing and/or perforated steel casing.

(i) Water Level

The average of static water level (depth of water from ground surface before pumping test) of all the records is 12.6m. From the viewpoint of geological Formations, the static water levels within Younger Granites and Older Gneiss are slightly shallower than others. The depth from the ground surface at which water was first encountered during drilling was averaged at about 16m.

(ii) Yield

As regards yield of boreholes tested, the geological formations are divided into two groups. The group which has little yield (approx. $3.5\text{m}^3/\text{hr}$) consists of Younger Granites Formation, Banded Foliated Gneiss Formation and Limpopo Mobil Belt Formation. The remaining Formations such as Great Dyke, Tonalitic Gneiss and Basement Schist Complex yielded considerably large quantities (approx. $5.6\text{m}^3/\text{hr}$).

The average yield of all boreholes except mentioned "Dry" in the Ministry of Water Resources and Development record, is $4.52\text{m}^3/\text{hr}$. The value of specific yield show almost the same tendency as the yield

itself. The value of $0.192\text{m}^3/\text{hr}/\text{m}$ is the average Specific Yield in the Project Area. This value suggests that water level will drop at least 5m to draw water of $1\text{m}^3/\text{hr}$.

(iii) Drilling Time

The drilling records indicate that average time required for completion of construction of each borehole is 19 days. The pumping test is included in this time. Boreholes in Younger Granites Formations took more days than in other Formations. The former required 24 days (average) per borehole, and the latter were completed in average 16 to 20 days. Drilling speed recorded is 2.67m average per day. The slowest is in Younger Granites Formation with 2.04m per day and the fastest is in Basement Schist Complex Formation with 3.26m per day.

2. Pumping Tests

Pumping tests were carried out for the existing boreholes to clarify the characteristics of the groundwater aquifer in the Project Area. Tests were carried out by pumping out water by the equipped hand pump except one by an engine driven pump. Water volume pumped out was measured and the water level fluctuation was measured by a meter level meter during water lifting and recovery periods.

Pumping tests were carried out for such boreholes which permitted insertion of water level meter through a gap or an opening at the based of the hand pump without tampering or removal of any pump parts. Ten such boreholes were found and tested.

The tested boreholes are presently being utilized for domestic water extraction. Because of the constant use by the local villagers the static water level could not be measured nor established. Test measuring was also limited with respect to time, since it was not permissible to make users wait for their water for too long a time.

The test results are summarized as follows.

Groundwater underlying in the Project Area seems to be mainly fissure water and not seepage water which is controlled by Daroy's law.

Calculated values based on the groundwater theories are not so applicable and their correspondences on each analysis between draw down and recovery are poor. This fact means that it seems unreasonable to adopt the seepage theory for the groundwater underlying in this area.

Location of pumping tests and summarized results of pumping test are shown in Table A.3-2-58 and A.3-2-59. Data of each pumping test are shown in Table A.3-2-60 through Table A.3-2-64.

Calculation Sheet of Transmissibility

$$T = \frac{Q_w}{2\pi S_w} \log_e (r_e/r_w)$$

T : Transmissibility (m²/sec)

Q_w: Pumping Discharge (m³/sec)

r_e: Radius of Cone Depression (300 m)

r_w: Radius of Well (0.08 m)

S_w: Drawdown

$$T = 1.31 \times \frac{Q_w}{S_w}$$

<u>Test No.</u>	<u>Q_s</u> (m ³ /sec)	<u>S_w</u> (m)	<u>T</u> (m ² /sec)	<u>K</u> (as 50m thick)	<u>Note</u>
1	-	-	-	-	Unadoptable
2	1.3 x 10 ⁻³	7.8	2.2 x 10 ⁻⁴	4.2 x 10 ⁻⁴	
3	-	-	-	-	Unadoptable
4	2.0 x 10 ⁻⁴	0.34	7.7 x 10 ⁻⁴	1.5 x 10 ⁻³	
5	-	-	-	-	Unadoptable
6	1.5 x 10 ⁻⁴	16.0	1.2 x 10 ⁻⁵	1.5 x 10 ⁻⁵	
7	1.8 x 10 ⁻⁴	0.95	2.5 x 10 ⁻⁴	5.0 x 10 ⁻⁴	
8	9.3 x 10 ⁻⁵	3.77	3.2 x 10 ⁻⁵	6.4 x 10 ⁻⁴	
9	2.5 x 10 ⁻⁴	5.26	6.2 x 10 ⁻⁵	1.2 x 10 ⁻⁴	
10	1.0 x 10 ⁻⁴	3.62	3.6 x 10 ⁻⁵	7.2 x 10 ⁻⁵	

Fig. A.3-2-54 B/H Location Drilled by MWR&D

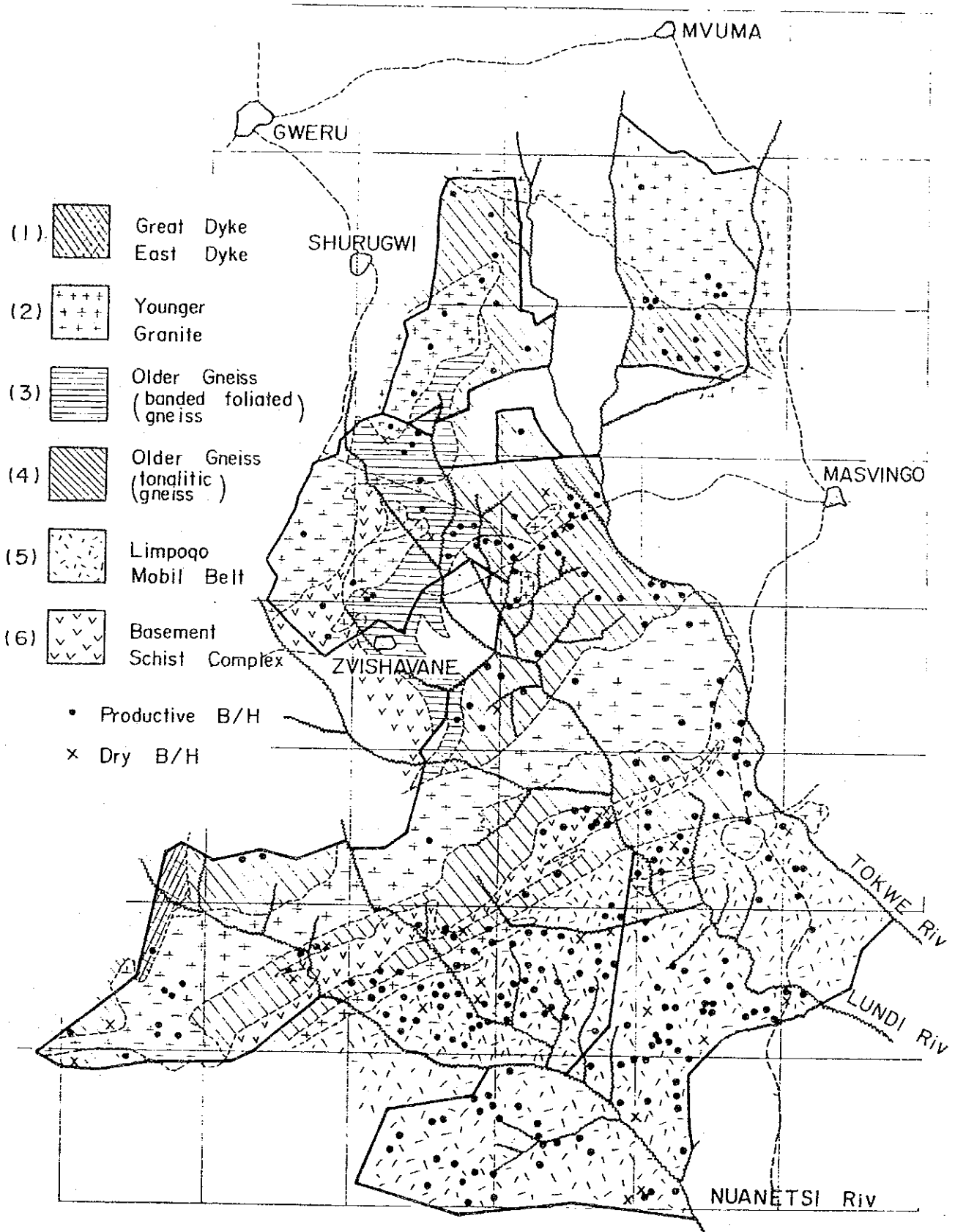


Table A. 3-2-10 Summary of Borehole Record per Geological Formations

Geological Formation	Contents		(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)	(I)	(J)	(K)
	S/No	B/H. No.	Drilled B/H. No.	Dry B/H. No.	Recom Depth by G/P (m)	Drilled B/H Depth (m)	Casing Length (m)	Static Water Level (m)	Water First Found (m)	Yield by Pump Test (m ³ /hr)	Specific Yield (m ³ /h/m)	Drilling Period (days)	Drilling Speed (m/day)
(1) Great Dyke	Max	3	3	0 (0%)	3	3	2	3	2	3	3	1	1
	Min				66	42	36.8	1.2	2	9.9	0.120	—	—
	Mean				40	39	28	21.3	24	1.8	0.325	—	—
	Mean				52.0	41.0	32.4	14.5	13.0	5.55	0.270	(13)	(3)
(2) Younger Granites	S/No	34	34	3 (9%)	21	33	17	23	17	31	16	17	17
	Max				60	60	27	1.5	6	16.2	0.810	37	4.70
	Min				30	28	6	23	24	0.3	0.014	10	0.97
	Mean				47.9	43.5	18.5	10.1	14.5	3.72	0.192	23.6	2.04
(3) Older Gneiss (banded foliated gneiss)	S/No	10	10	3 (30%)	10	10	7	8	7	8	6	6	6
	Max				65	45	33	1.7	6	7.7	0.397	19	3.40
	Min				15	21	12	26	27	0.6	0.067	10	1.62
	Mean				44.0	36.4	24.9	11.7	18.1	3.48	0.169	15.2	2.48
(4) Older Gneiss (tonalitic gneiss)	S/No	83	83	10 (12%)	43	81	46	59	44	73	45	38	36
	Max				70	70	39.5	2	6	18.6	0.844	52	7.43
	Min				35	25	3	42.7	43	0.46	0.017	9	0.66
	Mean				49.4	42.9	20.1	12.3	15.9	5.73	0.232	16.6	2.73
(5) Limpopo Mobil Belt	S/No	137	137	13 (9%)	57	134	62	94	62	122	74	12	11
	Max				80	76	50	37	4.5	15.9	0.984	43	8.00
	Min				30	24	6.4	0	37	0.22	0.003	7	1.08
	Mean				55.4	42.6	17.6	13.1	15.6	3.85	0.155	19.4	2.65
(6) Basement Schist Complex	S/No	20	20	2 (10%)	13	18	12	15	12	18	12	12	12
	Max				75	67	48	2.2	3	13.5	0.631	23	4.45
	Min				45	30	7	34	38	0.7	0.056	10	2.00
	Mean				58.0	46.3	28.1	14.1	18.2	5.81	0.264	15.4	3.26
Total	S/No	287	287	31 (11%)	147	279	146	202	144	255	156	86	83
	Max				80	76	50	0	2	18.6	0.984	52	8.00
	Min				15	21	3	42.7	43	0.22	0.003	7	0.66
	Mean				52.0	42.8	19.9	12.6	15.9	4.54	0.192	18.1	2.67

Note, S/NO.: Sample NO.

Table A.3-2-11

LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/II(Borehole) Name	Grid. Ref	Ground El. m	D to W $\frac{1}{2}$ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	FO RE NO (2)
						Yield $\frac{3}{2}$ m ³ /H	Supply Depth m	Specific Capacity m ³ /II/m	Populat.	Area km ²		
1	V 3415	TP 513188	1,180	4.8	M	12.15	7,32	0.389			ST.T	Y
2	"	"	"	11.9	M	6.8		0.130	1,710	27.0	Hospital	Y
3	"	"	"	4.8	D	18.4		0.458			"	Y
4	V 3092	TP 441168		11.0	H	5.4	14, 20	0.338	830	14.0	Rehabiliti	Y
5	V 3093	TP 371213		3.0	II	5.4	11, 15-30	0.225	660	13.0	"	Y
6	V 3090	TP 495045		7.0	H	5.4	17-36	0.200	400	14.0	"	Y
7	V 3099	TP 401131		12.0	II	5.4	15, 30	0.284	500	12.0		Y
8	V 3155	TP 358353		12.0	H	4.3	24, 41	0.144	510	14.0	Rehabiliti	Y
9	V 3356	TP 502066		5.0	II	3.24	6, 18	0.249	800	13.0		Y
10	V 3385	TP 501214		5.0	II	0.72	9, 31	0.023	630	14.0		Y
11	V 3413	TP 466100		3.0	II	13.5	8, 28	0.365	710	22.0	V 3597	Y
12	V 3414	TP 406068		16.0	H	9.0	18, 24	0.450	740	14.0		Y
13	V 3436	TP 394205		12.0	H	10.8	14, 27	0.540	540	10.0		Y
14	V 3437	TP 380204		13.0	II	1.1	27	0.040	1,480	25.0	No.17	Y
15	V 3597	TP 447060		14.0	II	1.35	15, 27	0.054	V 3413	-		Y
16	V 3614	TP 423062		17.0	H	9.0	18, 32	0.409	700	11.0		Y
17		TP 350220							V 3437	-		Y
18		TP 359452							620	14.0		N
19		TP 366411							550	11.0		N
20		TP 577396							870	13.0		N
	Sub-total								12,250	241.0	20 B/H	

Note: $\frac{1}{2}$ Depth to Water, $\frac{2}{2}$ H = Hand, D = Diesel, M = Motor, $\frac{3}{2}$ max. rate at test, $\frac{4}{2}$ Y = Yes, N = None.

* Connected with other Borehole(s)

Table A.3-2-12 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling			Geology 1/	2/ C.M		
		Date	Drilling Recommend m	Water Possibility m	From	to	Days			Depth m	Casing m
V 3415	1-No.1	20/ 8/81	50	35 - 50	27/ 8/81	12/ 9/81	17	40.5	14.0	G	N
	1-No.2							67.1	-	G	N
	1-No.3					25/11/75		46.2	30.8	G	N
V 3092	1-No.4	20/ 3/75	36 - 48	24 - 36	27/ 3/75	10/ 4/75	15	30.0	24.0	G	N
V 3093	1-No.5	21/ 3/75	30 - 45	21 - 27	11/ 4/75	22/ 4/75	11	30.0	30.0	G/Sch.	N
V 3090	1-No.6	17/ 3/75	30 - 36	21 - 27	7/ 3/75	26/ 3/75	20	36.0	10.0	G/Sch.	N
V 3099	1-No.7	21/ 4/75	45 - 51	30 - 42	23/ 4/75	13/ 5/75	21	36.0	21.0	G/Sch.	N
V 3155	1-No.8	30/10/75	42 - 60	24 - 36	2/ 2/76	11/ 2/76	10	47.0	23.0	G/Q Reef	N
V 3356	1-No.9	25/ 2/81	40 - 50	24 - 36	6/ 7/81	25/ 8/81	20	25.0	11.0	Sand/G	N
V 3385	1-No.10	24/ 6/81	35 - 40	25 - 30	6/ 8/81	26/ 8/81	21	40.0	22.0	G	N
V 3413	1-No.11		50	20 - 30, 28 - 30,	14/ 9/81	30/ 9/81	17	45.0	15.0	G/Serp	N
V 3414	1-No.12	19/ 8/81	40	24 - 36	1/10/81	17/10/81	17	40.0	27.0	G/P	N
V 3436	1-No.13	2/ 9/81	35 - 50	25 - 30	19/11/81	9/ 1/82	52	34.5	30.0	G/(Sch.)	N
V 3437	1-No.14	22/ 9/81	50 - 55	25 - 30, 40 - 50	11/ 1/82	2/ 2/82	23	43.0	3.0	Sch/G	N
V 3597	1-No.15	22/ 6/82	30 - 35	18 - 24	19/ 8/82	31/ 8/82	13	41.0	21.0	G	N
V 3614	1-No.16	23/ 8/82	45 - 50	25 - 35	1/ 9/82	11/ 9/82	11	41.0	33.0	G	N

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentine, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-13 LIST OF EXISTING BOREHOLES (FORM 1)
 C.L. Shurugwi D.C. (1 of 1)

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	FOOT N
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 3532	TP 038352	1,295	2.5	H	6.8	5, 27	0.201	590	12.0		Y
2	V 3498	TP 093299	1,195	6.0	H	9.0	11, 29	0.375	570	13.0		Y
3	V 3499	TP 107244	1,160	5.0	H	1.4	8	0.061	960	9.0		Y
4	V 3535	TP 165062	1,080	4.0	H	4.5	11, 19	0.196	610	12.0		Y
5	V 3429	TP 073173	1,180	16.0	H	16.2	16, 33	0.810	600	12.0		Y
6	V 3500	TP 116144	1,125	4.0	H	4.5	8, 32	0.155	610	13.0		Y
7	V 3404	TP 103031	1,340	2.0	H	3.24	7, 24	0.116	980	12.0		Y
8	V 3566	SP 983096	1,080	5.0	H	1.08	6	0.047	1,380	13.0		Y
9	V 3476	TP 010105	1,160	3.0	H	1.08	9, 27	0.035	470	10.0		Y
10	V 3477	TP 001112		N/D								Y
11	V 3567	SN 969968	1,090	14.0	H	6.8	16, 34	0.355	510	12.0		Y
12	V 3558	TN 159924		14.0	H	13.5	17, 25	0.844	730	12.0		Y
	Sub-total								8,010	130.0		11 B/H

Note; 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-14 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting		Drilling		Depth m	Casing m	Geology	D.C. (1 of 1)	
		Date	Drilling Recommend m	Water Possibility m	Date					
					From					to
V 3532	1-No. 1	23/2/82	40 - 50	30 - 40	12/4/82	20/4/82	9	37.0	14.0	G
V 3498	1-No. 2	22/2/82	35 - 40	10 - 25, 30 - 35	3/3/82	13/3/82	11	32.0	17.0	G
V 3499	1-No. 3	23/2/82	40 - 50	20 - 30, 35 - 45	15/3/82	10/4/82	26	31.0	0	
V 3535	1-No. 4	14/4/82	40 - 45	20 - 42	10/5/82	27/5/82	18	30.0	14.0	G/Do
V 3429	1-No. 5	10/9/81	40 - 45	30 - 35	3/3/82	12/2/82	41	40.0	27.0	G
V 3500	1-No. 6	23/2/82	40 - 50	30 - 40	21/4/82	8/5/82	18	36.0	22.0	G/Sch.
V 3404	1-No. 7	29/7/81	30 - 40	20 - 30	28/5/82	15/6/82	18	36.0	21.0	G
V 3566	1-No. 8	18/5/82	30 - 35	20 - 30	1/7/82	31/7/82	31	30.0	12.0	G
V 3476	1-No. 9	28/1/82	35 - 45	20 - 30, 36 - 40	13/2/82	2/3/82	19	35.0	9.0	G
V 3477	1-No. 10	28/1/82	40 - 60	30 - 35	N/D (NOT DRILLED)					G
V 3567	1-No. 11	19/5/82	40 - 50	30 - 40	1/8/82	16/8/82	16	35.0	9.0	G
V 3558	1-No. 12	6/5/82	40 - 50	30 - 40	16/6/82	30/6/82	15	31.0	20.0	G

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Cn; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-15 LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/H(Borehole) Name	Grid. Ref	Ground El. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	Form 2 (Y or N)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 3574	SN 903843	1,010	DRY								Y
2	V 3600	TN 004720	960	DRY								Y
3	V 3605	SN 960740	920		N/D							Y
4	V 3606	SN 985776	980	4.0		2.16	21, 28	0.080	940	14.0		Y
5	V 3625	SN 997804	975	10.0		0.60			490	10.0		Y
6	V 1739	RH 037537	1,020	NO	RECORD				300	12.0		N
7	V 2558	RH 078515	1,010		-do-				(V 2559)			N
8	V 2559	RH 076519	1,020	15.0		8.2			970	25.0	V 2558	Y
9	V 3344	RH 085563	1,015	21.0		7.7	24, 30	0.643	540	12.0		Y
10	V 3313	SN 958560	890		N/D	(NOT DRILLED)						Y
11	V 3304	SN 882593	985	DRY								Y
12	V 3345	SN 886591	985	2.0	H	7.7	12, 27	0.225	630	12.0	V 3450	Y
13	V 3450	SN 888590	990	1.7	H	6.75	6, 28		(V 3450)			Y
14	V 3636	SN 928643	955		N/D							N
15	V 3637	SN 924711	920		N/D							N
16	V 3651	RH 115625	1,010		N/D							N
17	V 3652	SN 962617	895		N/D							N
	Sub-total								3,870	85.0	8 B/H	

Note; 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-16 LIST OF EXISTING BOREHOLES (FORM 1)
 Runde C.L. Zvishavane D.C. (2 of 2)

No.	B/H(Borehole) Name	Grid. Ref	Ground FL. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 2899	RH 057798	1,095	1.5	D	0.9	6-36		640	11.0		
2	V 3596	SN 984906	1,015	5.0	H	6.75	9, 16	0.397	* 1,600	24.0	V 3595	Y
3	V 3575	SN 918861	1,020	12.0	H	0.14	12.8	0.009	470	15.0		Y
4	V 3573	SN 960849	995	26.0	H	1.08	27, 32	0.068	970	12.0		Y
5	V 3595	SN 973881	1,005	24.0	H	1.2	27, 36	0.067	*(V 3596)	-		Y
	Sub-total								3,680	62.0	5 B/H	

Note; 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-17 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting				Drilling			Geology 1/	D.C. (1 of 1)
		Date	Drilling Recommend m	Water Possibility m	Date From to	Days	Depth m	Casing m		
V 3574	1-No.1	27/ 5/82	35 - 40	25 - 35	12/ 8/82 - 8/ 9/82	28	30.0	-	G	N
V 3600	1-No.2	28/ 7/82	30 - 35	25 - 30	30/10/82		33.0	-	G	N
V 3605	1-No.3	10/ 8/82	35 - 40	25 - 35	N/D (NOT DRILLED)				G	N
V 3606	1-No.4	10/ 8/82	30 - 45	20 - 25, 35 - 40	9/ 9/82 - 18/ 9/82	10	34.0	27.0	G	N
V 3625	1-No.5	19/ 9/82	35 - 40	20 - 30	13/10/82		37.2		G/Sch	N
V 2559	1-No.8				31/ 3/71		31.0			
V 3344	1-No.9	14/ 8/80	40 - 45	30 - 40	26/10/81 - 7/11/81	13	36.5	36.0		
V 3313	1-No.10	19/ 8/80	24 - 30	18 - 30	N/D				G	
V 3304	1-No.11	14/ 5/80	12 - 15	7.2 - 10.8	12/10/81		38.0		G	
V 3345	1-No.12	14/ 8/81	40 - 45	30 - 40	1/ 9/81 - 19/ 9/81	19	39.5	12.0	G	
V 3450	1-No.13	12/10/81	40 - 45	30 - 35	24/10/81		36.6	30.0		
V 2899	2-No.1	26/ 7/73	45	18 - 36	12/ 6/74		46.0	22.0	G/Serp	
V 3596	2-No.2	16/ 6/82	45 - 65	30 - 40, 50 - 55	16/ 7/82 - 28/ 7/82	13	21.0	21.0	Sch.	
V 3575	2-No.3	27/ 5/82	25 - 30	12 - 30	1/ 6/82 - 25/ 6/82	25	30.0	6.0	G	
V 3573	2-No.4	27/ 5/82	50 - 60	25 - 30, 45 - 50	29/ 6/82 - 15/ 7/82	17	45.0	24.0	Sch.	
V 3595	2-No.5	16/ 6/82	35 - 45	20 - 30	29/ 7/82 - 11/ 8/82	14	45.0	33.0	G/Q	

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss
2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-18

LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/H(Borehole) Name	Grid. Ref	Ground El. m	D to W ^{1/} m	Pump ^{2/} Kind	Pumping Test			Served by B/H		Note	D.C. (1 of 1)
						Yield ^{3/} m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	GAVIRO	TN 072379	880			1.8			480	12.0		Y
2	ZVOVI	TN 163413	805			0.05			Few	-		Y
3	MAZVHHWA	TN 123448	840			0.9			* 400	16.0	GUDDO	Y
4	GUDDO	TN 102459	820			3.6			* (MAZVHHWA)	-		Y
5	V 3341	TN 099346	860			6.8			250	14.0		Y
6	V 3342	TN 121377	835			DRY			-	-		Y
7	V 3343	TN 038355		21.0		1.62	25, 33	0.180	250	12.0		Y
8	V 3240	TN 126379		N/D	(NOT DRILLED)				-	-		Y
9	V 3241	TN 139354		N/D					-	-		Y
	Sub-total								1,380	54.0		5 B/H

Note; ^{1/} Depth to Water, ^{2/} H = Hand, D = Diesel, M = Motor, ^{3/} max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-19 LIST OF EXISTING BORHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting				Drilling			C.L. Zvishavane	D.C. (1 of 1)	Geology ^{1/}	
		Date	Drilling Recommend m	Water Possibility m	From	Date to	Days	Depth m				Casing m
GAVIRO	1-No.1											
ZVOYI	1-No.2											
MAZVIHWA	1-No.3											
GU DO	1-No.4											
V 3240	1-No.8	20/7/77	42 - 54	30 - 48	N/D			53.1				
V 3241	1-No.9	20/1/77	40 - 50	30 - 40	N/D			48.5				
V 3341	1-No.5	12/1/81	40 - 45	35 - 40		23/1/82		41.0		G/Sch.		
V 3342	1-No.6	13/1/81	35 - 40	25 - 35		11/2/82		36.0		G/Do		
V 3343	1-No.7	13/1/81	35 - 45	25 - 35		9/11/81 - 26/11/81	18	35.0	27.0	G/P		

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentine, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gm; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-20 LIST OF EXISTING BOREHOLES (FORM 1)
 Bankwe, Bvute and Mpiravana Wards
 C.L. Mberengwe D.C. (I of II)

No.	B/H(Borehole) Name	Grid. Ref	Ground El.	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
Bankwe												
1	V 2951	Ward QG 750924	940	16.0	II	10.0	15-42	0.261	430	11.0		Y
2	V 2654	QG 601761	895	14.0	II	5.5	18, 33	0.340	380	13.0		Y
3	V 2674	QG 636724	980	DRY	II	DRY				-		Y
4	V 2653	QG 720748	920	11.0	II	3.4	36, 48	0.079	320	14.0		Y
Sub-total												
Brute												
5	V 680	Ward QH 945114	995		II	2.2			410	8.0	3 B/H	Y
6	V 3622	QH 918113	995	6.0	H	6.8			340	7.0		Y
Sub-total												
Mpiravana												
7	V 695	Ward QH 981109	965			7.3			750	15.0	2 B/H	Y
8	V 3613	QH 882058	970	NO RECORD					430	12.0		N
Sub-total												
									1,030	25.0	2 B/H	

Note; 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max: rate at test, 4/ Y = Yes, N = None.
 * Connected with other Borehole(s)

Table A.3-2-21
Chizungu and Mtubaidze Wards.

LIST OF EXISTING BOREHOLES (FORM 1)

C.L. Mberengwa D.C. (2 of 11)

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	FOUN- D (Y/N)
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
Chizungu		Ward										
1	V 3608	QI 856038	950	NOT	DRILLED							Y
	Sub-total											
Mtubaidze		Ward										
2	V 3260	QG 777852	965	5		0.45	9.24	0.015	* 910	18.0	3259, 681	Y
3	V 3259	QG 783847	955	NO RECORD					*(V 3260)	-		N
4	V 681	QG 787843	955			3.6			*(V 3260)	-		Y
5	V 2261	QG 817845	940			0.3			690	12.0		Y
6	V 444	QG 820781	885	11.0		6.8			790	13.0		Y
7	V 679	QG 778788	920			5.5			* 1,140	19.0	3640, 461	Y
8	V 3640	QG 779784	925	NOT	DRILLED				-	-		N
9	V 461	QG 777773	920	23.0		3.3			*(V 679)	-		Y
	Sub-total									62.0	7 B/H	
									3,530			

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.
* Connected with other Borehole(s)

Table A.3-2-22 LIST OF EXISTING BOREHOLES (FORM 1)
Mberengwa, Mahlebadza and Mposi Wards
Mberengwa. C.L. Mberengwa. D.C. (3 of 11)

No.	B/II(Borehole) Name	Grid. Ref	Ground Elev. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/II	Note	(Z or N)	
						Yield 3/ m ³ /II	Supply Depth m	Specific Capacity m ³ /II/m				
				Area								
Mduvanhu												
1	V 2672	Ward RQ 045913	840	16.0	II	1.26	22.5, 36	0.044	740	14.0	V 3639	Y
2	V 694	RG 010891	860	DRY		DRY			-	-		Y
3	V 692	QG 987894	880		II	0.7			760	14.0		Y
4	V 3074	RG 012904	870	NOT	DRILLED				-	-		Y
5	V 3639	RG 034908	855	NOT	DRILLED				-	-		N
Sub-total										28.0	2 B/II	
Mahlebadza												
NO BOREHOLES												
Mposi												
6	V 2260	Ward RG 093933	855	DRY		DRY			-	-		Y
7	V 1787	RG 078934		18.0	II	3.3			* 1,070	8.0	V 3638	Y
8	V 3638	RG 059929	835	NOT	DRILLED				* (V 1787)	-		N
9	V 3339	SM 897967	860	"								Y
10	V 3570	SM 905918	895	"								Y
11	V 3571	SM 936968	840	"								Y
12	V 3572	SM 907963		"								Y
Sub-total										8.0	2 B/II	

Note: 1/ Depth to Water, 2/ II = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-23 LIST OF EXISTING BOREHOLES (FORM 1)

Chingoma Ward

No.	B/H(Borehole) Name	Grid. Ref	Ground El. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	D.C. (4 of 11)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 691	SM 907880	830		II	5.5			350	10.0		Y
2	V 626	SM 940816	770	18.0	II	4.4			400	12.0		Y
3	V 1080	SM 969808	755		II	3.2			260	8.0		Y
4	V 778	SM 948869	780		II	3.2			* 660	15.0	V 777	Y
5	V 521	SM 950897	805	12.0	II	3.2			* 650	15.0	V 693	Y
6	V 693	SM 954916	830		II	3.3			* (V 521)	-		Y
7	V 777	SM 966886	815		II	0.3			* (V 778)	-		Y
8	V 520	TM 004872	795	12.0	II	2.3			510	14.0		Y
9	V 776	TM 008636	790	DRY		DRY			-	-		Y
10	V 517	TM 027866	760	5.0	II	6.8			* 1,200	24.0	V 854	Y
11	V 854	TM 048864	755		II	5.5			* (V 517)	-		Y
12	V 988	TM 068868	760		II	4.6			* 540	15.0	V 852	Y
13	V 852	TM 083856	730		II	6.6			* (V 988)	-		Y
14	V 853	TM 072806	760		II	1.1			* 550	17.0	V 851	Y
15	V 851	TM 086791	740		II	6.4			* (V 853)	-		Y
16	V 883	TM 113789	705		II	5.5			* 850	20.0	V 881	Y
17	V 882	TM 149799			II	6.4			430	12.0		Y
18	V 881	TM 088770	720		II	6.4			* (V 883)	-		Y
Sub-total									6,400	162.0	17 B/I	

Note: 1/ Depth to Water, 2/ II = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-24 LIST OF EXISTING BOREHOLES (FORM 1)

Mketi Ward
Mberengwa
C.L. Mberengwa
D.C. (5 of 11)

No.	B/H(Borehole) Name	Grid. Ref	Ground El. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	FOIE (Y/N)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 884	SM 966789	760			1.1			400	12.0		Y
2	V 982	SM 996803	745			0.9			300	7.0		Y
3	V 2997	TM 018752	700	37.0		0.3	37.0	0.013	730	21.0	2996, 625	Y
4	V 2996	TM 026753		NOT	DRILLED				*(V 2997)	-		Y
5	V 625	TM 007770	730	- do -					*(V 2997)	-		N
6	V 985	TM 056753	725			6.4			1,410	18.0	V 624	Y
7	V 624	TM 089753	695	NO RECORD					*(V 985)	-		N
Sub-total									2,840	58.0	7 B/H	

Note: 1/ Depth to water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-25 LIST OF EXISTING BOREHOLES (FORM 1)

Mataruse Ward Mberengwa C.L. Mberengwa D.C. (6 of 11)

No.	B/H(Borehole) Name	Grid. Ref	Ground Elev. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	Y or N
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	J 27 (BE 25)	TN 033134	955		II	0.6			490	13.0	J 140	Y
2	J 138	TN 177191		NO RECORD	II				930	23.0		N
3	J 139	TN 161153	940			6.8			590	13.0		Y
4	J 141	TN 058139		NO RECORD					390	11.0		N
5	J 140	TN 157201		NO RECORD					*(J 138)	-		N
6	J 175	TN 302176	755	DRY		DRY			-	-		N
7	V 683	TN 207171	1,500		II	1.8			340	10.0		Y
8	V 2891	TN 231201	800	25.0	II	13.6	27.0	0.338	480	22.0	2937	Y
9	V 2892	TN 283170	780	6.0	II	10.8	15, 25	0.540	*(V 2912)	-		Y
10	V 2893	TN 319175	735	34.0	II	3.0	38-46	0.371	230	10.0		Y
11	V 2911	TN 286169 (MINE)	780	9.0	II	4.32	14, 34	0.114	430	13.0	2912 2913 2892	Y
12	V 2912	TN 274169	795	7.0	II	4.32	7, 25	0.114	*(V 2911)	-	MINE	Y
13	V 2913	TN 264170	820	7.0	II	10.9	7, 27	0.390	*(V 2911)	-	"	Y
14	V 2937	TN 203217	780	18.0	II	2.3	23, 30	0.056	*(V 2891)	-	"	Y
Sub-total									3,880	115.0	13 B/H	

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-26 LIST OF EXISTING BOREHOLES (FORM 1)

Negobe Ward		Mberengwa		C.L. Mberengwa		D.C. (7 of 11)					
No.	B/II(Borchhole) Name	Grid. Ref	Ground El.	D to W 1/ m	Pump 2/ Kind	Pumping Test		Note	FORM 3 (Y or N)		
						Yield 3/ m ³ /II	Supply Depth m				
						Specific Capacity m ³ /II/m	Area km ²				
						Populat.					
1	J 142	TN 191066		NO RECORD				25.0	176, 1145	N	
2	J 176	TN 227084	780			5.5		-		Y	
3	J 174	TN 299161	765	DRY		DRY		-		N	
4	J 177	TN 270142		NO RECORD				19.0	V 2675	N	
5	J 178	TN 324151		- do -				41.0	V 685	N	
6	J 179	TN 164036	690	- do -				17.0		N	
7	V 684	TN 383058	735			3.3		12.0		Y	
8	V 685	TN 306121	755			5.5		-		Y	
9	V 1078	TN 213042				4.6		15.0		Y	
10	V 1145	TN 205074		NOT	DRILLED			-		N	
11	V 2675	TN 257129	815	32.0		4.1	32-54	0.172		Y	
12	V 3473	TN 227107	830	4.3		4.5	9, 42	0.111		Y	
13	V 3474	TN 229102	825	7.5		2.2	20, 34	0.082		Y	
14	V 3568	TN 228116	845	2.5		9.1	3, 31	0.228	15.0	Y	
15	V 3569	TN 240100		NOT	DRILLED				3473 3474 3569	Y	
Sub-total						7,980		144.0		12 B/II	

Note: 1/ Depth to Water, 2/ II = IIand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-27 LIST OF EXISTING BOREHOLES (FORM 1)
 Ngungubane Ward Mberengwa C.L. Mberengwa D.C. (8 of 11)

No.	B/H (Borehole) Name	Grid. Ref	Ground El. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	Form 2 (Y or N)
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /l/m	Populat.	Area km ²		
1	J 26	TN 316922	740		II	1.1			360	10.0		Y
2	J 71	TM 259938		NO RECORD					500	12.0		N
3	BE 58	TM 537963		NO RECORD					310	11.0		N
4	V 680	TM 313960	715		II	2.2			200	15.0		N
5	V 701	TM 257998	760		II	1.8			140	9.0		N
6	V 702	TM 288997	725	DRY		DRY			-	-		Y
7	V 1081	TM 306984	700		II	5.5			* 250	13.0	V 2289	Y
8	V 1100	TM 269973	715		H	4.6			220	10.0		Y
9	V 2289	TN 317003	705		II	0.1			*(V1081)	-		Y
10	V 2630	TN 342017	695	15.0	II	4.6			540	12.0		Y
Sub-total									2,520	92.0	9 B/H	

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-28 LIST OF EXISTING BOREHOLES (FORM 1)

Mataga Ward

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	BE 4	TM 157903		NO RECORD					240	14.0		N
2	V 481	TM 113988	775	30.0		5.5			(V 462)	-		Y
3	V 482	TN 135924	740	18.0		1.5			370	8.0		Y
4	V 550	TM 119945	760	13.0		1.5			700	12.0		Y
5	V 724	TM 126887	745	DRY		DRY			-	-		Y
6	V 986	TN 072033	840	NOT	DRILLED				-	-		N
7	V 987	TN 064010	880			4.6			640	14.0		Y
8	V 1079	TM 067979	810			4.6			640	11.0		Y
9	V 1122	TM 157834	715			4.6			570	13.0	V 3503	Y
10	V 1123	TM 182806	690			4.6			210	8.0		Y
11	V 3338	TM 083932	755	7.5		2.2			730	11.0		Y
12	V 462	TN 114004	800	27.0		1.1			* 1,390	21.0	V 481	Y
13	V 2671	TN 074931		NOT	DRILLED				-	-		Y
14	V 3475	TN 109007		DRY		DRY			-	-		Y
15	V 3503	TM 159851	700	13.0		0.25	15	0.014	(V 1122)	-		Y
16	V 3601	TM 124847	715	DRY		DRY			-	-		Y
17	V 3602	TM 117847	720	15.0		2.1	15	0.138	940	11.0		Y
Sub-total									6,430	123.0	12 B/H	

Note: 1/ Depth to Water, 2/ H = Diesel, D = Diesel, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-29 LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/H (Borehole) Name	Grid. Ref	Ground EL. m	D to W ^{1/} m	Pump ^{2/} Kind	Pumping Test			Served by B/H	Note	D.C. (100ft)
						Yield ^{3/} m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m			
1	J 7	TM 221823		NO RECORD					750	V 2632	N
2	J 28	TM 340910	735			0.5			510	V 703	Y
3	J 29	TM 302878	705			3.3			500	J 69	Y
4	J 30	TM 340852	685			5.5			590		Y
5	J 67	TM 239815		NO RECORD					300	V 2290	N
6	J 68	TM 281835		- do -					640		N
7	J 69	TM 278877		- do -					(J 29)		N
8	BE 14	TM 243837		- do -					480		N
9	BE 59	TM 201891		- do -					230	V 2631	N
10	V 483	TM 150993	770	12.0		1.6			900		Y
11	V 487	TM 214986	750	20.0		3.3			(V 1146)		Y
12	V 551	TM 167967	760	9.0		5.5			840	V 553	Y
13	V 552	TM 229988	745	8.0		0.5			(V 1146)		Y
14	V 553	TM 208958	755	24.0		5.5			(V 551)		Y
15	V 703	TM 331899	715			4.4			(J 28)		Y
16	V 2291	TM 249884	700	14.0		4.6			400		Y
17	V 2290	TM 248816	660	17.0		4.6			(J 67)		Y
18	V 2631	TM 212873	700	15.0		4.6			(BE 59)		Y
19	V 2632	TM 237838	670	15.0		3.6			(J 7)		Y
20	V 3502	TM 196792	680	8.0		4.4			470		Y
21	V 3504	TM 214924	760	25.7		2.2	34-45	0.127	610		Y
22	V 3603	TM 320789	635	5.0		6.6			430		Y
23	V 1146	TM 223999	735			4.6			1,090	487, 552	Y

Note: ^{1/} Depth to Water, ^{2/} H = Hand, D = Diesel, M = Motor, ^{3/} max. rate at test, ^{4/} Y = Yes, N = None.

Table A.3-2-30 LIST OF EXISTING BOREHOLES (FORM 1)
 Nyamondo Ward (2/2) Mberengwa C.L. Mberengwa D.C.(11of11)

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W L/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
24	V 700	TN 122012	820	DRY		DRY						Y
25	V 725	TN 150004	765	DRY		DRY						Y
									8,740	229.0		
Sub-total												25 B/H

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-31 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting				Drilling			Geology	
		Date	Drilling Recommend m	Water Possibility m	Casing m	Depth m	Date			
							From	to		Days
J 26	8-No.1						29/ 5/58			
J 27	6-No.1						16/ 2/59			
J 28	10-No.2						25/ 4/62			
J 29	10-No.3					Rehabili	23/ 3/81			
J 30	10-No.4						13/ 8/58			
J 139	6-No.3					Rehabili	27/ 3/81			
J 176	7-No.2						2/ 5/57			
J 461	2-No.9						11/ 4/55			
J 444	2-No.6						17/ 2/55			
V 481	9-No.2						21/ 5/55			
V 482	9-No.3						7/ 6/55			
V 462	9-No.12						28/ 4/55			
V 550	9-No.4						26/11/55			
V 483	10-No.10						8/ 7/55			
V 487	10-No.11						16/ 6/55			
V 551	10-No.12						7/12/55			
V 552	10-No.13						23/12/55			
V 553	10-No.14						18/ 2/56			
V 680	1-No.5						30/ 6/59			
V 695	1-No.7						20/ 7/59			
V 681	2-No.4						7/ 8/59			
V 679	2-No.7						25/ 8/59			
V 694	3-No.2						26/10/59			

Note: 1/ G; Granite, Sch; Schist, Scrp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-3-32 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling			Casing m	Geology 1/ C.M	
		Date	Drilling Recommend m	Water Possibility m	From	to	Days			Depth m
V 692	3-No.3					17/ 9/59		61.0		
V 691	4-No.1					5/11/59		31.0		
V 626	4-No.2					13/10/58		41.0		
V 778	4-No.4					23/ 1/60		50.0		
V 521	4-No.5					2/11/55		33.0		
V 693	4-No.6					6/10/59		38.0		
V 777	4-No.7					18/ 2/60		59.0		
V 520	4-No.8					15/ 9/55		29.0		
V 776	4-No.9					15/ 3/60		61.0		
V 517	4-No.10					6/9/55		26.0		
V 854	4-No.11					31/ 3/60		32.0		
V 988	4-No.12					20/ 7/60		46.0		
V 852	4-No.13					27/ 4/60		34.0		
V 853	4-No.14					16/ 4/60		40.0		
V 851	4-No.15					19/ 5/60		49.0		
V 883	4-No.16					3/ 8/60		40.0		
V 882	4-No.17					11/ 8/60		39.0		
V 881	4-No.18					19/ 7/60		55.0		
V 884	5-No.1					31/ 8/60		43.0		
V 982	5-No.2					13/10/60		48.0		
V 985	5-No.6					13/10/60		49.0		
V 1787	3-No.7					30/10/65		37.0		
V 1080	4-No.3					17/ 8/61		46.0		

Note: 1/ G; Granite, Sch; Schist, Scrp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Cn; Gneiss

2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-33 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling			Casing m	Geology ^{1/}	2/	
		Date	Drilling Recommend m	Water Possibility m	From	to	Days				Depth m
V 1078	7-No.9							43.0			
V 1081	8-No.7					11/5/61		37.0			
V 1100	8-No.8					29/6/61		35.0			
V 1079	9-No.8					16/6/61		31.0			
V 1122	9-No.9					29/8/61		55.0			
V 1123	9-No.10					14/9/61		31.0			
V 1146	10-No.23					27/9/61		49.0			
V 700	11-No.24					1/5/59		43.0			
V 725	11-No.25					11/8/59		76.0			
V 703	10-No.15					30/6/59		51.0			
V 724	9-No.5					-		62.0			
V 987	9-No.7					5/6/61		41.0			
V 701	8-No.5					15/5/59		49.0			
V 702	8-No.6					6/6/59		49.0			
V 684	7-No.7					19/3/59		49.0			
V 685	7-No.8					3/4/59		49.0			
V 683	6-No.7					-		43.0			

Note: 1/ G: Granite, Sch; Schist, Scrp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-34 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling			Geology 1/	2/ C.M		
		Date	Drilling Recommend m	Water Possibility m	From	to	Days			Depth m	Casing m
V 2951	1-No.1	28/11/73	42-66	33-54		16/ 1/74		42.0	28.0	Serp	
V 2654	1-No.2	21/10/71	30-42	21-27		15/11/71 - 27/11/71	13	33.0	6.6	G	
V 2674	1-No.3	17/11/71	63	33-39, 45-51		29/11/71 - 11/12/71	15	48.0	-	G/Sch	
V 2653	1-No.4	20/10/71	42-48	18-36		13/11/71		49.0	6.6	G W/ Sch Vein	
V 3622	1-No.6	8/ 9/82	40-45	30-40		23/10/82		31.0	-	G/Q	
V 3608	2-No.1	17/ 8/82	30-45	20-30		NOT DRILLED				G/Sch	
V 3260	2-No.2	4/ 8/77	45-50	30-40		27/11/77 - 21/12/77	25	38.0	12.0	G	
V 2261	2-No.5							28.0			
V 2672	3-No.1	16/11/71		-9		20/ 9/72 - 9/10/72	20	48.0	16.8	Sch/G/Q	
V 3074	3-No.4	11/12/74	90	39-45, 57-63		NOT DRILLED	NOT	DRILLED		Sch	
V 2260	3-No.6					4/ 3/69		61.0		G/Sch	
V 3339	3-No.9	10/12/80	45-55	35-45		NOT DRILLED				Sch/G	
V 3570	3-No.10	26/ 5/82	45-60	35-45		- do -				Sch/G	
V 3571	3-No.11	26/ 5/82	40-60	30-40, 45-50		- do -				Sch/G	
V 3572	3-No.12	26/ 5/82	35-45	20-30		- do -				Sch/G	
V 2997	5-No.3	28/ 5/74	66	27-33, 51-57		27/ 8/74 - 8/10/74	43	60.0	32.0	Sch G	
V 2996	5-No.4	27/ 5/74	-30	21-27		NOT DRILLED					
V 2891	6-No.8	17/ 7/73	66-75	33-39, 45-54		1/ 8/73 - 22/ 8/73	22	67.0	28.0	Serp	
V 2892	6-No.9	18/ 7/73	36-48	12-42		22/ 8/73 - 31/ 8/73	10	30.0	27.0	Serp	

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentine, Q; Quartz Vein(Reef), Do; Dolomite, P; Pegmatite, Gn; Gneiss
2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-35 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling		Depth m	Casing m	Geology 1/ 2/
		Date	Drilling Recommend m	Water Possibility m	Date				
					From	to			
V 2893	6-No.10	18/ 7/73	54-66	18-54	20/11/73 - 12/12/73	23	7.0	Green Stone/Sch	
V 2911	6-No.11	14/ 8/73	45-51	27-33, 36-42	1/ 9/73 - 11/ 9/73	11	16.0	Serp	
V 2912	6-No.12	14/ 8/73	39-54	27-33	14/ 4/73 - 26/ 4/73	13	16.0	Serp	
V 2913	6-No.13	14/ 8/73	36-45	27-33	27/ 9/73 - 12/10/73	16	20.0	Serp	
V 2937	6-No.14	29/10/73	66	24-54	17/11/73		23.0	Sch	
V 2675	7-No.11	5/ 1/72	60	6-48	10/ 1/72 - 22/ 1/72	13	41.0	Serp	
V 3473	7-No.12	26/ 1/82	60	-54	3/ 3/82 - 13/ 3/82	11	48.0	G	
V 3474	7-No.13	26/ 1/82	60	-42	12/ 2/82 - 3/ 3/82	20	39.0	G	
V 3568	7-No.14	19/ 5/82	45-65	30-40, 40-60	1/ 7/82 - 16/ 7/82	16	45.0	Serp	
V 3569	7-No.15	19/ 5/82	45-60	30-45	NOT DRILLED			Serp	
V 2289	8-No.9						62.0		
V 2630	8-No.10						37.0		
V 3338	9-No.11	9/12/80	40-50	30-40	12/ 6/82		50.0	G	
V 2671	9-No.13	16/11/71	15	6-12	NOT DRILLED			G	
V 3475	9-No.14	27/ 1/82	45-60	30-42	14/ 6/82 - 30/ 6/82	17	60.0	Sch/G	
V 3503	9-No.15	25/ 2/82	50-60	25-30, 45-50	16/ 4/82 - 12/ 5/82	27	35.0	G	
V 3601	9-No.16	3/ 8/82	45-55	30-40	30/ 8/82 - 23/ 9/82	25	27.0	G	
V 3602	9-No.17	3/ 8/82	40-50	30-40, 45-50	12/ 8/82 - 28/ 8/82	17	33.5	G	

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss

2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-36 LIST OF EXISTING BORHOLES (FORM 2)

R/H Name	No. in Form 1	Electric Geo-Propecting			Drilling			C.L.	Mberengwa	D.C. (6 of 6)	Geology 1/	Casing m	Depth m
		Date	Drilling Recommend m	Water Possibility m	From	to	Days						
V 2291	10-No.16					1/ 5/69							
V 2290	10-No.17					23/ 4/69							
V 2631	10-No.18					16/10/71							
V 2632	10-No.19					30/10/71							
V 3502	10-No.20	25/2/82	45-50	15-25, 35-45		31/3/82 - 15/ 4/82	16				9.0		G
V 3504	10-No.21	24/2/82	45-55	25-35, 40-50		19/3/82 - 30/ 3/82	12				45.0		G/Sch/Gn
V 3603	10-No.22	4/8/82	45-60	15-20, 25-45		7/10/82							G
V 3501		24/2/82	40-50	25-35		N/D (NOT DRILLED)							G
V 3610		18/8/82	35-45	24-30		N/D							Sch
V 3609		17/8/82	30-35	20-25		N/D							G
V 3620		7/9/82	30-35	20-30		N/D							G
V 3621		8/9/82	30-40	20-30		N/D							

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentine, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss

2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-37

LIST OF BOREHOLES NEWLY ESTABLISHED

Mberengwa C.L. Mberengwa D.C. (1 of 1)

No.	B/H (Borehole) Name	Grid Ref.	Ground EL m	Prospect- ing Date	Completed	Drilling					Note	
						Depth m	Casing D to W m	<u>1/</u> Yield m ³ /H	<u>2/</u> Yield m ³ /H	Specific Capacity m ³ /H/m		
1	V 3501	TM 353950		24/2/82	N/D							
2	V 3610	SM 901857		18/8/82	"							
3	V 3609	QH 837127		17/8/82	"							
4	V 3620	QG 739740	905	7/9/82	"							
5	V 3621	QG 699814	955	8/9/82	"							

Note: 1/ Depth to Water,2/ Max. rate at pumping test.

Table A.3-2-38

LIST OF EXISTING BOREHOLES (FORM 1)

Gaza II Ward

Chibi

C.L. Nyaningwe

D.C. (1 of 5)

No.	B/H (Borehole) Name	Grid. Ref	Ground EL. m	D to W $\frac{1}{2}$ m	Pump $\frac{2}{2}$ Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield $\frac{3}{3}$ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 955	TN 255755	975	15.2	II	4.4			670	10.0		Y
2	V 956				II	2.5						
3	V 1204	TN 315783	935	0.7	II	5.5			770	9.0		Y
4	V 2324	TN 145665	875	10.0	II	2.7			600	7.0		Y
5	V 2626	TN 25 75	985	25.9	II	0.9			*(V 955)	-		Y
6	V 2627	TN 269783	960	22.3	II	2.2			*(V 955)	18.0	JP5453	Y
7	V 2639	TN 106696		NO RECORD								
8	V 2666	TN 16 69	900	15.2	II	5.5	28-33					Y
9	V 3402	TN 233807	995	9.1	II	13.6	12, 34	0.360	1,050	16.0		Y
10	V 2638	TN 07 67		NO RECORD								
11	JP5424	TN 065713	925	21.0	II	1.8	24, 27	0.120	240	18.0	NO.17	Y
12	JP5453	TN 277778	960	18.0	II	2.5	23, 40	0.082	*(V2627)	-		Y
13	JP5455	TN 039668	890	25.0	II	4.5	30, 36	0.265	700	10.0		Y
14		TN 115854		NO RECORD								
15		TN 205815		NO RECORD								
16	Brute Sch.	TN 143774	970	8.0		14.7		0.300	700	13.0		Y
17		TN 074714	905	12.3		4.9			*(JP5424)	-		
	Sub-total								6,160	101.0	11 B/H	

Note: $\frac{1}{2}$ Depth to Water, $\frac{2}{2}$ II = Hand, D = Diesel, M = Motor, $\frac{3}{3}$ max. rate at test, $\frac{4}{4}$ Y = Yes, N = None.

* Connected with other Borehole(s)

Table A.3-2-39

LIST OF EXISTING BOREHOLES (FORM I)

Nambia Ward

No.	B/H(Borehole) Name	Grid. Ref	Ground FL. m	D to W L/ m	Pump 2/ Kind	Pumping Test			Served by B/H	Note	Floor Level
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m			
1	V 2325	TN 189691	895	5.0	II	10.9			Served by B/H		Y
2	V 2339	TN 277751	955	27.4	II	6.8			Area	15.0	Y
3	V 2340	TN 226722	920	34.1	II	4.6			Populat.	7.0	Y
4	V 2628	TN 182602		22.3	II	4.5			Area	9.0	Y
5	V 2629	TN 203610		26.5	II	2.7			Populat.	10.0	Y
6	V 2640	TN 154637	870	34.1	II	4.6			Area	13.0	Y
7	V 1891	TN 413627		9.1	II	9.1			Populat.	15.0	Y
8	V 2660	TN 400628		6.1	II	13.6	12-39		Area	12.0	Y
9	V 2661	TN 174568		NO RECORD					Populat.	-	Y
10	V 2667	TN 230680	910	8.0	II	12.3	12, 21	0.397	Area	16.0	Y
11	JP5421	TN 458601	870	9.0	II	1.5	18, 30	0.017	Populat.	12.0	Y
12	JP5422	TN 266632	885	14.0	II	10.5	18, 30	0.553	Area	13.0	Y
13	JP 5425	TN 355585	915	6.0	II	3.2	9, 21	0.082	Populat.	12.0	Y
14	Takawarasha	TN 185498	805	11.0	II	4.9	12, 45	0.144	Area	12.0	Y
15	B 3277 A	TN 252737	990	15.2	II	0.5	27-41	0.019	Populat.	8.0	Y
16	B 3277 B	TN 248734		42.7		Nil			Area	-	Y
	Sub-total								Populat.	154.0	
									Area	15 B/H	

Note; 1/ Depth to Water, 2/ II = Hand, D = Diesel, H = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-40

LIST OF EXISTING BOREHOLES (FORM 1)

China Ward

Chibi

C.L. Nyanningwe

D.C. (3 of 5)

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W m	Pump Kind	Pumping Test			Served by B/H		Note	Form (X or 5)
						Yield m ³ /H	Supply depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	Tokwe Cl.	TN 579439		12.2	II	2.7	15, 27	0.029	410	8.0		Y
2	Muvundusi	TN 483541	885	5.0	II	0.9	15, 27	0.029	340	14.0		Y
3	Gwitima	TN 538377	835	8.0	II	7.3	15, 21	0.261	410	13.0		Y
4	Jaka Sch.	TN 571371		15.0	II	1.34	21, 30	0.042	740	13.0	Pump T.	Y
5	Zihwa Sch.	TN 385301	760	6.1	II	5.3	15, 36	0.128	510	12.0		Y
6	V 3350	TN 569326	800	10.0	II	2.7	15, 24	0.177	770	20.0	JP5426	Y
7	JP5418	TN444267	795	5.0	II	3.2	21, 27	0.078	480	12.0		Y
8	JP5419	TN 465298	800	16.0	II	9.2	18, 30	0.297	370	11.0		Y
9	JP5420	TN231447	820	8.0	II	3.2	18, 30	0.144	590	13.0		Y
10	JP5426	TN 588317	790	6.0	II	18.4	9, 30	0.511	*(V 3350)	-		Y
11		TN 392535		Only	Location				* 400	12.0	NO.12	Y
12		TN 412526							*(NO. 11)	-		
13		TN 523348							220	9.0		
14		TN 402340							400	12.0		
	Sub-total								5,640	149.0	14 B/H	

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-41

LIST OF EXISTING BOREHOLES (FORM 1)

Maputo Ward

No.	B/H(Borehole) Name	Grid. Ref	Ground El. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H	Note	FOR EYES (Z)	
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m				
1	Nemavuzhe	TN 551178	735	4.6	H	0.6			630	12.0		
2	JP 5415	TN 698063	730	10.0	H	4.6	12, 18	0.121	*	750	13.0	No.16
3	JP 5423	TN 694111	715	6.0	H	14.7	9, 24	0.408	*	900	15.0	No.8
4	JP 5461	TN 530127	720		H					540	12.0	
5	Zuvuku	TN 642124	690	3.0	H	8.8	9, 21	0.206		770	12.0	
6	Mandiva Sch	TN 585245	770	12.0	H	6.6	15-45	0.244	*	770	11.0	No.17
7	Chasiyate B.O.	TN 605038	680	17.0	H	2.5				660	10.0	
8	Zifunzi Sch	TN 689113	735	14.0	H	3.9			*	(JP 5423)	-	
9	JP 5417	TN 409167	735	11.0	H	12.3	12, 27	0.397		580	13.0	
10	JP 5416	TN 431133	710	21.0	H	0.7	24	0.019		630	15.0	
11		TN 469228		Only	Location					540	10.0	
12		TN 433206			- do -					490	10.0	
13		TN 435177			- do -					340	8.0	
14		TN 614127			- do -					630	15.0	
15		TN 681085			- do -					310	8.0	
16		TN 694073			- do -				*	(JP 5415)	-	
17		TN 583253			- do -				*	(NO. 6)	-	
	Sub-total									8,540	164.0	17 B/H

Note; 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-42 LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/H (Borehole) Name	Grid. Ref	Ground El., m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	Form # (Y or N)
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1		TN 707987		Only	Location				* 850	14.0	No.2	
2		TN 709988		- do					* (No.1)	-		
3		TN 671954		- do					350	11.0		
4		TN 864025		Broken					-	-		
5		TN 747993		- do					-	-		
	Sub-total								1,200	25.0		3 B/H

Note; 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-43 LIST OF EXISTING BOREHOLES (FORM 2)

R/II Name	No. in Form 1	Electric Geo-Prospecting			Drilling			Geology	D.C. (1 of 3)	
		Date	Drilling Recommend m	Water Possibility m	Date From to	Days	Depth m			Casing m
V 955	1-No.1					8/11/60		44.2		
V 1204	1-No.3					9/69		21.4		
V 1891	2-No.7					31/ 3/67		27.7		
V 2324	1-No.4					19/ 6/69		37.0		
V 2325	2-No.1					16/ 6/69		45.0		
V 2339	2-No.2					30/ 8/69		45.7		
V 2340	2-No.3					16/10/71		50.3		
V 2626	1-No.5					21/ 9/71		35.1		
V 2627	1-No.6					15/ 9/71		42.7		
V 2628	2-No.4					2/10/71		38.1		
V 2629	2-No.5					9/10/71		48.8		
V 2640	2-No.6					16/10/71		50.3		
V 2660	2-No.8	2/11/71	42	27-33		19/ 7/72		40.5	29.0	G/Sch
V 2666	1-No.8	8/11/71	60	27-33				37.5	24.0	G
V 2667	2-No.10	9/11/71	45	33-39		27/7/82 - 16/ 8/82	21	42.0	20.6	
V 2668		9/11/71	54	27-33, 45-51						
V 2752		19/ 7/72	48-60	33-45						
V 3047		27/ 9/74	33-36	21-27						
V 3056		15/10/74	42-48	24-30, 39-45						
V 3401		22/ 7/81	50-60	35-45						
V 3232		7/10/76	42-48	20-28, 34-38						
V 2934	1-No.16	25/10/73	36-42	18-33		14/10/82 - 17/10/82	3	46.0	25.0	G
								61.0	8.0	Serp/G

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-44 LIST OF EXISTING BORHOLES (FORM 2)

B/H. Name	No. in Form 1	Electric Geo-Propecting		Drilling			Geology ^{1/}	2/				
		Date	Drilling Recommend m	Water Possibility m	Date				Depth m	Casing m		
					From	to					Days	
V 3350	3-No.6					14/7/82 - 29/7/82	16	35.0	6.6			
V 3226	4-No.6	9/9/76	36-42	24-36		10/7/82		45.0	34.5	G		
V 3402	1-No.9					16/4/82		47.9	5.8			
Zuvuku	4-No.5					13/3/81		50.0	13.1			
B 3277A	2-No.15					11/4/81		41.1	22.0			
B 3277B	2-No.16					25/3/81		70.0	33.5			
Zihwa	3-No.5					30/4/81		61.0	39.5			
5335	3-No.3	26/6/82	50-55	20-30, 33-55		8/8/82	10	38.0	18.6	Q in G		
5337		28/6/82	50	10-27, 33-50		17/8/82		45.0	23.0			
Takawarasha	2-No.14					13/7/82 - 26/7/82	14	48.0	18.7			
Muvandusi	3-No.2					4/8/82 - 21/8/82	18	40.0	7.0			
Zifunzi Sch	4-No.8					19/6/82 - 25/6/82	7	56.0	-			
JP 5415	4-No.2	29/7/82	50-55	20-50		28/8/82 - 16/9/82	20	50.0	15.5	Granulite, Iron-S		
JP 5416	4-No.10	29/7/82	50-55	27-35		24/9/82 - 16/10/82	23	60.0	35.2	Fault in Gn	Y	
JP 5417	4-No.9	30/7/82	40-50	10-27		16/8/82		45.0	23.5	Fault in Granulite	Y	
JP 5418	3-No.7	31/7/82	50	10-30, 40-50		27/8/82 - 15/9/82	20	50.0	31.2	Dyke in Gn	Y	
JP 5419	3-No.8	1/8/82	40-50	27-50		15/9/82 - 20/10/82	36	50.0	22.5	Amphibolite	Y	
JP 5420	3-No.9	2/8/82	40-55	10-21, 27-33		20/9/82 - 30/9/82	21	41.0	21.0	Gn	Y	
JP 5421	2-No.11	9/8/82	45-55	17-30, 35-45		23/8/82 - 2/9/82	11	35.0	20.0	G/Q	Y	
JP 5422	2-No.12	9/8/82	50-60	30-40, 50-60		3/9/82 - 18/9/82	16	36.0	23.0	Contact Do/G	Y	
JP 5423	4-No.3	9/8/82	45-55	20-30, 35-50		16/8/82 - 27/8/82	12	45.0	12.6		Y	
JP 5424	1-No.11	3/8/82	40-55	15-35,		19/8/82 - 31/8/82	13	39.0	36.8	Do Dyke	Y	
JP 5425	2-No.13	3/8/82	40-50	40-45		2/9/82 - 24/9/82	23	50.0	16.4	Do Dyke	Y	

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss

2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-45 LIST OF EXISTING BOREHOLES (FORM 2)

Chibi C.L. Nyaningwe D.C. (3 of 3)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling		Casing m	Depth m	Geology 1/	2/
		Date	Drilling Recommend m	Water Possibility m	Date					
					From	to				
JP 5425	2-No. 13	3/ 8/82	40-50	15-35, 40-45	2/ 9/82 - 24/ 9/82	23	50.0	Do Dyke	Y	
JP 5426	3-No. 10	4/ 8/82	50-60	-	21/ 9/82 - 30/ 9/82	10	46.0	Sch	Y	
JP 5453	1-No. 12	17/ 9/82	40-50	15-35	21/10/82 - 29/10/82	9	50.0	Serp/Sch	N	
JP 5455	1-No. 13	18/ 9/82	40-50	10-22, 30-40	4/10/82 - 14/10/82	11	45.0	Q in G	Y	
JP 5456		20/ 9/82	55-60	40-60	14/10/82 - 8/12/82	?	50.0	Q in Gn	N	
JP 5457	3-No. 4	21/ 9/82	45-50	15-25, 25-35	26/10/82		50.0	Q in G	Y	
JP 5458		21/ 9/82	55-70	35-50, 57-75	20/10/82 - 25/11/82	36	65.0	Quartzite	?	
JP 5459		21/ 9/82	45-60	25-35, 45-60	20/10/82		60.0	G	Y	
JP 5460		22/ 9/82	50-55	20-45	8/11/82 - 21/11/82	14	50.0	Q in G	?	
Mpagamuri					28/10/82 - 3/11/82	7	52.0		?	
JP 5338		28/ 6/82	45-50	10-40	19/10/82 - 4/11/82	17	50.0	Gn	Y	
JP 5491		4/11/82	60	30-50	8/11/82 - 29/11/82	22	50.0	G	?	
JP 5494		5/11/82	55	30-45	8/12/82 - 24/12/82	17	43.0	Q in P	?	
JP 5495		6/11/82	60	10-15, 30-45	26/11/82 - 8/12/82	12	55.0	Gn	?	
JP 5496		6/11/82	45	10-35	3/12/82 - 13/12/82	11	47.0	G	?	
JP 5497		6/11/82	50	21-40	9/12/82 - 15/ 1/83	37	50.0	G	?	
JP 5498		7/11/82	55-60	15-30, 45-55	7/12/82 - 15/12/82	9	55.0	G	?	
5828		8/12/82	60	10-21, 39-51	1/83			Serp/G	?	

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss
2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-46 LIST OF BOREHOLES NEWLY ESTABLISHED

Chibi C.L. Nyaningwe D.C. (1 of 2)

No.	B/H (Borehole) Name	Grid Ref.	Ground EL m	Prospect- ing Date	Completed	Depth m	Drilling				Note	
							Casing m	D to W m	Yield ^{2/} m ³ /H	Specific Capacity m ³ /H/m		
1	V 2668	TN 0572		9/11/71		48.0		DRY				
2	V 2752			19/ 7/72		48.0		21.0		DRY	0.8	
3	V 3056	TN 202583		15/10/74	N/D	(NOT DRILLED)						
4	V 3047	TN 244574		27/ 9/74	N/D							
5	V 3401	TN 223824		22/ 7/81	N/D							
6	V 3232	TN 713989		7/10/76		46.0	25.0	13.0		2.7		
7	V 3132	TN 484146			25/10/82	50.0		DRY		DRY		
8	V 3403	TN 204819			30/ 3/82	24.4		DRY		DRY		
9	5337	TN 605038		28/ 6/82	17/ 8/82	45.0	23.0	17.0		2.5	0.100	
10	JP 5456	TN 649166		20/ 9/82	8/12/82	50.0	50.0	6.0		0.4	0.010	
11	JP 5458	TN 543296		21/ 9/82	25/11/82	65.0	11.6	6.0		3.2	0.059	
12	JP 5459	TN 611189		21/ 9/82	20/10/82	60.0	25.5	16.0		3.7	0.090	
13	JP 5460	TN 439052		22/ 9/82	21/11/82	50.0	23.6	9.0		6.1	0.156	
14	Mpagamuri	TN 406204			3/11/82	52.0	-	12.0		5.68	0.158	
15	JP 5338	TN 419115		28/ 6/82	4/11/82	50.0	16.9	14.0		4.6	0.140	
16	JP 5491	TN 482359		4/11/82	29/11/82	50.0	22.0	9.0		2.6	0.067	
17	JP 5494	TN 531133		5/11/82	24/12/82	43.0	35.2	14.0		1.5	0.058	
18	JP 5495	TN 578402		6/11/82	8/12/82	55.0	33.5	9.0		14.73	0.343	
19	JP 5496	TN 540431		6/11/82	13/12/82	47.0	25.3	10.0		0.66	0.019	
20	JP 5497	TN 545486		6/11/82	15/ 1/83	50.0	20.0	9.0		0.52	0.014	
21	JP 5498	TN 295587		7/11/82	15/12/82	55.0	18.5	7.0		4.6	0.105	
22	JP 5828	TN		8/12/82	1/83					Few		Pumping Test

Note: 1/ Depth to Water, 2/ Max. rate at pumping test.

Table A.3-2-47

LIST OF BOREHOLES NEWLY ESTABLISHED

D.C. (2 of 2)

Nyanningwe

C.L.

Chibi

No.	B/H (Borehole) Name	Grid Ref.	Ground EL m	Prospect- ing Date	Completed	Depth m	Drilling				Note
							Casing D to W m	1/ Yield m ³ /h	2/ Yield m ³ /h	Specific Capacity m ³ /H/m	
23	JP 5452	TN 409605		17/ 9/82	N/D						Gneiss
24	JP 5454	TN 091713		18/ 9/82	30/11/82					0.36	Do in Granite
25	JP 5456A	TN 650164		20/ 9/82		47.0	DRY			DRY	Ironstone
26	JP 5461	TN 530127		22/ 9/82	8/10/82	49.0	DRY			DRY	Granite
27	JP 5492	TN 508187		4/11/82	N/D						Granite
28	JP 5449	TN 539176		7/11/82	N/D						Quartz Reef
29	JP 5823	TM 755921		7/12/82	N/D						Paragneiss
30	JP 5824	TM 805946		7/12/82	N/D						"
31	JP 5825	TN 816021		7/12/82	N/D						Gneiss
32	JP 5826	TN 760055		7/12/82	N/D						Paragneiss
33	JP 5827	TN 132498		8/12/82	N/D						Fault Zone
34	JP 5829	TN 477082		9/12/82	N/D						Granite
35	JP 5830	TN 495153		9/12/82	25/10/82					NIL	Quartz Reef

Note; 1/ Depth to Water,

2/ Max. rate at pumping test.

Table A.3-2-48 LIST OF EXISTING BOREHOLES (FORM 1)

Matibi No.1 C.L. Batanai D.C.(1 of 3)

No.	B/H(Borehole) Name	Grid. Ref	Ground El. m	D to W ^{1/} m	Pump ^{2/} Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield ^{3/} m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 2223	TM 673853	580	4.5		2.72	45, 15	0.127	* 1,120	20.0	No.2, 25	Y
2	V 2008	TM 675855	580	11.6		-0.1	12, 15	0.007	* (V 2223)	-		Y
3	MUKIANARI	TM 593812	590	9.0		2.27	12, 36	0.076				Y
4	V 947	TM 448765	580	13.0		2.27	18, 33	0.134	* 1,570	30.0	No.6, 7	Y
5	V 948	TM 467780	575	7.4		9.1	18, 26	0.548	* 320	14.0	No.9, 37	Y
6	CHITENERA I	TM 440766	575	15.2		1.36	23	0.087	* (V 947)	-		Y
7	" II	TM 423758	630	12.2		2.27		0.149	* (V 947)	-		Y
8	MABELE	TM 393740	660	12.2		5.45		0.180	* 1,820	23.0	V 3529	Y
9	CUIGALA	TM 460792	580	9.2		4.54	12, 27	0.186	* (V 948)	-		Y
10	PAMBI DIP	TM 464934	660	12.8		2.27	15, 30	0.098	* 1,520	20.0	V 3510	Y
11	TAISI	TM 547929	635	4.6		1.81		0.077	390	14.0		Y
12	MAKALUNE	TM 437906	675	9.1		4.54		0.157	440	14.0		Y
13	V 1069	TN 400006	680	18.0		4.18		0.270	* 1,030	20.0	V 1471	Y
14	V 1850	TM 560881	610	5.0		7.72		0.203	560	12.0		Y
15	V 963	TM 526903	640	9.1		3.0		0.178	600	14.0		Y
16	V 1471	TM 406984	690	7.6		3.86		0.127	* (V 1069)	-		Y
17	MATEZI DIP	TM 447833	645	13.7		3.6		0.125	500	18.0		Y
18	V 937	TM 492678	615	12.2		0.68		0.056	680	13.0		Y
19	HOMBONYI	TM 512752	660	4.5		6.81	15, 40	0.213	150	11.0		Y
20	V 980	TM 428706	600	13.7		0.36		0.008	810	12.0		Y
	Sub-total								11,510	235.0	19 B/H	

Note: ^{1/} Depth to Water, ^{2/} H = Hand, D = Diesel, M = Motor, ^{3/} max. rate at test, ^{4/} Y = Yes, N = None.

Table A.3-2-49 LIST OF EXISTING BOREHOLES (FORM 1)

Matibi No.1 C.L. Batanai D.C.(2 of 3)

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W ^{1/} m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	Form 2 (Y or N)
						Yield ^{3/} m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
21	CHIBAYA 2	TM 610820	585	9.2		0.31	15	0.013	* 1,230	21.0	No.33, 32	Y
22	V 943	TM 498640	595	11.0		3.0	18, 24	0.197	720	14.0		Y
23	CAITEFERE	TM 508613	570	18.3		0.7	18, 24	0.044	220	9.0		Y
24	IIRIMANI	TM 504559	545	7.3		0.6	11	0.109	200	10.0		Y
25	K/H IHERANI	TM 681869	595	4.5		1.0	17, 27	0.939	*(V 2223)	-		Y
26	PIKINI	TM 306727	620	30.5		1.13		0.106	880	12.0		Y
27	V 3510	TM 476928	660	7.2		4.54	12,18-26	0.130	*(No. 10)	-		Y
28	V 3530	TM 382657	580	27.4		2.1	32	0.174	520	12.0		Y
29	K/H BUKUWANI	TM 537777	620	DRY		DRY			530	7.0		Y
30	V 3512	TM 408825	675	DRY		DRY			410	12.0		Y
31	V 946	TM 662820	570			0.50			260	6.0		Y
32	V 546	TM 635833	580	30.5		0.40			*(No. 21)	-		Y
33	CHIBAYA	TM 618830	595	NO	RECORD				*(No. 21)	-		N
34	V 2965	TM 546833	600	17.0	M	13.6			*(V 2964)	-		Y
35	V 2964	TM 538834	600	18.0	M	13.6			*(No. 21)	19.0	No.34, 36	Y
36	V 547	TM 538824	575	24.4		4.0			*(V 2964)	-		Y
37	V 2385	TM 465777	655	33.5		0.90			*(V 948)	-		Y
38	GARASE	TM 376871	710	NO	RECORD				470	15.0		N
39	SILVER	TM 359904	635	NO	RECORD				190	8.0		N
40	V 1068	TM 475806	635	37.0		0.9			470	14.0	No.41	Y
									7,370	159.0	20 B/H	

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-50

LIST OF EXISTING BOREHOLES (FORM 1)

Matibi No.1 C.L. Batanai

D.C. (3 of 3)

No.	B/H (Borehole) Name	Grid. Ref	Ground EL. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	(N or H or L)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
41	MATEDZI	TN 480827	620			3.6			* (V 1068)	-		Y
42	V 3463	TM 439649	570	7.6		3.02	9, 33	0.114		12.0		Y
43	V 3527	TM 527826	600	10.0		0.22	16		* (V 2964)	-		Y
44	V 3529	TM 357728	615	4.9		3.4	9, 18-27	0.098		-		Y
45	V 3511	TM 365798	640	12.0		6.81	17, 37	0.206		11.0		Y
	V 3462	TM 426628		DRY		DRY						N
	V 1068	TM 475806	635	37.0		0.9			Excluded			Y
										690	23.0	5 B/H

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-51 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling			Geology 1/	2/		
		Date	Drilling Recommend m	Water Possibility m	From	Date to	Days			Depth m	Casing m
V 2223	1-No.1					26/ 9/80		27.4	16.0	Y	
V 2008	1-No.2					23/ 9/80		25.9	12.0	Y	
MUKHAMARI	1-No.3					4/10/80		40.9	11.0	Y	
V 947	1-No.4					16/10/80		34.1	10.6	N	
V 948	1-No.5					14/10/80		29.0	24.6	N	
CHITAMERA I	1-No.6					17/10/80		30.5	19.8	N	
" II	1-No.7					30/10/80	Rehabili	30.8		N	
MABELE	1-No.8					31/10/80	"	45.7		N	
CHIGALA	1-No.9					28/10/80		35.4	10.0		
PAMBI DIP	1-No.10					8/11/80		38.1	13.4		
TAISI	1-No.11					7/11/80	Rehabili	30.5			
MAKALUME	1-No.12					9/11/80	"	39.4			
V 1069	1-No.13					9/11/80	"	34.6			
V 1850	1-No.14					12/11/80	"	46.0			
V 963	1-No.15					12/11/80	"	29.6			
V 1471	1-No.16					9/11/80	"	39.6			
MATEZI DIP	1-No.17						"	45.7			
V 937	1-No.18					17/11/80	"	27.4			
HOMBONYI	1-No.19					17/11/80	"	42.7	18.3		
V 980	1-No.20					17/11/80	"	61.0			

Note: 1/ G; Granite, Sch; Schist, S&rp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss

2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-52 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-prospecting			Drilling			Casing m	Geology 1/ 2/	
		Date	Drilling Recommend m	Water Possibility m	From	to	Days			Depth m
CHIBAYA 2	2-No. 21					17/11/80		56.7	7.9	
V 943	2-No. 22					28/11/80		27.4	21.9	
CHIITEFERE	2-No. 23					28/11/80	Rehabili	37.2	11.9	
V 945	2-No. 24					28/11/80		15.9	11.3	G
V 3509	2-No. 25	4/ 3/82	30	20 - 25		15/ 3/82		33.6	3.4	G
PIKINI	2-No. 26					12/ 5/81		42.7		
V 3510	2-No. 27	4/ 3/82	45 - 50	20 - 25, 40 - 45		19/ 7/82		45.7	18.3	G/Sch.
V 3530	2-No. 28	18/ 3/82	40 - 60	30 - 40		28/ 7/82		39.0	12.2	G
V 3528	2-No. 29	17/ 3/82	30 - 40	20 - 30		8/ 7/82		34.6	-	G
V 3512	2-No. 30	4/ 3/82	80	25 - 35, 60 - 70		29/ 5/82				G
V 946	2-No. 31							41.0		
V 546	2-No. 32					23/11/55		55.0		
V 2965	2-No. 34	17/ 1/74	66	24 - 60		9/ 5/74		47.0		Gn/G
V 2964	2-No. 35	17/ 1/74	60	24 - 54		25/ 5/74		58.0		Gn/G
V 547	2-No. 36					20/ 2/56		47.0		
V 2385	2-No. 37					3/ 3/70		48.0		
V 1068	2-No. 40					8/ 6/61		49.0		
MATEDZI	2-No. 41							45.7		
V 3463	2-No. 42	17/12/81	30 - 45	25 - 35		17/12/82		37.2	31.2	G/Hornb. Contact
V 3527	2-No. 43	17/ 3/82	40 - 50	30 - 40		14/ 6/82		41.2	8.5	G
V 3529	2-No. 44	18/ 3/82	40 - 50	30 - 40		3/ 5/82		41.2	10.4	G
V 3511	2-No. 45	4/ 3/82	30 - 50	20 - 25		8/ 4/82		48.8	15.2	G/Sch.
V 1068						8/ 6/61		49.0		

Note: 1/ G; Granite, Sch: Schist, Scrp: Serpentinite, Q: Quartz Vein(Reef), Do: Dolerite, P: Pegmatite, Gn: Gneiss
2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-53 LIST OF BOREHOLES NEWLY ESTABLISHED
 Matibi No.1 C.L. Batanai D.C. (Iof1)

No.	B/H (Borehole) Name	Grid Ref.	Ground EL m	Prospect- ing Date	Completed	Depth m	Drilling				Note
							Casing m	D to W m	Yield ^{2/} m ³ /H	Specific Capacity m ³ /H/m	
	5478	TM 704866		15/10/82	19/1/83	46.0	9.5	9.1	2.27	0.069	
	V 3565	TM 527819		13/ 5/82	N/D (NOT DRILLED)						
	5471	TM 323745		13/10/82	"						
	5472	TM 332780		13/10/82	"						
	5472A	TM 332780		13/10/82	"						
	5473	TM 435836		13/10/82	"						
	5473A	TM 448830		13/10/82	"						
	5474	TM 485591		14/10/82	"						
	5474A	TM 476602		14/10/82	"						
	5475	TM 440639		14/10/82	"						
	5479	TM 348707		16/10/82	"						
	5480	TM 482809		16/10/82	"						
	5481	TM 510837		16/10/82	"						
	5482	TM 537809		16/10/82	"						
	V 3169	TM 409823		15/ 1/76	"						

Note; 1/ Depth to Water, 2/ Max. rate at pumping test.

Table A.3-2-54 LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/H(Borehole) Name	Grid. Ref	Ground EL. m	D to W <u>1/</u> m	Pump <u>2/</u> Kind	Pumping Test			Served by B/H		Note	(Z to E) (Y to N)
						Yield <u>3/</u> m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
1	V 2345	TM 439498	560	22.9		DRY			* 680	21.0		Y
2	B 3283	TM 438490	560	15.2		1.04	10, 32	0.068	*(V 2345)	-		Y
3	B 3284	TM 446494	555	24.4		13.6	24.4-70	0.447	"	-		Y
4	B 3285	TM 414490	580	Nil		Nil			"	-		Y
5	B 3287	SM 956586	770	DRY		DRY			* 1,270	24.0		Y
6	B 3288	SM 951578	760	4.6		1.68	9.1, 30	50.043	*(B 3287)	-		Y
7	B 2011	SM 965603	770	7.5		7.79	15, 40	0.164	"	-		Y
8	B 2010	TM 213596	620	13.1		0.22		0.013	* 580	19.0		Y
9	V 3315	TM 203620	635	6.1		0.3			*(B 2010)	-		Y
10	V 3560	TM 213598	610	28.9		3.8	15.2, 32	1.387	"	-		Y
11	V 3318	TN 161528	650	18.3		3.02	24.4, 39.6	0.117	180	11.0		Y
12	V 3319	TM 110480	675	12.2		0.09	12.2, 18.3	0.003	200	14.0		Y
13	B 3286	TM 425535	540									Y
14	V 3561	TM 153636	655	4.6		0.9	15.2	0.035	340	12.0		Y
15	V 3562	TM 066627	715	7.6		0.9	12.2, 21.3	0.040	-	-		Y
16	V 3563	TN 084513	690	12.2		1.7	18.3, 24.4	0.095	* 660	28.0		Y
17	JP5441	TM 102518	675	9.1		0.45	12, 27	0.012	*(V 3563)	-		Y
18	JP5467	TN 075541	700	13.7		2.3	21, 27	0.079	"	-		Y
	Sub-total								3,910	129.0	16 B/H	

Note: 1/ Depth to Water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-55 LIST OF EXISTING BOREHOLES (FORM 1)

No.	B/H (Borehole) Name	Grid. Ref	Ground EL. m	D to W 1/ m	Pump 2/ Kind	Pumping Test			Served by B/H		Note	FORM 2 (Y or N)
						Yield 3/ m ³ /H	Supply Depth m	Specific Capacity m ³ /H/m	Populat.	Area km ²		
19	5429	TM 140661	680	6.1		6.81	15, 21-39	0.185	* 490	11.0	5429A	Y
20	5429A	TM 135663	685	6.7		2.41	8, 15		* (5429)	-		Y
21	5428	TM 187647	660	15.2		4.5	15, 33	0.188	460	10.0		Y
22	5427	TM 184680	655	15.2		6.8			600	12.0		Y
23	5432	TM 110655	720	15.2		0.7	15.2	0.022	230	15.0	V 3316	Y
24	V 3316	TM 121647	695	G.L.		6.81	45, 21-30	0.158	* (5432)			Y
25	JP5433	TM 219579	630	6.1		4.5	15, 27		* 510	16.0	V 3317	Y
26	V 3317	TM 218555	650	6.1		11.4	12.2, 33.5	0.324	* (JP 5433)			Y
27	V 5431	TM 056624	720	5.5		6.81	7, 18-27	0.199	470	14.0		Y
28	B 3282	TM 036548	705	6.7		0.54	9, 12	0.015	440	12.0		Y
29	JP5463	TM 166717	680	6.1		6.81	9, 18-40	0.190	100	8.0		Y
30	JP5466	TM 033504	725	12.2		2.2	21, 30.5	0.124	310	12.0		Y
31	JP5470	TM 242604	610	13.7		2.3	15	0.102	570	15.0		Y
32	JP5469	TM 318573	605	12.2		15.9	18, 28-53	0.367	450	13.0		Y
33	JP5465	TM 296605	610	12.2		1.1	12, 15	0.050	270	12.0		Y
34	JP5440	TM 489483	540	15.2		0.68	15	0.028	520	16.0		Y
	V 3564	TM 278500				N/D						Y
	V 5464	TM 168714				N/D						Y
	5468	TM 148485		27.7		15.9	28, 40	0.984	Excluded			Y
	Camp Maranda	TM 203616		6.1		0.34	9.2	0.009	-do-			Y
	Sub-total								5,420	166.0	16 B/H	

Note; 1/ Depth to water, 2/ H = Hand, D = Diesel, M = Motor, 3/ max. rate at test, 4/ Y = Yes, N = None.

Table A.3-2-56 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting				Drilling			Geology	D.C. (1 of 2)	
		Date	Drilling Recommend m	Water Possibility m	From	to	Days	Depth m			Casing m
V 2345	1-No.1	24/7/80	45 - 55	20 - 25,	13/ 9/69				N	2/	
B 3283	1-No.2	25/7/80	50 - 80	35 - 55,	4/ 9/80			25.3	Y	0	
B 3284	1-No.3	25/7/80	50 - 80	20 - 35,	28/ 8/80			22.3	Y	N	
B 3285	1-No.4	25/7/80	50 - 80	20 - 35,	18/ 9/80			-	N		
B 3287	1-No.5	26/7/80	50 - 60	50 - 60,	20/ 7/80				N		
B 3288	1-No.6	26/7/80	45 - 60	20 - 35,	3/ 6/81			13.0	N		
B 2011	1-No.7		Redrilled	48 - 60,	9/ 7/81			8.8	N		
B 2010	1-No.8		-do-		5/ 6/81			-	Y		
V 3315	1-No.9	2/9/80	60 - 65	36 - 54	28/ 5/81			-	N		
V 3560	1-No.10	11/5/82	30 - 35	20 - 30	30/ 7/82			8.5	G		
V 3318	1-No.11	3/9/80	50 - 60	30 - 42	18/ 9/81			28.6	Gn		
V 3319	1-No.12	4/9/80	45 - 65	30 - 40	18/ 9/81			14.2	Granulite		
V 3286	1-No.13	25/7/80	45 - 80	12 - 25,	N/D						
V 3561	1-No.14	11/5/82	35 - 45	35 - 45,	18/ 8/82			13.1	G		
V 3562	1-No.15	12/5/82	35 - 40	20 - 30	21/ 8/82			11.0	G		
V 3563	1-No.16	12/5/82	60	35 - 45	26/ 8/82			9.8			
JP 5441	1-No.17	6/8/82	50 - 55	10 - 21,	14/ 9/82			22.0	Fault in Gn		
JP 5467	1-No.18	25/9/82	40 - 45	33 - 50,	19/10/82			26.8	Paragneiss		
5429	1-No.19	6/8/82	50 - 60	15 - 40	14/ 9/82			14.3	Gn		
5429A	1-No.20	6/8/82	50 - 60		28/ 8/82			15.0			
5428	1-No.21	5/8/82	40 - 50		7/10/82			13.7	Gn		

Note: 1/ G: Granite, Sch: Schist, Serp: Serpentinite, Q: Quartz Vein(Reef), Do: Dolerite, P: Pegmatite, Gn; Gneiss
 2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-57 LIST OF EXISTING BOREHOLES (FORM 2)

B/H Name	No. in Form 1	Electric Geo-Propecting			Drilling		Casing m	Geology ^{1/}	2/ C M	
		Date	Drilling Recommend m	Water Possibility m	From	to				Depth m
5427	2-No.22	5/8/82	40 - 50	21 - 40		4/ 9/82	40.9	Amphibolite/Gn	N	
5432	2-No.23	9/8/82	40 - 50	20 - 30, 35 - 45		14/10/82	48.8	Q in Gn	Y	
V 3316	2-No.24	2/9/80	45 - 60	24 - 42		21/ 8/81	45.4	Gn/G	N	
JP 5433	2-No.25	9/8/82	40 - 45	15 - 25, 30 - 40		6/10/82	43.4	Gn	Y	
V 3317	2-No.26	3/9/80	36 - 50	24 - 36		9/81	42.7	Granulite	N	
V 5431	2-No.27	9/8/82	50 - 55	15 - 25, 25 - 30		14/ 9/82	42.7	Gn	Y	
B 3282	2-No.28	24/7/80	45 - 55	25 - 35, 45 - 55		27/ 7/80	45.7		N	
JP 5463	2-No.29	24/9/82	50 - 60	27 - 40		4/11/82	44.5	P	Y	
JP 5466	2-No.30	25/9/82	40 - 50	21 - 40		5/11/82	33.3	Q in Gn	N	
JP 5470	2-No.31	26/9/82	40 - 50	10 - 30, 40 - 45		2/11/82	40.0	Granulite	N	
JP 5469	2-No.32	26/9/82	65 - 75	35 - 50, 55 - 70		9/12/82	58.5	Amphibolite	N	
JP 5465	2-No.33	24/9/82	60 - 65	20 - 30, 40 - 55		24/11/82	37.2	Granulite/Gn	N	
JP 5440	2-No.34	9/8/82	50 - 60	15 - 25, 30 - 40		27/11/82	43.0	Do dyke in Gn	N	
V 3564		13/5/82	40 - 50	21 - 40	N/D			G	-	
V 5464		24/9/82	50 - 55	15 - 40	N/D			Paragneiss	-	
5468		25/9/82	60 - 65	21 - 60		10/12/82	47.0		N	
Camp Maranda			Redrilled			28/ 5/81	45.7		Y	

Note: 1/ G; Granite, Sch; Schist, Serp; Serpentinite, Q; Quartz Vein(Reef), Do; Dolerite, P; Pegmatite, Gn; Gneiss

2/ Water Quality Analysis, Y = Yes, N = None

Table A.3-2-58. Location of Pumping Tests of Borehole

Test No.	Location	Grid Ref.	B/H No.	Depth (m)	Data of Borehole		Communal Land
					D to W (m)	Yield (m ³ /hr)	
1	Mazorodze Sch.	TN433 535	Unknown	-	-	-	Chibi (China)
2	Old Market (Tongogara T/S)	TP070 173	Unknown	-	No	Record	Shurugwi
3	Mukotosi Sch.	TN162 837	Unknown	-	No	Record	Chibi (Casa II)
4	Upstream of Denga Dam	TN277 751	V 2339	45.7	27.4	6.8	Chibi (Nambia)
5	Mushaya Cl.	TN491 678	V 937?	27.4	12.2	0.7	Matibi No.1
6	Zifunzi Sch. (Near)	TN 694 073	No. 16	-	No	Record	Chibi (Maputo)
7	Mandiva Sch. (Near)	TN583 253	Unknown	-	No.	Record	Chibi (Maputo)
8	Jaka Sch.	TN570 362	JP5437	50.0	15.0	1.34	Chibi (China)
9	Matedzi Sch.	TN167 967	V 551	36.0	9.0	5.5	Nberengwa
10	Mahombe Sch.	TN270 142	J 177	-	No.	Record	Nberengwa

Table A.3-2-59 Results of Pumping Tests

Test No.	Test Condition		Estimated T (m ² /sec) Recovery	Specific Capacity (m ³ /h/m)	Expected Continuous Discharge (m ³ /h)	Remarks			
	I.W.L. (m)	F.W.L. (m)							
1	1.2	Unknown	12.06	Over 5.2	None	None	B/H: Mazrodze Sch. Drilled end of Jan. 85		
2	75.0	6.30	14.06	7.76	2.2×10^{-4}	2.4×10^{-4} 5.3×10^{-5}	0.582	Over 6	B/H: Old Market
3	9.3	Unknown	22.59	Over 7.14	None	None	None	0.56	B/H: Mulotosi Sch. No Record
4	12.0	8.12	8.16	0.34	7.7×10^{-4}	2.2 5.6×10^{-4}	2.118	Over 6	B/H: V 2559 Denga Dam
5	2.2	Unknown	24.87	Over 6.17	None	None	None	0.13	B/H: V 957? Mushava Clinic
6	9.2	9.89	25.85	15.96	1.2×10^{-5}	1.9 4.2×10^{-6}	0.036	0.55	B/H: Zifunzi Sch. No. 16 (No Record)
7	11.0	11.59	12.51	0.95	2.5×10^{-4}	4.4 8.4×10^{-5}	0.696	6	B/H: Mandiva Sch.
8	5.6	12.15	15.92	5.77	5.2×10^{-5}	6.1×10^{-6} 1.4×10^{-5}	0.152	1.2	B/H: Jaka Sch.
9	15.0	7.79	15.05	5.26	6.2×10^{-5}	1.1 1.9×10^{-5}	0.174	2.4	B/H: Matedzi Sch V 551
10	6.2	18.50	21.92	5.62	3.6×10^{-5}	5.5×10^{-6}	0.102	0.37	B/H: Malombe Sch. J 177

Note : Q; Pumping Discharge, I.W.L.; Initial Water Level, F.W.L.; Final Water Level, Down I; downed Water Level, T; Transmissibility.

Table A.3-2-60 DATA SHEET OF PUMPING TESTS

Test No. 1 Locat. Mazorodze Sch Grid Ref TN 433 535					Test No. 2 Locat. Dongogara D.S.C. Grid Ref TP 070 175				
Drawdown			Recovery		Drawdown			Recovery	
T min	D m	Q ℓ/min	T min	D m	T min	D m	Q ℓ/min	T min	D m
0	41.73	6.9	0	42.06	0	6.30	75.0	0	14.06
0.5	-	-	0.5	-	0.5	8.20	-	0.5	12.00
1	-	-	1	41.96	1	9.80	-	1	10.62
2	-	-	2	41.87	2	11.50	-	2	9.28
3	42.07	-	3	41.75	3	12.20	-	3	8.72
4	-	-	4	41.66	4	12.71	-	4	8.34
5	42.05	-	5	41.55	5	12.97	-	5	8.16
6	-	-	6	41.45	6	13.12	-	6	7.99
7	-	-	7	-	7	13.27	-	7	7.85
8	-	-	8	41.28	8	13.42	-	8	7.74
9	-	-	9	-	9	13.50	-	9	7.64
10	42.08	3.0	10	41.13	10	13.56	-	10	7.56
12	-	-	12	40.98	12	13.67	-	12	7.42
14	-	-	14	40.85	14	13.76	-	14	7.31
15	42.07	2.4	15	-	15	-	-	15	-
16	-	-	16	40.67	16	13.83	-	16	7.22
18	-	-	18	40.54	18	13.87	-	18	7.15
20	42.08	-	20	40.38	20	13.92	-	20	7.08
25	-	-	25	40.01	25	14.01	-	25	6.95
30	42.06	1.3	30	39.65	30	14.09	-	30	6.85
35	-	-	35	39.27	35	14.07	-	35	6.77
40	42.05	1.5	40	38.98	40	14.15	-	40	6.71
45	-	-	45	38.58	45	14.21	-	45	-
50	42.05	1.1	50	38.24	50	14.16	-	50	6.62
55	-	-	55	37.86	55	14.09	-	55	-
60	42.08	-	60	37.48	60	14.06	-	60	6.56
75	42.06	1.3	65	37.15	70	-	-	70	6.51
80	-	-	70	36.85	80	-	-	80	6.47
90	42.05	1.1			90	-	-	90	6.43
100	42.06	-			100	-	-		
120	42.06	1.3							
		Q = 1.2							

Pumped by Diesel Engine.
Q is estimated based on the time filling up the tank

° 5/2/83 Between 42 - 40 m, Sound of Water falling down.
° Pumped Water is muddy.

° 7/2/85 Commenced at 15:00.

T; Time D; Observed Water Depth Q; Discharge Rate

Table A.3-2-61 DATA SHEET OF PUMPING TESTS

Test No. 3 Locat. Mukotosi Sch Grid Ref TN 162 837					Test No. 4 Locat. Upstream of Denga Dam Grid Ref TN 277 751				
Drawdown			Recovery		Drawdown			Recovery	
T min	D m	Q ℓ/min	T min	D m	T min	D m	Q ℓ/min	T min	D m
0	15.74	15.0	0	22.39	0	8.12		0	8.46
0.5	-	-	0.5	22.21	0.5	8.25		0.5	8.35
1	15.97	-	1	22.03	1	8.32	12.0	1	8.30
2	16.29	-	2	21.71	2	8.39		2	8.24
3	16.53	-	3	21.38	3	8.41		3	8.22
4	16.90	-	4	21.09	4	8.42		4	8.21
5	17.26	12.0	5	20.81	5	8.44		5	-
6	17.55	-	6	20.57	6	8.45		6	8.19
7	17.66	-	7	20.35	7	8.46		7	-
8	17.88	-	8	20.15	8	8.44		8	8.18
9	18.11	-	9	19.93	9	8.43		9	-
10	18.29	-	10	19.71	10	8.44	12.0	10	8.175
12	18.51	-	12.25	19.29	12	8.45		12	-
14	18.95	-	14	18.97	14	-		14	-
15	-	-	15	-	15	8.46		15	8.165
16	19.42	-	16	18.64	16	-		16	-
18	19.50	-	18	18.46	18	8.47		18	-
20	19.80	10.7	20	18.30	20	8.44	12.0	20	8.16
25	20.55	-	25	17.58	25	8.42		25	-
30	21.45	12.6	30	17.01	30	8.44	12.0	30	8.145
35	21.80	-	35	16.40	35	-		35	-
40	22.03	10.2	40	15.95	40	8.47		40	8.135
45	22.32	-	45	15.62	45	-		45	-
50	22.37	9.0	50	15.25	50	8.46		50	8.13
55	22.32	-	55		55	-		55	-
60	22.46	8.4	60		60	8.46	12.0	60	-
70	22.35	6.7			75	8.47		1.5	8.26
80	22.39	7.7			80	-			
90					90	8.46	12.0		
100					100				
		Q = 9.3 (20 - 80 min)							
° 8/2/85 Commenced at 9:30.					° 15/2/83 Commenced at 14:00.				

T; Time D; Observed Water Depth Q; Discharge Rate

Table A.3-2-62 DATA SHEET OF PUMPING TESTS

Test No.5 Locat. Mushava Clinic Grid Ref TM 491 678					Test No.6 Locat. Zifunzi Sch Near Grid Ref TN 694 073				
Drawdown			Recovery		Drawdown			Recovery	
T min	D m	Q ℓ/min	T min	D m	T min	D m	Q ℓ/min	T min	D m
0	27.87	14.5	0	24.87	0	9.89	-	0	25.85
0.5	-	-	0.5	24.70	0.5	-	-	0.5	-
1	24.87	-	1	24.53	1	10.96	13.1	1	25.47
2	24.88	-	2	24.25	2	11.82	-	2	25.07
3	24.87	-	3	24.00	3	12.57	-	3	24.71
4	-	-	4	23.76	4	13.28	-	4	24.30
5	24.87	4.1	5	23.54	5	13.90	-	5	23.80
6	-	-	6	23.34	6	14.58	-	6	23.33
7	-	-	7	23.15	7	15.30	15.0	7	22.85
8	-	-	8	22.97	8	16.10	-	8	22.45
9	-	-	9	22.80	9	16.74	-	9	22.00
10	24.87	2.1	10	22.61	10	17.27	15.4	10	21.56
12	-	-	12	22.31	12	18.16	-	12	20.70
14	-	-	14	22.01	14	18.98	-	14	19.92
15	24.88	-	15	-	15	-	-	15	-
16	-	-	16	21.72	16	19.82	13.6	16	19.17
18	-	-	18	21.45	18	20.52	-	18	18.47
20	24.87	-	20	21.19	20	21.06	13.0	20	17.82
25	24.87	2.5	25	20.62	25	22.74	12.2	25	16.36
30	24.88	-	30	20.12	30	24.15	11.6	30	15.12
35	-	-	35	19.72	35	25.03	10.2	35	14.07
40	24.87	2.2	40	19.39	40	25.85	9.2	40	13.25
45	-	-	45	19.12	45	-	-	45	12.56
50	24.87	-	50	18.85	50	-	-	50	11.85
55	-	-	55	18.62	55	-	-	55	11.53
60	24.87	2.1	60	18.40	60	-	-	60	11.22
70	-	-	-	-	70	-	-	-	-
80	-	-	-	-	80	-	-	-	-
90	-	-	-	-	90	-	-	-	-
100	-	-	-	-	100	-	-	-	-
		Q = 2.2				Finished due to hardness of pumping by man-power	Q = 12.6		

° 16/2/83 Commenced at 10:30.
° 6 - 7 Women were waiting the recovery,
when arrived the site.

° 17/2/83 Commenced at 14:30.

T; Time D; Observed Water Depth Q; Discharge Rate

Table A.3-2-63 DATA SHEET OF PUMPING TESTS

Test No. 7 Locat. Mandiva Sch Near Grid Ref TN 583 253					Test No. 8 Locat. Jaka Sch Grid Ref TN 570 362				
Drawdown			Recovery		Drawdown			Recovery	
T min	D m	Q ℓ/min	T min	D m	T min	D m	Q ℓ/min	T min	D m
0	11.77		0	12.54	0	13.96		0	15.92
0.5	-		0.5	-	0.5	-		0.5	15.82
1	11.97	12.0	1	12.41	1	14.27	9.5	1	15.77
2	12.04		2	12.34	2	14.40		2	15.66
3	12.11		3	12.27	3	14.49		3	15.54
4	12.12		4	12.20	4	14.58	6.0	4	15.46
5	12.13	10.0	5	12.12	5	14.65		5	15.36
6	12.14		6	12.07	6	14.76		6	15.26
7	12.18		7	12.03	7	14.81	6.0	7	15.18
8	12.20		8	11.98	8	14.90		8	15.10
9	12.22		9	11.94	9	14.95		9	15.01
10	12.26	11.0	10	11.90	10	15.05	6.3	10	14.92
12	12.27		12	11.85	12	15.12		12	14.75
14	12.33		14	11.78	14	15.33	6.3	14	14.59
15	-		15	-	15	-		15	-
16	12.36	11.4	16	11.74	16	15.53		16	14.45
18	12.42		18	11.70	18	15.58	6.0	18	14.35
20	12.45	11.8	20	11.68	20	15.63	5.6	20	14.20
25	12.49	10.5	25	11.65	25	15.77	5.6	25	13.94
30	12.54	11.0	30	11.63	30	15.88	5.4	30	13.76
35	12.53	10.8	35	End	35	15.91		35	-
40	12.54	11.2	40		40	15.93	5.6	40	13.34
45	12.55	11.2	45		45	15.92		45	-
50	12.54	11.0	50		50	15.95	5.6	50	13.10
55	-	-	55		55	-		55	
60	12.54	11.0	60		60	15.93	5.5	60	
70					70	15.91	5.6		
80					80	15.94	5.5		
90					90	15.92	5.6		
100		Q = 11.0			100				

° 21/2/83 Commenced at 15:00.

° 22/2/83 Commenced at 10:00.

T; Time D; Observed Water Depth Q; Discharge Rate

Table A.3-2-64 DATA SHEET OF PUMPING TESTS

Test No.9 Locat. Matedzi Sch Grid Ref TM 167 967					Test No.10 Locat. Mahombe Sch Grid Ref TN 270 142				
Drawdown			Recovery		Drawdown			Recovery	
T min	D m	Q ℓ/min	T min	D m	T min	D m	Q ℓ/min	T min	D m
0	7.79		0	13.05	0	19.82	-	0	21.92
0.5	-		0.5	-	0.5	-	-	0.5	21.77
1	8.13	15.0	1	12.87	1	20.05	8.6	1	21.65
2	8.31		2	12.69	2	20.26	-	2	21.46
3	8.48		3	12.52	3	20.46	-	3	21.21
4	8.60		4	12.36	4	20.58	6.9	4	20.95
5	8.76	13.8	5	12.19	5	20.74	-	5	20.71
6	8.86		6	12.02	6	20.90	-	6	20.48
7	8.99		7	11.86	7	21.00	-	7	20.29
8	9.13	18.0	8	11.71	8	21.13	-	8	20.09
9	9.34		9	11.58	9	21.22	6.9	9	19.92
10	9.44		10	11.47	10	21.28	-	10	19.77
12	9.68	16.4	12	11.29	12	21.36	-	12	19.50
14	9.98		14	11.13	14	21.45	6.8	14	19.27
15	-		15	-	15	-	-	15	-
16	10.21	15.7	16	10.97	16	21.59	-	16	19.08
18	10.33		18	10.80	18	21.64	-	18	18.92
20	10.39	12.9	20	10.65	20	21.72	6.5	20	18.79
22	10.56	15.0	25	10.30	25	21.86	6.0	25	18.54
30	11.41	15.0	30	9.97	30	21.91	6.1	30	18.45
35	11.92		35	9.66	35	21.90	-	35	18.40
40	12.35	15.2	40	9.38	40	21.92	6.2	40	18.37
45	12.71		45	End	45	-	-	45	End
50	12.92	14.6	50		50	21.94	6.0	50	
55	-		55		55	-	-	55	
60	13.08	15.0	60		60	21.93	5.9	60	
70	13.05	14.8			70	21.92	6.2		
80	13.07	14.9			80	21.93	6.0		
90	13.05	15.0			90	21.92	6.2		
24	10.76				100				
26	11.02	15.4							
28	11.18								
° 23/2/83 Commenced at 10:30.					° 24/2/83 Commenced at 14:00.				

T; Time D; Observed Water Depth Q; Discharge Rate

3-2-4 Water Quality

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3-2-4. Water Quality

The water quality analysis data (63 data) collected from Masvingo office of Ministry of Water Resources and Development were compiled for hexa diagramme, as shown Fig. 3-2-1 to Fig. 3-2-2. The data indicate that dissolved salts such as NaCl and NaHCO₃ contained in groundwater are generally increasing as it goes southwards in Masvingo Province.

Meanwhile, few water samples from boreholes show values of acceptable range with respect to maximum permissible level specified by World Health Organization (refer to Table 3-2-5).

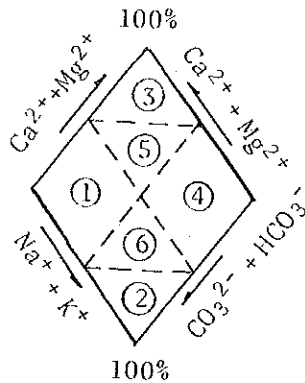
Numbers of acceptable water samples are:

Cibi C.L.	-	14 samples out of 24 (58%)
Matibi No.1 C.L.	-	7 samples out of 22 (32%)
Maranda C.L.	-	Nil samples out of 17 (0%)

Some unsuitable water samples containing high rate of fluorides and nitrates were found in the data.

(1) Key-diagram

The key-diagram is one of the classification methods to clarify chemical feature of water. This diagram indicates the percentages of the dissolved cation and anion composition groups in water, i.e., (Ca²⁺ + Mg²⁺) and (Na⁺ + K⁺) as cation and (SO₄²⁻ + Cl⁻) and (CO₃²⁻ + HCO₃⁻) as anion. It does not indicate the absolute dissolved amount of these ions. The chemical characteristics of the water can be determined by the plotted position of each water sample. In general, water quality is divided into five types.



1) Carbonate hardness type

Water plotted into this type is the commonest type of fresh water which comprises mainly calcium bicarbonate and magnesium bicarbonate.

2) Carbonate Alkali type

Water of this type mainly consists of sodium bicarbonate and potassium bicarbonate and is soft water derived from the water belonging to Carbonate hardness type through chemical change.

3) Non-Carbonate hardness type

Main elements of this type of water are principally chloride and sulfide. And a feature of this water shows so-called permanent hardness in its water quality.

4) Non-Carbonate Alkali type

Water of this type contains mainly alkali chloride and alkali sulfide. To this type of water belong the water mixed with sea water, fossil water and water of volcanic origin.

5) The intermediate type

(2) Hexadiagram

The key-diagram of a water sample indicates relations between anions and cations in qualitative terms or in percentage. On the other hand, the hexadiagram expresses the chemical compositions in both qualitative and quantitative terms. The unit used is me/l (milli-equivalents per liter) and not mg/l (milligrammes per liter). This system facilitates understanding of water compositions. To take an example, if a sample contains 23.0 mg/l of Na and 35.5 mg/l of Cl, it means the water contains

more Cl weightwise. When the same amounts are expressed in me/l, they both become 0.100 me/l or of a same density. It indicates that, in this case, both Na and Cl may have originated from the same source of NaCl. This is the advantage of me/l over the mg/l expression. By looking at the Hexadiagram, one can easily distinguish whether the water is of NaCl-type or $\text{Ca}(\text{HCO}_3)_2$ -type, etc.

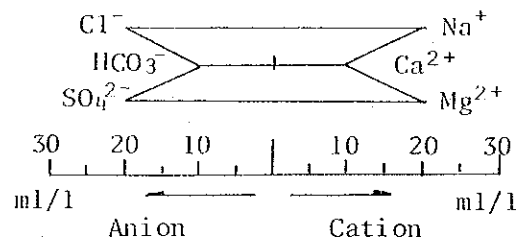
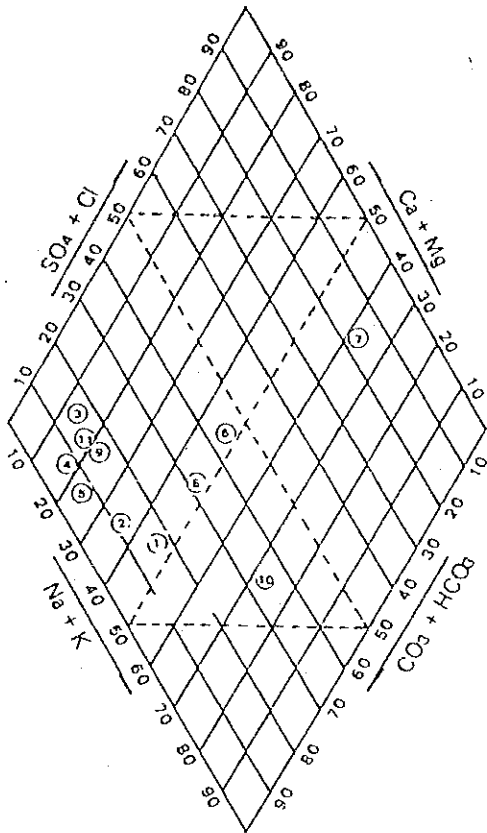
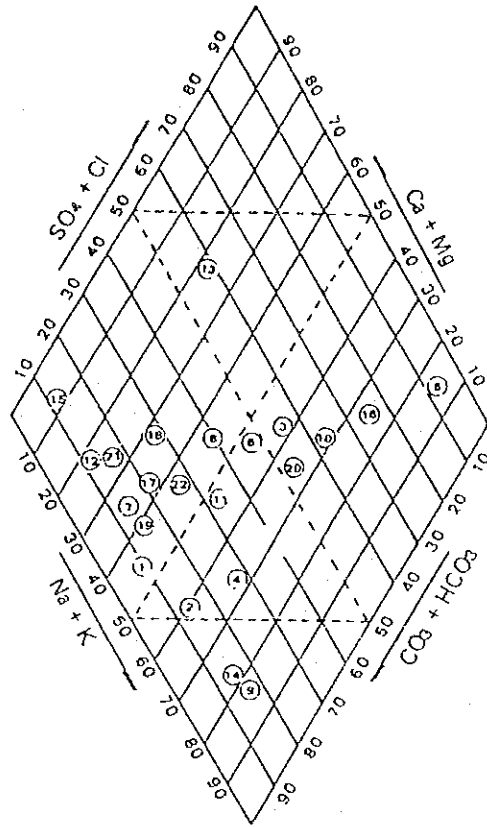


Fig. A. 3 - 2 - 1 Keydiagram

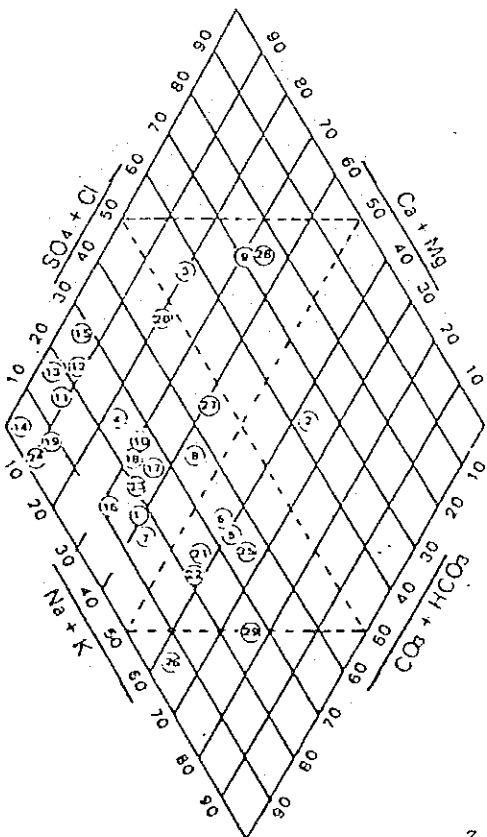
Mberengwa C.L.



Matibi No. 1 C.L.



Chibi C.L.



Maranda C.L.

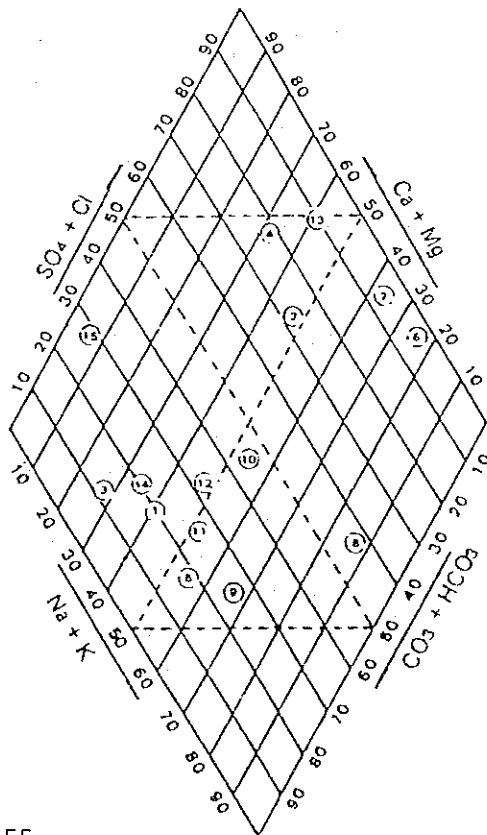
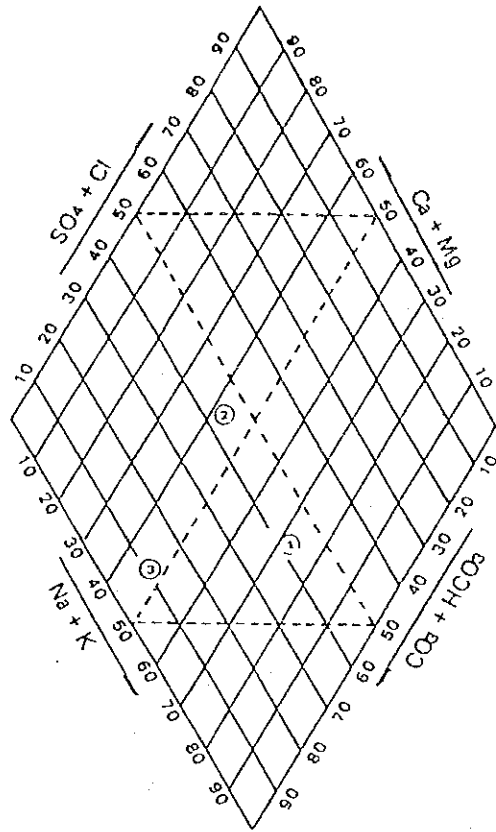
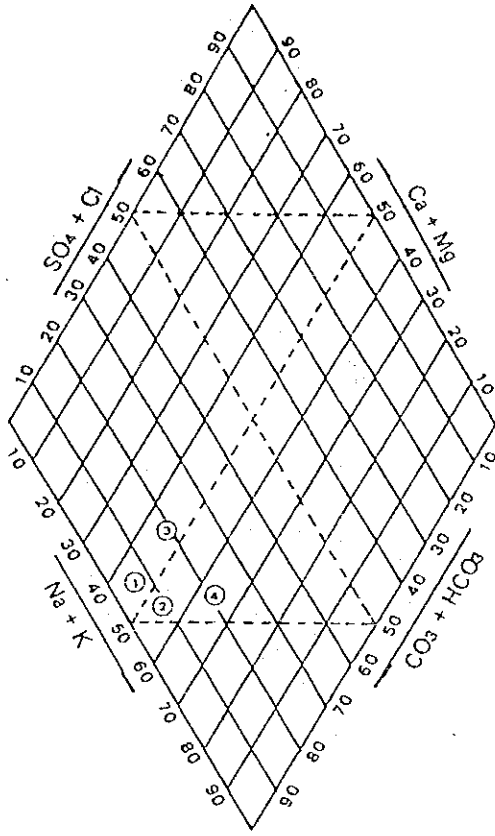


Fig. A. 3 - 2 - 2
Chilimanzi C.L.

Keydiagram

Shurugwi C.L.



Runde C.L.

Mazvihwa C.L.

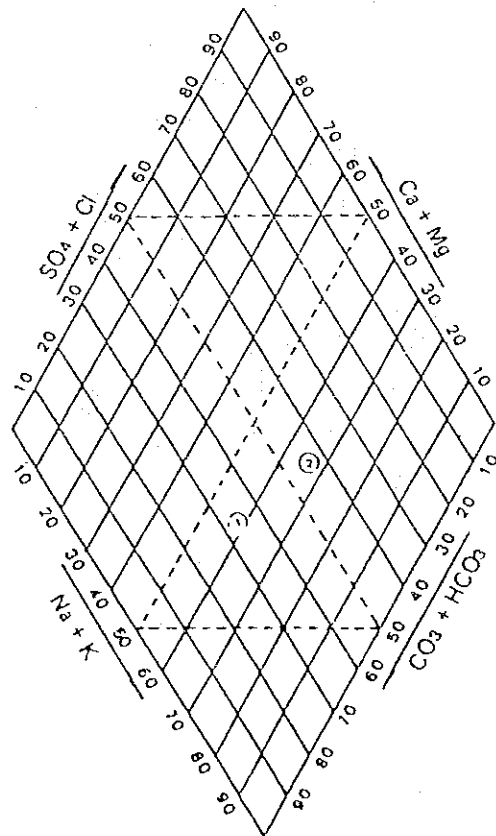
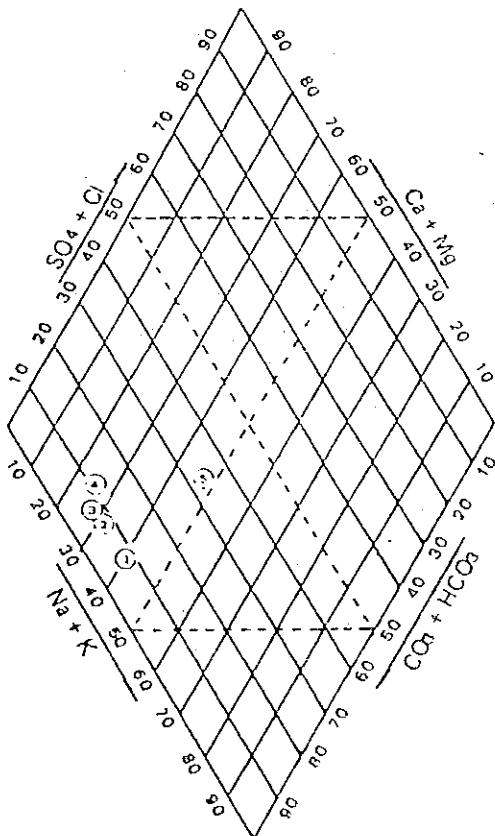


Table A.3-2-65 Water Quality Tests in Field

Chilimanzi C.L. (1 of 1)

No.	Site	Grid Ref.	W.R. 1/	Date	Temperature °C		P.H.	C 2/	Appearance	3/ I.T
					Air	Water				
WS-1	Chizhou B.C.	TP 382364	W	12/1/83	37.2	28.6	6.5	134	Whitish tinge Few suspended matter and sediment	
WS-2	Chizhou B.C.	TP 382364	W	12/1/83	37.0	25.3	5.6	63	Greyish tinge Suspended matter and sediment	
WS-3	Muwani B.C.	TP 548385	W	11/1/83	35.4	30.5	7.4	114	Whitish tinge Few suspended matter and sediment	
WS-4	Muwani B.C.	TP 548385	W	11/1/83	36.0	29.5	5.9	293	Greyish tinge Suspended matter and sediment	
WS-5	Shashe Sch.	TP 569053	R	11/1/83	36.1	29.0	7.2	259	Whitish tinge Few matter and sediment	
WS-6	Vudzi Sch.	TP 443218	R	12/1/83	35.0	35.0	8.8	301	Buff tinge Trace of suspended matter	2
WS-7	St. Theresa Hospital	TP 513188	B/II	13/1/83	36.0	31.0	7.4	242	Clean	3
WS-8	Nyamatiki River	TP 551386	R	12/1/83	36.0	25.5	7.5	119	Pale brownish green Matter and sediment	1
WS-9	Chaka Charch Sch.	TP 577396	B/II	13/1/83	38.0	Ranked Water 32.0	7.6	103	Clean	4

Notes: 1/ W.R. = Water Resource; B/II = Borehole W = Well R = River D = Dam
 2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ I.T = Test No. of Laboratory; with Head letter of J

Table A. 3-2-66 Water Quality Tests in Field

Shuruzwi C.L. (1 of 2)

No.	Site	Grid Ref.	W.R. 1/	Date	Temperature °C		P.H.	C 2/	Appearance	3/ LT
					Air	Water				
WS-1	Nakotoro Sch.	TP 044072	W	21/1/83	35.6	31.1	6.7	61.1	Whitish tinge Few suspended matter Sediment	12
WS-2	Nakotoro Sch.	TP 048065	W	21/1/83	35.4	24.0	7.2	781	Almost clean Few sediment	
WS-3	Ilanke B.C.	TP 035235	W	24/1/83	-	22.7	6.6	213	Whitish tinge Few suspended matter	
WS-4	Ilanke B.C.	TP 035235	W	do	-	22.5	6.6	127	Whitish tinge Few matter and sediment	
WS-5	Ilanke B.C.	TP 035235	W	do	-	21.5	7.2	190	Almost clean Trace of matter Trace	
WS-6	Ilanke B.C.	TP 035235	W	do	-	22.1	6.5	180	Almost clean Trace of matter	14
WS-7	Banga Sch.	TN 047986	D	22/1/83	36.0	32.0	7.2	158	Brownish green Few matter and sediment	13
WS-8	Tumba Sch.	SP 991084	W	25/1/83	26.1	23.9	7.5	65.0	Buff tinge Suspended matter and sediment	
WS-9	Chekenyu Sch.	SP 968081	W	22/1/83	34.8	29.5	7.8	91.0	Almost clean	

Notes; 1/ W.R. = Water Resource; B/H = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-67 Water Quality Tests in Field

Shurugwi C.L. (2 of 2)

No.	Site	Grid Ref.	W.R. 1/	Date	Temperature °C		p.H.	C 2/	Appearance	3/ T
					Air	Water				
WS-10	Dzambanda Dam No.2	TP 051027	D	22/1/83	36.0	35.0	7.2	82.7	Yellowish tinge Few suspended matter and sediment	
WS-11	Dzambanda Dam No.1	TP 070173	D	22/1/83	36.0	32.0	8.6	95.0	- do -	
WS-12	Musavezi River	TP 060146	R	22/1/83	36.0	34.0	9.6	183	Yellowish tinge Matter and sediment	
WS-13	Tongogara Township	TP 073173	B/II 3429	25/1/83	30.5	23.0	7.4	371	Clean	
WS-14	Maverdzonge Sch.	TP 060146	W	25/1/83	30.5	23.0	6.4	206	Clean	

Notes: 1/ W.R. = Water Resource; B/II = Borehole W = Well R = River D = Dam
 2/ C - Specific Conductivity at 20°C (µs/cm²), 3/ T - Test No. of Laboratory; with Head letter of J

Table A.3-2-68 Water Quality Tests in Field

Runde C.L. (1 of 2)

No.	Site	Grid Ref.	W.R. 1/ B/H	Date	Temperature °C		P.H.	C 2/	Appearance	3/ LT
					Air	Water				
WS-1	Shiku Sch.	SN 985776	3606	17/1/83	39.0	28.0	7.2	629	Clean	8
WS-2	Ihilo	RH 030668	W	13/1/83	38.5	32.4	6.1	63	Whitish tinge Few suspended matter and sediment	
WS-3	Ihilo	RH 030668	W	13/1/83	38.5	20.7	6.8	115	- do -	6
WS-4	Ihilo	RH 030668	W	13/1/83	38.5	29.6	7.2	206	Whitish tinge Trace of matter	
WS-5	Hanawa Sch.	SN 973881	B/H 3595	17/1/83	39.5	28.0	7.1	629	Clean	7
WS-6	Lunde	RH 076519	B/H 2559	17/1/83	39.5	26.0	7.1	786	Clean	
WS-7	Chingwangwe Sch.	RH 076805	D	18/1/83	31.0	26.0	8.8	749	Whitish tinge Suspended matter and sediment	
WS-8	Mapanzure Clinic	RH 057798	B/H 2899	18/1/83	30.0	30.6	8.3	456	Clean	9
WS-9	Mabasa Clinic	SN 960702	R	17/1/83	39.7	30.1	8.6	352	Whitish tinge Few matter and sediment	

Notes; 1/ W.R. = Water Resource; B/H = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (us/cm²); 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-69 Water Quality Tests in Field

Runde C.L. (2 of 2) & Mazvihwa C.L.

No.	Site	Grid Ref.	W.R. 1/	Date	Temperature °C		P.H.	C 2/	Appearance	3/ LT
					Air	Water				
WS-10	Runde C.L. Lunde Clinic	SN 886591	B/II 5345	14/1/83	35.0	26.0	6.9	424	Clean	5
	Mazvihwa C.L.									
WS-1	Matanbi Clinic	TN 170345	D	19/1/83	31.5	26.0	8.0	444	Buff tinge Matter and sediment	10
WS-2	Murowa Sch.	TN 273297	W	20/1/83	35.4	25.8	6.1	86.8	Whitish tinge Matter and sediment	11

Notes: 1/ W.R. = Water Resource; B/II = Borehole W = Well R = River D = Dam
 2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-70 Water Quality Tests in Field

Mberengwa C.L. (1 of 2)

No.	Site	Grid Ref.	W.R. <u>1/</u>	Date	Temperature °C		P.H.	C <u>2/</u>	Appearance	<u>3/</u> LT
					Air	Water				
WS-1	Near Mwembe B.C.	TN 000159	Spring	19/2/83	31.0	21.9	5.7	54.0	Whitish tinge Few matter and sediment	31
WS-2	Bvumbura Sch.	QG 856818	W	15/2/83	27.5	24.6	7.0	588	Clean	31
WS-3	Tom's Store	TN 114010	W	14/2/83	20.0	24.4	7.1	91.8	Clean	29
WS-4	Bvute Sch.	QH 918113	B/H 3622	15/2/83	18.2	23.5	7.0	801	Clean	30
WS-5	Near Bvute Dam	QH 945114	B/H 680	15/2/83	20.0	22.8	7.3	958	Clean	32
WS-6	Buchwa Mine	TN 286169	B/H 2911	16/2/83	33.5	29.0	7.0	860	Clean	34
WS-7	Buchwa Mine	TN 274169	B/H 2912	16/2/83	35.5	25.1	7.1	734	Clean	
WS-8	Near Mahombe Sch.	TN 270142	B/H J177	16/2/83	30.3	26.8	7.0	557	Clean	33
WS-9	Mbirashava Sch.	TN 083175	W	19/2/83	32.0	29.0	7.5	822	Almost clean Few sediment	39

Notes: 1/ W.R. = Water Resource; B/H = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-71 Water Quality Tests in Field

Mberengwa C.L. (2 of 2)

No.	Site	Grid Ref.	W.R. <u>1/</u>	Date	Temperature °C		P.H.	C <u>2/</u>	Appearance	<u>3/</u> LT
					Air	Water				
WS-10	Negobe Sch.	TN 257129	B/II 2675	16/2/83	30.0	25.6	7.5	526	Clean	
WS-11	Masvingo Sch.	TN 227107	B/II 3473	16/2/83	33.6	23.2	6.7	378	Almost clean Trace of matter	35
WS-12	Matedzi Sch.	TM 167967	B/II 551	16/2/83	30.0	25.6	6.7	1,204	Clean	36
WS-13	Near Ngunguhane Sch.	TM 269973	B/II 1100	14/2/83	20.0	25.4	7.2	6,927	Brownish tinge. No sediment	27
WS-14	Inyala	TM 048864	B/II 854	22/2/83	33.5	28.5	7.0	637	Clean	
WS-15	Near Rhonda	TM 072806	B/II 853	22/2/83	33.0	27.6	6.9	600	Clean	40

Notes: 1/ W.R. = Water Resource; B/II = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (us/cm²), 3/ LT = Test No. of Laboratory; with Ilead Letter of J

Table A.3-2-72 Water Quality Tests in Field

Chibi C.L. (1 of 3)

No.	Site	Grid Ref.	W.R. <u>1/</u>	Date	Temperature °C		P.H.	C <u>2/</u>	Appearance	<u>3/</u> LT
					Air	Water				
WS-1	Chigwikwi Sch	TN 065713	B/H 5424	4/2/83	24.5	25.4	7.3	1090	Clean	20
WS-2	Chifodza Sch	TN 441384	B/H	29/1/83	39.0	30.0	7.2	861	Clean	
WS-3	Bella Sch	TN 244574	B/H 3047	26/1/83	35.0	26.3	6.8	2040	Clean	16
WS-4	Davira Sch	TN 361320	R	29/1/83	39.0	26.0	6.8	56.0	Yellowish tinge Few matter and sediment	
WS-5	Chiware Sch	TN 231447	B/H 5420	29/1/83	39.1	26.3	6.5	2960	Clean	15
WS-6	Chisenga Sch	TN 261509	R	27/1/83	34.5	29.0	7.2	100	Whitish tinge Few matter and Sediment	
WS-7	Madzivadondo B.C.	TN 136656	B/H	26/1/83	32.0	26.0	7.6	455	Clean	17
WS-8	Mukotosi Sch	TN 166841	B/H	8/2/83	35.5	25.4	7.0	1175	Clean	23
WS-9	Mazorodze Sch	TN 433535	B/H	27/1/83	35.5	26.0	7.0	1237	Whitish tinge Few suspended matter	

Notes: 1/ W.R. = Water Resource; B/H = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ LT = Test No. of Laboratory; with lead letter of J

Table A.3-2-73 Water Quality Tests in Field

Chibi C.L. (2 of 3)

No.	Site	Grid Ref.	W.R. <u>1/</u>	Date	Temperature °C		P.H.	C <u>2/</u>	Appearance	<u>3/</u> LT
					Air	Water				
WS-10	Taru B.C.	TN 322531	R	27/1/83	35.5	27.6	7.2	132	Whitish tinge Few suspended matter	
WS-11	Ngundu B.C.	TN 707987	B/II	2/2/83	36.0	25.2	7.2	1045	Clean	18
WS-12	do	TN 709988	B/II	2/2/83	36.0	25.1	7.2	719	Clean	
WS-13	St. Simon Sch	TN 588317	B/II 5426	2/2/83	36.0	24.7	7.8	770	Clean	
WS-14	Near Chigapa Sch	TN 300592	B/II	3/2/83	38.0	27.8	6.7	2936	Clean	19
WS-15	Upstream of Donga Dam	TN 277751	B/H 2339	5/2/83	-	25.0	7.3	739	Clean	21
WS-16	Makungubwe	TN 694073	B/II	14/2/83	20.0	24.6	7.2	1645	Clean	28
WS-17	Jaka Sch	TN 571371	B/II	16/2/83	33.5	26.0	-	972	Clean	
WS-18	Mandiva Sch	TN 585245	B/II	14/2/83	21.1	24.6	6.6	254	Clean	

Notes: 1/ W.R. = Water Resource; B/II = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-74 Water Quality Tests in Field

Chibi C.L. (3 of 3) & Matibi No.1 C.L. (1 of 1)

No.	Site	Grid Ref.	W.R. <u>1/</u>	Date	Temperature °C		P.H.	C <u>2/</u>	Appearance	<u>3/</u> LT
					Air	Water				
WS-19	Maringire Sch	TN 611189	B/H 5459	14/2/83	21.5	24.9	6.7	361	Clean	
	Matibi No.1	C.L.								
WS-1	Near Matedzi Dip	TM 447833	B/H	10/2/83	33.6	26.2	6.6	524	Clean	24
WS-2	Mushava Clinic	TM 492678	B/II 937	10/2/83	33.5	29.0	7.9	2671	Clean	25
WS-3	Mabare Sch	TM 357728	B/II 3529	16/2/83	30.5	26.0	-	1590	Clean	
WS-4	Chipukswi	TM 635833	B/II 546	16/2/83	30.0	25.0	7.3	990	Clean	22

Notes; 1/ W.R. = Water Resource; B/H = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C. (µs/cm²), 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-75 Water Quality Tests in Field

Maranda C.L. (1 of 1)

No.	Site	Grid Ref.	W.R. <u>1/</u>	Date	Temperature °C		P.H.	C <u>2/</u>	Appearance	<u>3/</u> LT
					Air	Water				
WS-1	Denganya Sch.	TM 296605	B/H 5465	12/2/83	-	27.6	6.8	1,007	Clean	26
WS-2	Maranda B.C.	TM 213596	B/H 2010	12/2/83	-	26.9	6.8	6,737	Clean	
WS-3	Near Furidzi Sch.	TM 187647	B/H 5428	16/2/83	33.2	25.5	7.2	2,587	Clean	38
WS-4	Vinga Sch.	TM 110655	B/H 5432	16/2/83	33.5	26.5	-	1,575	Clean	
WS-5	Rasha Sch.	TM 056624	B/H 5431	16/2/83	30.5	26.0	-	1,060	Clean	
WS-6	Cherindi B.C.	TM 066627	BH 3562	16/2/83	32.5	26.5	7.0	7,349	Clean	37

Notes: 1/ W.R. = Water Resource; B/H = Borehole W = Well R = River D = Dam
2/ C = Specific Conductivity at 20°C (µs/cm²), 3/ LT = Test No. of Laboratory; with Head Letter of J

Table A.3-2-76 List of Water Quality Test by Zimbabwe

Test No.	Name of C.L.		Chibi Grid Ref.	Name of C.L.		Chibi Grid Ref.	B/H Name	Appearance	Test No.	Site	Chibi Grid Ref.	B/H Name	Appearance
	Test No.	Site		Test No.	Site								
Z1	Mandambwa B.C.		TN 252737	3277A	W No Mat & Sed		St. Simon Zhara	Z10		TN 588317	5426	Clean	
Z2	Maranba Sch		TN 230680	2667	B-tinge No Mat & Sed		Chirogwe	Z11		TN 465298	5419	Colourless Few Mat & Sed	
Z3	Rutsinda Sch		TN 266632	5422	W No Mat & Sed		Chikofa B.C.	Z12		TN 444267	5418	Clean	
Z4	Jochomi Sch		TN 458601	5421	Slight B-tinge No Mat & Sed		Mandiva Sch	Z13		TN 585245	Maputo No.6	Y-tinge Trace of Mat Few Sed	
Z5	Mangwana Sch		TN 355585	5425	Clean		Mpagamuri	Z14		TN 406204		B Mat & Sed	
Z6	Muvundusi Sch		TN 483541	China No.2	-		Maringamari	Z15		TN 611189	5459	Clean	
Z7	Takavarasha Sch		TN 185498	Nambia No.14	Clean		Nemavuzhe Sch	Z16		TN 551178	Maputo No.1	Colourless Trace of Mat & Sed	
Z8	Jaka Sch		TN 571371	5457	B No Mat & Sed		Mawadzi Sch	Z17		TN 431133	5416	Y-tinge No Mat & Sed	
Z9	Sese B.C.		TN 569326	3350	W Few Mat No Sed		Mupagamuri	Z18		TN 409167	5417	Clean	

Note: I/ W; Whitish B; Brownish Y; Yellow Mat; suspended Matter Sed; Sediment

Table A.3-2-77 List of Water Quality Test by Zimbabwe

(2 of 4)

Name of C.L.		Chibi			Name of C.L.			Matibi No.1		
Test No.	Site	Grid Ref.	B/H Name	Appearance	Test No.	Site	Grid Ref.	B/H Name	Appearance	
Z19	Chomuruvati B.C.	TN 419115	5388	Clean	Z1	Musaverema	TN 400006	1069	B-tinge Trace of Mat & Sed	
Z20	Zubuku B.C.	TN 642124	Maputo No.5	Opalescent Few Sed	Z2	Ziwa	TM 476928	3510	Y-tinge Clear	
Z21	Zifunzi Sch	TN 689113	Maputo No.8	Clean	Z3	Taisi	TM 547929	NO.11	Colourless Trace of Mat & Sed	
Z22	Chosiyate B.C.	TN 605038	5337	-	Z4	Makalume	TM 437906	NO.12	- do -	
					Z5	Nasvasvuku	TM 526903	963	B-tinge Mat & Sed	
					Z6	Matanda	TM 560881	1850	- do -	
					Z7	Chitanga	TM 675855	2008	B with Green Tinge Few Mat	
					Z8	Chitanga	TM 673853	2223	Milky Mat, No Sed	
					Z9	Matedzi Dip	TM 447833	NO.17	Colourless No Mat Few Sed	

Note: l/ W; Whitish B; Brownish Y; Yellow Mat; suspended Matter Sed; Sediment

Table A.3-2-78 List of Water Quality Test by Zimbabwe

Name of C.L.		Matibi No.1		Name of C.L.		Matibi No.			
Test No.	Site	Grid Ref.	B/H Name	Appearance	Test No.	Site	Grid Ref.	B/H Name	Appearance
Z10	Chibaya No.2	TM 610820	No.21	Milky Trace of Sed	Z19	Kure	TM 406984	1471	B Mat & Sed
Z11	Mukhamari	TM 593812	No.3	Colourless Trace of Mat					
Z12	Hombonyi	TN 512752	No.19	Milky Trace of Mat					
Z13	Pikinini	TN 306727	No.26	Clean					
Z14	Nabare Sch	TN 357728	3529	Clean					
Z15	Dzingatira	TN 382657	3530	Pale Y-tinge Trace of Mat					
Z16	Mahlome	TN 498640	943	Opalescent Few Sed.					
Z17	Chitefere	TN 508613	No.23	Colourless Trace of Mat & Sed					
Z18	Harimani	TM 504559	945	Colourless Trace of Sed					

Note: 1/ W; Whitish B; Brownish Y; Yellow Mat; suspended Matter Sed; Sediment

Table A.3-2-79 List of Water Quality Test by Zimbabwe

Name of C.L.		Maranda		Name of C.L.		Maranda	
Test No.	Site	Grid Ref.	B/H Name	Appearance	Test No.	Site	Grid Ref.
Z1	Rasha Sch	TM 056624	5431	Clean	Z10	Mapfumo	TM 102518
Z2	Mazetese	TM 135663	5429A	Clean	Z11	Mafemani	TM 084513
Z3	Mazetese	TM 140661	5429	Clean	Z12	Ruvengo	TM 242604
Z4	Chipwe Dip	TM 153636	3561	B-tinge No Mat & Sed			
Z5	Camp Maranda	TM 203616	No.38	Milky Sed.			
Z6	Nukalalwa	TM 166717	5463	B-tinge No Mat & Sed			
Z7	Maranda B.C.	TM 213598	3560	-			
Z8	"	TM 213596	2010	Milky Mat			
Z9	Matave	TM 075541	5467	Y-tinge No Mat & Sed			

Note: 1/ W; Whitish B; Brownish Y; Yellow Mat; suspended Matter Sed; Sediment

Table A.3-2-80

Water Quality Tests (General) in Laboratory

Chibi C.L. (1 of 2) / By Zimbabwe (1 of 3)

No.	P.H.	C 1/	A.D.S. 2/	(as CaCO ₃) M-Alka- linity	Total hardness (as CaCO ₃)	Ca	Mg	Na	K	SO ₄	Cl	Total Fe Less 0.1	Nit 3/	F
Z 1	8.2	886	510	380	300	53	41			4	58	0.1	7.7	0.5
Z 2	7.8	4,330	2,530	860	630	172	105			32	970	0.2	5.2	0.25
Z 3	7.9	2,910	1,565	632	1,179	240	140			25	576	-	2.6	0.4
Z 4	7.6	870	488	342	377	87	39			18	61	0.1	10	0.5
Z 5	7.4	1,500	825	473	326	85	27			23	174	0.02	12	0.7
Z 6	8.4	1,336	780	550	110	105	63			0.0	130	1.2	0.06	2.5
Z 7	8.2	403	235	200	140	28	17			22	12	0.3	0.12	0.7
Z 8	8.3	990	522	306	282	48.9	38.9			28	106	0.4	3.8	0.5
Z 9	8.0	856	492	415	240	51	32			13	50	0.5	0.02	0.25
Z10	7.9	900	499	480	206	38	27			0.0	14	Less 0.05	2.1	0.3
Z11	7.4	732	423	340	301	58	38			10	43	"	0.08	0.7
Z12	7.1	720	388	327	333	55	48			5	61	"	0.01	0.4
Z13	7.1	254	148	120	61	10	6			5	15	1.4	0.16	0.25
Z14	8.6	606	306	274	97	38.9	43			0.04	5	1.7	-	0.9
Z15	8.0	470	272	184	182	33.7	39.3			32	84	0.1	5	0.5
Z16	7.5	704	400	350	265	71	22			5	36	Less 0.1	0.1	0.9
Z17	8.0	1,290	758	571	498	45	94			13	131	Less 0.05	0.3	0.3
Z18	7.7	830	428	352	352	53	54			7	23	0.05	1.65	0.5

Notes: 1/ C = Conductivity 2/ A.D.S. = Approximately Dissolved Salines Unit: mg/l except C
3/ Nit = Nitrate, Nitrogen

Table A.3-2-81

Water Quality Tests (General) in Laboratory

No.	P.H.	Chibi C.L. (2 of 2) & Maranda C.L. (1 of 1)		By Zimbabwe (2 of 3)															
		C <u>1/</u>	A.D.S. <u>2/</u>	(as CaCO ₃) N-Alkalinity	(as CaCO ₃) Total hardness	Ca	Mg	Na	K	SO ₄	Cl	Total Fe	Nit <u>3/</u>	F					
Chibi C.L.																			
Z19	7.7	920	519	222	271	48	36.7							60	93	Less 0.05	12.2	0.4	
Z20	7.2	1,688	950	415	715	120	100							17	250	0.1	29	1.4	
Z21	8.0	994	584	430	255	42	36							24	86	-	0.11	-	
Z22	7.3	599	354	285	245	31	19							7	51	0.6	0.14	0.45	
Maranda C.L.																			
Z 1	7.1	1,055	595	428	373	62	49							15	72	0.1	12	0.6	
Z 2	8.0	5,280	2,776	773	1,399	210	213							70	1,263	Less 0.05	5.3	0.8	
Z 3	6.8	688	399	284	278	59	32							10	26	"	15	-	
Z 4	7.1	1,520	780	160	490	74	74							20	380	"	0.6	0.4	
Z 5	7.8	1,380	775	550	300	45	46							13	115	3.3	Less 0.05	2.2	
Z 6	7.7	-	3,218	103	666	56.9	127							40	1,861	Less 0.01	0.1	0.5	
Z 7	7.7	5,274	3,160	190	940	210	125							60	1,705	0.1	51	1.03	
Z 8	8.1	1,000	550	220	130	23	17							23	200	6.0	0.15	0.9	
Z 9	7.7	1,865	1,085	770	352	68	44							40	172	0.1	0.78	2.0	
Z10	7.3	2,640	1,434	798	657	115	90							52	409	Less 0.05	0.1	1.7	
Z11	7.4	2,020	1,150	810	540	100	70							20	190	-	0.08	-	
Z12	7.3	1,410	805	439	392	97.8	36							56	116	0.2	23.6	1.3	

Notes: 1/ C = Conductivity 2/ A.D.S. = Approximately Dissolved Salines3/ Nit = Nitrate, Nitrogen

Unit: mg/l except C

Table A.3-2-82

Water Quality Tests (General) in Laboratory

Matibi No.1 C.L. (1 of 1)

By Zimbabwe

No.	P.H.	C 1/	A.D.S. 2/	(as CaCO ₃) M-Alka- linity	(as CaCO ₃) Total hardness	Ca	Mg	Na	K	SO ₄	Cl	Total Fe	Nit 3/	F
Z 1	7.7	1,448	850	735	430	50	74			7	41	1.6	7.5	1.1
Z 2	7.9	1,116	737	675	550	62	38			14	63	-	0.08	-
Z 3	7.3	2,920	1,600	690	610	47	120			15	550	1.0	Less 0.05	0.4
Z 4	7.3	756	430	370	265	33	44			2	44	0.6	0.2	0.4
Z 5	7.7	547	320	290	275	31	48			4	26	1.0	3.2	0.7
Z 6	8.2	1,202	720	340	330	41	57			150	110	1.0	8.0	0.1
Z 7	7.5	932	520	300	275	46	39			45	105	0.5	0.3	0.8
Z 8	7.4	644	360	340	345	46	56			15	23	1.5	0.3	0.4
Z 9	7.5	1,508	900	700	175	62	4.9			58	61	-	25	-
Z10	5.9	3,096	1,700	600	520	58	91			22	700	-	1.7	1.8
Z11	6.9	1,588	920	610	440	54	74			15	180	0.5	4.5	1.0
Z12	7.0	1,028	590	440	355	54	54			Less 1	79	3.6	6.0	0.7
Z13	7.8	2,772	1,800	640	1,200	180	185			610	190	0.3	0.4	0.5
Z14	7.8	1,590	1,020	600	290	31	52			170	47	2.7	20	2.0
Z15	6.8	7,440	4,320	300	230	300	180			34	2,145	0.2	0.08	0.7
Z16	7.2	7,600	4,400	950	430	160	7.3			3	75	-	15	-
Z17	7.1	684	400	345	245	40	36			19	26	1.4	0.1	0.6
Z18	7.5	1,815	1,000	755	730	95	120			13	213	0.1	0.05	0.8
Z19	7.2	1,190	650	600	165	62	3.6			3	73	-	15	-

Notes: 1/ C = Conductivity 2/ A.D.S. = Approximately Dissolved Solines 3/ Nit = Nitrate, Nitrogen
Unit: mg/l except C

Table A.3-2-85

Water Quality Tests (Ions) in Laboratory

by Zimbabwe Unit: me/l (1 of 4)

No.	Cation							Anion						
	Ca	Mg	Na+K	Ratio $\frac{1}{2}$	Fe $\frac{2}{2}$	Cation $\frac{3}{3}$	SO ₄	Cl	CO ₃	HCO ₃	Ratio ⁴	NO ₂	F	SO ₄ / Anion
Chibi														
Z 1	2.6	3.4	3.9	39.4	0.0	9.9	0.1	1.6	0.0	7.6	81.7	0.6	0.0	9.9
Z 2	8.6	8.6	28.5	62.4	0.0	45.7	0.7	27.4	0.0	17.2	38.0	0.4	0.0	45.7
Z 3	12.0	11.5	6.0	20.3	-	29.5	0.5	16.2	0.0	12.6	43.0	0.2	0.0	29.5
Z 4	4.3	3.2	2.1	21.9	0.0	9.6	0.4	1.7	0.0	6.8	76.4	0.7	0.0	9.6
Z 5	4.2	2.2	9.4	59.5	0.0	15.8	0.5	4.9	0.0	9.5	63.8	0.9	0.0	15.8
Z 6	5.2	5.2	4.4	29.7	0.0	14.8	0.0	3.7	0.0	11.0	74.8	0.0	0.1	14.8
Z 7	1.4	1.4	2.0	41.7	0.0	4.8	0.5	0.3	0.0	4.9	83.3	0.0	0.0	4.8
Z 8	2.4	3.2	4.4	44.0	0.0	10.0	0.6	3.0	0.0	6.1	62.9	0.3	0.0	10.0
Z 9	2.5	2.6	4.9	49.0	0.0	10.0	0.3	1.4	0.0	8.3	83.0	0.0	0.0	10.0
Z10	1.9	2.2	6.1	59.8	0.0	10.2	0.0	0.4	0.0	9.6	96.0	0.2	0.0	10.2
Z11	2.9	3.1	2.2	26.8	0.0	8.2	0.2	1.2	0.0	6.8	82.9	0.0	0.0	8.2
Z12	2.7	3.9	1.7	20.5	0.0	8.3	0.1	1.7	0.0	6.5	78.3	0.0	0.0	8.3
Z13	0.5	0.5	1.8	62.1	0.1	2.9	0.1	0.4	0.0	2.4	82.8	0.0	0.0	2.9
Z14	1.9	3.5	0.1	1.8	0.1	5.6	0.0	0.1	0.1	5.4	98.2	-	0.0	5.6
Z15	1.7	3.2	0.3	5.8	0.0	5.2	0.2	0.9	0.0	3.7	71.2	0.4	0.0	5.2
Z16	3.5	1.8	2.8	34.6	0.0	8.1	0.1	1.0	0.0	7.0	86.4	0.0	0.0	8.1
Z17	2.2	7.7	5.5	35.7	0.0	15.4	0.3	3.7	0.0	11.4	74.0	0.0	0.0	15.4

Notes: $\frac{1}{2}$ (Na + K) / (Ca + Mg + Na + K) x 100% $\frac{2}{2}$ Total Fe $\frac{3}{3}$ Total Cation
 $\frac{4}{4}$ (CO₃ + HCO₃) / (SO₄ + Cl + CO₃ + HCO₃) x 100% $\frac{5}{5}$ Total Anion

Table A.3-2-84

Water Quality Tests (Ions) in Laboratory

by Zimbabwe Unit: me/l (2 of 4)

No.	Cation						Anion							
	Ca	Mg	Na+K	Ratio $\frac{1}{2}$	Fe $\frac{2}{3}$	Cation $\frac{3}{4}$	SO ₄	Cl	CO ₃	HCO ₃	Ratio $\frac{4}{5}$	NO ₂	F	NO ₃
Chibi C.L.														
Z18	2.6	4.4	0.8	10.3	0.0	7.8	0.5	0.2	0.0	7.0	90.9	0.1	0.0	7.8
Z19	2.4	3.0	3.7	40.7	0.0	9.1	1.2	2.6	0.0	4.4	53.7	0.9	0.0	9.1
Z20	6.0	8.2	3.8	21.1	0.0	18.0	0.4	7.1	0.0	8.3	52.5	2.1	0.1	18.0
Z21	2.1	3.0	6.4	55.7	-	11.5	0.5	2.4	0.0	8.6	74.8	0.0	-	11.5
Z22	1.5	1.6	4.1	56.9	0.0	7.2	0.1	1.4	0.0	5.7	79.2	0.0	0.0	7.2
Matibi No.1 C.L.														
Z1	2.5	6.1	7.9	47.9	0.1	16.6	0.1	1.2	0.0	14.7	91.9	0.5	0.1	16.6
Z2	3.1	3.1	9.4	60.3	-	15.6	0.3	1.8	0.0	13.5	86.5	0.0	-	15.6
Z3	2.3	9.9	17.4	58.8	0.0	29.6	0.3	15.5	0.0	13.8	46.6	0.0	0.0	29.6
Z4	1.6	3.6	3.4	39.5	0.0	8.6	0.0	1.2	0.0	7.4	86.0	0.0	0.0	8.6
Z5	1.5	3.9	1.4	20.6	0.0	6.8	0.1	0.7	0.0	5.8	87.9	0.2	0.0	6.8
Z6	2.0	4.7	6.9	50.7	0.0	13.6	3.1	3.1	0.0	6.8	52.3	0.6	0.0	13.6
Z7	2.3	3.2	4.4	44.4	0.0	9.9	0.9	3.0	0.0	6.0	60.6	0.0	0.0	9.9
Z8	2.3	4.6	0.7	9.2	0.1	7.7	0.3	0.6	0.0	6.8	88.3	0.0	0.0	7.7
Z9	3.1	0.4	15.2	81.3	-	18.7	1.2	1.7	0.0	14.0	82.8	1.8	-	18.7

Notes: $\frac{1}{2}$ $(\text{Na} + \text{K}) / (\text{Ca} + \text{Mg} + \text{Na} + \text{K}) \times 100\%$ $\frac{2}{3}$ Total Fe $\frac{3}{4}$ Total Cation
 $\frac{4}{5}$ $(\text{CO}_3 + \text{HCO}_3) / (\text{SO}_4 + \text{Cl} + \text{CO}_3 + \text{HCO}_3) \times 100\%$ $\frac{5}{6}$ Total Anion

by Zimbabwe Unit: me/l (3 of 4)

No.	Cation							Anion						
	Ca	Mg	Na+K	Ratio 1/	Fe 2/	Cation 3/	SO ₄	Cl	CO ₃	HCO ₃	Ratio 4/	NO ₂	F	SO ₄ ²⁻ / Anion
Matibi No.1 C.L.														
Z10	2.9	7.5	22.0	67.9	-	32.4	0.5	19.7	0.0	12.0	37.3	0.1	0.1	32.4
Z11	2.7	6.1	9.2	51.1	0.0	18.0	0.3	5.1	0.0	12.2	69.3	0.3	0.1	18.0
Z12	2.7	4.4	4.2	37.2	0.1	11.4	0.0	2.2	0.0	8.8	80.0	0.4	0.0	11.4
Z13	9.0	15.2	6.7	21.7	0.0	30.9	12.7	5.4	0.0	12.8	41.4	0.0	0.0	30.9
Z14	1.5	4.3	12.4	68.1	0.1	18.3	3.5	1.3	0.0	12.0	71.4	1.4	0.1	18.3
Z15	6.0	3.6	57.6	85.7	0.0	67.2	0.7	60.5	0.0	6.0	8.9	0.0	0.0	67.2
Z16	8.0	0.2	66.6	89.0	-	74.8	0.6	53.6	0.0	19.0	26.0	1.6	-	74.8
Z17	2.0	3.0	2.9	36.3	0.1	8.0	0.4	0.7	0.0	6.9	86.3	0.0	0.0	8.0
Z18	4.7	9.9	6.7	31.5	0.0	21.3	0.3	5.9	0.0	15.1	70.9	0.0	0.0	21.3
Z19	3.1	0.3	11.9	77.8	-	15.3	0.1	2.1	0.0	12.0	84.5	1.1	-	15.3
Maranda C.L.														
Z1	3.1	4.0	4.6	39.3	0.0	11.7	0.3	2.0	0.0	8.6	78.9	0.8	0.0	11.7
Z2	10.5	17.5	24.8	47.0	0.0	52.8	1.5	35.6	0.0	15.5	29.5	0.2	0.0	52.8
Z3	2.9	2.6	2.2	28.6	0.0	7.7	0.2	0.7	0.0	5.7	86.4	1.1	-	7.7
Z4	3.7	6.1	4.5	31.5	0.0	14.3	0.4	10.7	0.0	3.2	22.4	0.0	0.0	14.3

Notes: 1/ $(Na + K) / (Ca + Mg + Na + K) \times 100\%$ 2/ $Total\ Fe\ 3/ Total\ Cation$
 4/ $(CO_3 + HCO_3) / (SO_4 + Cl + CO_3 + HCO_3) \times 100\%$ 5/ $Total\ Anion$

Table A. 3-2-86

Water Quality Tests (Ions) in Laboratory

by Zimbabwe Unit: me/l (4 of 4)

No.	Cation						Anion							
	Ca	Mg	Na+K	Ratio 1/	Fe 2/	Carion 3/	SO ₄	Cl	CO ₃	HCO ₃	Ratio 4/	NO ₂	F	5/ AniDh
Maranda C.L.														
Z 5	2.2	3.8	7.5	55.6	0.1	13.6	0.3	3.2	0.0	11.0	81.5	0.0	0.1	13.6
Z 6	2.8	10.4	42.2	76.2	0.0	55.4	0.8	52.5	0.0	2.7	3.8	0.0	0.0	55.4
Z 7	10.5	10.3	56.0	63.4	0.0	56.8	1.2	48.1	0.0	3.8	7.2	3.6	0.1	56.8
Z 8	1.1	1.4	7.8	74.3	0.2	10.5	0.5	5.6	0.0	4.4	41.9	0.0	0.0	10.5
Z 9	3.4	3.6	14.3	67.1	0.0	21.3	0.8	4.9	0.0	15.4	73.0	0.1	0.1	21.3
Z10	5.7	7.4	15.6	54.4	0.0	28.7	1.1	11.5	0.0	16.0	55.9	0.0	0.1	28.7
Z11	5.0	5.8	11.2	50.9	-	22.0	0.4	5.4	0.0	16.2	73.6	0.0	-	22.0
Z12	4.9	3.0	7.2	47.7	0.0	15.0	1.2	3.3	0.0	8.8	66.2	1.7	0.1	15.1

Notes: 1/ $\frac{(Na + K)}{(Ca + Mg + Na + K)} \times 100\%$
 2/ Total Fe
 3/ Total Cation
 4/ $\frac{(CO_3 + HCO_3)}{(SO_4 + Cl + CO_3 + HCO_3)} \times 100\%$
 5/ Total Anion

Table A.3-2-87 Water Quality Tests (General) in Laboratory

By J.I.C.A.

No.	P.H.	C	A.D.S.	(as CaCO ₃) M-Alka- linity	(as CaCO ₃) Total hardness	Ca	Mg	Na	K	SO ₄	Cl	Total Fe	Nit	F
		<u>1/</u>	<u>2/</u>										<u>3/</u>	
Chilimanzi C.L.														
J 3	7.4	242	-	162.0	90	18.0	10.9	36.5	1.6	1.9	7.1	-	0.2	1.0
J 4	7.6	103	62	55.2	28	7.6	2.2	15.2	0.6	0.6	4.2	0.9	0.19	1.15
J 2	8.8	301	211	159.0	26	25.2	10.9	39.0	4.6	2.5	19.8	3.0	0.05	1.2
J 1	7.5	119	73	56.2	108	6.4	2.4	18.0	2.4	2.7	6.7	1.2	0.43	Less 0.2
Shurugwi C.L.														
J12	6.7	61.1	-	16.1	12	2.0	1.7	9.4	1.9	1.1	6.4	-	2.6	Less 0.2
J14	6.5	180.0	-	36.1	56	11.2	6.8	18.8	2.1	2.7	15.9	-	8.8	0.3
J13	7.2	158.0	-	76.3	48	10.0	5.6	19.0	2.7	1.1	8.5	-	0.36	Less 0.2
Runde C.L.														
J 8	7.2	629	398	375	250	55.2	27.2	74.5	2.2	3.8	22.7	0.2	0.04	0.3
J 7	7.1	629	-	367	258	35.2	41.3	54.0	5.2	4.1	5.7	-	0.0	0.3
J 9	8.3	456	-	271	210	10.0	45.0	38.5	4.1	1.8	13.4	-	1.5	0.2
J 5	7.7	424	290	249	218	21.6	39.9	32.0	1.7	3.1	14.9	0.96	4.2	0.6
J 6	6.8	115	-	42.2	37	8.4	5.9	11.0	2.4	2.8	11.3	-	0.71	0.5

Notes: 1/ C = Conductivity 2/ A.D.S. = Approximately Dissolved Salines Unit: mg/l except C
3/ Nit = Nitrate, Nitrogen

Table A.3-2-88 Water Quality Tests (General) in Laboratory

By J. I. C. A.

No.	P.H.	C	A.D.S.	(as CaCO ₃) M-Alka- linity	(as CaCO ₃) Total hardness	Ca	Mg	Na	K	SO ₄	Cl	Total Fe	Nit 3/	F
(2. of 3)														
Mazviwa C.L.														
J10	8.0	444	-	177	110	22.0	13.4	63.0	11.1	2.9	55.2	-	0.51	3.3
J11	6.1	86.8	-	15.1	14	1.6	2.4	9.8	6.3	1.3	14.2	-	1.18	0.6
Mberegwa C.L.														
J30	7.0	958	-	472	320	50.8	46.9	122.0	9.6	13.2	52.4	-	11.6	0.9
J32	8.3	860	-	502	370	55.2	56.4	85.0	6.2	19.4	25.5	-	2.1	0.7
J34	7.0	734	-	392	430	46.8	76.1	30.0	1.4	7.0	41.1	-	4.3	0.2
J33	7.0	967	-	512	475	48.0	86.3	44.0	2.7	6.3	26.0	-	3.64	0.6
J35	6.7	378	-	205	175	29.2	24.8	23.0	4.8	1.8	11.3	-	0.0	0.5
J36	6.7	1,204	-	382	360	74.0	42.5	156.0	2.0	9.7	209.0	-	14.4	2.8
J27	7.2	6,927	-	708	1,570	150.0	290.0	120.0	5.6	29.4	2,480.0	-	18.8	2.0
J40	6.9	600	-	216	192	27.6	29.9	75.0	2.0	4.3	63.7	-	16.0	1.4
J31	7.0	588	-	296	290	49.6	40.3	34.5	1.1	3.7	28.3	-	7.4	0.6
J39	6.0	91.8	-	22.1	12	2.8	1.2	10.4	0.9	1.2	6.4	-	2.45	Less 0.2
J29	7.1	801	-	422	435	51.6	74.4	43.5	2.8	39.2	24.1	-	7.0	0.7

Notes; 1/ C = Conductivity 2/ A.D.S. = Approximately Dissolved Salines Unit: mg/l except C
3/ Nit = Nitrate, Nitrogen

Table A.3-2-89 Water Quality Tests (General) in Laboratory

By J. I. C. A.

No.	P.H.	C 1/	A.D.S. 2/	(as CaCO ₃) M-Alka- linity	(as CaCO ₃) Total hardness	Ca	Mg	Na	K	SO ₄	Cl	Total Fe	Nit 3/	F
Chibi C.L.														
J20	7.3	1,090	674	552	468	74.4	68.5	110.0	1.9	7.2	88.5	0.6	7.5	0.8
J15	6.5	2,960	-	482	1,150	230.0	140.0	246.0	4.9	18.2	867.0	-	5.0	1.0
J16	6.8	2,040	1,139	663	220	88.0	62.0	265.0	12.1	56.0	202.0	0.2	32.5	1.2
J17	7.6	455	303	289	106	17.6	15.1	85.0	1.1	4.3	11.3	0.2	0.01	1.2
J23	7.0	1,175	-	552	178	43.2	17.0	273.0	1.7	5.8	149.0	-	0.75	1.0
J18	7.2	1,045	640	345	450	58.4	56.9	76.0	1.5	12.8	117.0	0.4	7.4	0.7
J19	6.7	2,936	2,094	552	1,190	302.0	106.0	230.0	4.1	10.9	849.0	0.8	0.05	3.0
J21	7.3	739	-	422	330	75.2	34.5	69.3	1.8	9.3	21.9	-	3.0	0.9
J28	7.2	1,645	-	658	450	51.2	78.2	295.0	4.3	8.9	248.0	-	8.8	0.8
Matibi No. 1 C.L.														
J25	7.9	2,671	-	703	510	68.0	82.6	410.0	1.6	23.5	504.0	-	3.0	2.4
J24	6.6	524	-	236	236	35.2	36.0	35.5	1.5	5.8	26.9	-	9.6	1.3
J22	7.3	990	-	402	315	88.8	22.6	108.0	1.5	12.0	86.7	-	0.04	0.7
Maranda C.L.														
J37	7.0	7,349	-	612	3,300	400.0	559.0	940.0	5.3	42.3	540.0	-	0.0	7.6
J26	6.8	1,007	-	467	380	38.0	69.3	92.0	0.8	21.3	70.8	-	0.2	1.8
J38	7.2	2,587	-	602	640	98.0	96.0	455.0	3.0	12.8	743.0	-	24.0	2.0

Notes: 1/ C = Conductivity 2/ A.D.S. = Approximately Dissolved Solines Unit: mg/l except C
3/ Nit = Nitrate, Nitrogen

Table A.3-2-90

Water Quality Tests (Ions) in Laboratory

Unit: me/l
by J.I.C.A. (1 of 3)

No.	Cation					Anion					F	S/ Anion					
	Ca	Mg	Na	K	Ratio $\frac{1}{2}$ Fe $\frac{2}{3}$ Cation $\frac{3}{4}$	SO ₄	Cl	CO ₃	HCO ₃	Ratio $\frac{4}{5}$			NO ₂				
Chilimanzi C.L.																	
J3	0.9	0.9	1.6	0.0	47.1	-	3.4	0.0	0.2	0.0	0.0	0.0	3.2	94.1	0.0	0.1	3.5
J4	0.4	0.2	0.7	0.0	53.8	-	1.3	0.0	0.1	0.0	0.0	0.0	1.1	91.7	0.0	0.1	1.3
J2	1.3	0.9	1.7	0.1	45.0	-	4.0	0.1	0.6	0.0	0.0	0.0	3.2	82.1	0.0	0.1	4.0
J1	0.3	0.2	0.8	0.1	64.3	-	1.4	0.1	0.2	0.0	0.0	0.0	1.1	78.6	0.0	0.0	1.4
Shurugwi C.L.																	
J12	0.1	0.1	0.4	0.1	71.4	-	0.7	0.0	0.2	0.0	0.0	0.0	0.3	60.0	0.2	0.0	0.7
J14	0.6	0.6	0.8	0.1	42.9	-	2.1	0.1	0.5	0.0	0.0	0.0	0.7	53.8	0.6	0.0	1.9
J13	0.5	0.5	0.8	0.1	47.4	-	1.9	0.0	0.2	0.0	0.0	0.0	1.5	88.2	0.0	0.0	1.7
Runde C.L.																	
J8	2.8	2.2	3.2	0.1	39.8	-	8.3	0.1	0.6	0.0	0.0	0.0	7.5	91.5	0.0	0.0	8.2
J7	1.8	3.4	2.4	0.1	32.5	-	7.7	0.1	0.2	0.0	0.0	0.0	7.3	91.3	0.0	0.0	8.0
J9	0.5	3.7	1.7	0.1	30.0	-	6.0	0.0	0.4	0.0	0.0	0.0	5.4	91.5	0.1	0.0	5.9
J5	1.1	3.5	1.4	0.0	24.1	-	5.8	0.1	0.4	0.0	0.0	0.0	5.0	90.1	0.0	0.0	5.5
J6	0.4	0.3	0.5	0.1	46.2	-	1.3	0.1	0.3	0.0	0.0	0.0	0.8	66.7	0.1	0.0	1.3

Notes: $\frac{1}{2}$ (Na + K) / (Ca + Mg + Na + K) x 100% $\frac{2}{3}$ Total Fe $\frac{3}{4}$ Total Cation
 $\frac{4}{5}$ (CO₃ + HCO₃) / (SO₄ + Cl + CO₃ + HCO₃) x 100% $\frac{5}{5}$ Total Anion

Table A.3-2-91 Water Quality Tests (Ions) in Laboratory

No.	Cation						Anion						Unit: me/l	(2 of 3)	
	Ca	Mg	Na	K	Ratio 1/	Fe 2/	Cation 3/	SO4	Cl	CO3	HCO3	Ratio 4/			NO2
Mazvihwa C.L.															
J10	1.1	1.1	2.8	0.3	58.5	-	5.3	0.1	1.6	0.0	3.5	66.0	0.1	0.0	5.3
J11	0.1	0.2	0.4	0.2	66.7	-	0.9	0.0	0.4	0.0	0.3	42.9	0.0	0.0	0.7
Mberengva C.L.															
J30	2.5	3.9	5.5	0.3	46.7	-	12.0	0.3	1.5	0.0	9.4	83.9	0.8	0.0	12.0
J32	2.8	4.6	3.7	0.2	34.5	-	11.3	0.4	0.7	0.0	10.0	90.1	0.2	0.0	11.3
J34	2.3	6.3	1.3	0.0	13.1	-	9.9	0.2	1.2	0.0	7.8	84.8	0.3	0.0	9.5
J33	2.4	7.1	1.9	0.1	17.4	-	11.5	0.1	0.8	0.0	10.2	91.9	0.3	0.0	11.4
J35	1.5	2.0	1.0	0.1	23.9	-	4.6	0.0	0.3	0.0	4.1	93.2	0.0	0.0	4.4
J36	3.7	3.5	6.8	0.1	48.9	-	14.1	0.2	5.9	0.0	7.6	55.5	1.0	0.1	14.8
J27	7.5	23.9	48.7	0.1	60.8	-	80.2	0.6	69.9	0.0	14.2	16.8	1.3	0.1	86.1
J40	1.4	2.5	3.3	0.1	46.6	-	7.3	0.1	1.8	0.0	4.3	69.4	1.1	0.1	7.4
J31	2.5	3.3	1.5	0.0	20.5	-	7.3	0.1	0.8	0.0	5.9	86.8	0.5	0.0	7.3
J39	0.1	0.1	0.5	0.0	71.4	-	0.7	0.0	0.2	0.0	0.4	66.7	0.2	0.0	0.8
J29	2.6	6.1	1.9	0.1	18.7	-	10.7	0.8	0.7	0.0	8.4	84.8	0.5	0.0	10.4

Notes: 1/ $(Na + K) / (Ca + Mg + Na + K) \times 100\%$
 2/ $Total\ Fe / Total\ Cation$
 3/ $(CO_3 + HCO_3) / (SO_4 + Cl + CO_3 + HCO_3) \times 100\%$
 4/ $Total\ Fe / Total\ Anion$

Table A.3-2-92 Water Quality Tests (Ions) in Laboratory

by J.I.C.A. Unit: me/l (3 of 3)

No.	Cation					Anion							
	Ca	Mg	Na	K	Ratio 1/ Fe 2/ Cation 3/	SO4	Cl	CO3	HCO3	Ratio 4/ NO2	F	NO3	Ratio 5/ Anion
Chibi C.L.													
J20	3.7	5.6	4.8	0.1	34.5	0.2	2.5	0.0	11.0	80.3	0.0	0.5	14.2
J15	11.5	11.5	10.7	0.1	32.0	0.4	24.5	0.0	9.6	27.8	0.0	0.4	34.9
J16	4.4	5.1	11.5	0.3	55.4	1.2	5.7	0.0	13.3	66.5	0.0	2.3	22.4
J17	0.9	1.2	3.7	0.0	63.8	0.1	0.3	0.1	5.7	93.5	0.0	0.0	6.2
J23	2.2	1.4	12.0	0.0	76.9	0.1	4.2	0.0	11.0	71.9	0.0	0.1	15.5
J18	2.9	4.7	3.3	0.0	30.3	0.3	3.3	0.0	6.9	73.1	0.0	0.5	11.0
J19	15.1	8.7	10.0	0.1	29.8	0.2	23.9	0.0	10.4	30.1	0.0	0.0	34.7
J21	3.8	2.8	3.0	0.1	32.0	0.2	0.6	0.0	8.4	91.3	0.0	0.2	9.4
J28	2.6	6.4	12.8	0.1	58.9	0.2	7.0	0.0	13.2	64.7	0.0	0.6	21.0
Matibi No.1 C.L.													
J25	3.4	6.8	17.8	0.0	63.6	0.5	14.2	0.0	14.0	48.8	0.0	0.2	28.9
J24	1.8	5.0	1.5	0.0	23.8	0.1	0.8	0.0	4.7	83.9	0.0	0.7	6.4
J22	4.4	1.9	4.7	0.0	42.7	0.3	2.4	0.0	8.0	74.8	0.0	0.0	10.7
Maranda C.L.													
J37	20.0	46.0	40.9	0.1	38.3	0.9	99.8	0.0	12.2	10.8	0.0	0.0	113.3
J26	1.9	5.7	4.0	0.0	34.5	0.4	2.0	0.0	9.3	79.5	0.0	0.0	11.8
J38	4.9	7.9	19.8	0.1	60.9	0.3	21.0	0.0	12.0	36.0	0.0	1.7	35.1

Notes: 1/ (Na + K) / (Ca + Mg + Na + K) x 100%
 2/ Total Fe
 3/ Total Cation
 4/ (CO3 + HCO3) / (SO4 + Cl + CO3 + HCO3) x 100%
 5/ Total Anion