

資料 1 1 . 水質試驗結果

1. 水質調査

現在水源として利用されている地下水等が利用に適しているかどうかを判定するために水質試験を実施した。採水数は、ボアホール(既存井戸) 74 ヶ所、ダッグウェル(浅井戸) 19 ヶ所、水源池 1 ヶ所である。また、22 ヶ所で簡易水質試験を実施した。さらに試掘井戸 6 箇所についても実施した。

分析項目は水温、色度、臭気、pH、濁度、蒸発残留物、硝酸性窒素、亜硝酸性窒素、フッ素、塩素、カルシウム、マグネシウム、鉄、マンガン、砒素、大腸菌群、一般細菌、電気伝導率、リン酸の 19 項目である。

2. 分析結果

分析結果を表 K-1 に示す。

既存の深井戸で WATSAN Standard (WHO 1984) を上まっている項目は、以下の通りである。

A. 硝酸性窒素 (NO_3)

・ Ibarapa East

Isale Togun 2、Oke-Imale 1,2、Aborerin 1、Isaba、Maya

・ Ibarapa North

Isale-Akao 2、Oke-ola 1、Igitele、Isale-oja、Jagun-olorunda

・ Orire

Daodu、Onikoko、Gebemi

・ Iseyin

Ado-Awaye2、4、Iseyin Area 2,3

B.H. (深井戸)では以上の 18 ヶ所、D.W. (浅井戸)では 6 ヶ所確認されている。 NO_3 は一般に土壌、水、植物中に広く相当量存在するが、肥料の使用、生活雑排水、尿尿等が汚染源の可能性がある。

B. 鉄 (Fe)

B.H. で 6 ヶ所、D.W. 等で 4 ヶ所、試掘井戸 2 カ所で基準値 (1 mg/l) をオーバーした。基準値以上では金属臭味を感じるようになるので、ろ過、煮沸等が望ましい。

C. マンガン

Ibarapa North の試掘井戸でマンガンが検出されているが、健康管理上の暫定基準値以下で飲料水としては問題ない値である。

Table K-1 Simple Water Analysis Data

LGA	Community	Water Resources	Latitude	Longitude	Temperature (°C)	pH	Coductivity (mS/cm)	DO (mg/l)	Coliform group (N)	Total bacteria (N)
Orire	Onira	D.W.	8 ° 21 33	4 ° 14 25	28.5	7.2	0.57	-	-	-
Orire	Alawodi	B.H.	8 ° 27 16	4 ° 08 48	30.0	6.9	0.50	-	2	change
Orire	Daodu	B.H.	8 ° 25 21	4 ° 07 55	29.5	6.7	0.90	-	no change	no change
Ibarapa N.	Isale Oja	B.H.	7 ° 40 38	3 ° 11 03	31.0	7.6	1.83	6.1	no change	27 ~ 40
Ibarapa N.	Aba Ibadan	B.H.	7 ° 43 38	3 ° 07 49	29.0	7.8	0.40	4.0	no change	14
Ibarapa N.	Imofin(Ayete)	B.H.	7 ° 32 19	3 ° 13 14	30.0	7.4	0.43	3.5	no change	no change
Ibarapa N.	Ominigbo	B.H.	7 ° 44 52	3 ° 06 58	29.0	7.1	0.32	2.5	no change	no change
Ibarapa N.	Eleede	D.W.	7 ° 45 29	3 ° 06 48	29.5	6.2	0.54	6.1	>20	50 100
Ibarapa N.	Idiyan	B.H.	7 ° 47 48	3 ° 07 24	31.0	6.1	0.60	3.4	change (very)	change
Ibarapa N.	Iwafin(Tapa)	B.H.	7 ° 33 57	3 ° 13 55	30.0	7.5	0.70	1.7	no change	23 36
Ibarapa C.	Apata	D.W.	7 ° 23 42	3 ° 10 48	27.5	7.9	0.12	5.0	change	change
Ibarapa C.	Apata	stream	7 ° 23 40	3 ° 10 49	26.0	7.2	0.07	3.7	change	change (weakly)
Ibarapa C.	Abule	pond	7 ° 28 36	3 ° 17 04	29.5	6.5	0.05	4.6	change	change
Ibarapa E.	Oke-Imale	D.W.	7 ° 35 30	3 ° 26 59	28.5	8.6	0.65	6.0	change	change
Ibarapa E.	Oke-Imale	B.H.	7 ° 35 27	3 ° 26 56	29.0	7.5	0.59	3.9	no change	16 35
Oyo West	Sooku	B.H.(PTF)	7 ° 54 04	3 ° 44 39	30.5	7.1	0.99	1.9	change	change
Oyo East	Olufayo	pond	7 ° 44 35	3 ° 58 55	25.5	6.8	0.06	0.4	change	change
Afijio	Aba Ilorin	D.W.	7 ° 42 00	3 ° 39 10	28.0	7.0	0.75	5.3	change	change
Ogo-Oluwa	Olorunda	D.W.	7 ° 55 27	4 ° 11 22	28.5	7.8	0.62	6.5	change (weakly)	change
Ogo-Oluwa	Otamokun	B.H(FGN)	7 ° 57 29	4 ° 10 16	29.0	7.4	1.98	3.8	change (weakly)	change (weakly)
Ogo-Oluwa	Ayede	D.W.	7 ° 58 55	4 ° 08 12	28.0	7.6	0.83	4.5	change	change
Ogo-Oluwa	Odo-Ifo	D.W.	7 ° 59 02	4 ° 08 56	28.5	6.8	0.20	4.0	change	change

Nigeria Water Analysis Data (D.W.1)

LGA	Afijio	Afijio	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa North	Ibarapa North	Ibarapa Central
Community	Aba Ilorin	Jagun	Ide-Ope	Isale Bale Alubata	Maya Ipa	Anko	Idiyan	Oke-Ola	Koso (Idere)
Pri.No.	5	219	52	115	32	113	17	2	110
Latitude	7° 42.051'	7° 46.747'	7° 25.978'	7° 35.889'	7° 40.752'	7° 32.240'	7° 47.676'	7° 40.891'	7° 29.820'
Longitude	3° 39.063'	3° 50.509'	3° 29.744'	3° 26.801'	3° 26.730'	3° 25.159'	3° 7.471'	3° 10.961'	3° 14.341'
Depth(m)									
Sampled Date	29.10.01	29.10.01	25.10.01	25.10.01	25.10.01	25.10.01	23.10.01	22.10.01	24.10.01
Temperature (° C)	29.3	27.2	29.3	29.3	29.8	29.6	29.5	34.5	29.5
Color (TCU)	70	225	5	5	>250	5	15	5	5
Odor	None	None	None	None	None	None	None	None	None
pH	6.4	6.9	6.5	7.7	6.8	6.5	6.8	7.6	6.8
Turbidity (NTU)	15	170	2.0	3.0	346	1	6	1.0	0
TDS (mg/l)	734	200	220	286	2700	262	256	414	250
NO ₃ (mg/l)	153.12	36.08	61.6	31.24	153.12	28.16	57.2	58.1	1.7
NO ₂ (mg/l)	9.9	128.7	3.3	13.2	389.4	16.5	9.9	3.3	None
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	185.5	14.5	50	64	199	95	66.6	108	53.5
Calcium(Ca) (mg/l)	149.6	7.2	46.4	57.6	65.6	48	41.6	40	58.4
Iron(Fe) (mg/l)	<0.1	>15.0	Trace	0.0	0.5	1.0	0.0	0.0	0.0
Mn (mg/l)	0.1	Trace	0.0	0.0	Trace	0.0	0.0	0.0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	5	161	6	161	240	161	0.0	7	3
Total Bacteria	120	130	40	120	180	155	35	10	35
Conductivity (mS/cm)	1.18	0.07	0.44	0.52	1.19	0.68	0.46	0.59	0.61
Magnesium(Mg) (mg/l)	15.36	0.48	1.44	5.76	33.6	10.08	9.12	8.64	2.88
Phosphate(PO ₄)(mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.5	0.0
Remarks		Pond							

Nigeria Water Analysis Data (D.W.2)

LGA	Ibarapa Central	Ibarapa Central	Orire	Orire	Orire	Orire	Orire	Orire	Iseyin
Community	Iyaororan	Araromi Idere	Sansan-Alasapa	Ayepe Kangara	Elekulu	Alangua	Eleyele	Olokoto	Ado-Awaye
Pri.No.	145	140	56	91	4	6	20	100	11
Latitude	7° 26.968'	7° 30.667'	8° 31.467'	8° 24.140	8° 23.444'	8° 25.578'	8° 28.884'	8° 35.173'	7° 49.742'
Longitude	3° 14.135'	3° 16.606'	4° 9.165'	4° 15.184'	4° 18.464'	4° 10.355'	4° 11.705'	4° 11.917'	3° 25.815'
Depth(m)									
Sampled Date	24.10.01	24.10.01	19.10.01	19.10.01	19.10.01	20.10.01	19.10.01	18.10.01	20.10.01
Temperature (° C)	29.5	29.5	29	28	28.5	28	28.5	28.5	29
Color (TCU)	>250	5	200	15	5	5	80	25	5
Odor	None	None	none	none	None	None	None	None	None
pH	6	6.5	6.7	6.7	6.4	7.2	6.3	7.5	7
Turbidity (NTU)	88	2	130.0	15.0	3	1	47	56.0	0
TDS (mg/l)	100	181	202	272	196	550	124	285	490
NO ₃ (mg/l)	0.2	1	23.74	7.48	6.6	84.04	14.1	23.32	52.8
NO ₂ (mg/l)	None	0	46.2	6.6	0	0	26.4	16.5	3.3
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	13	21	37	45	17.5	111	25	30	110
Calcium(Ca) (mg/l)	7.2	28	6.4	20	17.6	49.6	2.4	17.6	56
Iron(Fe) (mg/l)	15	0.1	1.5	<0.1	0.5	<0.1	<0.1	<0.1	0.0
Mn (mg/l)	0.3	0	<0.1	<0.1	0	0.0	0.0	0.0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	161	2	22	3	0	3	161.0	14	5
Total Bacteria	180	10	80	18	22	35	180	40	20
Conductivity (mS/cm)	0.08	0.24	0.11	0.19	0.17	0.56	0.05	0.15	0.74
Magnesium(Mg) (mg/l)	5.76	6.24	2.88	7.2	1.44	11.04	3.36	4.8	4.8
Phosphate(PO ₄)(mg/l)	0.0	0.0	0.0	0.0	2.0	0.0	0.0	2.5	0.0
Remarks									

Nigeria Water Analysis Data (D.W.3)

LGA	Iseyin	Iwajowa							
Community	Iserin	Ayetoro-Ile							
Pri.No.	16	213							
Latitude	7° 46.762'	7° 59.596'							
Longitude	3° 17.675'	3° 4.950'							
Depth(m)									
Sampled Date	20.10.01	29.10.01							
Temperature (° C)	28.5	29.3							
Color (TCU)	5	>250							
Odor	None	None							
pH	6.9	7							
Turbidity (NTU)	7	212.0							
TDS (mg/l)	322	96							
NO ₃ (mg/l)	33	0							
NO ₂ (mg/l)	6.6	0							
Fluoride(F) (mg/l)	0.0	0.0							
Chloride(Cl) (mg/l)	67.5	21							
Calcium(Ca) (mg/l)	25.6	4.4							
Iron(Fe) (mg/l)	0	>15.0							
Mn (mg/l)	0	0.0							
As (mg/l)	0.0	0.0							
Coliforms	22	0							
Total Bacteria	180	35							
Conductivity (mS/cm)	0.29	0.09							
Magnesium(Mg) (mg/l)	10.08	5.28							
Phosphate(PO ₄)(mg/l)	Trace	0.0							
Remarks									

Nigeria Water Analysis Data(B.H. 1)

LGA	WATSAN Standard (WHO 1984)	Afijio	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East
Community		Ilora	Maya	Isale Toqun(1)	Isale Toqun(2)	Alapa	Oke-Ola	Oke-Imale 1 (Lanlate)	Aborerin
Pri.No.		8	33	41	41	46	63	72	102
Borehole NO.				BD/97/46			-	-	-
Latitude		7° 48.031'	7° 40.696'	7° 36.028'	7° 36.033'	7° 39.184'	7° 31.472'	7° 35.425'	7° 31.782'
Longitude		3° 54.212'	3° 26.727'	3° 26.912'	3° 26.996'	3° 32.127'	3° 25.239'	3° 26.941'	3° 25.064'
Drilled Date									
Depth(m)									
Con.-Platform		ok	ok	ok	fair	ok	ok	ok	ok
Con.-Environs		ok	ok	ok	ok	ok	ok	ok	ok
Sampled Date		29.10.01	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01
Temperature (° C)		29.3	29.7	29.7	29.7	29.7	29.7	29.6	29.6
Color (TCU)		>250	5	20	5	5	10	20	5
Odor		None	None	None	None	None	None	None	None
pH	5.5 – 9.2	6.2	7.6	7.8	7	7	6.6	6.2	6.9
Turbidity (NTU)		119.0	0.0	3.0	0.0	2.0	2.0	28.0	2.0
TDS (mg/l)	1000	124	650	496	350	308	1.86	476	344
NO ₃ (mg/l)	45	0	70.4	24.64	61.6	11	19.36	75.24	73.92
NO ₂ (mg/l)		0	3.3	3.3	3.3	3.3	3.3	204.6	3.3
Fluoride(F) (mg/l)	1.5	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	600	27.5	157.5	73.5	105.0	33.5	53	73	89.5
Calcium(Ca) (mg/l)	200	12	55.2	58.4	70.4	39.2	28	42.4	36
Iron(Fe) (mg/l)	1.0	>15.0	0.0	0.3	0	0.8	0	0.3	0.0
Mn (mg/l)	0.1	0.0	0.0	0.0	0	0.03	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	1/100ml	1	3	5	54	9	240	18	17
Total Bacteria		45	42	120	120	180	180	35	35
Conductivity (mS/cm)		0.12	0.9	0.68	0.71	0.36	0.31	0.48	0.66
Magnesium(Mg) (mg/l)	150	1.92	14.88	8.16	7.2	4.8	4.32	5.28	9.6
Phosphate(PO ₄) (mg/l)		0.0	0.0	0.0	0.0	0.0	0.0	0.0	0
Remarks									

Nigeria Water Analysis Data(B.H.2)

LGA	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa East	Ibarapa North
Community	Isaba	Isale Bale Alubata	Oke-Imale 2 (Lanlate)	Oke Itabo (Lanlate)	Oke-Otun (Lanlate)	Sango	Akeete	Ijeun	Isale-Akao(1)
Pri.No.	114	115	116	117	118	119	132	134	1
Borehole NO.	-	-	-	-	BDI/97/45	-	-	BDI/97/58	-
Latitude	7° 31.953'	7° 35.691'	7° 35.386'	7° 36.184'	7° 35.097'	7° 32.248'	7° 38.911'	7° 39.645'	7° 40.730'
Longitude	3° 25.069'	3° 26.905'	3° 26.926'	3° 27.219'	3° 27.135'	3° 25.875'	3° 26.862'	3° 26.842'	3° 11.148'
Drilled Date									
Depth(m)									
Con.-Platform	ok	ok	ok	ok	ok	ok	ok	ok	bad
Con.-Environs	ok	ok	ok	ok	ok	ok	ok	ok	ok
Sampled Date	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01	25.10.01	22.10.01
Temperature (° C)	29.6	29.5	29.6	29.7	29.8	29.7	29.6	29.7	33
Color (TCU)	60	5	20	15	5	5	10	40	5
Odor	None	None	None	None	None	None	None	None	None
pH	6.9	7.0	6.2	7.2	7	7.4	7.4	6.8	6.9
Turbidity (NTU)	16	1.0	28.0	3.0	1.0	4.0	1.0	10.0	0.0
TDS (mg/l)	540	366	476	408	396	274	398	386	970
NO ₃ (mg/l)	71.72	46.2	75.24	0.44	1.32	5.72	Trace	7.04	38.7
NO ₂ (mg/l)	3.3	3.3	204.6	3.3	3.3	3.3	4.95	6.6	<3.3
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	54.5	102	73.0	75	23.0	22.5	14.5	20	169
Calcium(Ca) (mg/l)	28.8	65.6	42.4	79.2	51.2	36.8	57.6	39.2	138.4
Iron(Fe) (mg/l)	1.3	0.0	0.3	1.5	0.4	1.0	1.3	3.0	0.0
Mn (mg/l)	0.0	0.0	0.0	0.0	0.03	Trace	0.0	0.03	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	161	161	18	9	0	14	7	8	21
Total Bacteria	180	80	35	130	35	64	48	56	180
Conductivity (mS/cm)	0.46	0.63	0.48	0.53	0.38	0.33	0.37	0.30	0.97
Magnesium(Mg) (mg/l)	6.72	11.52	5.28	5.76	6.72	1.92	2.40	2.88	12.48
Phosphate(PO ₄) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	<4.0
Remarks									

Nigeria Water Analysis Data(B.H.3)

LGA	Ibarapa North	Ibarapa North	Ibarapa North	Ibarapa North	Ibarapa North	Ibarapa North	Ibarapa North	Ibarapa North	Ibarapa North
Community	Isale-Akao(2)	Oke-Ola	A.U.D (Igaagan)	Igitele	Isale-Oja (Igangan)	Oke-Ola	Iwafin (Ayete)	Imofin (Ayete)	Asunara
Pri.No.	1	2	7	9	10	12	13	14	15
Borehole NO.	-	-	-	BDI/95/10	BDI/95/8	-	BDI/96/3	-	-
Latitude	7° 40.342'	7° 40.857'	7° 40.193'	7° 40.767'	7° 40.657'	7° 40.908'	7° 32.705'	7° 32.333'	7° 39.328'
Longitude	3° 11.151'	3° 10.928'	3° 11.098'	3° 11.008'	3° 11.041'	3° 11.011'	3° 13.406'	3° 13.232'	3° 07.071'
Drilled Date									
Depth(m)									
Con.-Platform	bad	ok	ok	ok	ok	ok	ok	ok	ok
Con.-Environs	ok	ok	ok	ok	ok	ok	ok	ok	ok
Sampled Date	22-10-01	22-10-01	22-10-01	22-10-01	22-10-01	22-10-01	22-10-01	22-10-01	23-10-01
Temperature (° C)	32	34	32	34	36	35	31	32	30
Color (TCU)	5	20	5	5	5	5	5	5	5
Odor	None	None	None	None	None	None	None	None	None
pH	7	7.4	7	6.8	7	7	6.8	6.8	6.4
Turbidity (NTU)	1	14.0	0.0	0.0	0.0	0.0	0.0	0.0	30.0
TDS (mg/l)	902	624	354	1030	1288	270	296	266	234
NO ₃ (mg/l)	113.1	64.2	19.4	115.3	120.6	36.5	12.8	14.5	0.9
NO ₂ (mg/l)	13.2	9.9	3.3	0	3.3	3.3	0	0	9.9
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	143.5	99.5	57.5	159.5	225.5	56.5	52.5	44	15
Calcium(Ca) (mg/l)	40.8	49.6	44	140	144	39.2	45.6	38.4	23.2
Iron(Fe) (mg/l)	0.0	Trace	0.0	0.0	0	0.0	0	0.0	Trace
Mn (mg/l)	0.0	0.0	0.0	0.0	0	0	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	161	12	14	0	10	5	7	0	0
Total Bacteria	180	44	180+	180+	24	25	35	44	25
Conductivity (mS/cm)	1.01	0.64	0.43	1.06	1.33	0.41	0.41	0.33	0.21
Magnesium(Mg) (mg/l)	60.48	8.64	4.32	19.2	22.08	5.28	2.88	1.92	1.92
Phosphate(PO ₄) (mg/l)	0.0	2.5	0.0	0.0	0.0	<4.1	>2.5	0.0	0
Remarks									

Nigeria Water Analysis Data(B.H.4)

LGA	Ibarapa North Akoya Ojelere	Ibarapa North Iwafin (Tapa)	Ibarapa North Ominigbo	Ibarapa North Egbeomo	Ibarapa North Kajola Asipa	Ibarapa North Jagun-Olorunda	Ibarapa North Gbagban gere	Ibarapa North Abidioki	Ibarapa North Alafia
Pri.No.	31	34	35	50	59	88	105	155	158
Borehole NO.	-	BD1/98/3	BD1/95/6	-	-	-	-	-	-
Latitude	7° 44.015'	7° 33.957'	7° 44.868'	7° 44.828'	7° 34.883'	7° 30.173'	7° 35.140'	7° 46.155'	7° 35.837'
Longitude	3° 05.935'	3° 13.926'	3° 06.967'	3° 11.988'	3° 7.190'	3° 8.125'	3° 8.079'	3° 12.385'	3° 8.454'
Drilled Date									
Depth(m)									
Con.-Platform	ok	ok	ok	ok	bad	ok	ok	ok	bad
Con.-Environs	ok	ok	ok	ok	ok	ok	ok	ok	ok
Sampled Date	23-10-01	22-10-01	23-10-01	23-10-01	23-10-01	23-10-01	23-10-01	23-10-01	23.10.01
Temperature (° C)	30	33	30	33.5	30	30	30	35	30
Color (TCU)	5	5	5	5	5	5	10	5	5
Odor	None	None	None	None	None	None	None	None	none
pH	6.4	7.0	6.4	6.8	6.4	7	7.2	6.2	6.4
Turbidity (NTU)	0	0.0	10.0	2.0	0.0	0.0	0.0	0.0	0.0
TDS (mg/l)	160	524	218	296	180	336	118	186	194
NO ₃ (mg/l)	40.04	44	2.2	1.8	17.6	61	Trace	18	18
NO ₂ (mg/l)	6.6	0	6.6	3.3	6.6	0	3.3	3.3	3.3
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	68.5	7.7	16.5	17	37.0	59	26.5	24	21.5
Calcium(Ca) (mg/l)	36.8	74.4	41.6	33.6	32.8	50.4	4.8	24.8	29.6
Iron(Fe) (mg/l)	0.0	0.0	0.0	Trace	0	0.0	0	0.0	0.0
Mn (mg/l)	0.0	0.0	0.0	0.0	0	0	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	6	0	1	8	0	5	14	0	0
Total Bacteria	44	15	35	10	10	35	48	22	10
Conductivity (mS/cm)	0.41	0.59	0.26	0.28	0.32	0.51	0.14	0.22	0.24
Magnesium(Mg) (mg/l)	1.44	9.12	2.88	3.84	3.36	14.4	2.88	1.44	2.88
Phosphate(PO ₄) (mg/l)	0.0	2.5	0.0	0.0	0.0	0.0	<2.5	0.0	<4
Remarks									

Nigeria Water Analysis Data(B.H.5)

LGA	Ibarapa North	Ibarapa North	Ibarapa Central	Ibarapa Central	Ibarapa Central	Ibarapa Central	Ibarapa Central	Ibarapa Central	Ibarapa Central
Community	Okebi	Aba-Ibadan	Pako (Igboora)	Onigbio (Idere)	Idofin (Igboora)	Isale Oba (Igboora)	Oke-Iserin2(Igboora)	Oke-Iserin3(Igboora)	Balogun
Pri.No.	162	37	70	71	107	109	111	112	142
Borehole NO.	BD1/90/12		BDI/95/9	-	-	-	-	-	-
Latitude	7° 35.776'	7° 43.629'	7° 25.703'	7° 29.747'	7° 25.951'	7° 26.228'	7° 26.490'	7° 26.370'	7° 33.883'
Longitude	3° 9.330'	3° 7.812'	3° 17.625'	3° 14.623'	3° 16.923'	3° 16.847'	3° 17.085'	3° 16.954'	3° 18.960'
Drilled Date									
Depth(m)									
Con.-Platform	ok		ok	ok	ok	ok	ok	ok	ok
Con.-Environs	ok		ok	ok	ok	ok	ok	ok	ok
Sampled Date	23.10.01	23.10.01	24.10.01	24.10.01	24.10.01	24.10.01	24.10.01	24.10.01	24.10.01
Temperature (° C)	30	30	29.6	29.5	29.5	29.6	29.6	29.6	29.6
Color (TCU)	5	5	5	5	5	5	10	5	20
Odor	none	None	none	none	none	none	none	none	none
pH	7	7.0	6.4	7.4	6.4	6.4	6	6.2	6.2
Turbidity (NTU)	0	1.0	0.0	1.0	0.0	0.0	3.0	0.0	11.0
TDS (mg/l)	396	354	280	422	320	378	264	308	104
NO ₃ (mg/l)	0	Trace	14.7	1.3	14.8	15	26.5	21.1	0
NO ₂ (mg/l)	9.9	3.3	6.6	3	3.3	3.3	0	3.3	0
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	15	22.5	90.0	110	47.5	55.5	72	92	25
Calcium(Ca) (mg/l)	36.8	58.4	60	85.6	64	53.6	42.4	54.4	15.2
Iron(Fe) (mg/l)	0.0	0.0	0.0	0.0	0	0.0	0.2	Trace	1.0
Mn (mg/l)	0.0	0.0	0.0	0.0	0	0	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	4	18	0	4	0	7	5	5	3
Total Bacteria	35	35	0	20	5	40	40	35	35
Conductivity (mS/cm)	0.38	0.32	0.55	0.78	0.52	0.49	0.54	0.59	0.18
Magnesium(Mg) (mg/l)	7.68	0.96	4.32	6.24	7.68	7.2	4.32	11.52	1.44
Phosphate(PO ₄) (mg/l)	0.0	<4	0.0	0.0	0.0	0.0	0.0	0.0	0
Remarks		unsuccessful							

Nigeria Water Analysis Data(B.H.6)

LGA	Ibarapa Central Olowo layemo	Ibarapa Central Tobalogbo	Orire Daodu	Orire Adafila	Orire Oloya	Orire Gbemi	Orire Tuwure	Orire Eleru kanfila	Orire Baba-Eko
Pri.No.	150	153	3	40	51	175	176	177	178
Borehole NO.	-	-		BD2/96/21	BD2/96/20	BD2/96/21	BD2/76/19	BD2/96/25	BD2/96/27
Latitude	7° 33.856'	7° 31.964'	8° 25.320'	8° 27.433'	8° 20.574'	8° 28.613'	8° 19.524'	8° 29.418'	8° 31.100'
Longitude	3° 17.803'	3° 16.899'	4° 7.879'	4° 14.452'	4° 11.929'	4° 13.950'	4° 12.525'	4° 13.567'	4° 11.997'
Drilled Date									
Depth(m)									
Con.-Platform	ok	ok	ok	ok	ok	ok	ok	ok	ok
Con.-Environs	ok	ok	ok	ok	ok	ok	ok	ok	ok
Sampled Date	24.10.01	24.10.01	18.10.01	18.10.01	18.10.01	19.10.01	18.10.01	18.10.01	18.10.01
Temperature (° C)	29.6	29.5	28	28	28	28	28	28.5	28
Color (TCU)	5	15	5	5	5	5	5	10	5
Odor	none	none	none	none	none	None	None	None	None
pH	6.4	6.2	6.2	6.2	6.5	6.6	6.6	6.2	6.2
Turbidity (NTU)	0	5.0	2.0	0.0	0.0	0.0	0.0	12.0	0.0
TDS (mg/l)	188	112	758	240	352	348	242	194	402
NO ₃ (mg/l)	0.1	0	88	17.6	22.44	49.28	4.4	9.68	44
NO ₂ (mg/l)	0	Nil	1.65	3.3	0	3.3	1.65	3.3	3.3
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	31.5	25	93.0	26	45.0	43.5	22.5	23	57
Calcium(Ca) (mg/l)	24	12	100	34.4	42.4	45.6	22.4	20	41.6
Iron(Fe) (mg/l)	Trace	3.0	<0.1	<0.1	0	0.0	<0.1	1.0	<0.1
Mn (mg/l)	0.0	0.0	0.0	0.0	0	0	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	3	13	11	0	10	0	3	0	5
Total Bacteria	40	70	24	0	22	10	24	8	35
Conductivity (mS/cm)	0.22	0.17	0.75	0.26	0.38	0.32	0.19	0.17	0.36
Magnesium(Mg) (mg/l)	3.84	3.36	8.16	1.44	3.36	5.28	5.76	4.8	2.88
Phosphate(PO ₄) (mg/l)	0.0	0.0	1.0	0.0	1.0	0.0	1.0	0.0	0
Remarks									

Nigeria Water Analysis Data(B.H.7)

LGA	Orire	Orire	Orire	Orire	Orire	Iseyin	Iseyin	Iseyin	Iseyin
Community	Oniki	Onikoko	Agbadasaka	Kanbi	Onikeke	Ado-Awaye(1)	Ado-Awaye(2)	Ado-Awaye(3)	Ado-Awaye(4)
Pri.No.	180	181	182	190	195	11	11	11	11
Borehole NO.	-	BD2/96/29	BD2/96/41	BD2/96/7	-	-	-	-	-
Latitude	8° 30.827'	8° 27.643'	8° 23.244'	8° 28.571'	8° 15.231'	7° 47.709'	7° 49.873'	7° 49.877'	7° 50.08'
Longitude	4° 14.603'	4° 12.081	4° 14.830'	4° 7.110'	4° 6.822'	3° 25.952'	3° 25.897'	3° 26.001'	3° 25.681'
Drilled Date									
Depth(m)									
Con.-Platform	bad	ok	ok	ok	ok	ok	ok	ok	ok
Con.-Environs	bad	ok	ok	ok	ok	ok	ok	ok	ok
Sampled Date	18.10.01	18.10.01	18.10.01	18.10.01	19.10.01	20.10.11	20.10.01	20.10.01	20.10.01
Temperature (° C)	28	27	28	28	28	29	28	28	29
Color (TCU)	5	5	5	5	5	5	5	5	5
Odor	None	None	None	None	None	None	None	None	None
pH	6.4	6.6	6.2	6.8	6.2	6.8	7.2	7	6.6
Turbidity (NTU)	0	4.0	1.0	0.0	0.0	0.0	0.0	0.0	1.0
TDS (mg/l)	222	448	198	404	130	234	860	428	594
NO ₃ (mg/l)	24.64	63.8	44	40.48	28.16	6.6	57.2	18.4	80.08
NO ₂ (mg/l)	0	3.3	0	6.6	3.3	3.3	3.3	3.3	3.3
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	30	51.5	23.5	51	26.5	53.5	117.5	50	56.5
Calcium(Ca) (mg/l)	24	50.4	28	40	6.4	41.6	114.4	62.4	94.4
Iron(Fe) (mg/l)	0.0	<0.1	0.3	<0.1	0	<0.1	<0.1	0.0	0.2
Mn (mg/l)	0.0	0.0	0.0	0.0	0	0	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	0	3	11	0		1	28	14	22
Total Bacteria	30	24	35	0	8	16	180	50	70
Conductivity (mS/cm)	0.26	0.42	0.22	0.37	0.09	0.35	0.81	0.43	0.6
Magnesium(Mg) (mg/l)	3.84	5.28	4.32	6.24	2.88	6.72	5.76	4.8	3.84
Phosphate(PO ₄) (mg/l)	1.0	0.0	2.0	2.5	1.0	1.0	1.0	1.0	1
Remarks									

Nigeria Water Analysis Data(B.H.8)

LGA	Iseyin	Iseyin	Iseyin	Iseyin	Iseyin	Iseyin	Iseyin	Iseyin	Iseyin
Community	Ajepero	Aba-Agba	Apenpe	Finijo	Saboile	Iseyin Area(1)	Iseyin Area(2)	Iseyin Area(3)	Iseyin Area(4)
Pri.No.	64	167	168	169	170	172	172	172	172
Borehole NO.	BD1/00/4	-	BD1/2000/2	BD1/2000/17	-	BD/2000/8	-	-	-
Latitude	7° 55.002'	7° 44.616'	7° 48.207'	7° 32.330'	7° 50 189'	7° 58.272'	7° 58.665'	7° 58.259	7° 57.949'
Longitude	3° 41.679'	3° 31.403'	3° 41.6051'	3° 33.897'	3° 33.715'	3° 34.660'	3° 35.207'	3° 35.447'	3° 36.602'
Drilled Date									
Depth(m)									
Con.-Platform	ok	ok	fair	ok	ok	ok	ok	ok	-
Con.-Environs	ok	ok	fair	ok	ok	ok	ok	ok	-
Sampled Date	21.10.01	21.10.01	21.10.01	21.10.01	21.10.01	20.10.01	20.10.01	20.10.01	20.10.01
Temperature (° C)	28	28.5	28.5	28.5	28.5	29	29	29	28.5
Color (TCU)	5	5	5	5	5	5	5	5	5
Odor	None	None	None	None	None	None	None	None	None
pH	7.2	7.0	6.8	6.7	6.8	6.8	6.8	6.8	6.8
Turbidity (NTU)	3	6.0	1.0	0.0	1.0	0.0	1.0	0.0	0.0
TDS (mg/l)	330	448	352	202	180	Too low	342	Too low	318
NO ₃ (mg/l)	0.44	6.16	30.8	0.44	13.64	44	80.08	66	5.28
NO ₂ (mg/l)	3.3	0	Trace 1.65	3.3	0	3.3	3.3	3.3	3.3
Fluoride(F) (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	27.5	13	40.0	20	17.0	9	12	76	13.5
Calcium(Ca) (mg/l)	36	28.8	44	29.6	23.2	4.8	18.4	98	40
Iron(Fe) (mg/l)	0.2	0.2	<0.1	0.1	<0.1	0.0	0.1	<0.1	<0.1
Mn (mg/l)	0.0	0.0	0.0	0.0	0	0	0.0	0	0.0
As (mg/l)	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	0	11	0	0	0	0	17	0	3
Total Bacteria	14	45	35	130	18	4	35	35	40
Conductivity (mS/cm)	0.34	0.8	0.42	0.22	0.2	0.01	0.02	0.67	0.28
Magnesium(Mg) (mg/l)	2.4	50.4	12.48	4.32	1.44	0.96	3.84	10.08	5.76
Phosphate(PO ₄) (mg/l)	1.0	0.0	1.0	1.0	1.0	Trace	2.0	1.0	1
Remarks									submer sial

Nigeria Water Analysis Data(B.H.9)

LGA	Itesiwaju	Iwajowa	Iwajowa						
Community	Ipapo	Iganna 1	Iganna 2						
Pri.No.	103	131	131						
Borehole NO.		-	-						
Latitude	8° 8.084'	7° 58.610'	7° 58.440'						
Longitude	3° 41.605'	3° 14.939'	3° 14.068'						
Drilled Date									
Depth(m)									
Con.-Platform		-	-						
Con.-Environs		-	-						
Sampled Date	21.10.01	29.10.01	29.10.01						
Temperature (° C)	28	29.4	29.5						
Color (TCU)	5	5	5						
Odor	None	None	None						
pH	8	7.0	7						
Turbidity (NTU)	3	5.0	5.0						
TDS (mg/l)	824	118	210						
NO ₃ (mg/l)	15.84	1.76	Trace						
NO ₂ (mg/l)	0	3.3	3.3						
Fluoride(F) (mg/l)	0.0	0.0	0.0						
Chloride(Cl) (mg/l)	64.5	25	48.0						
Calcium(Ca) (mg/l)	123.2	28.8	30.4						
Iron(Fe) (mg/l)	0.0	<0.1	<0.1						
Mn (mg/l)	0.0	0.2	0.2						
As (mg/l)	0.0	0.0	0.0						
Coliforms	161	17	4						
Total Bacteria	50	60	35						
Conductivity (mS/cm)	0.95	0.28	0.24						
Magnesium(Mg) (mg/l)	6.72	0.48	2.4						
Phosphate(PO ₄) (mg/l)	0.0	0.0	0.0						
Remarks	unsuccessful	submer sial	submer sial						

Results of Water Analysis (Test Drilling)

LGA	WATSAN Standard (WHO 1984)	Orire			Ibarapa North		
Community		Elekulu	Eleyele	Olokun	Oke-Ola 1	Aba-Ibadan	Idifa-Idere
Pri.No.		4	20	45	2	37	86
Borehole NO.							
Latitude		8° 23'26"	8° 28'52"	8° 21'22"	7° 40'43"	7° 43'36"	7° 34'52"
Longitude		4°18'28"	4°11'44"	4°18'33"	3° 10'43"	3°07'53"	3° 07'09'
Drilled Date		Feb-02	Feb-02	Feb-02	Mar-02	Mar-02	Mar-02
Depth(m)		48.5	27	35	32	20	41
Con.-Platform							
Con.-Environs							
Sampled Date		02.02.01	28.10.01	27.02.02	08.03.02	10.03.02	07.03.02
Temperature(° C)		28.3	28.6	25.3	30	30.1	25.4
Color (TCU)		5	>250	5	5	175	85
Odor		None	Unpleasant	None	None	None	None
pH	5.5 ~ 9.2	6.2	7.4	6.8	7.0	7.4	6.8
Turbidity (NTU)		2	280.0	2.0	2.0	64.0	36.0
TDS (mg/l)	1,000	160	285	317	206	254	465
NO ₃ (mg/l)	45	0.4	0	0.8	7.92	0.0	0
NO ₂ (mg/l)		0.0	26.4	3.3	3.3	0	9.9
Fluoride(F) (mg/l)	1.5	0.0	0.0	0.0	0.0	0.0	0.0
Chloride(Cl) (mg/l)	600	11.5	23.5	13.5	13	20	31.5
Calcium(Ca) (mg/l)	200	24.8	32	40	12	28.5	38.4
Iron(Fe) (mg/l)	1.0	0	1.0	0	0.25	3.0	0.5
Mn (mg/l)	0.1	0.0	0.0	0.0	0.1	0.15	0.25
As (mg/l)	0.01	0.0	0.0	0.0	0.0	0.0	0.0
Coliforms	1/100ml	1	28	10	11	21	18
Total Bacteria		10	50	35	20	60	40
Conductivity (mS/cm)		0.01	0.02	0.05	0	0	0.88
Magnesium(Mg) (mg/l)	150	1.9	0.5	11.22	6.63	12.20	26.64
Phosphate(PO ₄) (mg/l)		0.0	0.0	0.0	0.0	0.0	0.0
Remarks							