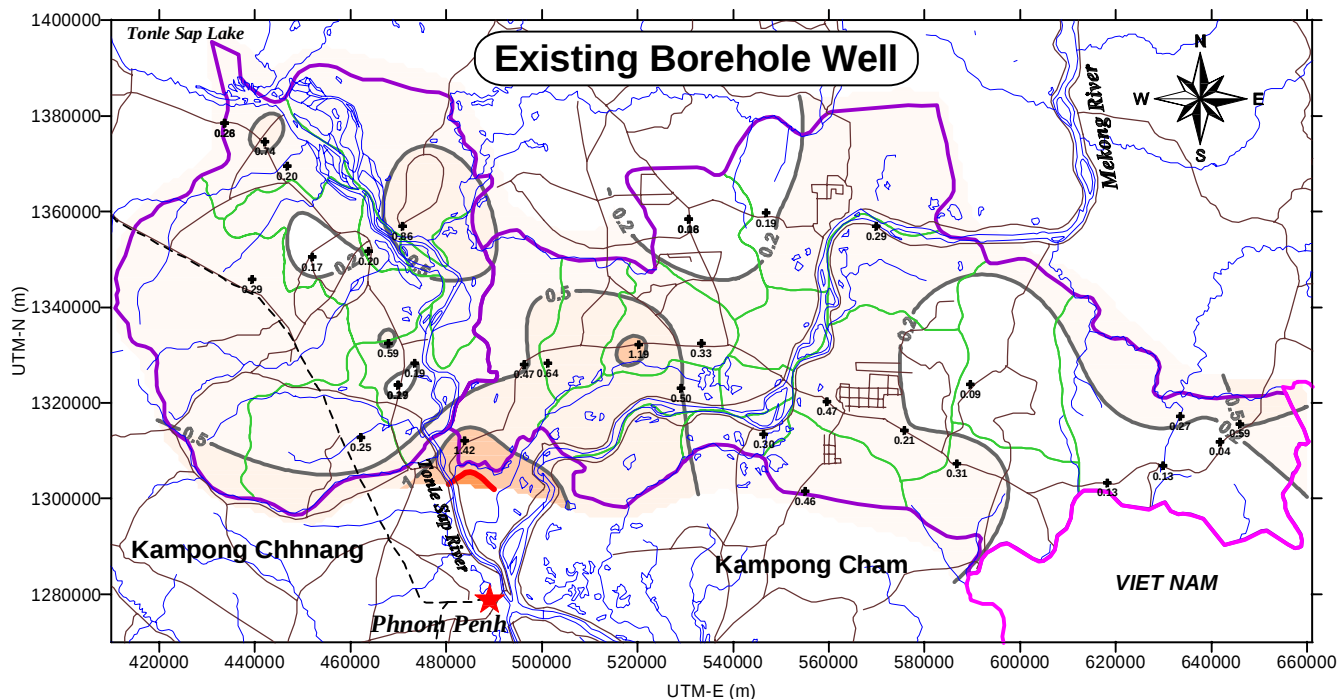
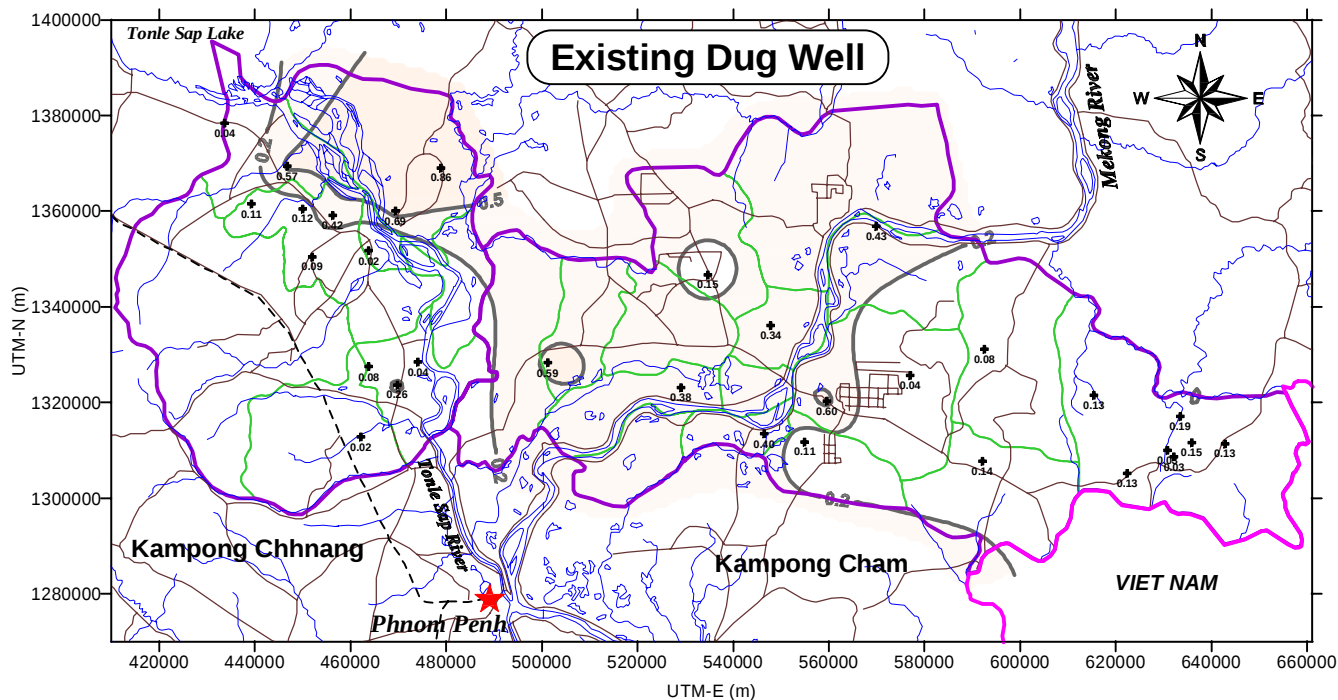
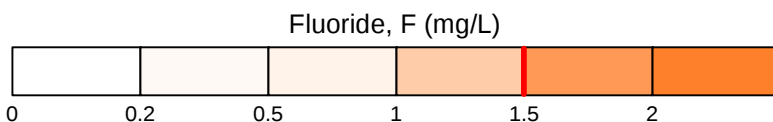




- ✚ F ≤ 1.5 mg/L
- 1.5 mg/L < F



[WHO Guideline Value of F for Drinking Water is 1.5 mg/L.]

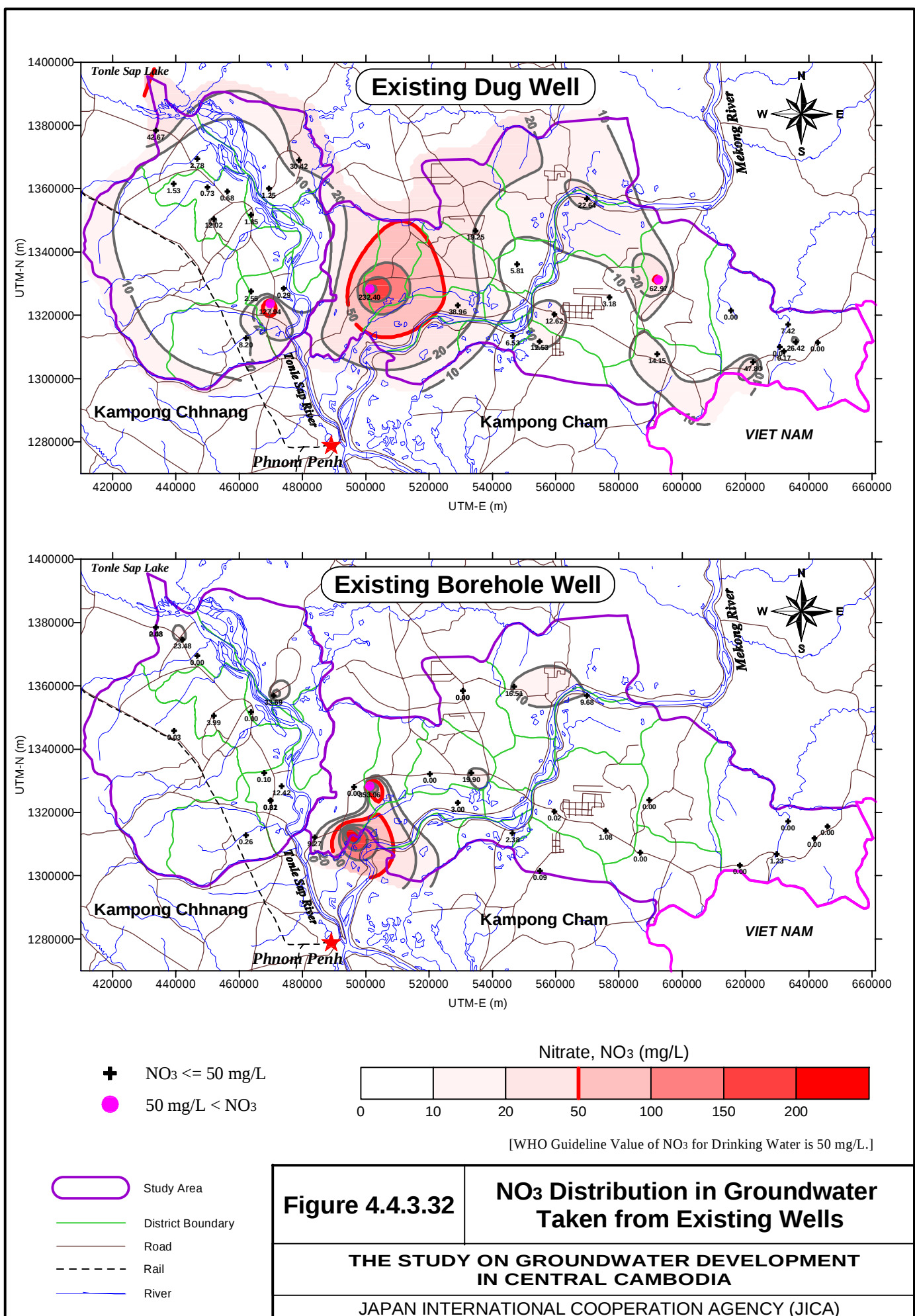
- Study Area
- District Boundary
- Road
- Rail
- River

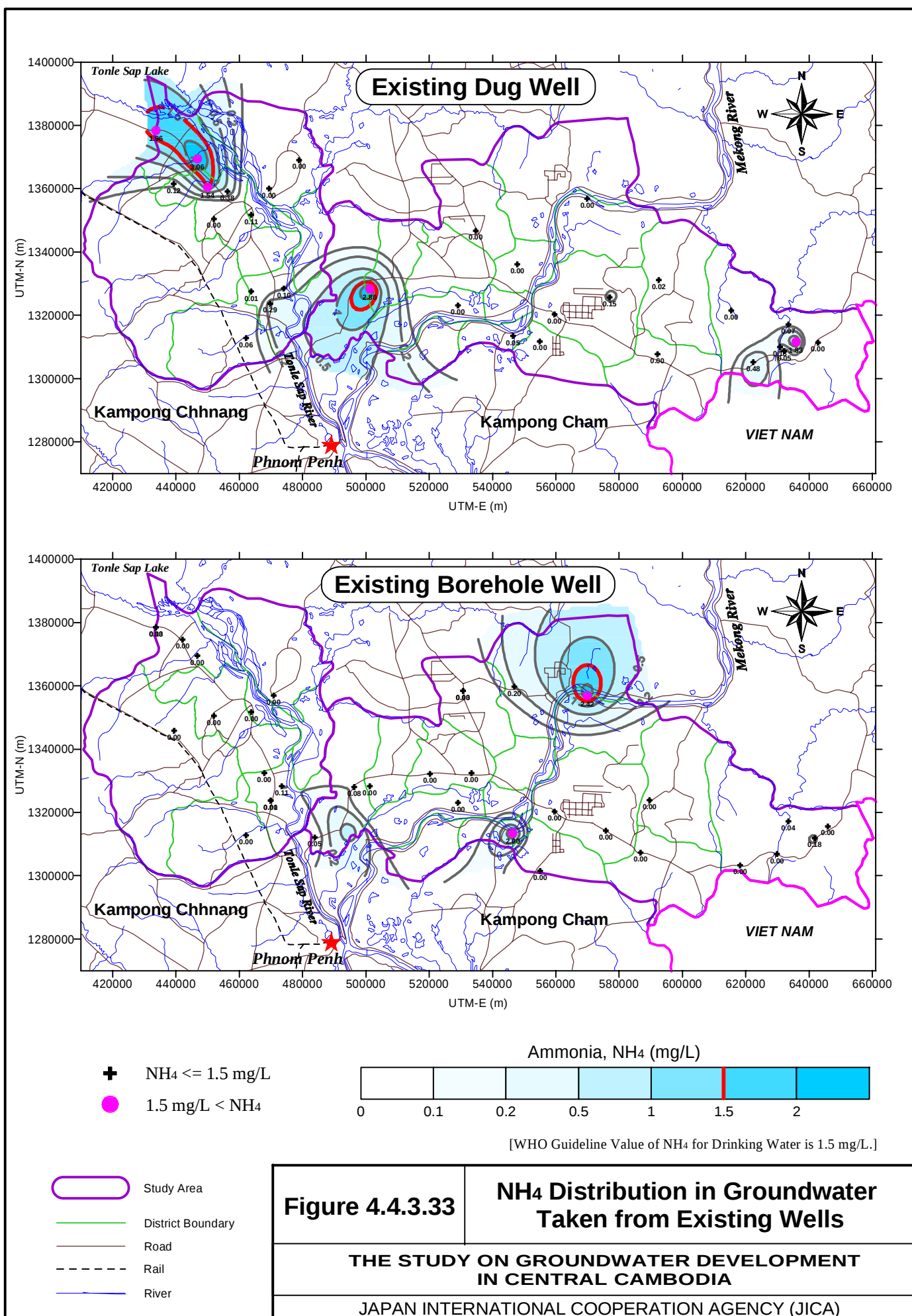
Figure 4.4.3.31

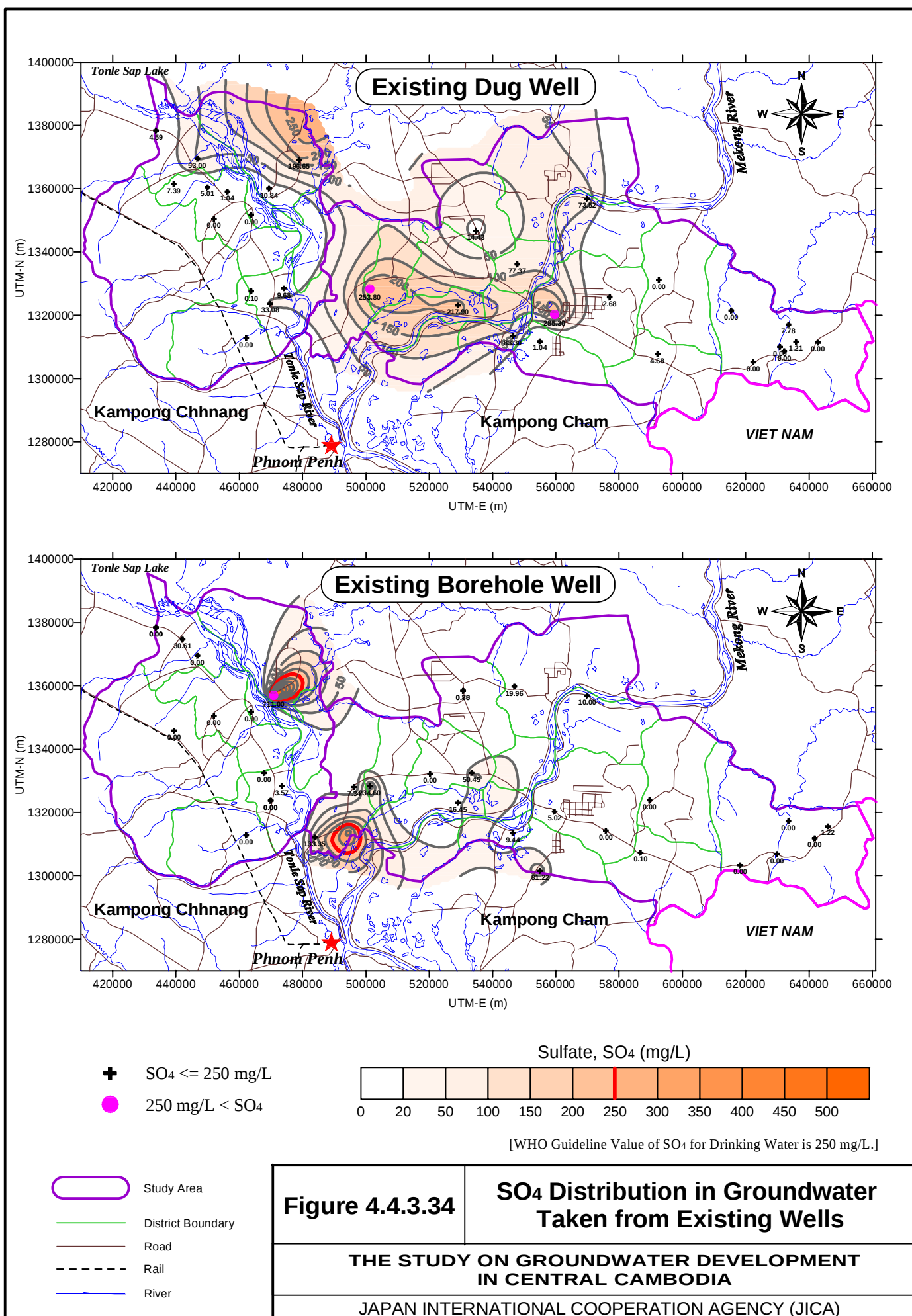
F Distribution in Groundwater Taken from Existing Wells

THE STUDY ON GROUNDWATER DEVELOPMENT IN CENTRAL CAMBODIA

JAPAN INTERNATIONAL COOPERATION AGENCY (JICA)







4-187

													WHO Guidelines Value for Drinking Water (mg/L)																Appearance of water at time Analysis
													250	0.5	0.1	1.5	0.01				250	250	50	1.5			1000		
Test No.	Test Site No.	Lab No.	Village No.	Sample Type	Sampling date	Water Temp. (°C)	ORP (Field)	pH	EC	Dissolved O ₂	Magnesium (mg/L)	Calcium (mg/L)	Potassium (mg/L)	Total Iron (mg/L)	Manganese (mg/L)	Ammonia (NH ₄) (mg/L)	Arsonic (mg/L)	Chloride (Cl ⁻) (mg/L)	Sulfate (SO ₄ ²⁻) (mg/L)	Unabsorbed phosphate (PO ₄ ³⁻) (mg/L)	Nitrate (NO ₃ ⁻) (mg/L)	Fluoride (F ⁻) (mg/L)	Chloro (ClO ₂) (mg/L)	Total Hardness as CaCO ₃	Percent- age of Hardness as CaCO ₃	Total Dissolved Solids (TDS) (mg/L)			
1	1	44544	005G	Raw water	25-Sep-01	30.4	15	7.66	71.5	65.28	18.23	75.57	2.30	0.04	0.23	0.00	0	0.0	457.64	18	7.51	0.00	0.03	0.28	33.29	242.4	0	427	Insoluble matter
2	1	45001	0204I	Raw water	13-Dec-01	28.7	18	7.48	96.3	82.40	19.32	88.00	2.00	0.03	0.28	0.28	0	0.0	437.24	24	3.83	0.03	0.21	0.28	24.20	238.0	0	408	Clear
3	2	44545	045G	Raw water	25-Sep-01	30.8	138	7.68	45.0	53.44	1.94	24.40	1.30	0.05	0.44	0.05	0	0.0	220.52	8	13.05	0.59	0.29	0.17	31.89	106.0	0	258	Insoluble matter
4	2	45002	045G	Raw water	13-Dec-01	30.4	37	7.34	37.8	43.20	1.36	24.83	0.00	0.06	0.23	0.03	0	0.0	222.81	18	7.12	4.19	0.00	0.15	33.89	148.0	0	227	Small amount of insoluble matter
5	3	44547	081G	Raw water	25-Sep-01	28.8	-28	7.88	81.8	15.80	11.70	32.89	4.83	0.32	1.83	0.21	0.002	0.0	280.06	12	14.24	3.20	0.22	0.18	40.38	272.4	0	388	Small amount of precipitated iron
6	4	44548	037G	Raw water	25-Sep-01	28.7	647	7.38	52.2	58.20	14.36	24.83	1.10	0.00	0.35	0.02	0	0.0	281.31	19	3.18	13.88	0.00	1.82	33.44	206.8	0	314	Small amount of insoluble matter
7	5	44549	087G	Raw water	25-Sep-01	30.8	-81	7.88	78.8	28.36	3.18	108.00	3.83	0.00	1.83	0.19	0.008	0.0	420.83	18	3.86	3.87	0.24	1.13	36.18	31.4	0	478	Small amount of insoluble matter
8	8	44550	082G	Raw water	25-Sep-01	30.2	-82	7.88	58.2	12.36	12.11	24.83	1.10	0.30	0.70	0.05	0.005	0.0	230.95	12	12.05	0.00	0.20	0.24	41.89	238.0	0	321	Small amount of insoluble matter
9	7	44551	187G	Raw water	25-Sep-01	30.0	10	11.28	185.0	5.88	0.80	218.00	1.40	0.12	0.84	0.00	0.005	118.0	0.00	0	25.31	26.81	0.31	0.12	32.39	11.0	0	864	Small amount of insoluble matter
10	7	45003	187G	Raw water	13-Dec-01	28.4	10	8.38	84.3	8.88	3.91	188.84	2.30	0.22	0.84	0.88	0.004	38.8	421.43	2	18.22	12.88	0.44	0.18	18.00	26.0	0	318	Small amount of insoluble matter
11	8	44552	180G	Raw water	25-Sep-01	28.4	190	7.58	122.0	130.40	45.84	42.30	2.50	0.87	0.00	0.00	0.001	0.0	425.52	19	180.57	1.33	11.02	0.28	42.59	514.0	190.29	403	Small amount of insoluble matter
12	8	45004	180G	Raw water	13-Dec-01	28.8	128	7.28	120.0	132.80	51.19	31.42	2.30	0.00	0.02	0.39	0	0.0	420.48	38	120.48	4.00	0.88	0.21	44.18	540.0	180	582	Clear
13	8	44543	180G	Raw water	25-Sep-01	28.2	87	7.88	71.5	43.32	8.81	188.93	7.10	0.88	0.88	0.02	0.004	0.0	412.32	18	12.88	9.87	0.17	1.82	23.08	144.8	0	428	Small amount of insoluble matter
14	10	44543	181G	Raw water	25-Sep-01	28.8	530	7.18	40.0	36.58	3.83	47.82	1.30	0.03	0.64	0.00	0.019	0.0	232.46	7	1.88	0.00	0.14	0.21	40.58	34.0	0	250	Small amount of insoluble matter
15	10	45005	187G	Raw water	14-Dec-01	28.0	38	7.53	84.8	38.80	6.30	51.39	2.50	0.41	0.14	1.00	0.008	0.0	283.88	13	5.88	0.38	0.00	0.14	40.88	172.4	0	283	Small amount of insoluble matter
16	10	45006	187G	Raw and water	14-Dec-01	28.2	38	7.38	38.2	34.40	4.30	42.82	4.30	0.14	0.01	0.42	0.001	0.0	224.38	11	11.87	0.20	0.20	0.20	44.88	108.0	0	227	Clear
17	11	44556	008M	Raw water	03-Oct-01	26.5	196	6.57	11.0	7.84	5.85	4.82	1.30	0.03	0.01	0.00	0	0.0	37.13	49	2.37	0.00	0.00	0.07	46.12	42.0	0	89	Clear
18	12	44560	015M	Raw water	06-Oct-01	26.8	8	7.18	88.1	48.80	48.20	21.38	0.20	0.06	0.30	0.00	0	0.0	446.22	14	87.88	14.88	0.23	0.17	86.87	870.0	16.14	308	Clear
19	12	44561	015M	Raw water	03-Oct-01	26.2	188	6.88	18.8	14.88	8.85	8.51	1.30	0.07	0.00	0.01	0	0.0	36.52	24	8.23	0.18	1.82	0.08	39.57	72.0	0	128	Small amount of precipitated iron
20	14	44564	048M	Raw water	03-Oct-01	26.9	-18	7.52	93.8	118.20	26.15	22.53	0.50	0.14	0.00	0.00	0.001	0.0	490.53	24	20.17	0.18	0.00	0.42	37.88	408.0	3.08	469	Clear

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													WHO Guideline Value for Drinking Water (mg/L)																																																																																																																																																																																																																																																																																																
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Test No.	Test Well No.	Lok No.	Village No.	Sample Type	Sampling date	Water Temp (°C)	ORP (mV)	pH	DO (mg/L)	Calcium (mg/L)	Magnesium (mg/L)	Dissolved Solids (mg/L)	Total Solids (mg/L)	Total Hardness (mg/L)	Ammonia (mg/L)	Arsonic (mg/L)	Germicidal (CL ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO ₂)	Disinfectant (HClO 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Table 4.4.3.2 Results of Laboratory Chemical Analysis of Groundwater Taken from Existing Wells (1/4)

Ser. No.	Lab. No.	Village No.	Province	Well Type	Sampling date	Water Temp (°C)	DOP (mg/L)	pH	EC (µS/cm)	Calcium (mg/L)	Magnesium (mg/L)	WHO Guideline Value for Drinking Water (mg/L)																Total Dissolved Solids (TDS) (mg/L)	Appearance of water at time analysis
												200.00	500	1000	1000	500	Carbonate (CO ₃)	Chloride (Cl ⁻)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)	Disinfectant (mg/L)		
												mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L		
1	44014	005G	Pg (Dharm)	DW	09-Aug-01	28.1	157	7.01	88.1	64.95	40.51	76.20	1.30	0.10	0.00	0.00	0.004	0.0	555.18	22	11.04	10.84	1.20	0.88	40.50	289.8	0	529	Small amount of insoluble matters
2	44025	005G	Pg (Dharm)	DW	11-Aug-01	27.3	365	8.98	12.2	5.83	0.89	14.71	4.30	0.55	0.00	0.00	0	0.0	17.48	8	25.31	0.10	0.55	0.88	12.90	18.0	4	75	Small amount of insoluble matters
3	44023	005G	Pg (Dharm)	DW	11-Aug-01	28.2	214	8.35	108.8	27.35	3.84	171.80	14.80	0.94	0.36	0.29	0	0.0	34.82	25	22.87	30.80	0.27	0.26	18.20	82.0	53	683	Small amount of insoluble matters
4	44009	0001G	Pg (Dharm)	DW	11-Aug-01	28.2	239	8.18	18.1	0.32	0.43	11.89	3.30	0.58	0.10	0.10	0	0.0	21.34	23	24.82	0.80	0.26	0.84	15.70	22.4	0	94	Small amount of insoluble matters
5	44002	0000G	Pg (Dharm)	DW	10-Aug-01	27.7	263	8.38	28.3	20.18	1.87	21.82	12.80	0.20	1.84	1.34	0.003	0.0	37.68	38	26.88	0.81	0.70	0.12	11.10	90.4	0	122	Precipitated iron
6	44027	0071G	Pg (Dharm)	DW	09-Aug-01	28.3	210	8.42	11.8	1.22	1.18	13.23	1.40	0.01	0.00	0.00	0	0.0	18.48	12	18.38	0.00	12.82	0.88	11.20	22.8	7	78	Clear
7	44032	0013G	Pg (Dharm)	DW	09-Aug-01	28.3	210	7.78	210.8	71.22	19.84	271.80	38.80	0.02	0.00	0.00	0.008	0.0	305.12	18	216.34	198.80	30.42	0.88	85.30	250.0	0	1388	Insoluble matters
8	44022	0002G	Pg (Dharm)	DW	10-Aug-01	27.8	158	8.82	22.8	26.88	1.88	18.82	20.80	0.80	0.11	0.12	0	0.0	88.28	17	81.13	1.20	1.20	0.11	18.80	22.2	0.01	181	Small amount of insoluble matters
9	44012	0130G	Pg (Dharm)	DW	10-Aug-01	28.0	202	8.41	18.1	10.55	0.89	12.54	1.20	0.01	0.01	0.11	0	0.0	48.58	26	26.50	0.80	1.85	0.80	14.70	50.4	11	102	Small amount of insoluble matters
10	44003	0100G	Pg (Dharm)	DW	09-Aug-01	28.1	130	8.06	14.2	10.43	2.34	8.55	0.80	0.05	0.31	0.08	0	0.0	59.28	13	13.2	0.80	0.20	0.82	12.90	57.2	18	68	Small amount of insoluble matters
11	44021	0100G	Pg (Dharm)	DW	07-Aug-01	28.3	249	8.91	25.3	15.88	3.15	16.55	10.80	0.05	0.01	1.08	0	0.0	9.18	58	37.18	4.58	82.87	0.85	23.80	52.0	44	168	Insoluble matters
12	44018	0001G	Pg (Dharm)	DW	07-Aug-01	28.1	200	8.37	42.9	0.48	3.82	48.87	20.80	1.20	0.36	3.08	0.008	0.0	49.18	31	87.83	53.80	2.20	0.57	52.80	33.8	0.21	302	Small amount of precipitated iron
13	44001	0000G	Pg (Dharm)	DW	10-Aug-01	28.2	186	7.60	88.7	38.24	1.43	113.37	3.80	0.88	0.10	0.38	0.008	0.0	408.48	18	73.2	1.84	0.80	0.87	28.80	126.0	0	408	Insoluble matters
14	44028	0039G	Pg (Dharm)	DW	29-Aug-01	27.2	804	8.84	17.7	1.08	8.38	8.88	10.20	0.08	1.18	0.48	0	0.0	2.88	88	18.38	0.80	87.80	0.12	8.80	38.8	22	108	Clear
15	44083	0039G	Pg (Dharm)	DW	29-Aug-01	28.5	251	8.21	1.8	1.88	0.58	1.10	0.20	0.28	0.08	0.00	0	0.0	7.18	58	2.27	0.80	0.80	0.12	8.20	7.2	1	18	Clear
16	44049	0002G	Pg (Dharm)	DW	29-Aug-01	27.9	288	8.20	1.8	1.12	0.58	0.88	0.10	0.02	0.01	0.08	0	0.0	5.82	28	1.88	0.80	0.11	0.82	2.80	8.0	1	11	Clear
17	44047	0039G	Pg (Dharm)	DW	29-Aug-01	27.9	278	8.28	3.8	1.48	0.88	3.88	1.50	0.04	0.04	0.18	0	0.0	9.18	48	5.83	0.80	0.87	0.88	8.80	7.2	0	25	Clear
18	44055	0101G	Pg (Dharm)	DW	09-Aug-01	27.3	173	8.15	8.8	4.18	0.89	2.30	0.20	0.40	0.05	0.00	0	0.0	32.58	37	2.77	0.80	0.80	0.12	24.80	26.8	0	55	Small amount of insoluble matters
19	44005	0100G	Pg (Dharm)	DW	10-Aug-01	27.5	299	8.42	34.8	10.48	1.14	25.55	23.80	2.22	0.14	0.01	0.008	0.0	75.88	48	47.88	1.20	1.42	0.18	34.80	82.8	1	208	Small amount of precipitated iron
20	44054	0100G	Pg (Dharm)	DW	29-Aug-01	27.3	243	8.30	10.1	1.52	2.15	8.87	2.20	0.15	0.08	1.08	0	0.0	15.52	57	9.48	1.21	26.82	0.15	10.30	27.8	16	78	Large amount of insoluble matters

Table 4.4.3.2 Results of Laboratory Chemical Analysis of Groundwater Taken from Existing Wells (2/4)

												WHO Guideline Value for Drinking Water (mg/L)																		
												200.00	500	100	100	500	500	Carbonate (CO ₃)	Chloride (ClO ₃)	Dissolved peroxide (H ₂ O ₂)	250.00	250.00	50.00	1.00					1000	
Ser. No.	Lab. No.	Village No.	Province	Well Type	Sampling date	Water Temp (T ₆₀) (Cm)	DOP (mg/L)	pH	EC (Cm/m)	Calcium (Ca) (mg/L)	Magnesium (Mg) (mg/L)	Sodium (Na) (mg/L)	Potassium (K) (mg/L)	Total Iron (Fe) (mg/L)	Manganese (Mn) (mg/L)	Ammonia (NH ₄) (mg/L)	Arsonic (As) (mg/L)	Carbonate (CO ₃) (mg/L)	Dissolve rate (HCO ₃) (mg/L)	Dissolved peroxide (H ₂ O ₂) (mg/L)	Oxide (O ₂) (mg/L)	Sulfate (SO ₄) (mg/L)	Aluminate (AlO ₃) (mg/L)	Fluoride (F ⁻) (mg/L)	Silica (SiO ₂) (mg/L)	Total Hardness as CaCO ₃ (mg/L)	Promer-ment Hardness as CaCO ₃ (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Appearance of water at time Analysis	
21	44482	81118	Ag. Chem	DW	28-Aug-01	27.0	28.3	5.94	18.7	6.32	3.82	18.10	11.90	0.02	0.24	0.00	0	0.0	17.48	84	32.83	4.80	14.15	0.14	13.90	29.2	75	115	Clear	
22	44457	82078	Ag. Chem	DW	31-Aug-01	28.7	110	7.12	95.3	20.00	21.47	71.25	18.50	0.11	0.15	0.05	0.002	0.0	291.08	95	81.88	80.34	8.50	0.40	38.50	280.0	58	528	Clear	
23	44431	82438	Ag. Chem	DW	17-Aug-01	27.5	32	7.20	104.8	135.83	49.38	45.50	0.80	0.03	0.01	0.00	0	0.0	581.58	45	77.52	72.52	22.84	0.40	38.90	651.0	155	300	Clear	
24	44401	82848	Ag. Chem	DW	21-Aug-01	28.3	29.2	8.04	7.0	3.82	2.80	5.82	4.80	0.25	0.03	0.15	0	0.0	13.58	63	6.31	2.80	3.10	0.04	40.50	17.2	8	73	Clear	
25	44437	83048CA2	Ag. Chem	DW	17-Aug-01	28.9	132	8.88	16.8	7.38	3.93	7.38	0.10	0.08	0.00	0.00	0	0.0	34.89	53	6.23	1.88	12.53	0.11	65.80	38.4	8	178	Clear	
26	44413	83548	Ag. Chem	DW	18-Aug-01	27.8	162	7.90	37.8	37.88	19.18	11.24	1.20	0.02	1.75	0.00	0	0.0	83.12	59	40.38	14.43	18.20	0.15	43.80	138.0	60	328	Clear	
27	44441	83758	Ag. Chem	DW	14-Aug-01	28.8	108	7.42	278.8	218.42	96.88	217.30	244.80	0.18	0.08	2.00	0.008	0.0	822.14	38	680.15	232.80	232.40	0.08	62.40	844.0	404	2428	Small amount of insoluble matter	
28	44446	83758	Ag. Chem	DW	28-Aug-01	27.6	259	8.22	58.8	28.32	1.82	40.82	38.50	0.01	0.40	0.02	0	0.0	25.22	28	181.97	0.00	82.91	0.08	15.70	182.0	81	312	Clear	
29	44483	83758	Ag. Chem	DW	16-Aug-01	28.0	187	7.88	115.0	50.43	76.12	81.10	12.40	0.02	0.05	0.00	0	0.0	389.00	53	134.47	71.37	5.81	0.24	38.50	429.0	121	852	Clear	
30	44459	83848	Ag. Chem	DW	15-Aug-01	29.0	80	7.80	328.8	241.89	182.82	290.80	2.80	1.30	0.25	0.00	0.002	0.0	706.18	45	630.82	217.30	38.90	0.38	38.20	1232.0	893	1809	Small amount of precipitated iron	
31	44461	83848	Ag. Chem	DW	21-Aug-01	27.6	85	7.58	274.8	250.44	185.85	88.20	0.20	0.01	0.02	0.00	0	0.0	542.54	58	460.76	236.30	12.82	0.60	68.40	1254.0	708	1848	Clear	
32	44485	83848CA2	Ag. Chem	DW	31-Aug-01	27.6	95	7.13	48.3	56.00	26.06	41.38	1.90	11.96	0.15	1.04	0.013	0.0	382.78	43	10.39	0.10	14.80	0.36	28.30	295.2	0	383	Precipitated iron	
33	44436	83818	Ag. Chem	DW	18-Aug-01	28.5	106	7.48	188.8	186.83	129.27	461.0	4.20	0.04	0.00	0.00	0	0.0	673.08	27	288.76	84.78	1.40	0.48	76.40	187.0	284	1888	Small amount of insoluble matter	
34	44432	83838	Ag. Chem	DW	19-Aug-01	28.8	32	7.83	72.3	36.69	25.82	87.38	1.30	0.02	0.00	0.10	0	0.0	483.88	8	1.88	0.00	0.23	1.20	17.80	188.0	8	403	Clear	
35	44422	83820	Ag. Chem	DW	18-Aug-01	28.3	127	7.75	54.4	70.88	70.33	15.40	0.70	0.00	0.00	0.00	0	0.0	329.18	8	10.28	0.00	0.26	0.26	46.80	281.0	0	318	Clear	
36	44409	83820	Ag. Chem	DW	19-Aug-01	28.2	14	7.38	262.8	256.83	71.39	221.14	2.10	0.01	0.04	0.00	0	0.0	483.08	32	230.32	113.80	22.80	0.88	45.80	983.0	284	1828	Clear	
37	44549	84450	Ag. Chem	DW	25-Sep-01	28.3	81	7.78	54.8	56.32	12.88	48.10	2.20	0.01	0.04	0.08	0	0.0	342.78	58	258	0.00	0.31	0.11	34.80	198.0	0	323	Insoluble matter	
38	44408	84450	Ag. Chem	DW	11-Aug-01	28.0	142	7.75	54.1	56.48	10.19	44.80	1.90	0.02	0.04	0.00	0	0.0	341.44	58	4.35	0.00	0.82	0.30	34.80	195.2	0	328	Precipitated iron	
39	44403	85010	Ag. Chem	DW	11-Aug-01	28.0	174	7.90	49.8	20.43	5.39	46.40	4.40	0.06	0.00	0.11	0	0.0	139.68	22	47.66	3.57	12.42	0.19	28.90	83.2	0	243	Clear	
40	44434	85110	Ag. Chem	DW	09-Aug-01	28.9	85	8.98	12.8	11.68	2.83	10.98	2.80	0.41	0.00	0.00	0	0.0	60.14	53	4.75	0.00	0.80	0.11	88.50	89.2	0	147	Clear	

Table 4.4.3.2 Results of Laboratory Chemical Analysis of Groundwater Taken from Existing Wells (3/4)

												WHO Guideline Value for Drinking Water (mg/L)																							
												250.00		50.00		10.00		1.00		0.01		250.00		250.00		50.00		1.00		10.00		1000			
Ser. No.	Lab. No.	Village No.	Province	Well Type	Sampling date	Water Temp (T _W) (°C)	DOP (mg/l)	pH	EC (µS/cm)	Calcium (Ca) (mg/L)	Magnesium (Mg) (mg/L)	Sodium (Na) (mg/L)	Potassium (K) (mg/L)	Total Iron (Fe) (mg/L)	Manganese (Mn) (mg/L)	Ammonia (NH ₄) (mg/L)	Arsenic (As) (mg/L)	Carbonate (CO ₃) (mg/L)	Bicarbonate (HCO ₃) (mg/L)	Dissolved gas carbon (dissolved CO ₂) (mg/L)	Chloride (Cl) (mg/L)	Sulfate (SO ₄) (mg/L)	Nitrate (NO ₃) (mg/L)	Fluoride (F) (mg/L)	Silica (SiO ₂) (mg/L)	Total Hardness as CaCO ₃ (mg/L)	Permanganate Hardness as CaCO ₃ (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Appearance of water at time Analysis						
41	44407	23110	Fe Chhawang	SH	08-Aug-01	23.0	159	7.00	48.8	40.28	14.83	34.50	11.40	0.03	0.02	0.00	0.008	0.0	282.94	5.2	9.49	0.00	0.00	0.30	43.00	134.4	0	303	Clear						
42	44402	23106	Fe Chhawang	SH	10-Aug-01	23.0	42	6.04	38.8	39.84	6.85	13.90	5.70	0.05	0.18	0.00	0	0	139.48	41	7.12	0.00	0.00	0.20	71.90	127.8	0	252	Clear						
43	44428	23206	Fe Chhawang	SH	07-Aug-01	21.6	-95	7.14	71.8	33.92	6.57	98.60	26.50	0.01	0.17	0.00	0.003	0.0	225.04	26	84.67	30.81	22.40	0.74	69.20	128.0	0	404	Insoluble matter						
44	44542	23306	Fe Chhawang	SH	29-Sep-01	23.1	50	7.52	44.5	85.52	4.90	48.74	4.90	0.06	1.40	0.00	0.008	0.0	242.31	57	15.88	0.00	0.40	0.26	42.70	160.8	0	274	Insoluble matter						
45	44518	23306	Fe Chhawang	SH	07-Aug-01	26.0	48	7.70	39.0	36.72	5.00	44.88	1.80	0.12	0.03	0.12	0.015	0.0	236.18	8	7.12	0.00	0.00	0.26	62.30	83.2	0	263	Clear						
46	44526	23306	Fe Chhawang	SH	07-Aug-01	23.6	-80	7.78	48.8	47.88	4.42	64.80	2.80	0.26	0.08	0.00	0	0	273.84	7	2.18	0.00	0.00	0.21	48.30	127.8	0	268	Clear						
47	44618	23306	Fe Chhawang	SH	11-Aug-01	23.2	184	7.88	41.8	47.04	4.24	38.80	2.80	0.03	0.04	0.00	0.008	0.0	246.28	8	6.21	0.00	0.10	0.28	58.40	124.8	0	272	Clear						
48	44445	23306	Fe Chhawang	SH	29-Aug-01	27.0	28	7.20	79.2	122.40	18.82	18.20	0.80	0.26	0.22	0.00	0	0	481.12	39	15.82	1.22	0.00	0.58	33.10	282.0	0	448	Clear						
49	44438	23306	Fe Chhawang	SH	29-Aug-01	28.0	604	5.55	1.8	0.80	1.87	0.80	0.20	0.01	0.01	0.00	0	0	5.82	28	2.27	0.00	0.00	0.10	12.90	6.4	2	21	Clear						
50	44464	23306	Fe Chhawang	SH	29-Aug-01	28.7	237	5.20	1.8	1.12	0.70	2.87	0.80	0.01	0.01	0.00	0	0	5.82	59	2.27	0.00	0.25	0.10	5.90	6.0	1	13	Clear						
51	44406	23306	Fe Chhawang	SH	10-Aug-01	-	-	8.88	25.1	17.82	8.84	10.82	3.90	0.11	0.03	0.04	0	0	125.58	43	1.59	0.00	0.00	0.27	68.20	85.2	0	172	Clear						
52	44461	23306	Fe Chhawang	SH	29-Aug-01	23.4	-2	8.75	28.8	26.55	11.89	11.80	5.90	0.40	0.15	0.00	0.008	0.0	182.88	48	1.18	0.10	0.00	0.31	53.20	115.2	0	184	Small amount of insoluble matter						
53	44465	23306	Fe Chhawang	SH	31-Aug-01	23.6	-148	7.14	43.8	84.88	13.57	23.40	1.20	15.84	0.21	0.00	0.002	0.0	242.58	28	4.35	8.44	2.30	0.30	32.30	180.0	0	268	Precipitated iron						
54	44438	23306	Fe Chhawang	SH	17-Aug-01	23.7	-128	7.38	88.3	79.40	26.74	31.86	1.30	20.40	0.07	0.42	0.142	0.0	426.58	31	26.63	10.00	8.40	0.20	28.30	288.0	0	473	Large amount of precipitated iron						
55	44438	23306	Fe Chhawang	SH	21-Aug-01	23.1	170	8.32	24.7	16.68	17.38	14.94	4.00	0.04	0.00	0.00	0.002	0.0	129.98	24	8.88	0.00	1.88	0.21	88.40	89.2	0	203	Clear						
56	44442	23318	Fe Chhawang	SH	18-Aug-01	28.2	22	7.58	108.5	85.22	84.20	38.80	2.70	0.01	0.18	0.00	0	0	487.54	21	50.00	81.22	0.08	0.46	53.40	477.0	84	816	Clear						
57	44553	202546A0	Fe Chhawang	SH	27-Sep-01	25.7	-23	7.82	78.7	54.00	41.89	38.50	4.80	1.50	0.42	0.02	0	0	429.31	51	32.83	0.80	0.90	0.08	25.90	231.0	0	404	Insoluble matter						
58	44439	202546A0	Fe Chhawang	SH	18-Aug-01	23.5	-81	7.78	78.9	54.43	50.87	21.10	4.70	1.30	0.12	0.00	0	0	490.68	51	40.14	0.70	0.90	0.14	25.90	243.0	0	428	Small amount of insoluble matter						
59	44442	23358	Fe Chhawang	SH	14-Aug-01	26.4	93	7.24	326.8	270.89	135.81	180.93	79.90	0.26	0.06	0.00	0	0	524.48	48	535.93	234.83	350.90	0.54	63.90	1230.0	825	1366	Clear						
60	44428	230418	Fe Chhawang	SH	14-Aug-01	28.2	-18	7.43	189.8	73.62	64.76	251.20	1.30	0.21	0.22	0.08	0	0	711.88	27	176.21	130.95	8.27	1.82	48.60	408.0	0	1128	Small amount of precipitated iron						

Table 4.4.3.2 Results of Laboratory Chemical Analysis of Groundwater Taken from Existing Wells (4/4)

												WHO Guideline Value for Drinking Water (mg/L)																	
												250.00		500	1000	1500	3000		250.00	500.00	500.00	1500					1000		
Ser. No.	Lab. No.	Village No.	Province	Well Type	Sampling date	Water Temp. (H ₂ O) (deg-C)	DOP (H ₂ O) (deg)	pH	EC (H ₂ O) (μS/cm)	Calcium (H ₂ O) (mg/L)	Magnesium (H ₂ O) (mg/L)	Sodium (H ₂ O) (mg/L)	Potassium (H ₂ O) (mg/L)	Total Iron (H ₂ O) (mg/L)	Manganese (H ₂ O) (mg/L)	Ammonia (H ₂ O) (mg/L)	Ammonia (H ₂ O) (mg/L)	Carbonate (H ₂ O) (mg/L)	Bicarbonate (H ₂ O) (mg/L)	Dissolved inorganic carbon (H ₂ O) (mg/L)	Chloride (H ₂ O) (mg/L)	Sulfate (H ₂ O) (mg/L)	Nitrate (H ₂ O) (mg/L)	Fluoride (H ₂ O) (mg/L)	Silica (H ₂ O) (mg/L)	Total Hardness as CaCO ₃ (mg/L)	Permanganate Hardness as CaCO ₃ (mg/L)	Total Dissolved Solids (TDS) (mg/L)	Appearance of water at time Analysis
81	44404	50308	Eg. Cham	SH	18-Aug-01	28.5	-71	7.90	52.1	13.36	13.84	80.37	1.80	2.96	0.03	0.08	0.008	0.0	275.48	48	20.86	1.34	0.80	0.41	41.70	89.0	0	374	Small amount of precipitated iron
82	44409	50308	Eg. Cham	SH	28-Aug-01	28.5	-25.2	8.10	5.8	3.23	3.83	3.87	4.10	1.10	0.19	0.00	0	0.0	29.18	37	3.77	0.00	0.00	0.00	45.30	17.2	0	75	Clear
83	44409	50308	Eg. Cham	SH	10-Aug-01	28.8	80	7.28	35.3	87.84	51.21	61.82	1.80	0.08	0.71	0.00	0	0.0	356.78	29	0.89	16.40	0.00	0.00	48.30	280.0	0	320	Clear
84	44405	50308	Eg. Cham	SH	15-Aug-01	28.5	-80	7.80	52.2	43.68	33.29	46.30	1.10	0.60	0.08	0.00	0	0.0	283.84	15	0.18	0.00	0.00	1.18	18.80	244.4	0	238	Small amount of insoluble matter
85	44405	50308	Eg. Cham	SH	15-Aug-01	31.8	119	7.28	181.0	132.80	15.84	80.67	0.80	0.05	0.05	0.00	0.008	0.0	312.48	29	286.51	50.45	18.80	0.30	63.80	642.0	337	812	Clear
86	44402	50308	Eg. Cham	SH	18-Aug-01	28.7	80	7.24	51.8	21.29	23.35	35.82	4.70	0.61	0.01	0.20	0	0.0	103.28	11	84.80	19.80	16.51	0.19	46.10	149.2	51	258	Clear
87	44449	50308	Eg. Cham	SH	28-Aug-01	28.2	-280	8.25	1.5	1.89	0.89	0.89	0.10	0.02	0.00	0.18	0	0.0	5.82	95	1.80	0.00	0.00	0.05	8.70	6.0	1	15	Clear
88	44452	50408	Eg. Cham	SH	21-Aug-01	28.7	-42	7.84	51.1	34.43	67.84	44.80	1.10	1.22	0.05	0.00	0	0.0	582.00	21	50.25	5.82	0.02	0.41	75.80	484.0	0	402	Small amount of insoluble matter