

Annex (5-a)

**Yearly Programme of Water Supply for Mandalay Division Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	20	84		66	4	5	9	84	1193.43	1167.00	
2	2012-2013	18	78		64	4	3	7	78	1269.53	1095.00	
3	2013-2014	17	79		66	4	2	7	79	1320.80	1121.00	
4	2014-2015	15	82		70	4	1	7	82	1296.70	1177.00	
5	2015-2016	14	81		71	2	1	7	81	1306.28	1214.00	
	<b>Total</b>	<b>20</b>	<b>404</b>	<b>0</b>	<b>337</b>	<b>18</b>	<b>12</b>	<b>37</b>	<b>404</b>	<b>6386.74</b>	<b>5774.00</b>	

**Yearly Programme of Water Supply for Kachine State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	9	20	1	12	5		2	20	421.80	69.50	
2	2012-2013	5	18	1	12	4		1	18	1570.00	51.50	
3	2013-2014	2	19		13	5		1	19	1031.50	54.50	
4	2014-2015	2	20		13	6		1	20	1134.60	55.50	
5	2015-2016	1	21		15	6			21	1052.10	43.50	
	<b>Total</b>	<b>9</b>	<b>98</b>	<b>2</b>	<b>65</b>	<b>26</b>	<b>0</b>	<b>5</b>	<b>98</b>	<b>9006.20</b>	<b>274.50</b>	

**Yearly Programme of Water Supply for Kayah State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	7	12			2	4	6	12	56.21	120.00	
2	2012-2013	6	12			2	4	6	12	61.66	120.00	
3	2013-2014	5	11			1	4	6	11	67.73	119.00	
4	2014-2015	4	11			1	4	6	11	200.00	119.00	
5	2015-2016	3	10				4	6	10	219.40	118.00	
	<b>Total</b>	<b>7</b>	<b>56</b>	<b>0</b>	<b>0</b>	<b>6</b>	<b>20</b>	<b>30</b>	<b>56</b>	<b>2275.40</b>	<b>596.00</b>	

**Yearly Programme of Water Supply for Kayin State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	6	6	5	1				6	1289.20	5.00	
2	2012-2013	6	6	5	1				6	1418.12	5.00	
3	2013-2014	6	6	5	1				6	1559.93	5.00	
4	2014-2015	6	2	2					2	1046.83	10.00	
5	2015-2016	6	2	2					2	1151.51	1.00	
	<b>Total</b>	<b>6</b>	<b>22</b>	<b>19</b>	<b>3</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>22</b>	<b>6465.59</b>	<b>26.00</b>	

Annex (5-c)

**Yearly Programme of Water Supply for Chin State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted						Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream	total				
1	2011-2012	8	12				3	9	12	252.34	25.23	165.00	
2	2012-2013	8	12				1	11	12	277.50	27.75	191.00	
3	2013-2014	8	13				1	12	13	305.30	30.53	208.00	
4	2014-2015	8	14				1	13	14	335.80	33.58	225.00	
5	2015-2016	7	14				2	12	14	331.80	33.18	212.00	
	<b>Total</b>	<b>8</b>	<b>65</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>57</b>	<b>65</b>	<b>1502.74</b>	<b>150.27</b>	<b>1001.00</b>	

**Yearly Programme of Water Supply for Tanintharyi Division Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted						Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream	total				
1	2011-2012	10	36	2	2	25	4	3	36	2369.20	236.92	98.00	
2	2012-2013	9	34	1		28	2	3	34	1966.20	196.62	87.50	
3	2013-2014	8	33	1		28	1	3	33	1651.00	165.10	83.50	
4	2014-2015	5	38	1		33	2	2	38	570.80	57.08	80.00	
5	2015-2016	5	41	1		34	2	4	41	627.90	62.79	110.50	
	<b>Total</b>	<b>10</b>	<b>182</b>	<b>6</b>	<b>2</b>	<b>148</b>	<b>11</b>	<b>15</b>	<b>182</b>	<b>7185.10</b>	<b>718.51</b>	<b>459.50</b>	

Annex (5-d)

**Yearly Programme of Water Supply for Bago Division Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark	
				S.T	D.T	Dug Well	Pond	Stream					total
1	2011-2012	7	27		3	2	22		27	2394.48	239.45	97.50	
2	2012-2013	5	27		3	2	22		27	918.30	91.83	97.50	
3	2013-2014	4	26		3	2	21		26	731.70	73.17	93.50	
4	2014-2015	4	27		3	3	21		27	804.90	80.49	94.50	
5	2015-2016	3	22		2	3	17		22	784.10	78.41	76.00	
	<b>Total</b>	<b>7</b>	<b>129</b>	<b>0</b>	<b>14</b>	<b>12</b>	<b>103</b>	<b>0</b>	<b>129</b>	<b>5633.48</b>	<b>563.35</b>	<b>459.00</b>	

**Yearly Programme of Water Supply for Bago (West) Division Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark	
				S.T	D.T	Dug Well	Pond	Stream					total
1	2011-2012	14	67	30	31	3	3		67	3536.39	353.64	107.50	
2	2012-2013	12	59	23	32	2	2		59	3732.00	373.20	101.50	
3	2013-2014	12	62	24	34	2	2		62	4105.20	410.52	107.00	
4	2014-2015	12	65	24	37	2	2		65	4515.70	451.57	222.50	
5	2015-2016	11	69	26	40	2	1		69	5790.40	579.04	119.00	
	<b>Total</b>	<b>14</b>	<b>322</b>	<b>127</b>	<b>174</b>	<b>11</b>	<b>10</b>	<b>0</b>	<b>322</b>	<b>21679.69</b>	<b>2167.97</b>	<b>657.50</b>	

Annex (5-e)

**Yearly Programme of Water Supply for Mon State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	9	22	1	6	5	10		22	3688.85	60.50	
2	2012-2013	6	23	1	6	5	10	1	23	1894.70	77.50	
3	2013-2014	5	24	1	7	5	10	1	24	1856.60	80.00	
4	2014-2015	2	25	2	6	5	11	1	25	849.30	91.00	
5	2015-2016	1	24	2	6	6	10		24	737.50	62.00	
	<b>Total</b>	<b>9</b>	<b>118</b>	<b>7</b>	<b>31</b>	<b>26</b>	<b>51</b>	<b>3</b>	<b>118</b>	<b>9026.95</b>	<b>371.00</b>	

**Yearly Programme of Water Supply for Rakhine State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	14	31	4		4	20	3	31	3075.93	137.00	
2	2012-2013	10	30	4		3	20	3	30	3601.40	136.00	
3	2013-2014	5	30	4		3	20	3	30	1058.30	136.00	
4	2014-2015	2	30	5		2	21	2	30	530.70	145.00	
5	2015-2016	2	31	4		4	22	1	31	583.80	111.00	
	<b>Total</b>	<b>14</b>	<b>152</b>	<b>21</b>	<b>0</b>	<b>16</b>	<b>103</b>	<b>12</b>	<b>152</b>	<b>8850.13</b>	<b>665.00</b>	

**Yearly Programme of Water Supply for Yangon Division Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted						Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream	total				
1	2011-2012	11	100	54	16	1	29		100	2500.41	250.04	184.00	
2	2012-2013	10	99	54	14	1	30		99	2230.00	223.00	183.00	
3	2013-2014	9	101	55	14	1	31		101	2102.10	210.21	187.50	
4	2014-2015	7	105	57	14	1	33		105	2130.50	213.05	453.00	
5	2015-2016	7	106	58	13	1	34		106	2343.60	234.36	198.50	
	<b>Total</b>	<b>11</b>	<b>511</b>	<b>278</b>	<b>71</b>	<b>5</b>	<b>157</b>	<b>0</b>	<b>511</b>	<b>11306.61</b>	<b>1130.66</b>	<b>1206.00</b>	

**Yearly Programme of Water Supply for Shan (Sourth) State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted						Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream	total				
1	2011-2012	19	44	7	3	11	12	11	44	2897.62	289.76	257.00	
2	2012-2013	19	45	3	1	8	15	18	45	3187.30	318.73	378.00	
3	2013-2014	18	41	3	1	8	11	18	41	3300.00	330.00	362.00	
4	2014-2015	17	37	2	1	7	10	17	37	2088.30	208.83	348.50	
5	2015-2016	14	38	2	2	6	10	18	38	1962.70	196.27	358.00	
	<b>Total</b>	<b>19</b>	<b>205</b>	<b>17</b>	<b>8</b>	<b>40</b>	<b>58</b>	<b>82</b>	<b>205</b>	<b>13435.92</b>	<b>1343.59</b>	<b>1703.50</b>	

Annex (5-g)

**Yearly Programme of Water Supply for Shan (North) State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Allotted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	14	40	2	9	5	5	19	40	388.18	371.50	
2	2012-2013	13	36	1	8	5	4	18	36	357.38	347.50	
3	2013-2014	12	35		8	5	4	18	35	380.51	347.00	
4	2014-2015	10	39		6	6	4	23	39	265.79	428.00	
5	2015-2016	10	41		7	6	3	25	41	292.37	460.50	
	<b>Total</b>	<b>14</b>	<b>191</b>	<b>3</b>	<b>38</b>	<b>27</b>	<b>20</b>	<b>103</b>	<b>191</b>	<b>16842.29</b>	<b>1954.50</b>	

**Yearly Programme of Water Supply for Shan (East) State Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Allotted For Water Supply	Estimated Expenditures	Remark
				S.T	D.T	Dug Well	Pond	Stream				
1	2011-2012	9	18			2	2	14	18	1696.00	248.00	
2	2012-2013	9	18			1	2	15	18	1865.60	264.00	
3	2013-2014	8	14				1	13	14	1047.80	225.00	
4	2014-2015	5	12				1	11	12	420.50	191.00	
5	2015-2016	3	11				1	10	11	381.70	174.00	
	<b>Total</b>	<b>9</b>	<b>73</b>	<b>0</b>	<b>0</b>	<b>3</b>	<b>7</b>	<b>63</b>	<b>73</b>	<b>5411.60</b>	<b>1102.00</b>	

Annex (5-b)

**Yearly Programme of Water Supply for Ayeyarwaddy Division Rural Areas**

Sr.	Fiscal Year	Township	Village	System to be Adopted					Income (Kyats in Million)	15% Alloted For Water Supply	Estimated Expenditures	Remark	
				S.T	D.T	Dug Well	Pond	Stream					total
1	2011-2012	33	107	29	24	2	52		107	5550.00	555.00	284.50	
2	2012-2013	20	105	29	23	1	52		105	2950.00	295.00	281.00	
3	2013-2014	13	108	34	19	1	54		108	1786.30	178.63	281.50	
4	2014-2015	8	105	37	17	2	49		105	580.70	58.07	425.50	
5	2015-2016	5	107	39	17	2	49		107	353.70	35.37	260.00	
	<b>Total</b>	<b>33</b>	<b>532</b>	<b>168</b>	<b>100</b>	<b>8</b>	<b>256</b>	<b>0</b>	<b>532</b>	<b>11220.70</b>	<b>1122.07</b>	<b>1532.50</b>	



# **Appendix 7**

## **References**

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## APPENDIX 7 REFERENCES

### (1) Evaluation of Aquifer in Mandalay Region

Serial No.	Township	Village Name (Population)	Estimated SWL by existing well (m)	Aquifer Condition				Rank of hydrogeological condition	Depth of the well to be drilled (m)	Formation to be drilled through (m)				Geology	Remarks (Estimation reliability, water quality, etc. -)	Screen (3.0 m/unit)	Bottom Plug (5.5 m/unit)	Casing (5.5 m/unit)			Expected W.L. BGS (m)	Expected SWL by existing well (m)			
				Existing Date (E, VES conducted) (V)		Lithology				Resistivity (ohm)		Unconsolidated (m)	Soft rock (m)					Middle hard rock (m)	Clayey/Silty	Sandy			94 inch	φ10 inch	Total
				Depth (m)	Estimation basis	Depth (m)	Resistivity (ohm)			Depth (m)	Depth (m)														
MA-01	Kyauk Padung	Sebauk	100	E	100-120	Fine - medium sand	60	A	120	60	60	0	0	0	0	1	1	20	0	20	110	135.08			
MA-02	Kyauk Padung	Alalayaw	130	V	130-210	Fine sand w/ silt	20	C	200	100	100	0	0	0	0	3	1	34	0	34	140	134.34			
MA-03	Kyauk Padung	Sayinsu	170	V	130-200	Fine sand w/ silt	19	C	200	100	100	0	0	0	0	3	1	34	0	34	180	120.35			
MA-04	Kyauk Padung	Thagama	115	V	115-140	Medium sand	74	A	150	20	130	0	0	0	0	1	1	26	0	26	125	176.03			
MA-05	Kyauk Padung	Myoukgone	195	V	200-290	Sandstone	(120)	C	270	20	60	60	130	130	0	3	1	47	0	47	205	152.93			
MA-06	Kyauk Padung	Phonthar Ywarthit	185	E	190-300	Medium - coarse sand	200	A	260	10	250	0	0	0	0	1	1	46	0	46	195	151.24			
MA-07	Kyauk Padung	Tangkaan (Ywarthit)	260	V	260-490	Sandstone	(120)	C	330	10	20	90	210	0	0	1	1	21	37	58	270	139.33			
MA-08	Kyauk Padung	Ywardenslay	150	V	150-210	Fine sand	46	B	210	70	140	0	0	0	0	1	1	37	0	37	160	64.26			
MA-09	Kyauk Padung	Kyansou	130	V	130-230	Fine sand	36	B	200	120	80	0	0	0	0	1	1	35	0	35	140	180			
MA-10	Kyauk Padung	Kyauksaythan	180	V	180-260	Fine sand w/ silt	9	D	230	210	20	0	0	0	0	4	1	39	0	39	190	189.59			
MA-11	Kyauk Padung	Leyar (N)	170	V	170-240	Fine sand w/ silt	23	C	240	90	150	0	0	0	0	3	1	41	0	41	180	205.34			
MA-12	Kyauk Padung	Ihritsan	150	V	150-320	Fine sand	38	B	260	130	130	0	0	0	0	2	1	45	0	45	160	114.77			
MA-13	Kyauk Padung	Leyar (S)	130	V	130-300	Silt w/ fine sand	20	C	200	100	100	0	0	0	0	3	1	34	0	34	140	209.87			
MA-14	Nyaung Oo	Kannigi	135	V	135-270	Coarse sand	184	A	210	25	185	0	0	0	0	1	1	37	0	37	145	163.18			
MA-15	Nyaung Oo	Kantlan	155	V	155-255	Medium sand	28	C	250	50	200	0	0	0	0	2	1	43	0	43	165	48.41			
MA-16	Nyaung Oo	Yinsan	100	V	100-180	Fine - medium - coarse sand	113	A	170	30	140	0	0	0	0	1	1	30	0	30	110	189.59			
MA-17	Nyaung Oo	Myeeneagi	175	V	175-190	Fine - medium sand	22	C	250	70	180	0	0	0	0	3	1	43	0	43	185	82.29			
MA-18	Nyaung Oo	Magyizauk	80	V	80-150	Fine sand w/ silt	22	C	150	40	110	0	0	0	0	3	1	25	0	25	90	74.96			
MA-19	Nyaung Oo	Taungkwim	135	V	135-180	Fine sand	44	B	180	10	170	0	0	0	0	1	1	31	0	31	145	52.81			
MA-20	Nyaung Oo	Kudaw	220	V	220-290<	Fine sand	39	B	290	10	280	0	0	0	0	1	1	51	0	51	230	120			
MA-21	Nyaung Oo	Ngalirpaok	330	V	330-460	Medium - fine sand	70	D	360	280	100	0	0	0	0	1	1	27	37	64	340	120			
MA-22	Pyaw Bwe	Aukshubin	110	E	110-210	Medium - coarse sand	125	B	180	10	170	0	0	0	0	1	1	31	0	31	120	110			
MA-23	Pyaw Bwe	Phaunglaw	110	E	110-210	Medium - coarse sand	(120)	B	180	10	170	(0)	(0)	(0)	0	1	1	31	0	31	120	110			
MA-24	Nwa-Ho Gyi	Phynee	100	V	100-220	Sandstone	20	C	220	100	120	0	0	0	0	3	1	37	0	37	110	240			
MA-25	Nwa-Ho Gyi	Khatlan	230	E	230-300	Medium - fine sand	45	B	300	240	60	0	0	0	0	1	1	53	0	53	240	170			
MA-26	Nwa-Ho Gyi	Tesse	210	V	210-280	Fine sand w/ silt	6.3	D	280	280	0	0	0	0	0	4	1	48	0	48	220	140			
MA-27	Taung The	Kyaukpau	160	V	160-230	Fine sand	25	C	230	150	80	0	0	0	0	2	1	40	0	40	170	160			
MA-28	Taung The	Taungyay (Zeeptihan towers)	130	V	130-190	Medium sand	81	A	190	60	130	0	0	0	0	1	1	33	0	33	140	120			
MA-29	Taung The	Pudaksantone	150	V	150-220	Fine sand	6	D	220	80	140	0	0	0	0	4	1	37	0	37	160	130			
MA-30	Yame Thin	Kain	120	V	120-150	Medium - coarse sand	(100)	A	150	60	50	40	0	0	0	1	1	26	0	26	130	120			
MA-31	Yame Thin	Sargyin (S)	110	V	110-150	Medium - coarse sand	(100)	A	150	60	50	40	0	0	0	1	1	26	0	26	120	120			

(2) Evaluation of Aquifer in Magway Region

Magway Region (1)

Serial No.	Township	Village Name (Population)	Estimated GWL BGS (m)	Aquifer Condition			Rank of hydrogeology (local condition)	Depth of the well to be drilled (m)	Formation to be drilled through (m)			Geology	Remarks (Estimation reliability, water quality, etc...)	Screen (3.0 m/unit)	Bottom Plug (3.0 m/unit)	Casing (3.5 m/unit)		Expected W.L. BGS (m)	Expected SWL by existing well (m)		
				Depth (m)	Existing Data (E), VES conducted (V)	Lithology			Resistivity (Ω-m)	Unconsolidated	Soft rock					Middle hard rock	φ4 inch			φ6 inch	Total
MG-01	Chauk	Sharpin	280	V	280-400	Mudstone w/ S.S	(50)	C	350	10	0	100	240	Pegu overlain by ft	3	1	24	37	61	290	152.00
MG-02	Chauk	Suetat	290	V	290-470	Medium sand	99	D	360	10	350	0	0	0	0	1	27	37	64	300	274.00
MG-03	Chauk	Thapaypin	260	V	250-340	Medium sand	120	A	320	0	320	0	0	0	1	1	20	37	57	260	241.00
MG-04	Chauk	Gwaypin (Ywama)	245	V	245-280	Medium - coarse sand	125	A	280	30	250	0	0	0	1	1	49	0	49	295	268.00
MG-05	Chauk	Tonywar	150	V	150-190	Fine sand	45	B	190	20	170	0	0	0	1	1	33	0	33	160	123.00
MG-06	Chauk	Uyin (E)	120	V	120-260	Medium sand	118	A	260	10	250	0	0	0	1	1	46	0	46	130	182.00
MG-07	Chauk	Nayweltaar (W)	220	V	220-250	Fine sand w/ silt	20	C	250	150	100	0	0	0	1	1	43	0	43	230	182.00
MG-08	Chauk	Myayrelain	265	V	265-340	Silt with fine sand	8.6	D	340	160	180	0	0	0	1	1	22	37	59	275	204.00
MG-09	Chauk	Myayson (E)	200	V	200-400	Fine - medium sand	75	A	270	20	250	0	0	0	1	1	44	0	44	210	167.00
MG-10	Chauk	Thangon	175	V	175-350	Fine - medium sand	74	A	250	120	120	10	0	0	1	1	44	0	44	185	137.00
MG-11	Chauk	Hinaygyphone	150	V	150-270	Fine - medium sand	84	A	220	210	10	0	0	0	1	1	38	0	38	160	157.00
MG-12	Chauk	Bombwe	100	V	100-300	Fine sand	42	B	170	10	160	0	0	0	1	1	29	0	29	110	114.00
MG-13	Chauk	Molar	90	V	90-210	Silt w/ fine sand	19	C	210	210	0	0	0	0	1	1	35	0	35	100	118.00
MG-14	Chauk	Sandaung (W)	190	V	190-300	Silt w/ fine sand	8.5	D	300	280	20	0	0	0	1	1	51	0	51	200	145.00
MG-15	Chauk	Thithia	220	V	220-460	Fine - medium sand w/ silt	70-120	A	290	5	285	0	0	0	1	1	50	0	50	230	203.00
MG-16	Chauk	Zeechopin	260	V	260-300	Fine sand	36	B	300	5	295	0	0	0	1	1	53	0	53	270	308.00
MG-17	Chauk	Hatazu Ywama	250	V	250-310	Fine - medium sand	87	A	310	10	300	0	0	0	1	1	18	37	55	260	293.00
MG-18	Chauk	YayLar	240	E	240-350	Fine sand	30	B	350	0	350	0	0	0	1	1	25	37	62	250	272.00
MG-19	Chauk	Taungthar (N)	80	V	80-250	Shale	33	C	150	20	0	40	90	Pegu formation is underlying	3	1	24	0	24	90	106.00
MG-20	Chauk	Thayetgone	115	V	115<	Fine sand	48	B	190	30	160	0	0	0	1	1	33	0	33	125	129.00
MG-21	Chauk	Sanyoe	240	V	240-380	Coarse sand - gravel	300	A	310	30	280	0	0	0	1	1	18	37	55	250	247.00
MG-22	Chauk	Kyauktai	190	V	190-420	Medium sand	130	A	260	10	250	0	0	0	1	1	46	0	46	200	134.00
MG-23	Chauk	Thiriphyayoe	185	V	185-260	Fine sand	48	B	260	10	250	0	0	0	1	1	46	0	46	195	140.00
MG-24	Chauk	Konegyi	135	V	135-330	Medium sand	91	A	210	20	190	0	0	0	1	1	36	0	36	145	127.00
MG-25	Chauk	Kaphyu	130	V	130-200	Fine - medium sand	61	A	200	50	150	0	0	0	1	1	35	0	35	140	154.00
MG-26	Chauk	Wathesan	330	V	330-400	Fine sand	30	D	400	0	400	0	0	0	1	1	34	37	71	340	228.00
MG-27	Chauk	Thanbo	380	V	380-470	Medium sand	88	D	400	10	390	0	0	0	1	1	34	37	71	390	197.00

Magway Region (2)

Serial No.	Township	Village Name (Population)	Estimated GWL BGS (m)	Aquifer Condition			Rank of hydrogeological condition	Depth of the well to be drilled (m)	Formation to be drilled through (m)				Geology	Remarks (Estimation reliability, water quality, etc. -)	Screen Plug (3.0 m/unit)	Casing (5.5 m/unit)			Expected W.L. BGS (m)	Expected SWL by existing well (m)	
				Depth (m)	Existing Date (E), VES conducted (V)	Lithology			Reactivity (r-cm)	Unconsolidated	Soft rock	Middle hard rock				φ4 inch	φ4 inch	Total			
								Clayey/Silty	Sandy												
MG-28	Chauk	Thayetin	250	V	250-350	Fine sand	38	300	0	290	10	0	0	0	1	53	0	53	260	252.00	
MG-29	Chauk	Sanyayin	230	E	230-500	Fine sand	35	300	0	300	0	0	0	0	1	53	0	53	240	225.00	
MG-30	Chauk	Kyewat Ywama	140	V	140-170	Fine sand	52	170	30	140	0	0	0	0	1	29	0	29	150	177.00	
MG-31	Yanangyaung	Ziphayugone	200	V	200-230	Fine sand	68	230	40	190	0	0	0	0	1	40	0	40	210		
MG-32	Yanangyaung	Hanaungtha	200	V	200-230	Fine-medium sand	68	230	40	190	0	0	0	0	1	40	0	40	210		
MG-33	Nat Mauk	Oakpho	190	V	190-230	Silt w/ fine sand	15	230	190	40	0	0	0	0	4	39	0	39	200		
MG-34	Nat Mauk	Gwekan (S)	105	V	105-135	Silt w/ fine sand	23	140	120	20	0	0	0	0	2	23	0	23	115		
MG-35	Nat Mauk	Kyaukpon	95	V	n.a.	Silt w/ fine sand	8	180	160	20	0	0	0	0	4	30	0	30	105		
MG-36	Nat Mauk	Ywathit	200	V	200-300	Silt w/ fine sand	30	300	200	100	0	0	0	0	2	1	53	0	53	210	
MG-37	Nat Mauk	Theatin (S)	200	V	n.a.	Silt w/ fine sand	22	270	70	200	0	0	0	0	2	1	47	0	47	210	
MG-38	Myo Thit	Chauk Kyar	210	V	210-260	Silt w/ fine sand	9.6	260	250	10	0	0	0	0	4	1	44	0	44	220	
MG-39	Myo Thit	Dalaitgon	210	V	210-260	Fine sand w/ silt	15	260	240	20	0	0	0	0	4	1	44	0	44	220	
MG-40	Myo Thit	Wargyiang	150	V	150-200	Fine sand w/ silt	17	200	180	20	0	0	0	0	4	1	33	0	33	160	
MG-41	Myo Thit	Yonedaw	150	V	150-260	Medium - coarse sand	133	260	0	260	0	0	0	0	1	46	0	46	160		
MG-42	Myo Thit	Magyigon	150	V	150-200	Sandstone	(100<)	200	10	10	80	100	Pegu		3	1	34	0	34	160	
MG-43	Myo Thit	Waironepho	150	V	150-260	Fine sand	39	210	30	180	0	0	0	0	2	1	36	0	36	160	
MG-44	Myo Thit	Natywar	150	V	150-300	Fine - medium sand	65	210	10	200	0	0	0	0	1	1	37	0	37	160	
MG-45	Myo Thit	Yaypayee	70	V	70-120	Silt w/ fine sand	20	130	120	10	0	0	0	0	4	1	21	0	21	80	
MG-46	Myo Thit	Bork	250	V	250-350	Sandstone	(60)	350	100	50	60	140	Pegu		3	1	24	37	61	260	
MG-47	Myo Thit	Gwelaw	200	V	200-250	Fine sand	47	250	50	200	0	0	0	0	1	1	44	0	44	210	
MG-48	Myo Thit	Layatain (N)	200	V	200-340	Silt w/ fine sand	27	270	120	150	0	0	0	0	3	1	46	0	46	210	
MG-49	Salin	Kalgyi	15	V	15-110	Silt w/ fine sand	12	110	80	30	0	0	0	0	4	1	17	0	17	25	
MG-50	Salin	Chuangyiet (N)	80	V	80-160	Medium sand	78	120	20	100	0	0	0	0	1	1	20	0	20	90	
MG-51	Magway	Kyilsorway	150	V	150-220	Sandstone	118	220	0	20	70	130	Pegu overlain by Ir		3	1	38	0	38	160	
MG-52	Magway	Nyaungbin	150	V	150-220	Sandstone interstrating thin siltstone bed	80	220	0	10	60	150	Pegu overlain by Ir		3	1	38	0	38	160	

### (3) Evaluation of Aquifer in Sagaing Region

Serial No.	Township	Village Name (Population)	Estimated GWL BGS (m)	Aquifer Condition			Rank of hydrogeological condition	Depth of bore well to be drilled (m)	Formation to be drilled through (m)			Geology	Remarks (Estimation reliability, water quality, etc...)	Screen (3.0 m/Unit)	Bottom Plug (5.5 m/Unit)	Casing (5.5 m/Unit)			Expected W.L. BGS (m)	Expected SWL by existing well (m)	
				Depth (m)	Existing Date (E), VES conducted (V)	Estimation basis			Unconsolidated	Clayey/Silty	Soft rock (m)					Middle hard rock (m)	q4 inch	q10 inch			Total
SA-01	Bu Ta Lin	Yehwat	210	V	210-250	Silt with finesand	12	A	250	200	50	0	0	0	0	1	43	0	43	220	
SA-02	Bu Ta Lin	Chindwin	110	E	110-130	Fine - medium sand	65	A	140	20	120	0	0	0	1	24	0	24	120		
SA-03	Wei Let	Myindaw	120	V	300-390	Fine sand	46	B	350	300	50	0	0	0	1	25	37	62	130		
SA-04	Wei Let	Tamakan	120	V	120-195	Sandstone	282	C	195	30	30	0	135		3	33	0	33	130		
SA-05	Wei Let	Sahmon	110	V	110-180	Sandstone	(100)	D	180	80	20	20	60		3	30	0	30	120		
SA-06	Wei Let	Weiyeva	110	V	110-200	Sandstone	(100)	D	180	60	20	30	70		3	30	0	30	120		
SA-07	Wei Let	Yonehtar	280	V	280-330	Sandstone	(100)	D	330	80	50	60	140		3	20	37	57	290		
SA-08	Ayar Daw	Hainpinkar	120	V	120-200	Fine sand w/ silt	12	C	200	120	80	0	0		3	34	0	34	130		
SA-09	Ayar Daw	Thanbayargyin	130	V	130-150	Fine sand	4.3	D	150	130	20	0	0		4	24	0	24	140		
SA-10	Pelle	Kandunk	150	V	150-300	Sandstone	(130-)	D	250	10	10	50	180		3	43	0	43	160		
SA-11	Pelle	Ayechanthar	260	V	260-400	Sandstone	(80-)	D	330	60	60	80	130		3	21	37	58	270		
SA-12	Pelle	Mintabin	260	E	260-300<	Fine - medium sand	51	A	310	120	190	0	0		1	18	37	55	270		
SA-13	Pelle	Padaukgon	***	***	***	***	***	E	***	***	***	***	***		0	0	0	0	Eliminated		
SA-14	Yin Mar Bin	Phowmaung	130	V	130-180	Sandstone	152	C	180	0	10	70	100		3	30	0	30	140		
SA-15	Yin Mar Bin	Tebingan	45	V	45-100	Sandstone	24	C	110	10	10	40	50		3	18	0	18	55		
SA-16	Yin Mar Bin	Indaw	140	V	130<	Fine-medium sand	60	A	200	30	170	0	0		1	35	0	35	150		
SA-17	Yin Mar Bin	Myayek	140	V	140-175	Fine sand	31	B	175	40	135	0	0		2	30	0	30	150		
SA-18	Yin Mar Bin	Kapeing	140	V	140-210	Finesand w/ silt	19	C	210	160	50	0	0		3	36	0	36	150		
SA-19	Yin Mar Bin	Sinawel (N)	220	V	220-260	Coarse sand	135	A	260	200	60	0	0		1	46	0	46	230		
SA-20	Sa Lin Gyi	Zedaw	200	E	200-250	Silty sand w/ fine sand	14	D	250	50	200	0	0		4	42	0	42	210		
SA-21	Sa Lin Gyi	Pyawbwe	200	E	170-	Sandstone	(80)	D	300	0	0	10	290		3	52	0	52	210		
SA-22	Sa Lin Gyi	Naungpinar	150<	E	110-350	Shale dominated ss/sh alternation	15-20	D	250	10	0	50	190		3	43	0	43	160		

**Sagaing Region (2)**

Serial No.	Township	Village Name (Population)	Estimated GWL BGS (m)	Aqualifer Condition			Rank of hydrogeological condition	Depth of the well to be drilled (m)	Formation to be drilled through (m)				Geology	Remarks (Estimation reliability, water quality, etc. . .)	Screen (3.0 m/unit)	Bottom Plug (5.5 m/unit)	Casing (5.5 m/unit)			Expected W.L. BGS (m)	Expected SWL by existing well (m)		
				Existing Data (E), VES conducted (V)	Lithology				Resistivity (Ω-m)	Unconsolidated (m)	Soft rock (m)	Middle hard rock (m)					Clayey/Silty	Sandy	ø4 inch			ø10 inch	Total
					Depth (m)	Depth (m)																	
SA-23	Sa Lin Gyi	Yaymain (N)		***	***	***	E	***	***	***	***	Pegu	Once 100 m well was drilled but no water. Shallow level was also seen. It is recommended to develop the shallow well near river.	0	0	0	0	0	10	Eliminated			
SA-24	Ka Ni	Mirma	150	V	150-210	Sandstone dominated sandstone/shale	95	210	0	0	60	150	Pegu	Existing well depth is 95 m, water quantity is good but quantity is poor.	3	1	36	0	36	160			
SA-25	Ka Ni	Nyaungphile	140	V	140-280	Fine sand	49	210	10	200	0	0	IronfainbyQ	Alternate layer of sandstone and mudstone. Existing well (1) Water level 36 m, well depth 152 m. Silty, (2) Water level 24 m, well depth 96 m, 1-200 GPH, Silty.	1	1	37	0	37	150			
SA-26	Mon Ywa	Neilkanwa	120	E	120-160	Sandstone rich	(100)	160	0	0	60	100	Pegu	Alternate layer of sandstone and mudstone. Water level of existing well is 35 m, well depth 216 m, drinkable, 1,500 GPH.	3	1	27	0	27	130			
SA-27	Mon Ywa	Bawga	110	V	110-160	Sandstone rich	42	160	40	120	0	0	IF	Alternate layer of sandstone and mudstone. Water level of existing well is 35 m, well depth 216 m, drinkable, 1,500 GPH.	1	1	28	0	28	120			
Total			***	***	***	***	***	25,390	7,845	13,570	1,190	2,785	***	***	164	76	2,894	518	3,212	14,220	***		
											21,415		3,975										

#### (4) Water Sample Sources of the Surveyed Villages

##### Mandalay Region

Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>	Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>	
Kyank Pa Daun	MA-01	Sebauk	Prim.	PW	Nyaung U	MA-17	Myaenegyi	Prim.	PW	
			Sec.	VP				Sec.	TW	
	MA-02	Aleywar	Prim.	PW		MA-18	Magyizauk	Prim.	TW	
			Sec.	VP				Sec.	VP	
	MA-03	Seyinsu	Prim.	PW		MA-19	TaiMAkwin	Prim.	PW	
			Sec.	VP				Sec.	TW	
	MA-04	Tagama	Prim.	PW		MA-20	Kudaw	Prim.	PW	
			Sec.	VP				Sec.	TW	
	MA-05	Myoukgone	Prim.	PW		MA-21	Ngalinpoak	Prim.	OW	
			Sec.	VP				Sec.	TW	
	MA-06	Phonthar Ywarhit	Prim.	VP		Pyaw Bwe	MA-22	Aukshitpin	Prim.	TW
			Sec.	VP					Sec.	Stream
	MA-07	Tanaakan (Ywarhit)	Prim.	VP		MA-23	Phaungtaw	Prim.	OW	
Sec.			TW	Sec.	VP					
MA-08	Ywardenshay	Prim.	VP	Nwa Hto Gyi	MA-24	Pyinse	Prim.	TW		
		Sec.	TW				Sec.	VP		
MA-09	Kyans ou	Prim.	TW		MA-25	Khatlan	Prim.	OW		
		Sec.	VP	Sec.			OW			
MA-10	Kyauksitkan	Prim.	Stream	MA-26	Tetse	Prim.	OW			
		Sec.	VP			Sec.	VP			
MA-11	Leyar (N)	Prim.	TW	Taung Tha	MA-27	Kyaukpau	Prim.	VP		
		Sec.	VP				Sec.	TW		
MA-12	Inbinsan	Prim.	VP		MA-28	Twinpyar (Zeepinkan)	Prim.	TW		
		Sec.	VP	Sec.			VP			
MA-13	Leyar (S)	Prim.	PW	MA-29	Pudauksarkone	Prim.	TW			
		Sec.	VP			Sec.	OW			
Nyaung U	MA-14	Kannigyi	Prim.	PW	Yame Thin	MA-30	Katin	Prim.	VP	
			Sec.	VP				Sec.	VP	
	MA-15	Kantein	Prim.	PW	MA-31	Sargyin (S)	Prim.	OW		
			Sec.	VP			Sec.	OW		
	MA-16	Yansim	Prim.	PW						
Sec.			VP							

1) Prim.: Primary water source      Sec.: Secondary water source

2) VP: Village Pond (man-made or natural pond usually rain-fed)

OW: Open Well (open at the top and can get water by pulling up)

Irrigation: Irrigation Canal (from Dam to water source by the canal)

Dam: Man-made structure to collect water

TW: Tubewell (depth more than 100 feet & need mechanical/electrical power to extract water)

SW: Shallow Well (depth less than 100 feet)

Stream: Natural Water Flow

PW: Piped water (water supply by pipes from water source)

3) White on Black indicates sources without water.



Magway Region

Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>
Chauk	MG-01	Sharpin	Prim.	OW
			Sec.	VP
	MG-02	Suetut	Prim.	VP
			Sec.	TW
	MG-03	Thapaypin	Prim.	VP
			Sec.	TW
	MG-04	Gwaypin (Ywama)	Prim.	VP
			Sec.	TW
	MG-05	Tonywar	Prim.	VP
			Sec.	VP
	MG-06	Uyin (E)	Prim.	TW
			Sec.	VP
	MG-07	Nayweltaw (W)	Prim.	VP
			Sec.	TW
	MG-08	Myaynelain	Prim.	VP
			Sec.	VP
	MG-09	Myayson (E)	Prim.	VP
			Sec.	TW
MG-10	Thangon	Prim.	VP	
		Sec.	TW	
MG-11	Hmatgyiphone	Prim.	VP	
		Sec.	VP	
MG-12	Bombwe	Prim.	TW	
		Sec.	VP	
MG-13	Molar	Prim.	PW	
		Sec.	VP	
MG-14	Sardaung (W)	Prim.	VP	
		Sec.	OW	
MG-15	Thithla	Prim.	VP	
		Sec.	VP	
MG-16	Zeechopin	Prim.	VP	
		Sec.	VP	
MG-17	Htansu Ywama	Prim.	VP	
		Sec.	TW	
MG-18	Yaylar	Prim.	VP	
		Sec.	VP	

Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>
Chauk	MG-19	Taungthar (N)	Prim.	VP
			Sec.	TW
	MG-20	Thayetgone	Prim.	VP
			Sec.	OW
	MG-21	Sanyoe	Prim.	VP
			Sec.	TW
	MG-22	Kyauktai	Prim.	VP
			Sec.	TW
	MG-23	Twinphyuyoe	Prim.	TW
			Sec.	VP
	MG-24	Konegyi	Prim.	VP
			Sec.	OW
	MG-25	Kaphyu	Prim.	VP
			Sec.	OW
	MG-26	Wathesan	Prim.	VP
Sec.			TW	
MG-27	Thanbo	Prim.	VP	
		Sec.	VP	
MG-28	Thayetpin	Prim.	VP	
		Sec.	TW	
MG-29	Sanyayin	Prim.	VP	
		Sec.	VP	
MG-30	Kywetut Ywama	Prim.	VP	
		Sec.	VP	
Yanan-gyaimg	MG-31	Ziphyugone	Prim.	SW
			Sec.	Stream
MG-32	Htanaungla	Prim.	VP	
		Sec.	Weir	
Nat Mauk	MG-33	Oakpho	Prim.	VP
			Sec.	TW
	MG-34	Gwekan (S)	Prim.	SW
			Sec.	VP
	MG-35	Kyaukp on	Prim.	VP
Sec.			TW	

- 1) Prim.: Primary water source      Sec.: Secondary water source  
2) VP: Village Pond (man-made or natural pond usually rain-fed)  
OW: Open Well (open at the top and can get water by pulling up)  
Irrigation: Irrigation Canal (from Dam to water source by the canal)  
Dam: Man-made structure to collect water  
TW: Tube well (depth more than 100 feet & need mechanical/electrical power to extract water)  
SW: Shallow Well (depth less than 100 feet)  
Stream: Natural Water Flow  
PW: Piped water (water supply by pipes from water source)  
3) White on Black indicates sources without water.

Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>
Nat Mauk	MG-36	Ywathit	Prim.	SW
			Sec.	VP
	MG-37	Thetwin (S)	Prim.	VP
			Sec.	VP
Myothit	MG-38	Chauk Kyar	Prim.	OW
			Sec.	SW
	MG-39	Dahatgon	Prim.	SW
			Sec.	TW
	MG-40	Wargyiaing	Prim.	OW
			Sec.	TW
Myothit	MG-41	Yonedaw	Prim.	TW
			Sec.	OW
	MG-42	Magyigon	Prim.	OW
			Sec.	TW
	MG-43	Ngarlonepho	Prim.	TW
			Sec.	VP
	MG-44	Natywar	Prim.	TW
			Sec.	VP
	MG-45	Yaypyae	Prim.	OW
			Sec.	VP
	MG-46	Bork	Prim.	OW
			Sec.	irrigation
	MG-47	Gwetaw	Prim.	TW
			Sec.	VP
MG-48	Laytais in (N)	Prim.	TW	
		Sec.	TW	
Sa Lin	MG-49	Kaigyi	Prim.	Stream
			Sec.	VP
	MG-50	Chaimgyetet (N)	Prim.	OW
			Sec.	VP
Magway	MG-51	Kyitsonpway	Prim.	TW
			Sec.	VP
	MG-52	Nyaimgbin	Prim.	TW
			Sec.	VP

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SW: Shallow Well (depth less than 100 feet)

Stream: Natural Water Flow

PW: Piped water (water supply by pipes from water source)

3) White on Black indicates sources without water.

### Sagaing Region

Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>
Bu Ta Lin	SA-01	Yehtwat	Prim.	VP
			Sec.	TW
	SA-02	Chindwin	Prim.	TW
			Sec.	VP
Wet Let	SA-03	Myindaw	Prim.	Irrigation
			Sec.	VP
	SA-04	Tamakan	Prim.	OW
			Sec.	VP
	SA-05	Sahmon	Prim.	Irrigation
			Sec.	TW
	SA-06	Wetleywa	Prim.	Irrigation
			Sec.	VP
SA-07	Yonethar	Prim.	OW	
		Sec.	TW	
Avar Daw	SA-08	Htainpinkar	Prim.	TW
			Sec.	VP
	SA-09	Thanbayargyi	Prim.	TW
			Sec.	VP
Pe Le	SA-10	Kandouk	Prim.	OW
			Sec.	Dam
	SA-11	Ayechanthar	Prim.	OW
			Sec.	Dam
	SA-12	Mintaipin	Prim.	TW
Sec.			OW	
SA-13	Padaukaon	Prim.	OW	
		Sec.	VP	
Yin Mar Pi	SA-14	Phowintaimg	Prim.	VP
			Sec.	Dam
	SA-15	Tebingan	Prim.	VP
			Sec.	TW
	SA-16	Indaw	Prim.	SW
			Sec.	VP
	SA-17	Myayeik	Prim.	Stream
			Sec.	OW

Township	Code	Village	Priority <sup>1)</sup>	Source <sup>2)</sup>
Yin Mar Pi	SA-18	Kapaing	Prim.	SW
			Sec.	OW
	SA-19	Sinzwel(N)	Prim.	SW
			Sec.	SW
Sa Lin Gyi	SA-20	Zedaw	Prim.	OW
			Sec.	OW
	SA-21	Pyawbwe	Prim.	OW
			Sec.	VP
	SA-22	Nyaimgpintar	Prim.	VP
			Sec.	SW
SA-23	Yaymain (N)	Prim.	VP	
		Sec.	Dam	
Ka Ni	SA-24	Nyaimgpindle	Prim.	TW
			Sec.	Stream
	SA-25	Minma	Prim.	TW
			Sec.	VP
Mon Ywa	SA-26	Neikbanwa	Prim.	VP
			Sec.	TW
	SA-27	Bawga	Prim.	TW
			Sec.	VP

- 1) Prim.: Primary water source      Sec.: Secondary water source  
2) VP: Village Pond (man-made or natural pond usually rain-fed)  
OW: Open Well (open at the top and can get water by pulling up)  
Irrigation: Irrigation Canal (from Dam to water source by the canal)  
Dam: Man-made structure to collect water  
TW: Tube well (depth more than 100 feet & need mechanical/electrical power to extract water)  
SW: Shallow Well (depth less than 100 feet)  
Stream: Natural Water Flow  
PW: Piped water (water supply by pipes from water source)  
3) White on Black indicates sources without water.

## (5) Water Quality Analysis Items and Methods

	Parameter	MCDC Lab.	JICA survey team	Analyses in Japan*
Proposed National Drinking Water Quality Standards, Myanmar (2006)	Fecal coliforms	—	—	—
	Total coliforms	—	—	—
	Color	Spectrophotometer	—	—
	Taste and odour	—	—	—
	Turbidity	Electrode	—	—
	Arsenic	—	—	ICP-MS**
	Cadmium	—	—	ICP-MS
	Chromium	—	—	ICP-MS
	Copper	—	—	ICP-MS
	Cyanide	—	—	—
	Fluoride	—	Electrode	Ion chromatography
	Lead	—	—	ICP-MS
	Mercury	—	—	—
	Nitrate	—	Electrode	Ion chromatography
	Selenium	—	—	ICP-MS
	Manganese	Spectrophotometer	—	ICP-MS
	Aluminum	—	—	ICP-MS
	Chloride	Titration	Electrode	Ion chromatography
	Hardness, total (as CaCO <sub>3</sub> )	Titration	—	—
	Iron	Spectrophotometer	Colorimetry	ICP-MS
	pH	Strips	Electrode	—
	Sodium	—	—	ICP-AES***
	Sulphate	Spectrophotometer	—	—
Zinc	—	—	ICP-MS	
Calcium	Titration	—	ICP-AES	
Magnesium	Titration	—	ICP-AES	
Electric conductivity	Electrode	Electrode	—	
Total dissolved solid	Electrode	—	—	
Reference Data	Alkalinity, total	Titration	—	—
	Boron	—	—	ICP-MS
	Nickel	—	—	ICP-MS
	Nitrite	—	—	Ion chromatography
	Phosphate	—	—	ICP-MS
	Potassium	—	—	ICP-AES

\* 45 water samples selected from among all water samples were conducted.

\*\* Inductively coupled plasma atomic emission spectrometry

\*\*\* Inductively coupled plasma mass spectrometer

(6) Result of Water Quality Analysis in Myanmar

Mandalay Region

Code	Priority (Source)	Color	Turbidity	pH	Alkalinity	EC	Cl <sup>-</sup>	F <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	Fe	Mn	Ca	Mg	Hardness
		TCU	NTU		mg L <sup>-1</sup>	mS m <sup>-1</sup>							mg L <sup>-1</sup>		
MA-01	Prim.(PW)	3.83	>50	8.13	180	40.80	15	0.56	3.40	<50	>0.2	1.90	40	12	140
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-02	Prim.(PW)	1.07	3.00	7.97	18	39.80	12	0.37	2.60	<50	0.01	0.05	33	14	140
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-03	Prim.(PW)	1.30	>50	8.09	120	24.80	10	0.29	1.74	<50	>0.2	1.40	22	6	80
	Sec. (VP)	>1000	>50	6.71	60	5.96	8	0.14	0.88	<50	>0.2	0.90	8	1	20
MA-04	Prim.(PW)	4.78	>50	6.71	160	39.50	15	0.19	2.40	<50	>0.2	1.40	32	15	140
	Sec. (VP)	185.00	>50	7.21	60	11.32	8	0.12	1.11	65	>0.2	0.70	16	1	40
MA-05	Prim.(PW)	9.55	>50	8.60	300	68.00	20	0.39	7.90	<50	>0.2	1.30	27	47	260
	Sec. (VP)	423.00	>50	7.44	160	34.10	12	0.22	4.70	100	>0.2	3.00	36	7	120
MA-06	Prim.(VP)	393.00	>50	6.67	40	62.59	6	0.09	3.50	100	>0.2	1.80	4	1	8
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-07	Prim.(VP)	283.00	>50	7.01	60	13.25	8	0.14	1.49	90	>0.2	0.70	11	7	36
	Sec. (TW)	2.52	>50	8.22	80	127.70	33	0.16	1.19	>200	>0.2	1.00	88	61	340
MA-08	Prim.(VP)	367.00	>50	7.37	100	19.95	6	0.20	0.88	90	>0.2	0.05	14	23	60
	Sec. (TW)	1.11	>50	8.28	160	142.20	30	0.31	2.10	>200	>0.2	1.20	58	51	340
MA-09	Prim.(TW)	1.27	>50	8.87	500	137.10	70	1.02	6.10	125	0.10	1.10	16	39	200
	Sec. (VP)	149.00	>50	6.78	60	11.30	8	0.17	1.32	65	>0.2	1.90	13	1	36
MA-10	Prim.(Stream)	27.70	>50	7.27	40	25.00	20	0.14	25.00	<50	>0.2	0.90	14	5	56
	Sec. (VP)	305.00	>50	7.94	220	81.20	25	0.39	2.60	125	>0.2	0.40	20	10	88
MA-11	Prim.(TW)	1.24	>50	7.69	400	120.20	75	0.34	5.30	90	0.10	1.00	40	39	260
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-12	Prim.(VP)	180.00	>50	6.94	60	11.28	12	0.14	2.30	65	>0.2	0.20	10	7	32
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-13	Prim.(PW)	4.75	>50	6.58	160	43.30	12	0.12	0.99	<50	>0.2	1.00	35	26	140
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-14	Prim.(PW)	131.00	>50	7.38	60	8.81	8	0.11	0.23	60	>0.2	1.00	12	1	32
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-15	Prim.(PW)	78.10	>50	7.01	60	9.89	8	0.11	0.38	<50	>0.2	1.20	12	7	36
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-16	Prim.(PW)	29.60	>50	7.35	60	14.65	8	0.10	0.65	<50	>0.2	1.50	20	7	48
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MA-17	Prim.(PW)	239.00	>50	7.92	60	9.96	5	0.15	0.46	70	>0.2	1.80	13	8	64
	Sec. (TW)	1.11	>50	7.99	340	128.60	100	0.34	2.40	>200	>0.2	1.70	74	38	340
MA-18	Prim.(TW)	3.28	10.00	7.25	240	57.40	18	0.18	0.73	<50	0.02	0.38	32	16	148
	Sec. (VP)	625.00	>50	7.26	40	56.70	6	0.36	0.77	150	>0.2	0.35	8	1	24
MA-19	Prim.(PW)	56.40	>50	7.88	60	9.33	8	0.12	0.36	>200	>0.2	0.60	10	1	28
	Sec. (TW)	1.55	>50	7.71	340	93.40	20	0.36	1.19	150	>0.2	0.80	60	46	248
MA-20	Prim.(PW)	35.00	>50	7.95	60	11.42	5	0.24	0.58	<50	>0.2	1.00	14	1	40
	Sec. (TW)	5.30	>50	7.83	280	86.20	50	0.11	1.72	125	>0.2	0.60	68	26	280
MA-21	Prim.(OW)	60.60	>50	7.76	220	43.80	10	0.21	0.83	65	>0.2	0.70	58	14	200
	Sec. (TW)	25.60	>50	7.65	360	133.90	85	0.19	1.62	>200	>0.2	1.10	118	42	468
MA-22	Prim.(TW)	17.10	>50	7.62	320	105.50	20	1.05	15.40	150	0.18	0.80	67	44	348
	Sec. (Stream)	0.93	>50	7.82	240	95.00	12	0.72	0.82	>200	0.18	0.80	114	25	388
MA-23	Prim.(OW)	7.46	>50	7.13	320	81.00	15	1.10	2.20	80	0.15	1.60	90	18	300
	Sec. (VP)	97.40	>50	7.54	100	22.90	6	0.41	1.55	>200	>0.2	1.40	32	7	88
MA-24	Prim.(TW)	0.62	>50	7.85	380	165.00	75	0.48	1.79	>200	0.10	1.00	62	40	320
	Sec. (VP)	2.90	>50	7.49	220	48.80	15	0.36	0.83	<50	>0.2	1.40	45	7	140
MA-25	Prim.(OW)	1.55	37.00	7.41	480	128.70	60	0.55	1.57	125	0.06	0.80	67	62	320
	Sec. (OW)	2.67	31.00	7.73	640	152.10	55	0.68	1.32	>200	0.03	1.80	32	44	260
MA-26	Prim.(OW)	11.60	>50	7.98	360	81.60	15	0.67	2.10	<50	>0.2	0.80	29	16	140
	Sec. (VP)	263.00	>50	7.53	160	47.80	30	0.48	3.30	90	>0.2	0.60	20	18	88
MA-27	Prim.(VP)	182.00	>50	7.59	100	20.60	6	0.15	0.21	50	>0.2	0.40	20	16	88
	Sec. (TW)	11.80	>50	6.81	380	492.00	90	0.16	23.00	90	>0.2	0.70	214	108	980
MA-28	Prim.(TW)	1.30	34.00	8.58	380	132.80	18	0.24	2.30	125	0.03	0.40	26	53	280
	Sec. (VP)	>1000	>50	7.97	80	149.20	8	0.11	0.75	>200	>3.5	0.50	24	1	60
MA-29	Prim.(TW)	1.30	42.00	8.00	280	87.60	25	0.47	2.20	125	0.16	0.00	35	39	248
	Sec. (OW)	1.15	25.00	8.34	940	291.00	200	14.80	50.00	200	0.02	1.80	4	16	68
MA-30	Prim.(VP)	5.39	86.00	8.03	320	79.70	25	0.92	2.30	>200	>0.2	0.60	20	18	120
	Sec. (VP)	16.90	108.00	7.87	300	52.60	40	0.28	1.87	<50	>0.2	0.40	16	10	80
MA-31	Prim.(OW)	8.46	47.00	7.99	400	201.00	125	1.11	4.60	125	0.16	1.60	16	5	68
	Sec. (OW)	1.45	7.00	8.00	400	164.90	370	1.10	3.10	80	0.02	1.90	16	5	64

## Magway Region

Code	Priority (Source)	Color	Turbidity	pH	Alkalinity	EC	Cl <sup>-</sup>	F <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	Fe	Mn	Ca	Mg	Hardness
		TCU	NTU		mg L <sup>-1</sup>	mS m <sup>-1</sup>							mg L <sup>-1</sup>		
MG-01	Prim.(OW)	47.00	0.61	7.26	300	73.10	15	0.86	0.28	<50	0.08	0.06	86	20	300
	Sec. (VP)	>50	382.00	7.33	140	40.60	38	0.63	3.60	90	>0.2	0.06	14	3	48
MG-02	Prim.(VP)	>50	738.00	7.29	100	19.22	12	0.38	0.47	80	>0.2	0.05	14	11	80
	Sec. (TW)	8.00	1.11	8.93	388	157.30	210	1.03	3.80	90	0.02	0.06	8	44	200
MG-03	Prim.(VP)	>50	507.00	7.28	48	11.83	8	0.31	0.21	100	>0.2	0.50	14	1	36
	Sec. (TW)	30.00	1.49	8.56	260	96.90	115	0.59	1.89	70	0.03	0.05	37	46	280
MG-04	Prim.(VP)	>50	702.00	7.08	88	17.64	12	0.28	0.34	80	>0.2	0.05	14	8	68
	Sec. (TW)	5.00	1.67	8.95	400	156.60	250	0.94	3.20	125	0.02	0.04	8	44	200
MG-05	Prim.(VP)	>50	204.00	7.64	80	17.46	8	0.51	0.29	<50	>0.2	0.04	14	1	40
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-06	Prim.(TW)	32.00	9.27	7.86	200	58.10	43	0.42	1.23	55	0.03	0.05	32	21	168
	Sec. (VP)	>50	>1000	7.38	100	19.01	8	0.33	0.59	>200	>0.2	0.70	13	7	60
MG-07	Prim.(VP)	>50	389.00	7.39	120	25.90	8	0.32	1.68	100	>0.2	0.07	21	7	80
	Sec. (TW)	5.00	1.48	8.02	140	1398.00	625	0.31	72.00	200	0.01	0.20	584	1378	4250
MG-08	Prim.(VP)	>50	>1000	7.42	68	14.84	8	0.36	0.68	>200	>0.2	0.70	21	4	68
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-09	Prim.(VP)	>50	>1000	7.26	80	14.03	8	0.21	0.37	75	>0.2	0.70	18	1	48
	Sec. (TW)	26.00	2.80	7.64	320	111.30	90	1.37	1.79	100	0.02	0.05	48	5	240
MG-10	Prim.(VP)	>50	>1000	7.53	88	17.59	8	0.63	0.36	70	>0.2	0.70	8	14	80
	Sec. (TW)	10.00	4.03	8.67	280	97.40	83	0.72	4.80	90	0.02	0.25	18	16	112
MG-11	Prim.(VP)	>50	30.00	7.76	100	14.51	8	0.41	0.41	90	>0.2	0.45	16	7	48
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-12	Prim.(TW)	>50	3.01	8.16	280	135.40	250	0.54	4.60	125	>0.2	1.10	51	45	312
	Sec. (VP)	>50	878.00	7.46	90	21.10	8	0.26	0.92	60	>0.2	0.40	32	5	100
MG-13	Prim.(PW)	>50	147.00	7.82	48	9.02	8	0.21	0.37	<50	>0.2	1.70	8	7	28
	Sec. (VP)	>50	54.00	7.26	100	22.20	8	0.27	1.15	<50	>0.2	1.40	24	5	80
MG-14	Prim.(VP)	>50	>1000	6.96	68	17.67	8	0.27	0.79	80	>0.2	0.70	18	4	60
	Sec. (OW)	18.00	4.54	8.18	560	1038.00	3000	2.10	21.00	200	0.01	0.05	16	29	160
MG-15	Prim.(PW)	>50	710.00	7.36	100	18.04	8	0.47	0.18	55	>0.2	0.50	22	1	60
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-16	Prim.(PW)	>50	477.00	6.96	40	5.14	8	0.19	0.83	100	>0.2	0.50	10	1	24
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-17	Prim.(PW)	>50	710.00	6.89	60	8.45	8	0.14	1.11	150	>0.2	0.50	8	5	40
	Sec. (TW)	20.00	1.37	8.79	560	159.10	140	0.78	3.90	55	0.02	0.05	8	36	160
MG-18	Prim.(PW)	>50	528.00	7.06	68	14.16	10	0.34	0.27	125	>0.2	0.50	10	3	36
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-19	Prim.(PW)	>50	>1000	7.61	68	14.51	8	0.66	0.81	125	>0.2	0.70	8	4	32
	Sec. (TW)	>50	38.40	7.86	160	275.00	200	0.49	2.30	>200	>0.2	0.05	108	29	390
MG-20	Prim.(PW)	>50	227.00	7.83	120	27.30	10	0.72	0.89	70	>0.2	0.06	20	8	80
	Sec. (OW)	59.00	8.89	8.24	1548	342.00	88	11.60	29.00	<50	0.10	0.05	4	4	20
MG-21	Prim.(PW)	>50	384.00	7.45	60	8.09	6	0.26	0.73	<200	>0.2	0.06	13	1	36
	Sec. (TW)	10.00	1.24	8.11	244	76.80	65	0.61	2.10	60	0.01	1.04	37	34	232
MG-22	Prim.(PW)	>50	>1000	7.08	64	10.22	8	0.25	0.24	80	>0.2	0.70	16	1	40
	Sec. (TW)	22.00	3.92	7.64	280	87.30	70	0.88	1.52	55	0.02	0.05	48	34	260
MG-23	Prim.(TW)	8.00	1.08	8.55	180	75.50	85	0.34	2.20	60	—	0.05	26	43	240
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-24	Prim.(PW)	>50	134.00	7.63	120	31.90	12	0.58	3.90	60	>0.2	0.10	21	16	116
	Sec. (OW)	10.00	2.30	7.89	1700	455.00	250	3.30	61.00	<200	0.01	0.05	10	44	200
MG-25	Prim.(PW)	>50	85.70	7.65	140	21.50	8	0.36	1.19	<50	>0.2	1.10	22	3	68
	Sec. (OW)	>50	3.69	7.73	840	195.60	125	2.20	7.10	<50	>0.2	1.60	28	18	140
MG-26	Prim.(PW)	>50	333.00	7.51	120	22.20	8	0.33	0.53	90	>0.2	0.50	34	11	128
	Sec. (TW)	5.00	1.31	8.41	340	107.80	100	0.35	1.99	<200	0.01	0.05	19	52	260
MG-27	Prim.(PW)	>50	>1000	7.59	100	19.78	8	0.38	0.29	150	>0.2	0.70	19	16	112
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-28	Prim.(PW)	>50	668.00	7.48	120	21.70	8	0.35	0.49	150	>0.2	0.50	27	13	120
	Sec. (TW)	10.00	0.73	8.57	220	59.70	40	0.28	1.72	<50	0.01	0.05	32	24	180
MG-29	Prim.(PW)	>50	244.00	7.89	68	12.95	8	0.23	0.35	75	>0.2	0.25	10	14	80
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-30	Prim.(PW)	>50	81.00	7.38	80	17.13	8	0.29	0.69	<200	>0.2	0.05	21	7	80
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-31	Prim.(SW)	33.00	1.50	7.41	280	69.70	22	0.87	0.98	<50	0.02	0.40	64	29	280
	Sec. (Stream)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-32	Prim.(PW)	>50	138.00	7.41	100	25.10	18	1.11	0.83	50	>0.2	0.06	8	15	80
	Sec. (Weir)	>50	223.00	8.55	100	17.18	10	0.47	0.47	75	>0.2	0.25	14	11	80

Code	Priority (Source)	Color	Turbidity	pH	Alkalinity	EC	Cl <sup>-</sup>	F <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	Fe	Mn	Ca	Mg	Hardness
		TCU	NTU		mg L <sup>-1</sup>	mS m <sup>-1</sup>									
MG-33	Prim.(PW)	>50	68.90	7.43	100	20.80	10	0.28	1.03	<50	>0.2	0.60	29	12	120
	Sec. (TV)	>50	50.50	7.01	640	552.00	98	0.94	2.70	>200	>0.2	0.70	160	98	800
MG-34	Prim.(SW)	>50	8.95	7.01	308	240.00	18	1.03	1.99	>200	>0.2	0.70	112	59	520
	Sec. (VP)	>50	>1000	7.39	240	57.70	18	0.75	0.68	125	>0.2	>0.7	58	22	236
MG-35	Prim.(PW)	>50	510.00	7.76	68	7.79	12	0.24	0.49	100	>0.2	0.70	13	12	80
	Sec. (TV)	>50	4.34	7.11	300	240.00	22	1.07	2.50	>200	0.10	0.25	106	64	528
MG-36	Prim.(SW)	>50	293.00	7.51	200	48.50	18	0.65	1.81	80	>0.2	0.45	40	24	200
	Sec. (VP)	>50	>1000	7.79	80	17.69	8	0.38	2.20	>200	>0.2	>0.7	22	11	100
MG-37	Prim.(PW)	>50	>1000	8.75	120	29.30	20	0.63	2.40	>200	>0.2	>0.7	24	7	68
	Sec. (VP)	>50	830.00	7.74	80	19.31	10	0.36	1.19	80	>0.2	0.70	21	12	100
MG-38	Prim.(OW)	>50	6.04	7.51	400	94.50	18	0.67	0.89	80	>0.2	0.50	42	33	240
	Sec. (SW)	35.00	1.67	8.37	560	125.50	12	2.40	0.48	<50	0.02	0.05	4	7	12
MG-39	Prim.(SW)	21.00	1.65	7.22	400	93.10	18	0.78	0.51	55	0.01	0.15	59	70	436
	Sec. (TW)	45.00	3.87	7.96	360	83.10	18	0.51	0.56	60	0.10	0.05	46	69	400
MG-40	Prim.(OW)	>50	4.66	7.31	240	52.40	10	0.42	5.10	<50	>0.2	0.30	62	20	240
	Sec. (TV)	28.00	4.97	7.83	500	134.50	40	1.72	1.32	125	0.02	0.10	29	31	200
MG-41	Prim.(TW)	33.00	3.96	8.24	230	89.10	30	1.07	2.80	90	0.03	0.05	18	23	140
	Sec. (OV)	>50	102.00	6.72	40	13.48	12	0.19	8.50	>200	>0.2	0.35	11	3	40
MG-42	Prim.(OW)	>50	333.00	7.67	380	91.50	30	0.54	2.90	80	>0.2	0.35	78	55	420
	Sec. (TW)	>50	93.70	7.65	640	161.50	20	0.56	15.40	<50	>0.2	0.05	27	37	220
MG-43	Prim.(TW)	24.00	4.74	8.18	220	45.10	8	0.25	0.82	<50	0.02	0.05	21	26	160
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-44	Prim.(TW)	16.00	0.86	8.16	340	94.60	38	0.43	1.19	70	0.02	0.05	8	11	60
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-45	Prim.(OW)	>50	14.80	7.35	260	59.40	15	0.26	1.11	<50	>0.2	0.40	83	56	312
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-46	Prim.(OW)	19.00	2.96	7.93	620	202.00	30	0.63	3.80	>200	0.02	0.05	34	65	300
	Sec. (Irrigation)	>50	14.20	7.75	260	83.70	15	0.92	2.20	200	>0.2	0.25	40	49	300
MG-47	Prim.(TW)	48.00	5.04	7.75	340	76.40	12	0.88	0.62	<50	0.08	0.15	38	30	220
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
MG-48	Prim.(TW)	6.00	0.65	7.89	120	71.30	10	1.03	1.58	>100	0.01	0.10	24	26	168
	Sec. (TW)	33.00	3.97	7.52	360	79.50	15	0.77	0.59	<50	0.03	0.10	48	39	280
MG-49	Prim.(Stream)	>50	28.70	7.61	560	141.50	12	0.87	0.91	>200	>0.2	0.25	60	75	460
	Sec. (VP)	>50	86.70	7.51	160	43.20	19	0.56	4.30	55	>0.2	0.15	10	19	100
MG-50	Prim.(OW)	23.00	1.81	7.39	460	153.90	200	1.23	2.80	<50	0.02	0.10	74	61	440
	Sec. (VP)	>50	404.00	7.91	60	8.72	8	0.36	0.21	<50	>0.2	0.10	10	16	88
MG-51	Prim.(TW)	33.00	2.10	8.47	360	81.30	12	0.63	2.20	<50	0.03	0.05	21	61	300
	Sec. (VP)	>50	>1000	7.07	80	13.21	12	0.47	0.63	60	>0.2	0.70	18	11	90
MG-52	Prim.(TW)	>50	4.71	7.54	360	99.30	65	0.42	1.12	55	0.10	0.10	59	37	300
	Sec. (VP)	>50	>1000	7.37	100	27.10	22	0.39	1.03	60	>0.2	0.07	27	8	100

### Sagaing Region

Code	Priority (Source)	Color	Turbidity	pH	Alkalinity	EC	Cl <sup>-</sup>	F <sup>-</sup>	NO <sub>3</sub> <sup>-</sup>	SO <sub>4</sub> <sup>2-</sup>	Fe	Mn	Ca	Mg	Hardness
		TCU	NTU		mg L <sup>-1</sup>	mS m <sup>-1</sup>	mg L <sup>-1</sup>								
SA-01	Prim.(PW)	>50	44.50	7.29	80	17.32	8	0.22	0.86	12	>0.2	1.90	20	5	60
	Sec. (TW)	7.00	2.02	7.92	420	106.80	42	0.25	0.66	34	0.12	0.10	40	24	180
SA-02	Prim.(TW)	20.00	1.02	7.88	240	49.50	10	0.29	0.15	5	0.18	0.30	40	24	188
	Sec. (VP)	>50	754.00	6.78	100	8.81	8	0.20	0.38	69	>3.5	2.40	20	7	2200
SA-03	Prim.(Irrigation)	>50	13.70	7.44	160	47.90	48	0.65	2.20	4	0.11	0.20	32	10	120
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SA-04	Prim.(OW)	>50	27.70	7.35	260	268.00	300	0.31	498.00	77	0.30	1.00	100	274	1220
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SA-05	Prim.(Irrigation)	>50	23.40	7.35	120	65.30	150	0.47	3.40	13	0.23	0.60	30	6	100
	Sec. (TW)	>50	0.91	7.38	80	753.00	2200	0.31	21.00	3	0.20	0.50	180	119	600
SA-06	Prim.(Irrigation)	>50	763.00	7.86	140	50.60	58	0.55	1.97	7	0.32	2.20	24	10	100
	Sec. (VP)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SA-07	Sec. (OW)	8.00	1.34	7.89	380	92.50	22	1.03	4.70	5	0.01	0.10	50	45	300
	Sec. (TW)	20.00	0.56	7.90	480	205.00	300	1.13	11.90	1	0.01	0.20	20	13	100
SA-08	Prim.(TW)	>50	11.10	7.96	700	16.77	125	0.58	1.08	13	0.31	1.40	12	56	200
	Sec. (VP)	>50	12.90	7.88	120	28.40	10	0.52	1.43	7	0.19	0.70	24	10	100
SA-09	Prim.(TW)	>50	4.39	7.85	500	35.60	90	0.99	1.97	89	0.48	1.00	40	31	220
	Sec. (VP)	>50	108.00	7.59	160	147.30	10	1.36	1.12	5	0.46	2.20	40	5	160
SA-10	Prim.(OW)	3.00	1.67	7.80	380	97.80	28	0.36	0.59	50	0.11	0.30	32	20	160
	Sec. (Dam)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SA-11	Prim.(OW)	5.00	1.83	7.48	460	112.40	48	0.43	1.31	60	0.12	0.10	32	5	100
	Sec. (Dam)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SA-12	Prim.(TW)	>50	4.82	7.18	360	183.90	30	0.47	1.42	>200	0.07	0.40	120	54	500
	Sec. (OW)	>50	0.73	8.43	460	115.50	23	0.37	0.73	108	0.06	0.60	8	5	32
SA-13	Prim.(OW)	20.00	4.42	7.61	380	87.40	10	0.55	0.31	29	0.14	0.50	24	50	260
	Sec. (VP)	>50	60.50	7.31	120	153.50	48	0.77	1.66	121	0.36	1.70	100	98	460
SA-14	Prim.(PW)	>50	18.80	7.08	60	11.93	8	0.26	0.57	1	0.19	0.60	16	1	40
	Sec. (Dam)	>50	20.50	8.54	80	16.35	6	0.47	0.28	1	0.33	0.20	12	1	36
SA-15	Prim.(PW)	>50	55.40	8.28	160	26.50	12	0.26	0.38	19	0.23	1.20	20	12	88
	Sec. (TW)	3.00	1.10	7.62	640	150.10	18	0.31	1.11	17	0.01	0.05	19	122	548
SA-16	Prim.(SW)	>50	16.80	8.35	1150	258.00	33	2.60	13.10	1	0.13	0.50	4	8	40
	Sec. (VP)	>50	>1000	7.48	140	32.20	8	0.49	1.42	85	>3.1	>22.8	20	10	80
SA-17	Prim.(Stream)	>50	156.00	8.12	240	60.20	15	0.56	0.97	29	1.00	0.70	32	15	148
	Sec. (OW)	>50	43.70	7.82	720	266.00	250	2.10	67.00	84	0.24	1.30	32	39	240
SA-18	Prim.(SW)	35.00	1.96	7.52	360	86.20	30	0.54	1.61	19	0.08	0.30	80	24	280
	Sec. (OW)	>50	29.90	7.75	580	125.50	23	0.65	3.80	1	0.14	0.80	48	24	220
SA-19	Prim.(SW)	5.00	0.74	8.03	440	273.00	10	3.30	4.50	15	0.01	0.10	4	1	12
	Sec. (SW)	10.00	1.03	8.54	980	106.50	15	2.30	3.60	130	0.06	0.40	10	9	60
SA-20	Prim.(OW)	>50	71.80	7.70	84	27.40	15	0.75	1.37	17	1.13	1.00	12	1	24
	Sec. (OW)	>50	2.45	8.50	1300	548.00	900	4.80	9.10	121	0.12	0.90	8	55	240
SA-21	Prim.(OW)	>50	3.06	7.46	580	445.00	550	1.35	5.50	>200	0.10	2.50	120	75	600
	Sec. (VP)	>50	2.49	8.13	400	127.40	11	1.12	1.34	77	0.12	0.80	20	18	120
SA-22	Prim.(PW)	>50	817.00	9.19	528	153.00	150	2.40	3.30	50	1.91	0.80	4	1	12
	Sec. (SW)	>50	0.28	7.58	440	122.70	58	1.28	1.57	72	0.28	1.90	28	22	160
SA-23	Prim.(PW)	>50	1.14	7.53	260	72.10	20	0.66	0.41	45	0.30	1.70	32	10	120
	Sec. (Dam)	—	—	—	—	—	—	—	—	—	—	—	—	—	—
SA-24	Prim.(TW)	>50	0.80	8.14	200	45.90	10	0.45	0.25	13	0.33	2.10	42	8	140
	Sec. (Stream)	>50	>1000	7.90	100	21.00	10	0.56	0.92	32	>3.51	1.80	16	7	48
SA-25	Prim.(TW)	>50	4.27	7.52	240	53.50	10	0.68	0.84	9	0.62	2.00	34	28	200
	Sec. (VP)	>50	401.00	6.79	40	8.99	6	0.30	1.55	9	>351	1.00	8	1	20
SA-26	Prim.(PW)	>50	4.09	7.55	200	103.60	35	1.32	2.80	100	0.37	2.10	46	6	140
	Sec. (TW)	>50	12.90	7.79	460	2710.00	1350	1.79	8.50	79	2.69	2.80	400	708	3900
SA-27	Prim.(TW)	>50	592.00	7.86	68	21.30	10	0.67	3.40	3	2.71	2.40	24	7	68
	Sec. (VP)	>50	0.85	8.19	280	8.43	35	1.12	1.74	77	0.39	2.20	30	25	180



## (7) Result of Water Quality Analysis in Japan

### Water Sources Selected among the Surveyed Villages

Code	Priority (Source)	As	Cd	Cr	Cu	F	Pb	NO <sub>3</sub> <sup>-</sup>	Se	Mn
		(mg L <sup>-1</sup> )								
Myanmar STD.		0.05	0.005	0.05	2.0	1.5	0.01	50	0.01	0.3
SA-04	Prim.(OW)	0.002	0.0003>	0.006	0.01>	0.16	0.001>	540.0	0.001>	0.001>
SA-05	Sec. (TW)	0.001>	0.0003>	0.005>	0.01>	0.20	0.001>	0.3	0.001>	0.001>
SA-07	Sec. (TW)	0.003	0.0003>	0.005>	0.01>	0.67	0.001>	16.0	0.001	0.001>
SA-09	Prim. (TW)	0.001	0.0003>	0.005>	0.01>	0.27	0.001>	0.1>	0.001>	0.001>
SA-17	Sec. (OW)	0.002	0.0003>	0.005>	0.01>	1.37	0.001>	148.0	0.004	0.001>
SA-20	Sec. (OW)	0.003	0.0003>	0.011	0.01>	3.20	0.001>	6.6	0.006	0.001>
SA-21	Prim. (OW)	0.001>	0.0003>	0.005>	0.01>	0.44	0.001>	0.7	0.001>	0.001>
SA-26	Sec. (TW)	0.003	0.0003>	0.005>	0.01>	0.91	0.001	0.1>	0.001>	0.740
Extra	(TW)	0.001>	0.0003>	0.005>	0.01>	5.95	0.001>	1.9	0.001>	0.001>
MA-27	Sec. (TW)	0.001>	0.0003>	0.005>	0.01>	0.09	0.001>	33.9	0.004	0.019
MA-29	Sec. (OW)	0.003	0.0003>	0.005>	0.01>	5.26	0.001>	124.0	0.001	0.001>
MA-31	Prim. (OW)	0.003	0.0003>	0.005>	0.01>	0.86	0.001>	1.1	0.001>	0.004
MG-02	Sec.(TW)	0.001>	0.0003>	0.005>	0.01>	0.52	0.001>	2.6	0.001>	0.001>
MG-04	Sec.(TW)	0.001>	0.0003>	0.005>	0.01>	0.53	0.001>	1.2	0.001>	0.001>
MG-07	Sec.(TW)	0.002	0.0003>	0.005>	0.01>	0.19	0.001>	183.0	0.066	0.001>
MG-14	Sec.(OW)	0.015	0.0003>	0.027	0.01>	1.00	0.001>	25.6	0.003	0.001>
MG-17	Sec.(TW)	0.002	0.0003>	0.005>	0.01>	0.41	0.001>	4.8	0.002	0.001>
MG-19	Sec.(TW)	0.001>	0.0003>	0.005>	0.01>	0.34	0.002	0.8	0.001>	0.001>
MG-20	Sec.(OW)	0.009	0.0003>	0.058	0.01>	7.32	0.001>	63.5	0.004	0.001>
MG-24	Sec.(OW)	0.007	0.0003>	0.005	0.01>	2.45	0.001>	153.0	0.005	0.001>
MG-25	Sec.(OW)	0.001	0.0003>	0.005>	0.01>	1.39	0.001>	16.5	0.001>	0.001>
MG-42	Prim.(OW)	0.001>	0.0003>	0.005>	0.01>	0.20	0.001>	37.3	0.001>	0.001>
MG-46	Sec.(TW)	0.001>	0.0003>	0.005>	0.01>	0.34	0.001>	9.6	0.001>	0.001>
MG-33	Sec.(TW)	0.001>	0.0003>	0.005>	0.01>	0.42	0.001>	4.5	0.001>	0.001
MG-35	Sec.(TW)	0.003	0.0003>	0.005>	0.01>	0.46	0.001>	0.7	0.004	0.130
MG-50	Sec.(OW)	0.001>	0.0003>	0.005>	0.01>	0.59	0.001>	0.1	0.001>	0.001>

Code	Priority (Source)	Al	Cl	Fe	Na	SO <sub>4</sub> <sup>2-</sup>	Zn	Ca	Mg	B	Ni	P	K	NO <sub>2</sub> <sup>-</sup>
		(mg L <sup>-1</sup> )										(mg L <sup>-1</sup> )		
Myanmar STD.		0.1	250	1.0	200	400	10	200	150	—	—	—	—	—
SA-04	Prim.(OW)	0.01>	298.0	0.01>	38.9	95.1	0.01>	96.2	243.0	0.1>	0.002	0.3	10.6	0.13
SA-05	Sec. (TW)	0.01>	2070.0	0.01>	1250.0	47.9	0.01>	186.0	41.9	0.1>	0.001>	0.1>	7.0	1.69
SA-07	Sec. (TW)	0.01>	266.0	0.01>	409.0	22.6	0.01>	21.0	14.3	0.1>	0.001>	0.1>	2.7	0.01>
SA-09	Prim. (TW)	0.01>	76.7	0.01	248.0	114.0	0.07	38.5	36.1	0.1>	0.007	0.1>	5.7	0.01>
SA-17	Sec. (OW)	0.01>	179.0	0.01>	534.0	101.0	0.08	37.2	37.5	0.2	0.001>	0.1>	4.5	0.23
SA-20	Sec. (OW)	0.01>	629.0	0.01>	1220.0	344.0	0.01>	7.9	61.1	1.2	0.001>	0.1>	25.0	0.34
SA-21	Prim. (OW)	0.01>	373.0	0.01>	822.0	1020.0	0.01>	128.0	87.9	0.1	0.001>	0.1>	1.4	0.04
SA-26	Sec. (TW)	0.01	1160.0	0.01>	7110.0	17500.0	0.01>	474.0	769.0	1.7	0.001>	0.1>	25.8	4.28
Extra	(TW)	0.02	66.2	0.01>	172.0	116.0	0.01>	6.0	0.4	0.2	0.001>	0.1>	1.5	0.06
MA-27	Sec. (TW)	0.01>	1110.0	0.01>	639.0	74.0	0.08	246.0	94.5	0.1>	0.001>	0.1>	5.9	0.29
MA-29	Sec. (OW)	0.01>	80.3	0.01>	693.0	138.0	0.01>	3.2	18.4	0.3	0.001>	0.1>	19.6	0.04
MA-31	Prim. (OW)	0.01>	282.0	0.01>	402.0	53.2	0.01>	20.6	7.7	0.5	0.001>	0.1>	4.0	0.03
MG-02	Sec.(TW)	0.01>	179.0	0.01>	272.0	59.2	0.01>	9.4	49.4	0.3	0.001>	0.1>	9.5	0.14
MG-04	Sec.(TW)	0.01>	178.0	0.01>	264.0	59.1	0.01>	9.3	49.3	0.2	0.001>	0.1>	9.2	0.20
MG-07	Sec.(TW)	0.01>	525.0	0.01>	2370.0	7290.0	0.02	605.0	856.0	0.4	0.001>	0.1>	54.3	0.71
MG-14	Sec.(OW)	0.01>	2540.0	0.01>	2220.0	163.0	0.01>	18.5	22.9	0.3	0.001>	0.1>	5.3	0.01>
MG-17	Sec.(TW)	0.01>	117.0	0.01>	307.0	29.7	0.01>	7.9	42.6	0.2	0.001>	0.1>	8.1	0.11
MG-19	Sec.(TW)	0.01>	137.0	0.01>	482.0	912.0	0.01>	119.0	39.9	0.2	0.001>	0.1>	5.0	0.07
MG-20	Sec.(OW)	0.01>	69.1	0.01>	900.0	32.6	0.01>	3.9	6.5	0.5	0.001>	0.1>	4.3	0.06
MG-24	Sec.(OW)	0.01>	208.0	0.01>	1120.0	40.8	0.01>	13.2	40.6	0.4	0.001>	0.1>	13.8	0.01>
MG-25	Sec.(OW)	0.01>	46.6	0.01>	421.0	4.2	0.01>	32.7	21.5	0.2	0.001>	0.1>	8.2	0.03
MG-42	Prim.(OW)	0.01>	27.8	0.01>	306.0	13.7	0.01>	28.6	34.6	0.1>	0.001>	0.1>	3.3	0.05
MG-46	Sec.(TW)	0.01>	17.5	0.01>	395.0	307.0	0.01>	30.3	43.3	1.5	0.001>	0.1>	6.5	0.04
MG-33	Sec.(TW)	0.01>	211.0	0.01>	1100.0	1810.0	0.05	168.0	91.1	1.7	0.001	0.1>	12.9	4.46
MG-35	Sec.(TW)	0.01>	134.0	0.01>	346.0	586.0	0.02	111.0	62.6	0.1>	0.002	0.1>	7.7	0.39
MG-50	Sec.(OW)	0.01>	163.0	0.01>	175.0	1.0>	0.01>	75.5	58.0	0.1>	0.001>	0.1>	1.5	0.08

### Water Sources Drilled/Rehabilitated by the Past JICA Technical Transfer Project

Code	Village / Town	As	Cd	Cr	Cu	F	Pb	NO <sub>3</sub> <sup>-</sup>	Se	Mn
		(mg L <sup>-1</sup> )								
Myanmar STD.		0.05	0.005	0.05	2.0	1.5	0.01	50	0.01	0.3
KD-2	Kanni	0.001>	0.0003>	0.005>	0.01>	0.31	0.001>	0.7	0.001>	9.840
KD-3	Yw aalu	0.001>	0.0003>	0.005>	0.01>	0.15	0.001>	0.5	0.001>	0.002
KR-5	Lapapya	0.001>	0.0003>	0.005>	0.01>	0.40	0.001>	12.4	0.001>	0.002
ND-3	Sipin Thar	0.001	0.0003>	0.005>	0.01>	0.24	0.001>	52.4	0.005	0.001>
ND-4	Dann	0.001>	0.0003>	0.005>	0.01>	0.48	0.001	41.2	0.001>	0.001>
ND-7	Thee Dw in	0.001>	0.0003>	0.005>	0.01>	0.12	0.001>	0.4	0.001>	0.245
ND-8	Pho Ni Kan	0.002	0.0003>	0.005>	0.01>	1.30	0.001>	28.0	0.004	0.056
ND-9	Igyi	0.001>	0.001	0.005>	0.01>	0.14	0.003	1.2	0.001>	0.027
NR-2	Sin Lu Aing	0.001>	0.0003>	0.005>	0.01>	0.09	0.001>	0.1>	0.001>	0.592
NR-6	Kyun	0.002	0.0003>	0.005>	0.01>	0.18	0.001>	0.6	0.001>	0.017
NR-8	Mya	0.001>	0.0003>	0.005>	0.01>	0.13	0.001>	0.1>	0.001>	0.001>
NR-18	Myaung	0.001	0.0003>	0.005>	0.01>	0.38	0.001>	0.1>	0.001>	0.001>
NR-13	Let	0.001>	0.0003>	0.005>	0.01>	0.41	0.001>	7.7	0.001	0.001
CD-1	Ko Su	0.002	0.0003>	0.005>	0.01>	0.34	0.001>	0.1>	0.001>	0.444
CD-3	San Su (Yw a Ma)	0.005	0.0003>	0.005>	0.01>	0.47	0.001>	0.2	0.001>	0.662
CD-5	Thw e Net (Yw a Thit)	0.001>	0.0003>	0.005>	0.01>	0.41	0.001>	0.1>	0.001>	0.001>
CR-3	Thanbo	0.002	0.0003>	0.005>	0.01>	0.75	0.001>	6.8	0.001>	0.004
CR-8	Sudaw	0.001>	0.0003>	0.005>	0.01>	0.27	0.001>	1.3	0.001	0.001>
CR-9	Gw aygyo	0.001>	0.0003>	0.005>	0.01>	5.27	0.001>	2.2	0.001>	0.049

Code	Al	Cl	Fe	Na	SO <sub>4</sub> <sup>2-</sup>	Zn	Ca	Mg	B	Ni	P	K	NO <sub>2</sub> <sup>-</sup>
	(mg L <sup>-1</sup> )								(mg L <sup>-1</sup> )				
STD.	0.1	250	1.0	200	400	10	200	150	—	—	—	—	—
KD-2	0.01>	40.4	0.01>	236.0	1020.0	0.06	167.0	125.0	0.1>	0.015	0.1>	23.2	0.03
KD-3	0.01>	85.7	0.01>	335.0	839.0	0.02	159.0	79.8	0.3	0.001>	0.1>	30.5	0.03
KR-5	0.01>	80.2	0.01>	141.0	238.0	0.04	65.8	81.5	0.1>	0.001>	0.1>	4.0	0.01>
ND-3	0.01>	27.6	0.01>	131.0	25.8	0.01	22.3	27.1	0.1>	0.001	0.1>	35.4	0.18
ND-4	0.01>	30.1	0.01>	217.0	112.0	0.42	40.7	26.0	0.1>	0.001>	0.1>	4.5	0.30
ND-7	0.01>	64.5	0.01>	108.0	179.0	0.45	66.0	43.3	0.1>	0.001>	0.1>	5.9	0.01>
ND-8	0.01>	234.0	0.01	1420.0	1430.0	0.14	23.5	87.8	2.0	0.001>	0.1>	5.0	0.30
ND-9	0.01>	47.0	0.18	86.9	15.2	2.75	50.1	33.5	0.1>	0.002	0.1>	6.6	0.04
NR-2	0.01>	16.4	0.01>	90.4	25.4	1.87	42.1	23.8	0.1>	0.024	0.1>	5.2	0.01>
NR-6	0.01>	156.0	0.01>	149.0	26.7	0.51	99.3	41.0	0.1>	0.004	0.1>	5.5	0.03
NR-8	0.01>	21.9	0.01>	98.0	45.0	0.05	49.0	33.2	0.1>	0.001>	0.1>	3.1	0.01>
NR-18	0.01>	33.6	0.01>	167.0	51.0	0.01>	10.5	28.4	0.1>	0.001>	0.1>	3.6	0.01>
NR-13	0.01>	1680.0	0.01>	5080.0	8400.0	0.01>	353.0	109.0	12.3	0.001>	0.1>	16.7	4.91
CD-1	0.01>	245.0	0.02	270.0	68.0	4.18	75.2	68.0	0.5	0.001>	0.1>	7.3	0.01>
CD-3	0.01>	174.0	0.02	247.0	57.7	1.16	58.2	45.6	0.1	0.001>	0.1>	6.8	0.01>
CD-5	0.01>	126.0	0.01>	220.0	102.0	0.09	49.4	27.7	0.1	0.001>	0.1>	5.1	0.01>
CR-3	0.01>	40.2	0.01>	130.0	40.9	0.13	60.6	45.6	0.1>	0.001>	0.1>	6.1	0.07
CR-8	0.01>	190.0	0.01>	398.0	1080.0	0.03	275.0	108.0	0.2	0.001>	0.1>	7.6	0.03
CR-9	0.01>	114.0	0.01>	540.0	33.1	0.05	10.5	18.0	0.7	0.001>	0.1>	3.2	0.01>

