JIRO SY RANO MALAGASY
B P 200 - ANTANANARIVO

DIRECTION DE L'EXPLOITATION EAU
DEPARTEMENT QUALITE EAU
Tél (261 20) 22 221 92

BULLETIN D'ANALYSE PHYSICO-CHIMIQUE N° 332 /06

PRELEVEMENT

Région : AMBANISARIKA
Centre :
Nature : Eau brute
Typed'échantillon : F018

Date de prélèvement : 15.02.06
Date de réception : 02.03.06
Préleveur : CHINA ZHONGHAO
Date d' analyse : 03.03.06
Usage : AEP

ANALYSES

Paramètres	Examen au Laboratoire	VMA N. M.
Aspect	trouble	limpide
Odeur	absence	absence
Couleur		incolore
Température, en °C	24,4	25
Turbidité, en NTU	7,06	5
pH	7,24	6,5 - 9,0
Conductivité à 20°C, en µs/cm	13360	3000
Minéralisation, en mg/l	12371	
MeS en mg/l		

Paramètres	Valeurs	VMA N. M.
Dureté TH en°F	384,00	50
TH Ca, en°F	64,00	
Alcalinité TA, en°F	0,00	
TAC, en°F	13,40	
Chlore résiduel en mg/l		
M.O., mg O_2/l (alcalin)	0,10	2
(acide)		5

Cations		mg/l	VMA N. M.
Calcium	Ca^{++}	256,00	
Magnésium	Mg^{++}	777,60	
Sodium	Na^{+}	2066,88	
Potassium	K^{+}		12
Ammonium	$NH4^{+}$	0,02	0,5
Fer	Fe^{++}		0,5
Fer total	Fe^{++},Fe^{+++}	0,02	0,5
Manganèse	Mn^{++}		0,05
Aluminium	Al^{+++}		0,2

Anions		mg/l	VMA N. M.
Carbonates	CO^{--}_3	0,00	
Bicarbonates	HCO^{-}_3	163,48	
Chlorures	Cl^{-}	5307,25	250
Sulfates	SO^{--}_4	713,70	250
Nitrites	NO^{-}_2	0,17	0,1
Nitrates	NO^{-}_3	31,88	50
Phosphate	PO^{---}_4		5
Fluorures	F^{-}		1,5
Hydroxyde	OH^{-}	0,00	

Substances toxiques	mg/l	VMA
Arsenics totaux As		0,05
Cyanures totaux Cn		0,005
Chromes totaux Cr		0,05

VMA : valeur maximale admissible pour eau potable (N.M.)
M.O : matières organiques (Oxydabilité au $KMnO_4$)
l. : légèrement
°F : degré Français
N.M. : Norme Malgache

OBSERVATIONS :

Eau non conforme à la norme.
(cf. : Aspect, Turbidité, Conductivité, Dureté, Chlorures, Sulfates, Nitrites)

Antananarivo, le 06.03.06
Le chef de Laboratoire,

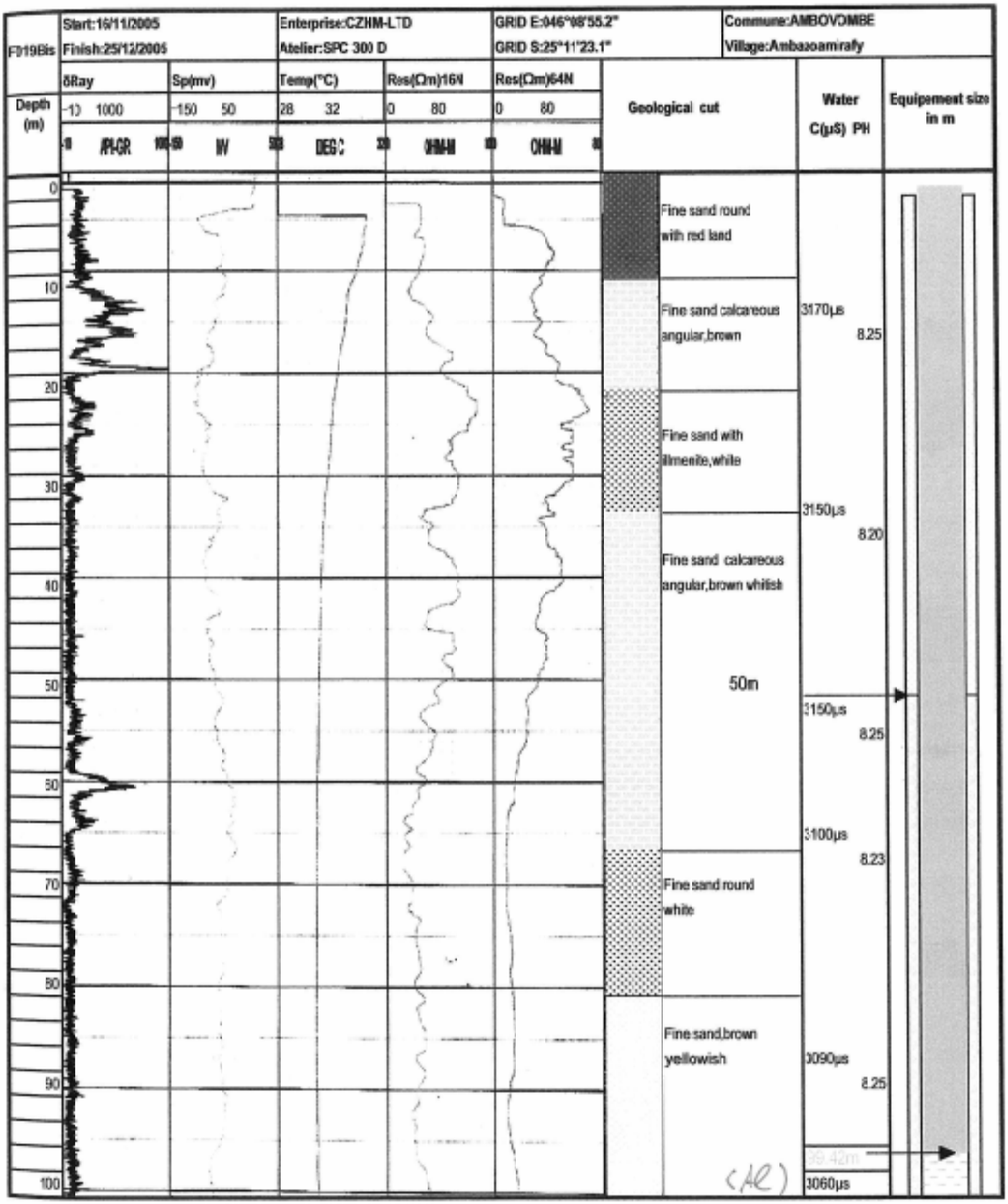
Le Chef de Département Qualité Eau

RABETOKOTANY Monique

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA PROJET
CONTRACTOR :CZHM-LTD

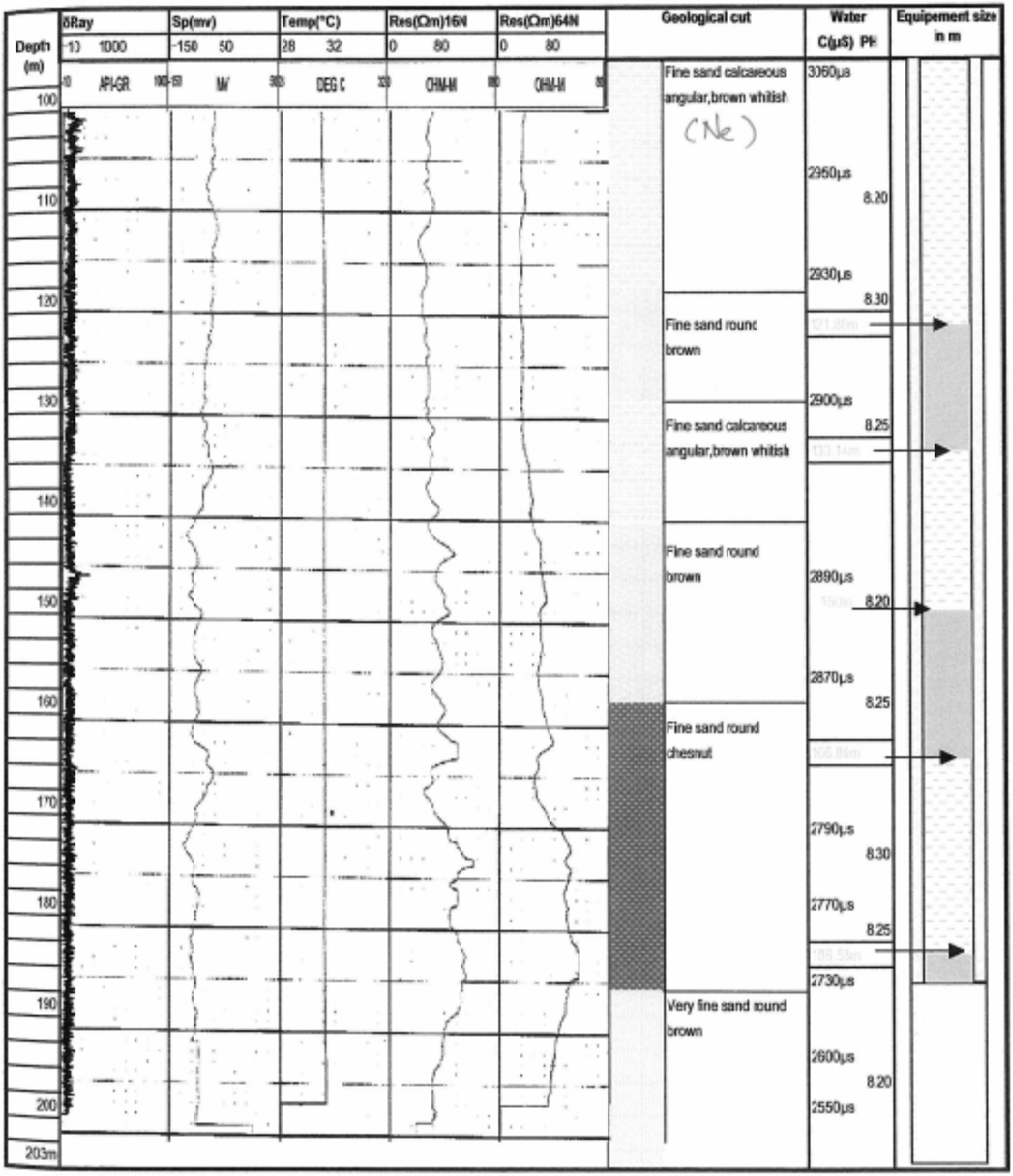
GEOLOGIC LOG SUMMARY F019 (a)



THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA PROJET
CONTRACTOR :CZHM-LTD

GEOLOGIC LOG SUMMARY F019 (b)



THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR:CZHM-LTD

DRILLING CUTTING F022

Number: F022	Village:Anjira	Commune:ANTARITARIKA	Start:15/02/2006	LOCATION:
Final	Conductivity:	Limpidity:	Finish:28/02/2006	Grid E:045°45'29,6"
Prelict drilling:120m	Diameter	Screen:	Enterprise:CZHM-LTD	Grid N:25°2'02,6"
Drilled depth:126m	Drilling	Size sup:12.05m	Rig: N°3	Altitude : 78m
Final borehole:114.51m	Intern casing:155mm	Size inf :114.21m	Hydrogeologist :Hery	
Basement:	Extern casing:165mm	Opening: 0.75mm	Driller: Manorisoa, Blan Aimé, Quiso	

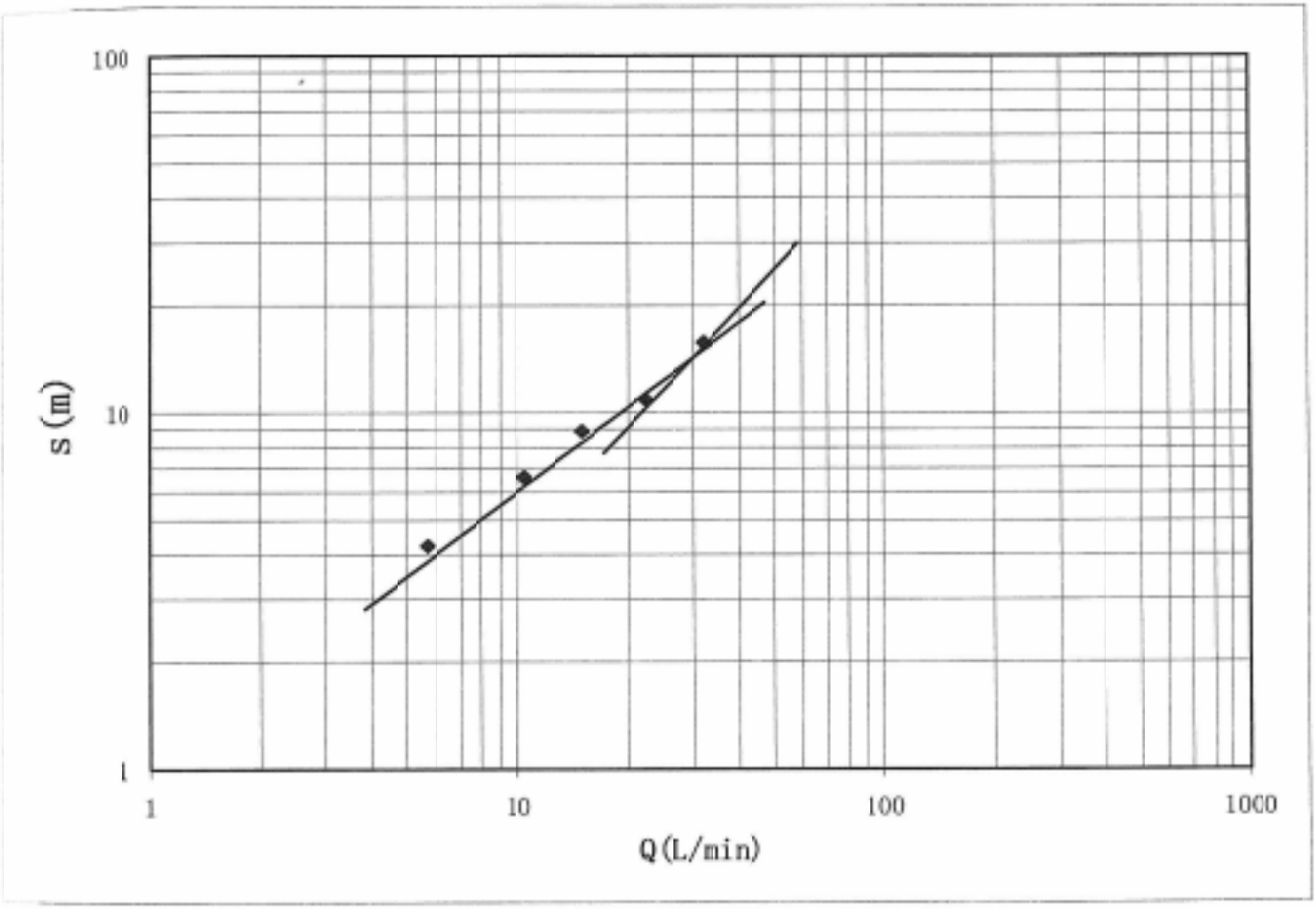
Borehole Diameter (")	Depth m	Cut	Water c(µs) ph	Speed Progress m/h	Legend	Geologic formation Lithologic Description shape color
	0					
	5m Gravel			12		Fine sand calcareous angular white 6m
12"			3880µs 7.54	8,5		
	10			15		Sandstone calcareous 11m
	12,05m			1,4		Chalky of sandy 17m
	20			0,9		Fine sand angular brown 31m
			3900µs 7.48	12		
	30					
	32,72m			15		
	38,34m			2		Fine sand calcareous angularwhite Al Ne 46m
10"	40			1,5		
			3880µs 7.50			
	50					Chalky of sandstone 58m
	57,01m			1,8		
58.8m						
	60					Marne sandy 65m
			3750µs 7.49			
	70			2		Marne of sandstone 77m
	74,87m					
	80			7,5		Marne 82m
	86,11m		3800µs 7.50	6		Marne of sandstone 88m
	90			2,5		Chalky 97m
	100			7,5		Marne 102m
	108,59m		3880µs 7.45	4		Marne of sandy 108m
	110			8,8		Marne of sandstone 115m
	114,21m					
	114,51m			4		Marne 126m
	120					
	126					

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA PROJECT
CONTRACTOR:CZHM-LTD

STEPS DRAW DOWN PUMPING TEST

BOREHOLE No.	SITE NAME	DATE	CONDUCTIVITY	S.W.L (m)
F 022	Anjira	05-06/03/2006	7310 µS /cm	58,8



STEP	Q(L/min)	N.D(m)	S(m)	Q/S(L/min/m)
1	5,67	63,03	4,23	1,34
2	10,50	65,40	6,60	1,59
3	15,00	67,66	8,86	1,69
4	22,33	69,68	10,88	2,05
5	32,00	74,55	15,75	2,03

Relation Betwwen s and Q (F022)

JIRO SY RANO MALAGASY
B P 200 - ANTANANARIVO

DIRECTION DE L'EXPLOITATION EAU
DEPARTEMENT QUALITE EAU
Tél (261 20) 22 221 92

BULLETIN D'ANALYSE PHYSICO-CHIMIQUE N° 449 /06

PRELEVEMENT

Région : ANJRA
Centre :
Nature : Eau brute
Typed'échantillon : F 022

Date de prélèvement : 08.03.06
Date de réception : 15.0 .06
Préleveur : CHINA ZHONGHAO
Date d' analyse : 15.03.06
Usage : AEP

ANALYSES

Paramètres	Examen au Laboratoire	VMA N. M.
Aspect	limpide	limpide
Odeur	absence	absence
Couleur		incolore
Température, en °C	25,2	25
Turbidité, en NTU	1,98	5
pH	7,32	6,5 - 9,0
Conductivité à 20 °C, en µs/cm	3430	3000
Minéralisation, en mg/l	4750	
MeS en mg/l		

Paramètres	Valeurs	VMA N. M.
Dureté TH en °F	107,80	50
TH Ca, en °F	53,20	
Alcalinité TA, en °F	0,00	
TAC, en °F	4,00	
Chlore résiduel en mg/l		
M.O., mg O_2/l (alcalin)	0,56	2
(acide)		5

Cations		mg/l	VMA N. M.
Calcium	Ca^{++}	212,60	
Magnésium	Mg^{++}	118,40	
Sodium	Na^{+}	548,49	
Potassium	K^{+}		12
Ammonium	$NH4^{+}$	0,00	0.5
Fer	Fe^{++}		0,5
Fer total	Fe^{++},Fe^{+++}	0,00	0,5
Manganèse	Mn^{++}		0,05
Aluminium	Al^{+++}		0.2

Anions		mg/l	VMA N. M.
Carbonates	CO_3^{--}	0,00	
Bicarbonates	HCO_3^{-}	329,40	
Chlorures	Cl^{-}	1353,60	250
Sulfates	SO_4^{--}	52,42	250
Nitrites	NO_2^{-}	0,84	0,1
Nitrates	NO_3^{-}	65	50
Phosphate	PO_4^{---}		5
Fluorures	F^{-}	0,91	1,5
Hydroxyde	OH^{-}	0,00	

Substances toxiques	mg/l	VMA
Arsenics totaux As		0,05
Cyanures totaux Cn		0,005
Chromes totaux Cr		0,05

VMA : valeur maximale admissible pour eau potable (N.M.)
M.O : matières organiques (Oxydabilité au $KMnO_4$)
l. : légèrement
°F : degré Français
N.M. : Norme Malgache

OBSERVATIONS :

Non conforme à la norme
Mauvais goût Dureté Chlorures Sulfates Nitrates

Antananarivo, le 16/3/06
Le chef de Laboratoire,

RAMIANDRISOA Rabarimanantsoa

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUTTTING (a)

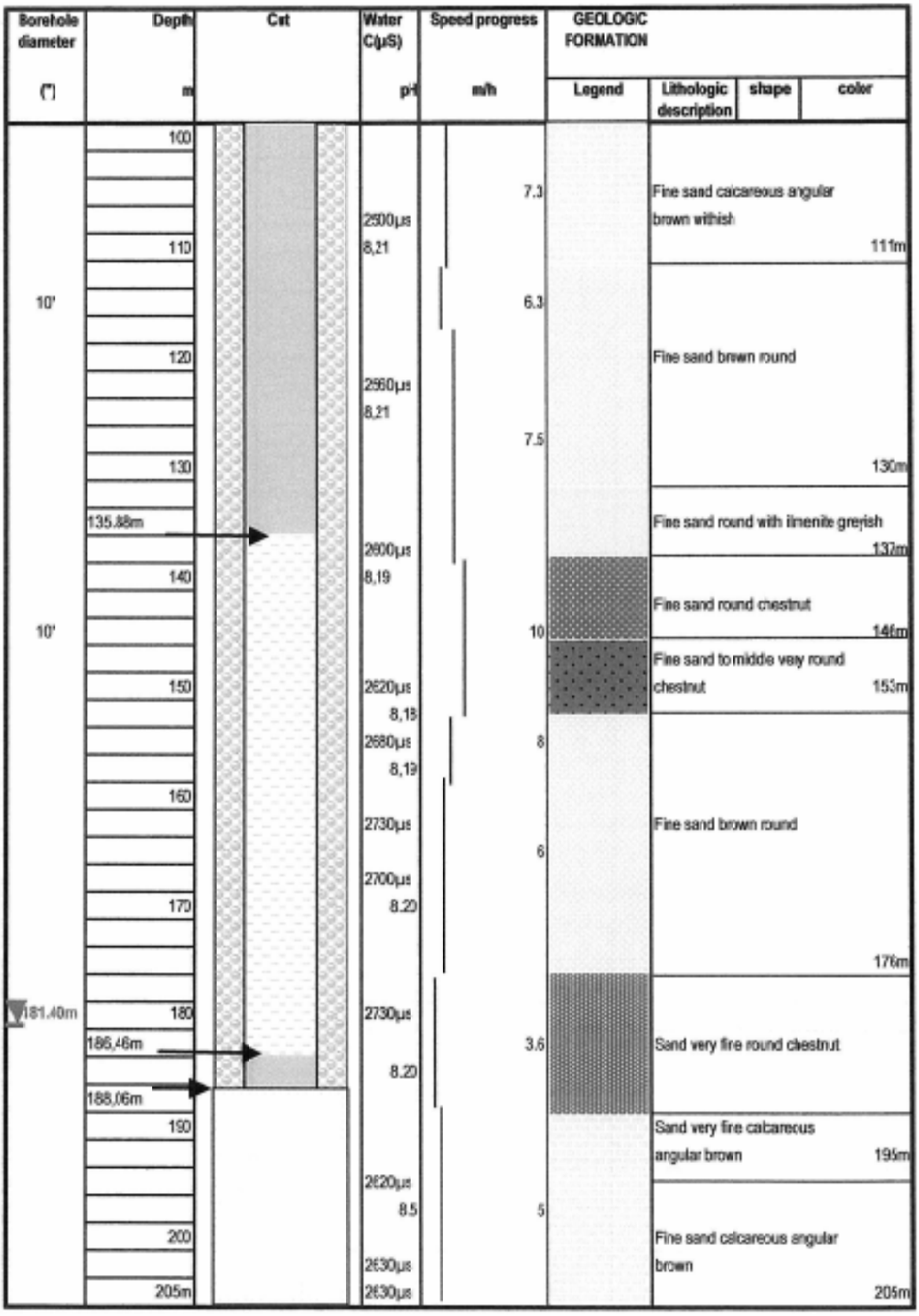
Number: F030	Village: ENKONIKA	Commune:AMBOVOMBE	Start: 17/12/2005	LOCATION
Final C .	Conductivity:	Limpidity:	Finish: 03/01/2006	GRID E: 046°04'23,5"
Drilled depth: 205m	Diameter	Screen	Enterprise: CZHM-LTD	GRID S:25°13'49,0'
Predic drilling: 200m	Drilling	Size sup: 26,29m	Atelier: SPC 300 D	Altitude:180
Final borehole:138,06m	Intern casing: 156mm	Size inf: 186,46m	Hydrogeologist: Frida,Hery,Rofy	
Basement:	Extern casing:165mm	screen slice op: 1mm	Driller: Manorisoa ,Bien Aimé,Qiao	

Borehole diameter (")	Depth m	Cut	Water C(µS) pH	Speed progress m/h	GEOLOGIC FORMATION Legend	Lithologic description	shape	color
12"	0		2900µs 7,7	25		Fine sand round chestnut 6m		
	10					Fine sand to middle yellowish round 10m		
			2920µs 7,6			Fine sand round brown 16m		
	19,3m Gravel					Fine sand round chestnut	Al	20m
	20		2840µs 7,6	20			Ne	
	26,25m					Fine sand argular brown with a few calcareous 30m		
	30		2840µs 7,5					
	31,91m			2,5		Sand very fine angular withish calcareous 35m		
	40		2650µs 7,7					
10"	50		2400µs 7,7			Fine sand calcareous angular brown 77m		
	60		2420µs 7,56	12				
	70							
	79,68m							
10"	80		2440µs 7,3	5,6		Fine sand to middle calcareous angular brown withish 89m		
	88,11m 90		2420µs 8,1	9,8		Sand middle round chestnut 90m		
			2470µs			Fine sand calcareous angular brown 94m		
	100		7,6	6		Fine sand calcareous brown greyish with ilmenite 106m		

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUTTING (b)



THE STUDY ON THE SUSTAINAIBLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR:CZHM-LTD

DRILLING CUT (a)

Number:F032	Village:BEHABOBO	Commune:AMBOVOMBE	Start:09/01/2006		LOCATION
Final Q	Conductivity:3020µs	Limpidity:	Finish:19/01/2006		GRID E:046°10'55,7"
Depth	Diameter	Screen			GRID S:25°07'53,1"
Predict drilling:205m	Drilling	Size sup:104,88m	Rig:SPC 300 H		Altituce:229m
Final borehole:193,59m	Intern casing:156mm	Size inf :191,99m	Hydrogeologist: Frida, Hery		
Basement:	Extern casing:165mm	Screen slice op: 01mm	Driller : Manorisoa ,Bien Aimé,Olao		

Borehole diameter (")	Depth m	Cut	Water C(µS) PH	Speed progress m/h	GEOLOGIC FORMATION Legend	Lithologic description	Shape and color
12"	0		2920µs	17		Red land with finesand round	2m
						Finesand round chestnut with magnetite	6m
	10			12		Very finesand round chestnut	12m
10"			2910µs	7,1		Very finesand round brown	13m
	X		2890µs	6,2		Red land with finesand round	17m
	X 20					Finesand round chestnut with magnetite	23m
	X		3030µs	8,2		Red land with finesand round Al Ile	31m
	30		3130µs	7,5			
				2,5		Very finesand calcareous angular brown withish	44m
	40		3330µs	3,2			
10"	50		3020µs	5		Finesand calcareous angular brown withish	
				2,4			59m
			2730µs				
	60					Very finesand round brown with magnett	64m
			2750µs	6			
	70		2820µs			Finesand round brown	
			2990µs				
	80		3010µs				81m
				1,7			
			3060µs			Very finesand calcareous angular brown withish	89m
10"	90		3100µs	2,9		Finesand round chestnut	91m
			2980µs	1,5		Very finesand calcareous angular brown withish	96m
	98,3m					Finesand to middle round chestrut	97m
	100		2920µs	1,8			

THE STUDY ON THE SUSTAINAIBLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR:CZHM-LTD

DRILLING CUT (b)

Number:F032	Village:BEHABOEO	Commune:AMBOVOMBE	Start:09/01/2006	LOCATION
Final C	Conductivity:302µs	Limpidity:	Finish:19/01/2006	GRID E:046°10'55,2"
Depth	Diameter	Screen	Society:CZHM-LTD	GRID S:25°07'52,8"
Predict drilling:205m	Drilling	Size sup:184,88m	Atelier:SPC 300 D	Elevaton:227m-228m
Final borehole:193,29m	Intern casing:156mm	Size inf:191,99m	Hydrogeologist: Ravelcson Frida, Randriasilaina Hery	
Basement:	Extern casing:165mm	Screen slice op: 01mm	Driller: Manorisoa ,Bien Aimé,Qiso	

Borehole diameter (")	Depth m	Cut	Water C(µS) PH	Speed progress	GEOLOGIC FORMATION Legend	Lithologic description	Shape and color
10"	100		2910µs/7.2	1,8			
	110		3030µs/7.28	2,3		Very finesand calcareous angular brown withish	117m
	120		3100µs/7.28	3,5		Finesand calcareous angular brown withish	122m
10"	130		3060µs/7.2	6,9		Finesand rounc	123m
	140		2970µs/7.2			Sandstone clay round brown	141m
	150		2990µs/7.28	1,5		Sandstone calcareous angular brown withish	156m
	160		2960µs/7.26	1,9		Finesand round chestnut	158m
			3030µs/7.26	3,3		Finesand calcareous angular brown	161m
			2980µs/7.27			Very finesand rc	168m
10"	170		2960µs/7.22	1,2		Finesand calcareous angular brown withish	183m
	180		2930µs/7.18	1,7		Finesand round chestnut	185m
	190		2990µs/7.26	2,3		Finesand calcareous angular brown	191m
	192m		2930µs/7.24			Finesand to midde round brown	192m
	193,29m					Sand clay round brown	195m
WL. 22/01/	200m		3200µs/7.26	1,5		Sandstone calcareous angular brown withish	
191,77m	205m		3400µs				

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUTTING NBA-SE-1

Number: NBA-SE-1	Village:Anjatoka	Commune:Ambovombe	Start: 09/02/2006	LOCATION:		
Final Q:	Conductivity:	Limpidity	Finish:10/02/2006	Grid E:046-06'18.7"		
Depth	Diameter	Screen:	Enterprise:CZHM-LTD	Grid S: 25-10'39.6"		
Predict drilling:30m	Drilling	Size sup:	Rig: N°3	Elevation:		
Final borehole:44m	Intern casing:	Size inf :	Hydrogeologist: Hery			
Basement:	Extern casing:	Opening:	Driller:Bien Aimé , Manorisoa , Qiac			

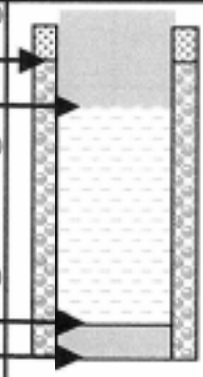
Borehole Diameter (")	Depth m	Cut	Water c/µs) ph	Speed Progress m/h	Geologic formation Legend	Lithologic Description	shape	color	
	0			12		Red land			2m
						Finesand	round	reddish	4m
			3330µs						
			7,8	4		Very finesand	round	reddish	
	10	No equipment					with ilmenit		12m
10"			3300µs			Finesand round		red whitish	
			7,6			With clay		Al	16m
				3				Ne	
	20		3070µs			Finesand calcareous angular brown withish			
			7,7	5		Sandstone	angular	brown withish	
			3150µs				calcareous		28m
X			7,8			Finesand calcareous angular brown			
X	30								
X			3200µs						
X			7,5						
X						Very finesand calcareous angular brown			
X	40		3240µs						
X			7,8						
X									44m

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUTTING NBA-SE-2

Number: NBA-SE-2	Village:Anjatoka	Commune:Ambovombe	Start: 10/02/2006	LOCATICN:	
Final Q: <)	Conductivity:	Limpidity:	Finish:11/02/2006	Grid E:046-06'18.7"	
Depth	Diameter	Screen:	Enterprise:CZHM-LTD	Grid S: 25-10'39.6"	
Predict drilling:20m	Drilling	Size sup:6.84m	Rig: N°3	Altitude:	
Final borehole:24m	Intern casing:156mn	Size inf :20.89m	Hydrogeologist: Hery		
Basement	Extern casing:165mm	Opening: 1mm	Driller:Bien Aimé , Manorisoa ,Qiao		

Borehole Diameter (")	Depth m	Cut	Water c(µs) ph	Speed Progress m/h	Geologic formation Legend	Lithologic Description shape color	
10"	0 3m Gravel 6.84m 10 20 20.89m 24m 30 40		3320µs/7.6 3290µs/7.5 3070µs/7.8 3080µs/7.7	12 4 3 5		Red land Finesand round reddish Very finesand round reddish with ilmerit Finesand round red whitish With clay Finesand angular brown whitish calcareous Sandstone calcareous	2m 4m 10m 15m Ne 21m 24m

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUT NBA SW-1

Number: NBA SW-1	Village:Mitsangana SW	Commune:Ambovombe	Start: 11/02/2006	LOCATION:	
Final Q: <o.2m³/h	Conductivity:	Limpidity:	Finish:12/02/2006	Grid E:046-04'38.8"	
Drilled depth: 33m	Diameter	Screen:	Enterprise:CZHM-LTD	Grid S: 25-11'23.9"	
Predict drilling:30m	Drilling	Size sup:10.33m	Rig: N°3	Altitude:	
Final borehole:30.30m	Intern casing:165mm	Size inf :27.19m	Hydrogeologist: Hery		
Basemen:	Extern casing:155mm	Opening: 1mm	Driller:Bien Aimé , Manorisoa , Qiao		

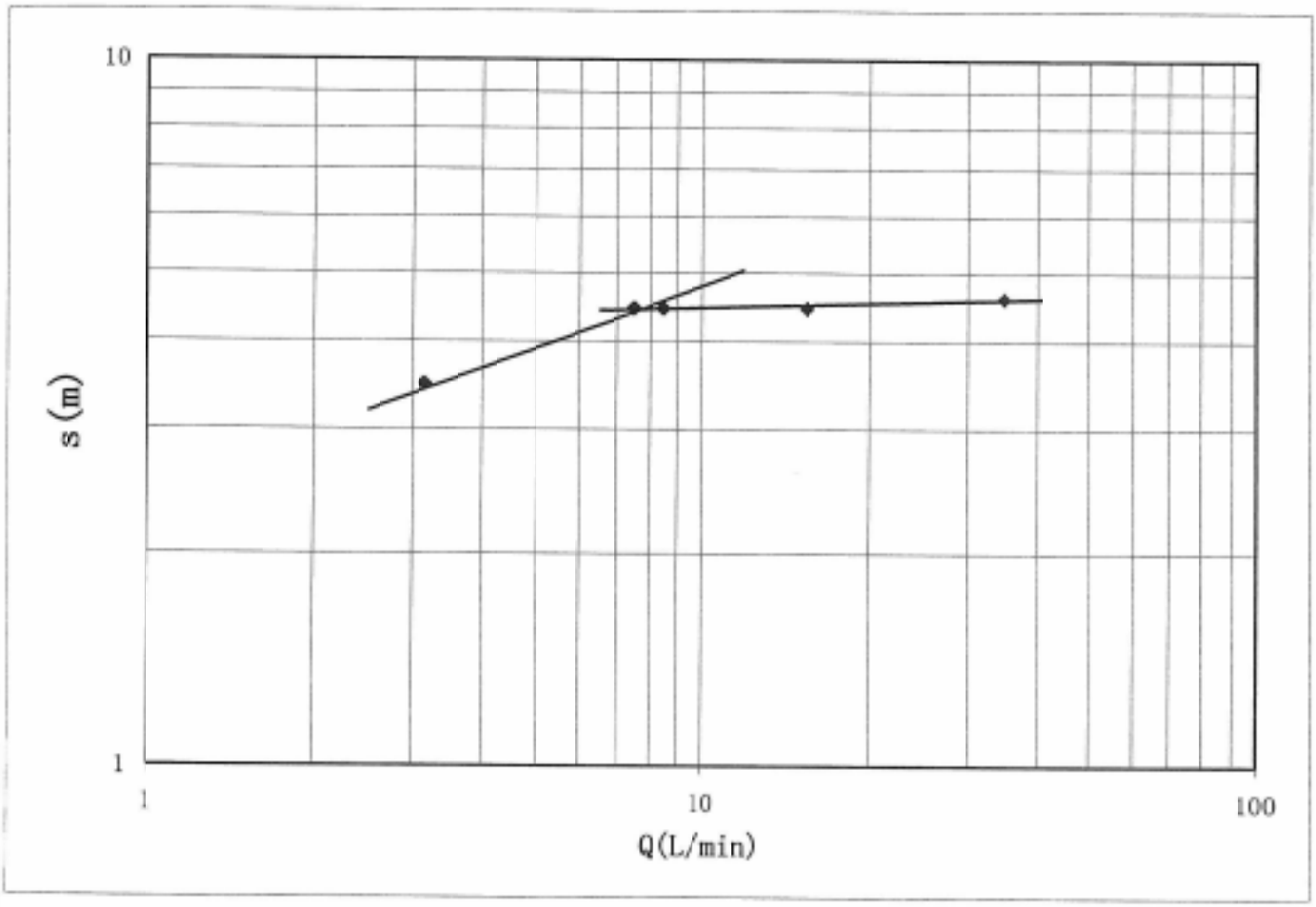
Borehole Diameter (")	Depth m	Cut	Water c(µs) ph	Speed Progress m/h	Geologic formation Legend	Lithologic Description shape color	
	0			6		Vegetable land reddish	2m
5m Gravel				2		Very finesand round reddish	6m
			558)µs/7.4			Finesand round chestnut	7m
	10			6		Finesand round reddish with ilmenit	12m
10"	10.33m					Finesand round brown	15m
	15.95m		620)µs/7.3	1,6		Very finesand round brown with clay	
	20						
22.35m	21.57m			5		Sandstone with clay	22m
						Finesand round with green clay	26m
	27.19m		620)µs/7.3				
	30			1,5		Clay green	
	30.30m					▲ Al	33m
	40						

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA PROJECT
CONTRACTOR:CZHM-LTD

STEPS DRAW DOWN PUMPING TEST

BOREHOLE No.	SITE NAME	DATE	CONDUCTIVITY	S.W.L (m)
NBA SW-1	Mitsangana	02/03/2006	7020µs	22,35



STEP	Q(L/min)	N.D(m)	S(m)	Q/S(L/min/m)
1	3,17	26,82	3,47	0,91
2	7,50	26,82	4,45	1,69
3	8,50	26,82	4,45	1,91
4	15,50	26,82	4,45	3,48
5	34,83	26,95	4,60	7,57

Relation Betwwen s and Q

JIRO SY RANO MALAGASY
B P 200 - ANTANANARIVO

DIRECTION DE L'EXPLOITATION EAU
DEPARTEMENT QUALITE EAU
Tél (261 20) 22 221 92

BULLETIN D'ANALYSE PHYSICO-CHIMIQUE N° 343 /06

PRELEVEMENT

Région : AMBARO III
Centre :
Nature : Eau brute
Type d'échantillon : F.SW

Date de prélèvement : 03.03.06
Date de réception : 07.03.06
Préleveur : CHINA ZHONGHAO
Date d' analyse : 07.03.06
Usage : AEP

ANALYSES

Paramètres	Examen au Laboratoire	VMA N. M.
Aspect	l. trouble	limpide
Odeur	absence	absence
Couleur		incolore
Température, en °C	25,4	25
Turbidité, en NTU	14,9	5
pH	7,31	6,5 - 9,0
Conductivité à 20 °C, en µs/cm	4670	3000
Minéralisation, en mg/l	4324	
MeS en mg/l		

Paramètres	Valeurs	VMA N. M.
Dureté TH en °F	92,80	50
TH Ca, en °F	45,00	
Alcalinité TA, en °F	0,00	
TAC, en °F	23,00	
Chlore résiduel en mg/l		
M.O., mg O_2/l (alcalin)	0,90	2
(acide)		5

Cations		mg/l	VMA N. M.
Calcium	Ca^{++}	180,00	
Magnésium	Mg^{++}	116,15	
Sodium	Na^{+}	673,54	
Potassium	K^{+}		12
Ammonium	$NH4^{+}$	0,13	0,5
Fer	Fe^{++}		0,5
Fer total	Fe^{++},Fe^{+++}	0,00	0,5
Manganèse	Mn^{++}		0,05
Aluminium	Al^{+++}		0,2

Anions		mg/l	VMA N. M.
Carbonates	CO_3^{--}	0,00	
Bicarbonates	HCO_3^{-}	280,60	
Chlorures	Cl^{-}	1459,05	250
Sulfates	SO_4^{--}	125,35	250
Nitrites	NO_2^{-}	0,04	0,1
Nitrates	NO_3^{-}	5,53	50
Phosphate	PO_4^{---}		5
Fluorures	F^{-}	0,35	1,5
Hydroxyde	OH^{-}	0,00	

Substances toxiques	mg/l	VMA
Arsenics totaux As		0,05
Cyanures totaux Cn		0,005
Chromes totaux Cr		0,05

VMA : valeur maximale admissible pour eau potable (N.M.)
M.O : matières organiques (Oxydabilité au $KMnO_4$)
l. : légèrement
°F : degré Français
N.M. : Norme Malgache

OBSERVATIONS :

Eau non conforme à la norme.
(cf. : Aspect, Turbidité, Conductivité, Dureté, Chlorures)

Antananarivo, le 10.03.06
Le chef de Laboratoire,

Le Chef de Département Qualité Eau

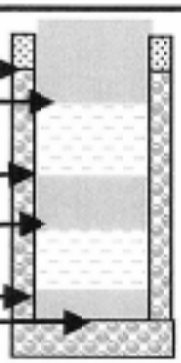
RABETOKOTANY Monique

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUT NBA-SW-2

Number: NBA-SW-2	Village:AMBARO	Commune:Ambovombe	Start: 03/03/2006	LOCATION:	
Final Q:	Conductivity:	Limpidity:	Finish:04/03/2006	Grid E: 046-04'43.0"	
rilled depth:24m	Diameter	Screen:5.97-11.59;14.10-17.21m	Enterprise:CZHM-LTD	Grid S: 25-11'01.09"	
Predict drilling:20m	Drilling	Size sup:11.44m	Rig: N°3	Elevation:	
Final borehole:20,32m	Intern casing: 156mm	Size inf : 19.87m	Hydrogeologist: Manda RAFIDISON		
Basement:	Extern casing: 155mm	Opening: 1mm	Driller:Bien Aimé & Manoïsoa & Qiao		

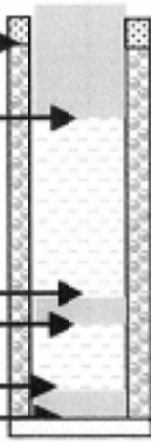
Borehole Diameter (")	Depth m	Cut	Water c(µs) ph	Speed Progress m/h	Geologic formation Legend	Lithologic shape color Description
MFT 10"	0 3m Gravel 5.97m 10 11.59m 14.40m 17,21m 20 20.32m 30		1124µs 7.53	6 12 10 8		Finesand round chesnut 6m Finesand angular chestnut greenish with clay 11m Finesand angular green with cay ▲ Al 24m (Air drilling)

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTOR: CZHM-LTD

DRILLING CUT FP10

Number:FP 010	Village:Analaisoka	Communs:Sihanamaro	Start:14/02/2006	LOCATION:	
Final Q: < 0	Conductivity:	Limpidity:	Finish:14/02/2006	Grid E: 045°46'22,1"	
Drilled depth:31m	Diameter	Screen:	Enterprise:CZHM-LTD	Grid N: 25°10'52,0"	
Predict drilling : 30m	Drilling	Size sup: 9.13m	Rig: N°3	Altitude :	
Final borehole: 30.16m	Intern casing:156mm	Size inf : 28.80m	Hydrogeologist: Hery		
Basement:	Extern casing:165mm	Opening : 0,75mm	Driller:Bien Aimé ,Manorisoa , Qiao		

Borehole Diameter (")	Depth m	Cut	Water c(µs) ph	Speed Progress m/h	Geologic formation: Legend	Lithologic Description / shape / color
3m Gravel	0		2320µs 7.3	8,6		Red land 2m
						Finesand round chesnut 4m
	9.13m		2410µs 7.25			Finesand round white with ilmenit 10m
10"	10		2420µs 7.24	1,3		Finesand round white with clay 12m
			2350µs 7.36	8,6		Finesand round white 18m
	20					
	20.37m		2380µs 7.3	20		Finesand round reddsh
	23.18m		2460µs 7.38			
	28.80m					▲ Al 31m
	30.16m		2400µs 7.35			
	40					

THE STUDY ON THE SUSTAINABLE AUTONOMIC DRINKING WATER SUPPLY PROGRAM IN THE SOUTH REGION OF MADAGASCAR

JICA-PROJECT
CONTRACTCR: CZHM-LTD

DRILLING CUT NBA-NW

(NE-1)

Number: NBA-NW	Village:BEABO	Commune:Ambovombe	Start: 24/02/2006	LOCATION:	
Final Q:	Conductivity:	Limpidity:	Finish: 26/02/2006	Grid E:046-45'35.9"	
Drilled depth: 19m	Diameter	Screen	Enterprise: CZHM-LTD	Grid S:25-10'13.1"	
Predict drilling:15m	Drilling	Size sup:3.36m	Rig: N°3	Altitude:	
Final borehole:15.90m	Intern casing: 156mm	Size inf :14.40m	Hydrogeologist: Manda		
Basement:	Extern casing: 165mm	Opening: 0.75mm	Driller:Bien Aimé , Manorisoa , Qiao		

Borehole Diameter (")	Depth m	Cut	Water c(µs) ph	Speed Progress m/h	Geologic formation: Legend	Lithologic Description	shape	color
10"	0 3m Gravel 3.36m 8.98m 11.79m 14.60m 15.90m 20 30		1240µs 7.2 1230µs 7.24 1240µs 7.2	9 8 7 8		Finesand round chestnu: 6m Finesand angular chestnut greenish with clay 5m Finesand angular grey with clay ▲ Al 19m (Air Drilling)		