

GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2017**

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17
LOCATION	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14
TEMPERATURE (OC)	28.0	N/S	28.0	28.0	27.5	27.5	N/S	28.0	28.0	27.5	N/S	N/S	28.0	28.0
pH	7.87	N/S	7.83	7.74	7.42	7.31	N/S	7.84	7.24	7.17	N/S	N/S	7.20	7.19
TURBIDITY (NTU)	0.09	N/S	0.07	0.05	0.07	0.06	N/S	0.15	0.05	0.06	N/S	N/S	0.10	0.15
CONDUCTIVITY (µmho)	591	N/S	585	855	569	622	N/S	595	1458	1723	N/S	N/S	2230	1411
CALCIUM HARDNESS (mg/L CaCO ₃)	196.0	N/S	216.0	284.0	224.0	264.0	N/S	260.0	360.0	350.0	N/S	N/S	400.0	350.0
TOTAL HARDNESS (mg/L CaCO ₃)	270.0	N/S	276.0	340.0	266.0	290.0	N/S	296.0	410.0	410.0	N/S	N/S	480.0	384.0
CHLORIDES (Mg/l Cl)	75.0	N/S	57.5	83.0	58.5	81.5	N/S	48.0	242.9	354.4	N/S	N/S	511.8	268.9
TOTAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	N/S	POS	NEG	POS	N/S	N/S	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	292	N/S	260	289	274	284	N/S	272	305	303	N/S	N/S	314	314

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER.

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2017**

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/05/17	01/11/17
LOCATION	A-15	A-17	A-18	A-19	A-21	A-23	A-25	A-26	A-28	A-29	A-30	A-31	A-32	M-1
TEMPERATURE (0C)	28.0	28.0	28.0	28.0	28.0	N/S	N/S	N/S	N/S	N/S	28.0	27.5	27.0	27.5
pH	7.26	7.39	7.13	7.67	7.22	N/S	N/S	N/S	N/S	N/S	8.05	7.75	7.87	7.56
TURBIDITY (NTU)	0.08	0.06	0.09	0.07	0.08	N/S	N/S	N/S	N/S	N/S	0.06	0.08	0.07	0.11
CONDUCTIVITY (µmho)	984	1101	1646	2180	1560	N/S	N/S	N/S	N/S	N/S	632	602	552	986
CALCIUM HARDNESS (mg/L CaCO ₃)	290.0	224.0	356.0	348.0	288.0	N/S	N/S	N/S	N/S	N/S	260.0	244.0	240.0	148.0
TOTAL HARDNESS (mg/L CaCO ₃)	316.0	290.0	432.0	444.0	356.0	N/S	N/S	N/S	N/S	N/S	276.0	270.0	256.0	244.0
CHLORIDES (Mg/l Cl)	159.9	220.4	319.9	484.3	322.9	N/S	N/S	N/S	N/S	N/S	77.5	50.5	49.5	165.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	POS	NEG	NEG	N/S	N/S	N/S	N/S	N/S	POS	POS	NEG	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	N/S	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	255	205	322	309	254	N/S	N/S	N/S	N/S	N/S	262	253	243	199

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2017**

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	01/11/17	01/11/17	01/12/17	01/12/17	01/11/17	01/12/17	01/11/17	01/12/17	01/12/17	01/12/17	01/12/17	01/12/17	01/12/17	01/12/17
LOCATION	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-12	M-14	M-15	M-16	M-17A	M-17B
TEMPERATURE (0C)	27.0	27.0	N/S	27.5	N/S	27.5	27.0	27.5	N/S	N/S	27.5	N/S	N/S	27.5
pH	7.43	7.38	N/S	7.10	N/S	7.12	7.40	7.24	N/S	N/S	7.36	N/S	N/S	7.28
TURBIDITY (NTU)	0.36	0.08	N/S	0.08	N/S	0.05	0.06	0.18	N/S	N/S	0.06	N/S	N/S	0.06
CONDUCTIVITY (µmho)	630	495	N/S	581	N/S	549	450	1061	N/S	N/S	536	N/S	N/S	624
CALCIUM HARDNESS (mg/L CaCO ₃)	148.0	164.0	N/S	192.0	N/S	196.0	142.0	170.0	N/S	N/S	196.0	N/S	N/S	224.0
TOTAL HARDNESS (mg/L CaCO ₃)	220.0	210.0	N/S	232.0	N/S	230.0	194.0	230.0	N/S	N/S	256.0	N/S	N/S	236.0
CHLORIDES (Mg/l Cl)	79.0	42.5	N/S	69.5	N/S	63.0	44.0	189.9	N/S	N/S	59.5	N/S	N/S	79.0
TOTAL COLIFORM (cfu/100mL)	POS	NEG	N/S	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	N/S	N/S	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	N/S	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	200	196	N/S	215	N/S	210	175	189	N/S	N/S	205	N/S	N/S	230

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1ST QUARTER 2017**

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	01/12/17	01/12/17	01/12/17	01/11/17	01/11/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17
LOCATION	M-18	M-20 A	M-21	M-23	EX-11	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9
TEMPERATURE (0C)	27.5	27.5	27.0	27.0	28.0	27.0	27.0	N/S	27.0	N/S	27.0	27.0	27.0	27.0
pH	7.18	7.19	7.21	7.42	7.35	7.13	7.11	N/S	7.09	N/S	7.04	7.20	7.29	7.25
TURBIDITY (NTU)	0.06	0.08	0.09	0.06	0.06	0.06	0.42	N/S	0.10	N/S	0.06	0.09	0.06	0.06
CONDUCTIVITY (µmho)	569	640	749	471	580	681	682	N/S	601	N/S	645	610	1076	952
CALCIUM HARDNESS (mg/L CaCO ₃)	196.0	224.0	224.0	174.0	160.0	192.0	112.0	N/S	220.0	N/S	222.0	220.0	232.0	218.0
TOTAL HARDNESS (mg/L CaCO ₃)	256.0	240.0	264.0	194.0	226.0	238.0	246.0	N/S	240.0	N/S	250.0	232.0	248.0	278.0
CHLORIDES (Mg/l Cl)	61.0	69.0	87.0	41.0	56.5	77.0	78.0	N/S	63.5	N/S	83.5	75.5	185.9	151.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	192	215	230	186	205	223	223	N/S	226	N/S	221	201	175	229

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1ST QUARTER 2017**

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17
LOCATION	D-10	D-11	D-12	D-13	D-14	D-15	D-16	D-17	D-18	D-19	D-20	D-21	D-22	D-24
TEMPERATURE (0C)	N/S	27.0	27.0	N/S	27.5	27.5	27.5	N/S	N/S	27.0	27.0	27.5	N/S	27.5
pH	N/S	7.57	7.50	N/S	7.37	7.32	7.28	N/S	N/S	7.35	7.33	7.30	N/S	7.28
TURBIDITY (NTU)	N/S	0.11	0.05	N/S	0.07	0.06	0.05	N/S	N/S	0.06	0.05	0.08	N/S	0.06
CONDUCTIVITY (µmho)	N/S	737	408	N/S	613	670	699	N/S	N/S	600	637	622	N/S	586
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	234.0	170.0	N/S	214.0	218.0	240.0	N/S	N/S	200.0	220.0	210.0	N/S	214.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	252.0	190.0	N/S	224.0	242.0	252.0	N/S	N/S	206.0	228.0	228.0	N/S	230.0
CHLORIDES (Mg/l Cl)	N/S	92.5	44.0	N/S	72.5	77.0	89.5	N/S	N/S	87.0	106.0	76.5	N/S	69.0
TOTAL COLIFORM (cfu/100mL)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	POS	N/S	NEG
FECAL COLIFORM (cfu/100mL)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	213	164	N/S	201	216	211	N/S	N/S	177	194	198	N/S	199

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1ST QUARTER 2017**

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	01/19/17	01/19/17	01/19/17	01/19/17	01/19/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17
LOCATION	D-25	D-26	D-27	D-28	EX-5A	Y-1	Y-2	Y-3	Y-4A	Y-5	Y-6	Y-7	Y-9	Y-10
TEMPERATURE (0C)	27.0	27.0	27.5	27.0	27.0	N/S	27.5	27.5	27.0	27.0	27.0	27.5	27.5	27.5
pH	7.38	7.44	7.41	7.35	7.26	N/S	7.29	7.26	7.68	7.58	7.52	7.26	7.26	7.57
TURBIDITY (NTU)	0.07	0.10	0.07	0.06	0.06	N/S	0.07	0.20	0.16	0.06	0.08	0.08	0.07	0.07
CONDUCTIVITY (µmho)	450	766	419	567	598	N/S	529	504	551	651	508	580	563	562
CALCIUM HARDNESS (mg/L CaCO ₃)	180.0	204.0	192.0	202.0	214.0	N/S	204.0	210.0	216.0	212.0	216.0	260.0	236.0	208.0
TOTAL HARDNESS (mg/L CaCO ₃)	180.0	228.0	198.0	214.0	248.0	N/S	244.0	252.0	256.0	240.0	236.0	280.0	268.0	228.0
CHLORIDES (Mg/l Cl)	55.0	110.5	46.0	74.5	61.0	N/S	49.5	35.0	54.0	87.0	50.0	46.5	50.0	63.0
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	POS	POS	POS	N/S	NEG	POS	POS	NEG	NEG	NEG	POS	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	161	178	170	183	217	N/S	231	227	226	200	215	245	249	208

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2017**

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	01/26/17	02/02/17	02/02/17
LOCATION	Y-12	Y-14	Y-15	Y-16	Y-17	Y-18	Y-19	Y-20	Y-21	Y-22	Y-23	GH-501	F-1	F-2
TEMPERATURE (0C)	27.0	27.0	27.5	27.5	27.0	27.0	27.5	27.0	28.0	27.5	27.0	27.5	27.0	27.5
pH	7.88	7.58	7.42	7.52	7.27	7.30	7.26	7.70	7.99	7.66	7.54	7.53	7.75	7.67
TURBIDITY (NTU)	0.06	0.21	0.15	0.08	0.07	0.05	0.06	0.07	0.07	0.06	0.06	0.07	0.07	0.10
CONDUCTIVITY (µmho)	632	632	378	577	488	478	568	489	592	480	514	759	673	815
CALCIUM HARDNESS (mg/L CaCO ₃)	210.0	210.0	164.0	216.0	220.0	192.0	220.0	188.0	212.0	204.0	230.0	220.0	164.0	188.0
TOTAL HARDNESS (mg/L CaCO ₃)	244.0	236.0	180.0	252.0	240.0	230.0	264.0	216.0	260.0	230.0	260.0	250.0	220.0	248.0
CHLORIDES (Mg/l Cl)	77.0	80.5	46.5	48.0	48.5	41.0	49.5	50.0	52.5	44.0	33.5	110.5	99.0	124.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	219	211	160	239	222	194	226	192	238	205	232	218	180	201

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
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SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	02/02/17	02/09/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17
LOCATION	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-15	F-16	F-17
TEMPERATURE (0C)	27.5	27.0	27.5	N/S	27.5	27.5	27.5	27.5	27.0	27.5	27.0	27.0	N/S	27.0
pH	7.54	7.01	7.48	N/S	7.49	7.39	7.31	7.74	7.84	7.58	7.39	7.59	N/S	7.58
TURBIDITY (NTU)	0.42	0.15	0.09	N/S	0.08	0.05	0.06	0.13	0.12	0.07	0.67	0.07	N/S	0.06
CONDUCTIVITY (µmho)	674	676	697	N/S	674	494	589	1036	743	466	1003	519	N/S	439
CALCIUM HARDNESS (mg/L CaCO ₃)	190.0	202.0	196.0	N/S	192.0	208.0	200.0	196.0	0.0	200.0	196.0	196.0	N/S	196.0
TOTAL HARDNESS (mg/L CaCO ₃)	236.0	240.0	236.0	N/S	228.0	228.0	224.0	252.0	196.0	216.0	252.0	220.0	N/S	212.0
CHLORIDES (Mg/l Cl)	97.0	87.0	95.5	N/S	92.5	42.0	61.0	191.9	252.0	27.5	168.9	71.5	N/S	34.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	N/S	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	196	213	187	N/S	178	201	196	191	190	200	190	195	N/S	191

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1ST QUARTER 2017

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	02/02/17	01/12/17	02/08/17	02/08/17	02/08/17	02/08/17	02/08/17	02/08/17	01/05/17
LOCATION	F-18	F-19	F-20	AG-1	AG-2A	HGC-2	H-1	MJ-1	MJ-5	ASAN	SRSP	FENA	UGUM	NAS-1
TEMPERATURE (0C)	27.5	27.5	27.5	N/S	27.0	27.0	27.0	N/S	N/S	N/S	27.0	27.0	29.0	N/S
pH	7.47	7.51	7.52	N/S	7.55	7.55	7.21	N/S	N/S	N/S	7.29	7.44	7.48	N/S
TURBIDITY (NTU)	0.06	0.08	0.14	N/S	0.06	0.06	0.07	N/S	N/S	N/S	0.09	0.08	0.14	N/S
CONDUCTIVITY (µmho)	442	1061	1094	N/S	458	450	996	N/S	N/S	N/S	407	323	138	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	200.0	216.0	192.0	N/S	192.0	196.0	236.0	N/S	N/S	N/S	176.0	120.0	22.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	220.0	270.0	270.0	N/S	220.0	212.0	270.0	N/S	N/S	N/S	198.0	132.0	42.0	N/S
CHLORIDES (Mg/I Cl)	35.0	180.9	191.4	N/S	58.0	44.5	167.9	N/S	N/S	N/S	35.0	32.5	32.5	N/S
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	N/S	POS	NEG	NEG	N/S
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	N/S
TOTAL ALKALINITY (mg/L CaCO ₃)	188	189	189	N/S	192	194	213	N/S	N/S	N/S	196	135	42	N/S

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2017

SAMPLE NO.	127	128	129	130										
DATE	02/15/17	02/14/17	02/15/17	02/15/17										
LOCATION	GIAA-1	GIAA-2	GIAA-3	TUMON MAUI WELL										
TEMPERATURE (OC)	28.0	28.0	N/S	27.0										
pH	7.00	7.13	N/S	7.40										
TURBIDITY (NTU)	0.10	0.06	N/S	0.14										
CONDUCTIVITY (µmho)	580	538	N/S	765										
CALCIUM HARDNESS (mg/L CaCO ₃)	190.0	194.0	N/S	222.0										
TOTAL HARDNESS (mg/L CaCO ₃)	220.0	226.0	N/S	256.0										
CHLORIDES (Mg/l Cl)	64.5	63.0	N/S	118.0										
TOTAL COLIFORM (cfu/100mL)	POS	NEG	N/S	POS										
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
TOTAL ALKALINITY (mg/L CaCO ₃)	205	201	N/S	212										

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	05/18/17	04/06/17	04/06/17
LOCATION	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14
TEMPERATURE (0C)	30.0	N/S	27.0	28.0	27.5	27.0	N/S	27.0	28.0	28.0	N/S	28.0	28.0	28.0
pH	7.00	N/S	7.22	7.07	7.18	7.15	N/S	7.81	7.11	7.13	N/S	6.90	7.24	7.21
TURBIDITY (NTU)	0.11	N/S	0.10	0.09	0.05	0.10	N/S	0.12	0.10	0.10	N/S	0.20	0.15	0.28
CONDUCTIVITY (µmho)	555	N/S	548	827	534	592	N/S	562	1375	1785	N/S	638	2100	1358
CALCIUM HARDNESS (mg/L CaCO ₃)	248.0	N/S	252.0	280.0	248.0	280.0	N/S	280.0	376.0	360.0	N/S	310.0	436.0	364.0
TOTAL HARDNESS (mg/L CaCO ₃)	292.0	N/S	284.0	340.0	272.0	300.0	N/S	296.0	420.0	436.0	N/S	328.0	500.0	424.0
CHLORIDES (Mg/l Cl ⁻)	26.5	N/S	36.0	105.5	38.5	40.0	N/S	32.5	272.4	370.4	N/S	38.0	486.3	238.9
TOTAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	289	N/S	295	317	269	302	N/S	294	326	316	N/S	314	325	330

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/06/17	04/13/17
LOCATION	A-15	A-17	A-18	A-19	A-21	A-23	A-25	A-26	A-28	A-29	A-30	A-31	A-32	M-1
TEMPERATURE (0C)	27.0	27.0	28.0	27.5	27.0	N/S	N/S	N/S	N/S	N/S	27.5	27.0	28.0	28.0
pH	7.31	7.33	7.15	7.13	7.20	N/S	N/S	N/S	N/S	N/S	7.23	7.24	7.29	7.38
TURBIDITY (NTU)	0.10	0.21	0.19	0.40	0.12	N/S	N/S	N/S	N/S	N/S	0.12	0.11	0.20	0.10
CONDUCTIVITY (µmho)	949	791	1606	2080	1505	N/S	N/S	N/S	N/S	N/S	784	572	522	926
CALCIUM HARDNESS (mg/L CaCO ₃)	272.0	240.0	368.0	356.0	288.0	N/S	N/S	N/S	N/S	N/S	288.0	252.0	232.0	190.0
TOTAL HARDNESS (mg/L CaCO ₃)	316.0	276.0	456.0	472.0	356.0	N/S	N/S	N/S	N/S	N/S	290.0	284.0	264.0	268.0
CHLORIDES (Mg/l Cl ⁻)	149.9	124.5	321.4	474.8	318.4	N/S	N/S	N/S	N/S	N/S	110.0	66.0	52.0	175.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	N/S	N/S	N/S	N/S	N/S	NEG	POS	POS	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	N/S	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	265	221	336	318	263	N/S	N/S	N/S	N/S	N/S	274	259	252	204

REMARKS:

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17	04/03/17
LOCATION	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-12	M-14	M-15	M-16	M-17A	M-17B
TEMPERATURE (°C)	28.0	28.0	N/S	27.0	N/S	27.0	28.0	28.0	N/S	N/S	27.0	N/S	N/S	28.0
pH	7.34	7.33	N/S	7.24	N/S	7.30	7.33	7.48	N/S	N/S	7.50	N/S	N/S	7.32
TURBIDITY (NTU)	0.50	0.10	N/S	0.30	N/S	0.10	0.10	0.20	N/S	N/S	0.10	N/S	N/S	0.10
CONDUCTIVITY (µmho)	590	467	N/S	559	N/S	524	421	579	N/S	N/S	513	N/S	N/S	590
CALCIUM HARDNESS (mg/L CaCO ₃)	156.0	148.0	N/S	196.0	N/S	196.0	152.0	156.0	N/S	N/S	208.0	N/S	N/S	232.0
TOTAL HARDNESS (mg/L CaCO ₃)	230.0	236.0	N/S	236.0	N/S	232.0	196.0	228.0	N/S	N/S	232.0	N/S	N/S	260.0
CHLORIDES (Mg/l Cl ⁻)	79.5	48.5	N/S	65.0	N/S	56.5	40.0	78.0	N/S	N/S	47.5	N/S	N/S	66.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG	N/S	NEG	NEG	POS	N/S	N/S	NEG	N/S	N/S	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	N/S	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	198	198	N/S	219	N/S	214	184	192	N/S	N/S	206	N/S	N/S	235

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	04/13/17	04/13/17	04/13/17	04/13/17	04/13/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	05/18/17	04/20/17	04/20/17	05/18/17
LOCATION	M-18	M-20 A	M-21	M-23	EX-11	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9
TEMPERATURE (0C)	28.0	28.0	28.0	28.0	28.0	27.5	27.5	N/S	27.5	N/S	28.0	27.5	28.0	28.0
pH	7.35	7.36	7.35	7.39	7.41	6.93	7.02	N/S	7.15	N/S	7.10	7.29	7.34	7.02
TURBIDITY (NTU)	0.10	0.10	0.10	0.10	0.10	0.15	0.11	N/S	0.06	N/S	0.13	0.08	0.11	0.10
CONDUCTIVITY (µmho)	545	601	702	451	549	645	647	N/S	563	N/S	641	581	1058	980
CALCIUM HARDNESS (mg/L CaCO ₃)	212.0	216.0	216.0	184.0	168.0	212.0	208.0	N/S	210.0	N/S	214.0	210.0	204.0	220.0
TOTAL HARDNESS (mg/L CaCO ₃)	224.0	250.0	264.0	204.0	236.0	264.0	260.0	N/S	252.0	N/S	252.0	240.0	256.0	276.0
CHLORIDES (Mg/l Cl ⁻)	68.5	77.0	90.0	56.0	61.5	87.5	84.5	N/S	60.0	N/S	77.0	74.5	229.9	174.9
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	POS	NEG	NEG	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	204	223	232	190	202	222	220	N/S	221	N/S	230	213	180	228

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17
LOCATION	D-10	D-11	D-12	D-13	D-14	D-15	D-16	D-17	D-18	D-19	D-20	D-21	D-22	D-24
TEMPERATURE (0C)	N/S	28.0	27.5	N/S	27.5	27.5	27.5	N/S	N/S	27.5	27.5	27.5	N/S	28.0
pH	N/S	7.73	7.63	N/S	7.43	7.39	7.35	N/S	N/S	7.53	7.42	7.40	N/S	7.89
TURBIDITY (NTU)	N/S	0.11	0.06	N/S	0.08	0.07	0.12	N/S	N/S	0.07	0.06	0.11	N/S	0.09
CONDUCTIVITY (µmho)	N/S	649	391	N/S	579	630	659	N/S	N/S	566	609	595	N/S	545
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	216.0	170.0	N/S	204.0	216.0	208.0	N/S	N/S	196.0	200.0	200.0	N/S	204.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	256.0	192.0	N/S	232.0	250.0	252.0	N/S	N/S	212.0	224.0	230.0	N/S	240.0
CHLORIDES (Mg/l Cl ⁻)	N/S	85.0	49.5	N/S	72.0	80.5	89.0	N/S	N/S	88.0	94.5	78.0	N/S	75.0
TOTAL COLIFORM (cfu/100mL)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
FECAL COLIFORM (cfu/100mL)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	220	170	N/S	201	218	212	N/S	N/S	183	197	201	N/S	195

REMARKS:

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	04/20/17	04/20/17	04/20/17	04/20/17	04/20/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17
LOCATION	D-25	D-26	D-27	D-28	EX-5A	Y-1	Y-2	Y-3	Y-4A	Y-5	Y-6	Y-7	Y-9	Y-10
TEMPERATURE (0C)	27.5	27.5	28.0	27.5	27.5	N/S	28.0	28.0	28.0	27.5	27.5	27.5	28.0	27.5
pH	7.20	7.48	7.76	7.54	7.54	N/S	7.21	7.26	7.32	7.14	7.27	7.12	7.13	7.23
TURBIDITY (NTU)	0.06	0.10	0.10	0.09	0.06	N/S	0.08	0.18	0.16	0.08	0.07	0.08	0.07	0.09
CONDUCTIVITY (µmho)	429	808	400	541	558	N/S	529	513	561	652	508	577	565	577
CALCIUM HARDNESS (mg/L CaCO ₃)	164.0	196.0	184.0	192.0	212.0	N/S	200.0	192.0	196.0	200.0	196.0	220.0	220.0	192.0
TOTAL HARDNESS (mg/L CaCO ₃)	184.0	230.0	200.0	216.0	252.0	N/S	240.0	236.0	232.0	236.0	220.0	256.0	256.0	210.0
CHLORIDES (Mg/l Cl ⁻)	50.0	138.9	42.0	69.0	68.0	N/S	27.0	28.5	46.5	74.0	34.0	30.5	51.0	78.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	POS	NEG	NEG	N/S	POS	POS	NEG	NEG	NEG	NEG	POS	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	170	184	181	198	224	N/S	228	236	233	214	219	252	255	214

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

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GUAM WATERWORKS AUTHORITY

QUARTERLY CHEMICAL DEEPWELL ANALYSIS
2ND QUARTER 2017

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/04/17	05/11/17	05/11/17
LOCATION	Y-12	Y-14	Y-15	Y-16	Y-17	Y-18	Y-19	Y-20	Y-21	Y-22	Y-23	GH-501	F-1	F-2
TEMPERATURE (0C)	27.0	27.5	27.5	28.0	27.0	28.0	28.0	27.5	27.5	27.5	27.5	28.0	N/S	27.0
pH	7.21	7.25	7.39	7.39	7.20	7.35	7.22	7.35	7.29	7.34	7.14	7.28	N/S	7.05
TURBIDITY (NTU)	0.07	0.07	0.15	0.07	0.06	0.07	0.06	0.08	0.07	0.07	0.06	0.39	N/S	0.13
CONDUCTIVITY (µmho)	632	620	377	577	490	480	567	498	584	584	511	774	N/S	824
CALCIUM HARDNESS (mg/L CaCO ₃)	192.0	192.0	156.0	196.0	204.0	184.0	196.0	168.0	208.0	190.0	212.0	188.0	N/S	204.0
TOTAL HARDNESS (mg/L CaCO ₃)	228.0	216.0	164.0	230.0	220.0	204.0	230.0	196.0	236.0	208.0	232.0	228.0	N/S	236.0
CHLORIDES (Mg/l Cl ⁻)	61.5	65.5	30.0	48.5	28.5	59.5	77.0	40.0	47.0	50.5	34.5	96.5	N/S	118.5
TOTAL COLIFORM (cfu/100mL)	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	N/S	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	222	216	164	240	227	196	231	197	238	210	240	221	N/S	195

REMARKS:

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17
LOCATION	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-15	F-16	F-17
TEMPERATURE (0C)	27.0	27.0	28.0	28.0	28.0	27.5	28.0	27.0	27.0	27.5	27.0	27.0	27.0	27.0
pH	7.33	7.26	7.26	7.38	7.41	7.12	7.47	7.30	7.58	7.07	7.31	7.31	7.28	7.27
TURBIDITY (NTU)	0.11	0.41	0.07	0.06	0.09	0.05	0.11	0.12	0.08	0.06	0.06	0.07	0.06	0.06
CONDUCTIVITY (µmho)	700	686	694	1033	674	489	589	1074	754	464	1171	532	465	434
CALCIUM HARDNESS (mg/L CaCO ₃)	210.0	196.0	164.0	188.0	176.0	196.0	192.0	196.0	196.0	196.0	208.0	190.0	204.0	196.0
TOTAL HARDNESS (mg/L CaCO ₃)	240.0	240.0	224.0	256.0	204.0	210.0	220.0	250.0	236.0	216.0	268.0	216.0	216.0	210.0
CHLORIDES (Mg/l Cl ⁻)	87.0	93.0	79.5	186.4	91.5	39.0	66.5	207.9	111.0	33.5	229.9	53.5	37.0	25.5
TOTAL COLIFORM (cfu/100mL)	NEG	POS	NEG	N/S	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	POS	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	196	211	194	185	175	201	195	191	194	195	195	194	200	194

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	05/11/17	04/13/17	05/10/17	05/10/17	05/10/17	05/10/17	05/10/17	05/10/17	04/06/17
LOCATION	F-18	F-19	F-20	AG-1	AG-2A	HGC-2	H-1	MJ-1	MJ-5	ASAN	SRSP	FENA	UGUM	NAS-1
TEMPERATURE (0C)	27.5	27.5	27.5	27.5	28.0	28.0	28.0	N/S	N/S	N/S	28.0	29.0	28.5	N/S
pH	7.27	7.50	7.47	7.59	7.26	7.51	7.33	N/S	N/S	N/S	7.26	7.66	7.63	N/S
TURBIDITY (NTU)	0.06	0.12	0.08	0.66	0.10	0.09	0.10	N/S	N/S	N/S	0.07	0.07	0.10	N/S
CONDUCTIVITY (µmho)	438	1061	1117	492	445	442	903	N/S	N/S	N/S	401	299	143	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	192.0	208.0	212.0	204.0	188.0	192.0	228.0	N/S	N/S	N/S	172.0	98.0	20.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	208.0	264.0	272.0	212.0	236.0	220.0	272.0	N/S	N/S	N/S	182.0	104.0	46.0	N/S
CHLORIDES (Mg/l Cl ⁻)	25.5	199.4	220.9	36.0	55.0	25.5	168.4	N/S	N/S	N/S	23.0	30.0	28.5	N/S
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	NEG	NEG	N/S	N/S	N/S	POS	NEG	NEG	N/S
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	N/S
TOTAL ALKALINITY (mg/L CaCO ₃)	191	191	197	205	191	192	242	N/S	N/S	N/S	193	124	51	N/S

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2017

SAMPLE NO.	127	128	129	130										
DATE	05/19/17	05/19/17	05/19/17	05/19/17										
LOCATION	GIAA-1	GIAA-2	GIAA-3	TUMON MAUI WELL										
TEMPERATURE (0C)	28.0	28.0	N/S	28.0										
pH	6.67	6.80	N/S	7.00										
TURBIDITY (NTU)	0.08	0.11	N/S	0.14										
CONDUCTIVITY (µmho)	618	523	N/S	769										
CALCIUM HARDNESS (mg/L CaCO ₃)	196.0	196.0	N/S	232.0										
TOTAL HARDNESS (mg/L CaCO ₃)	236.0	228.0	N/S	264.0										
CHLORIDES (Mg/l Cl ⁻)	65.5	63.0	N/S	94.5										
TOTAL COLIFORM (cfu/100mL)	POS	NEG	N/S	POS										
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
TOTAL ALKALINITY (mg/L CaCO ₃)	194	195	N/S	200										

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER.

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GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17
LOCATION	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14
TEMPERATURE (OC)	N/S	N/S	27.5	27.0	28.0	28.0	N/S	28.0	28.0	28.0	N/S	N/S	27.5	28.0
pH	N/S	N/S	7.31	7.05	7.26	7.19	N/S	7.16	7.75	7.53	N/S	N/S	7.40	7.68
TURBIDITY (NTU)	N/S	N/S	0.07	0.06	0.06	0.06	N/S	0.26	0.09	0.07	N/S	N/S	0.21	0.08
CONDUCTIVITY (μ mho)	N/S	N/S	575	905	643	643	N/S	601	1417	1975	N/S	N/S	2100	1475
CALCIUM HARDNESS (mg/L CaCO_3)	N/S	N/S	288.0	340.0	264.0	284.0	N/S	280.0	364.0	370.0	N/S	N/S	400.0	350.0
TOTAL HARDNESS (mg/L CaCO_3)	N/S	N/S	300.0	350.0	280.0	312.0	N/S	290.0	424.0	448.0	N/S	N/S	496.0	416.0
CHLORIDES (Mg/l Cl_1)	N/S	N/S	22.0	88.5	47.5	70.5	N/S	35.0	209.4	397.3	N/S	N/S	426.3	264.9
TOTAL COLIFORM (cfu/100mL)	N/S	N/S	NEG	NEG	NEG	POS	N/S	NEG	NEG	NEG	N/S	N/S	POS	NEG
FECAL COLIFORM (cfu/100mL)	N/S	N/S	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO_3)	N/S	N/S	259	301	260	288	N/S	275	312	303	N/S	N/S	325	319

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/12/17	07/19/17
LOCATION	A-15	A-17	A-18	A-19	A-21	A-23	A-25	A-26	A-28	A-29	A-30	A-31	A-32	M-1
TEMPERATURE (0C)	28.0	28.0	28.0	28.0	28.0	N/S	N/S	N/S	N/S	N/S	28.0	28.0	28.0	27.5
pH	7.48	7.67	7.23	7.16	7.38	N/S	N/S	N/S	N/S	N/S	7.43	7.37	7.39	7.14
TURBIDITY (NTU)	0.11	0.11	0.29	0.08	0.07	N/S	N/S	N/S	N/S	N/S	0.07	0.13	0.12	0.13
CONDUCTIVITY (μ mho)	1050	1270	1777	2250	1703	N/S	N/S	N/S	N/S	N/S	846	616	553	957
CALCIUM HARDNESS (mg/L CaCO_3)	276.0	232.0	384.0	356.0	296.0	N/S	N/S	N/S	N/S	N/S	288.0	252.0	248.0	168.0
TOTAL HARDNESS (mg/L CaCO_3)	324.0	276.0	450.0	470.0	360.0	N/S	N/S	N/S	N/S	N/S	296.0	264.0	256.0	264.0
CHLORIDES (Mg/l Cl ₂)	161.4	228.9	338.9	476.8	321.9	N/S	N/S	N/S	N/S	N/S	107.5	58.0	34.0	170.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	N/S	N/S	NEG	POS	POS	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	N/S	N/S	NEG	POS	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO_3)	265	212	329	308	256	N/S	N/S	N/S	N/S	N/S	269	271	264	171

REMARKS:

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17
LOCATION	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-12	M-14	M-15	M-16	M-17A	M-17B
TEMPERATURE (°C)	27.5	27.5	27.5	27.0	N/S	27.0	27.5	27.5	N/S	N/S	27.5	N/S	N/S	27.0
pH	7.19	7.26	7.22	7.27	N/S	7.16	7.70	7.51	N/S	N/S	7.10	N/S	N/S	7.07
TURBIDITY (NTU)	0.19	0.16	0.07	0.06	N/S	0.07	0.06	0.10	N/S	N/S	0.06	N/S	N/S	0.06
CONDUCTIVITY (µmho)	634	498	495	589	N/S	555	451	906	N/S	N/S	536	N/S	N/S	623
CALCIUM HARDNESS (mg/L CaCO ₃)	174.0	176.0	188.0	204.0	N/S	204.0	158.0	178.0	N/S	N/S	210.0	N/S	N/S	226.0
TOTAL HARDNESS (mg/L CaCO ₃)	230.0	220.0	222.0	218.0	N/S	210.0	206.0	256.0	N/S	N/S	220.0	N/S	N/S	244.0
CHLORIDES (Mg/l Cl ₁)	85.0	43.0	37.0	68.0	N/S	59.0	39.5	160.9	N/S	N/S	34.0	N/S	N/S	68.5
TOTAL COLIFORM (cfu/100mL)	POS	NEG	NEG	POS	N/S	POS	NEG	POS	N/S	N/S	NEG	N/S	N/S	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	N/S	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	190	193	198	212	N/S	208	176	187	N/S	N/S	201	N/S	N/S	227

REMARKS:

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	07/19/17	07/19/17	07/19/17	07/19/17	07/19/17	07/26/17	07/26/17	07/26/17	07/26/17	07/26/17	07/26/17	07/26/17	07/26/17	08/08/17
LOCATION	M-18	M-20 A	M-21	M-23	EX-11	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9
TEMPERATURE (°C)	27.5	27.5	27.5	27.0	27.5	27.5	27.5	N/S	27.5	N/S	27.5	27.0	27.0	28.0
pH	7.13	7.14	7.13	7.54	7.47	7.71	7.61	N/S	7.67	N/S	7.55	7.11	7.45	7.21
TURBIDITY (NTU)	0.06	0.07	0.07	0.06	0.06	0.08	0.24	N/S	0.08	N/S	0.19	0.12	0.09	0.23
CONDUCTIVITY (µmho)	572	635	742	482	581	685	687	N/S	599	N/S	646	626	1193	1069
CALCIUM HARDNESS (mg/L CaCO ₃)	202.0	216.0	226.0	186.0	166.0	212.0	210.0	N/S	214.0	N/S	228.0	214.0	202.0	220.0
TOTAL HARDNESS (mg/L CaCO ₃)	218.0	248.0	262.0	208.0	238.0	254.0	254.0	N/S	256.0	N/S	258.0	244.0	266.0	296.0
CHLORIDES (Mg/l Cl ₂)	78.5	71.0	95.5	46.0	63.0	88.0	96.0	N/S	61.0	N/S	84.5	77.0	254.4	191.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	194	216	231	188	211	219	220	N/S	221	N/S	224	211	183	227

REMARKS:

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16
LOCATION	D-10	D-11	D-12	D-13	D-14	D-15	D-16	D-17	D-18	D-19	D-20	D-21	D-22	D-24
TEMPERATURE (0C)	N/S	27.5	27.5	N/S	28.0	28.0	28.0	N/S	N/S	27.0	27.0	28.0	N/S	27.0
pH	N/S	7.53	7.63	N/S	7.51	7.47	7.44	N/S	N/S	7.52	7.36	7.36	N/S	7.81
TURBIDITY (NTU)	N/S	0.10	0.10	N/S	0.09	0.14	0.12	N/S	N/S	0.07	0.06	0.09	N/S	0.08
CONDUCTIVITY (μ mho)	N/S	726	431	N/S	623	671	692	N/S	N/S	613	657	621	N/S	592
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	224.0	180.0	N/S	212.0	0.0	228.0	N/S	N/S	186.0	130.0	214.0	N/S	218.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	256.0	190.0	N/S	230.0	212.0	242.0	N/S	N/S	242.0	164.0	234.0	N/S	234.0
CHLORIDES (Mg/l Cl ₂)	N/S	94.0	45.5	N/S	76.0	230.0	85.5	N/S	N/S	87.0	91.5	83.0	N/S	66.5
TOTAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	POS	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
FECAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	POS	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	220	173	N/S	200	217	211	N/S	N/S	182	198	198	N/S	201

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	07/26/17	07/26/17	07/26/17	07/26/17	07/26/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17
LOCATION	D-25	D-26	D-27	D-28	EX-5A	Y-1	Y-2	Y-3	Y-4A	Y-5	Y-6	Y-7	Y-9	Y-10
TEMPERATURE (°C)	27.0	27.0	28.0	27.0	27.5	N/S	27.5	28.0	28.0	27.5	27.5	28.5	28.0	28.0
pH	7.71	7.81	7.83	7.87	7.51	N/S	7.70	7.82	7.16	7.95	7.68	7.59	7.81	7.94
TURBIDITY (NTU)	0.07	0.09	0.06	0.07	0.08	N/S	0.09	0.15	0.16	0.10	0.07	0.10	0.08	0.07
CONDUCTIVITY (µmho)	511	953	450	582	604	N/S	540	528	559	661	515	583	575	583
CALCIUM HARDNESS (mg/L CaCO ₃)	180.0	202.0	196.0	196.0	216.0	N/S	200.0	218.0	210.0	214.0	206.0	238.0	236.0	206.0
TOTAL HARDNESS (mg/L CaCO ₃)	234.0	224.0	206.0	220.0	254.0	N/S	240.0	252.0	256.0	248.0	250.0	284.0	290.0	256.0
CHLORIDES (Mg/l Cl ₁)	63.0	183.9	37.5	65.5	59.0	N/S	47.5	44.5	68.5	91.0	37.5	44.5	43.0	66.0
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	165	185	182	193	226	N/S	231	240	232	213	220	255	254	216

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER.

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GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	08/02/17	08/02/17	08/02/17	08/17/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/02/17	08/09/17	08/09/17
LOCATION	Y-12	Y-14	Y-15	Y-16	Y-17	Y-18	Y-19	Y-20	Y-21	Y-22	Y-23	GH-501	F-1	F-2
TEMPERATURE (0C)	28.0	28.0	27.5	27.5	27.5	27.0	27.0	27.0	28.0	28.0	27.5	28.0	N/S	28.0
pH	7.81	7.78	7.79	7.20	7.63	7.75	7.56	7.70	7.65	7.64	7.46	7.70	N/S	7.03
TURBIDITY (NTU)	0.08	0.08	0.07	0.16	0.07	0.08	0.08	0.07	0.06	0.08	0.08	0.09	N/S	0.11
CONDUCTIVITY (µmho)	618	601	383	582	498	483	571	507	580	484	520	833	N/S	839
CALCIUM HARDNESS (mg/L CaCO ₃)	204.0	204.0	156.0	216.0	226.0	190.0	234.0	182.0	230.0	196.0	238.0	208.0	N/S	192.0
TOTAL HARDNESS (mg/L CaCO ₃)	258.0	246.0	180.0	260.0	250.0	224.0	260.0	224.0	260.0	232.0	252.0	270.0	N/S	244.0
CHLORIDES (Mg/l Cl ₁)	77.0	83.0	38.0	50.0	46.0	52.0	43.5	55.5	48.0	27.0	34.0	124.5	N/S	120.0
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	POS	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	219	220	161	242	229	202	235	199	236	212	242	218	N/S	192

REMARKS:

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GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17
LOCATION	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-15	F-16	F-17
TEMPERATURE (0C)	N/S	27.0	27.0	N/S	27.5	27.5	27.5	28.0	28.0	28.0	27.0	27.0	27.0	27.0
pH	N/S	7.05	7.00	N/S	7.54	7.34	7.18	7.27	7.46	7.36	7.20	7.38	7.24	7.24
TURBIDITY (NTU)	N/S	0.18	0.07	N/S	0.33	0.07	0.05	0.06	0.07	0.07	0.58	0.07	0.06	0.08
CONDUCTIVITY (µmho)	N/S	759	706	N/S	684	498	605	1115	778	778	1136	530	471	440
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	216.0	206.0	N/S	190.0	212.0	206.0	210.0	206.0	210.0	214.0	202.0	204.0	198.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	240.0	234.0	N/S	220.0	222.0	222.0	266.0	238.0	214.0	268.0	216.0	218.0	210.0
CHLORIDES (Mg/l Cl ₁)	N/S	95.5	86.5	N/S	88.5	29.5	67.0	202.4	116.5	29.5	210.9	50.5	18.0	25.5
TOTAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	POS	NEG	NEG	NEG	NEG	POS	NEG	POS	NEG
FECAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	213	193	N/S	176	198	195	190	193	195	191	195	199	192

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER.

CERTIFIED BY: _____

GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS 3RD QUARTER 2017

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	08/09/17	07/13/16	08/15/17	08/15/17	08/15/17	08/15/17	08/15/17	08/15/17	07/12/17
LOCATION	F-18	F-19	F-20	AG-1	AG-2A	HGC-2	H-1	MJ-1	MJ-5	ASAN	SRSP	FENA	UGUM	NAS-1
TEMPERATURE (0C)	27.5	28.0	27.0	27.0	27.0	27.0	27.0	N/S	N/S	N/S	27.5	31.0	30.0	N/S
pH	7.16	7.19	7.22	7.30	7.41	7.49	7.07	N/S	N/S	N/S	7.55	7.41	7.79	N/S
TURBIDITY (NTU)	0.07	0.08	0.08	0.09	0.17	0.07	0.07	N/S	N/S	N/S	0.38	0.26	0.09	N/S
CONDUCTIVITY (µmho)	444	1097	1175	535	453	441	1021	N/S	N/S	N/S	390	280	157	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	204.0	212.0	214.0	202.0	180.0	196.0	224.0	N/S	N/S	N/S	180.0	96.0	24.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	212.0	266.0	278.0	220.0	206.0	204.0	264.0	N/S	N/S	N/S	194.0	106.0	52.0	N/S
CHLORIDES (Mg/l Cl ₂)	39.0	171.9	201.4	47.5	35.5	35.5	159.4	N/S	N/S	N/S	33.0	34.0	31.0	N/S
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	POS	NEG	NEG	N/S
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	N/S
TOTAL ALKALINITY (mg/L CaCO ₃)	192	194	195	205	190	185	201	N/S	N/S	N/S	194	108	56	N/S

REMARKS:

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WASTEWATER.

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P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2017**

SAMPLE NO.	127	128	129	130										
DATE	08/24/17	08/24/17	08/24/17	08/17/17										
LOCATION	GIAA-1	GIAA-2	GIAA-3	TUMON MAUI WELL										
TEMPERATURE (0C)	28.0	N/S	N/S	28.0										
pH	7.41	N/S	N/S	7.27										
TURBIDITY (NTU)	0.08	N/S	N/S	0.25										
CONDUCTIVITY (µmho)	616	N/S	N/S	760										
CALCIUM HARDNESS (mg/L CaCO ₃)	200.0	N/S	N/S	222.0										
TOTAL HARDNESS (mg/L CaCO ₃)	226.0	N/S	N/S	264.0										
CHLORIDES (Mg/l Cl ₁)	72.0	N/S	N/S	116.0										
TOTAL COLIFORM (cfu/100mL)	NEG	N/S	N/S	POS										
FECAL COLIFORM (cfu/100mL)	NEG	N/S	N/S	NEG										
TOTAL ALKALINITY (mg/L CaCO ₃)	197	N/S	N/S	211										

REMARKS:

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GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
4TH QUARTER 2017**

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17
LOCATION	A-1	A-2	A-3	A-4	A-5	A-6	A-7	A-8	A-9	A-10	A-11	A-12	A-13	A-14
TEMPERATURE (0C)	N/S	N/S	28.0	28.0	28.0	28.0	N/S	28.0	28.0	28.0	N/S	28.0	27.5	28.5
pH	N/S	N/S	7.27	7.01	7.23	7.06	N/S	7.25	7.35	7.24	N/S	7.07	7.13	7.05
TURBIDITY (NTU)	N/S	N/S	0.08	0.06	0.06	0.12	N/S	0.16	0.07	0.06	N/S	0.06	0.08	0.09
CONDUCTIVITY (µmho)	N/S	N/S	567	891	559	619	N/S	583	1434	1869	N/S	614	2200	1424
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	N/S	272.0	330.0	226.0	230.0	N/S	286.0	388.0	364.0	N/S	306.0	430.0	344.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	N/S	286.0	338.0	282.0	308.0	N/S	298.0	438.0	462.0	N/S	322.0	474.0	392.0
CHLORIDES (Mg/l Cl ⁻)	N/S	N/S	10.0	87.0	26.5	33.0	N/S	44.5	248.9	403.3	N/S	33.5	490.3	248.9
TOTAL COLIFORM (cfu/100mL)	N/S	N/S	NEG	NEG	NEG	POS	N/S	NEG	NEG	NEG	N/S	POS	NEG	NEG
FECAL COLIFORM (cfu/100mL)	N/S	N/S	NEG	NEG	NEG	POS	N/S	NEG	NEG	NEG	N/S	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	N/S	285	303	263	288	N/S	268	309	304	N/S	300	322	318

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/05/17	10/12/17
LOCATION	A-15	A-17	A-18	A-19	A-21	A-23	A-25	A-26	A-28	A-29	A-30	A-31	A-32	M-1
TEMPERATURE (0C)	28.5	28.0	28.0	28.0	28.0	N/S	N/S	N/S	N/S	N/S	28.0	28.0	28.0	27.0
pH	7.17	7.43	7.20	7.11	7.20	N/S	N/S	N/S	N/S	N/S	7.47	7.30	7.47	7.84
TURBIDITY (NTU)	0.08	0.09	0.47	0.08	0.06	N/S	N/S	N/S	N/S	N/S	0.08	0.12	0.08	0.08
CONDUCTIVITY (µmho)	994	1134	1739	2240	1588	N/S	N/S	N/S	N/S	N/S	758	594	538	920
CALCIUM HARDNESS (mg/L CaCO ₃)	226.0	208.0	392.0	384.0	286.0	N/S	N/S	N/S	N/S	N/S	276.0	214.0	182.0	170.0
TOTAL HARDNESS (mg/L CaCO ₃)	326.0	276.0	472.0	500.0	374.0	N/S	N/S	N/S	N/S	N/S	310.0	272.0	260.0	264.0
CHLORIDES (Mg/l Cl ⁻)	160.4	208.9	350.4	482.3	324.4	N/S	N/S	N/S	N/S	N/S	79.5	36.0	26.5	211.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	POS	NEG	POS	N/S	N/S	N/S	N/S	N/S	POS	POS	POS	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	N/S	N/S	NEG	POS	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	270	207	323	314	253	N/S	N/S	N/S	N/S	N/S	270	260	250	201

REMARKS:

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17
LOCATION	M-2	M-3	M-4	M-5	M-6	M-7	M-8	M-9	M-12	M-14	M-15	M-16	M-17A	M-17B
TEMPERATURE (0C)	28.0	27.5	27.5	27.0	N/S	27.5	27.5	N/S	N/S	N/S	27.0	N/S	N/S	27.5
pH	7.63	7.51	7.51	7.06	N/S	7.01	7.54	N/S	N/S	N/S	7.00	N/S	N/S	6.97
TURBIDITY (NTU)	0.77	0.07	0.06	0.06	N/S	0.11	0.05	N/S	N/S	N/S	0.05	N/S	N/S	0.06
CONDUCTIVITY (µmho)	621	485	476	567	N/S	526	444	N/S	N/S	N/S	528	N/S	N/S	610
CALCIUM HARDNESS (mg/L CaCO ₃)	178.0	172.0	186.0	200.0	N/S	204.0	160.0	N/S	N/S	N/S	212.0	N/S	N/S	226.0
TOTAL HARDNESS (mg/L CaCO ₃)	240.0	218.0	234.0	242.0	N/S	236.0	208.0	N/S	N/S	N/S	236.0	N/S	N/S	256.0
CHLORIDES (Mg/l Cl ⁻)	82.5	46.0	36.5	52.5	N/S	39.5	53.0	N/S	N/S	N/S	68.5	N/S	N/S	49.5
TOTAL COLIFORM (cfu/100mL)	POS	NEG	NEG	NEG	N/S	NEG	NEG	N/S	N/S	N/S	NEG	N/S	N/S	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	N/S	NEG	NEG	N/S	N/S	N/S	NEG	N/S	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	194	196	196	214	N/S	206	183	N/S	N/S	N/S	202	N/S	N/S	230

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	10/12/17	10/12/17	10/12/17	10/12/17	10/12/17	10/18/17	10/18/17	10/18/17	10/18/17	10/18/17	10/18/17	10/18/17	10/18/17	10/18/17
LOCATION	M-18	M-20 A	M-21	M-23	EX-11	D-1	D-2	D-3	D-4	D-5	D-6	D-7	D-8	D-9
TEMPERATURE (0C)	27.5	27.5	27.5	27.0	27.5	27.0	27.0	N/S	27.0	N/S	27.0	27.0	27.0	27.0
pH	7.02	7.08	7.55	7.50	7.44	7.23	7.14	N/S	7.13	N/S	7.07	7.39	7.25	7.72
TURBIDITY (NTU)	0.06	0.09	0.14	0.06	0.14	0.27	0.09	N/S	0.09	N/S	0.06	0.07	0.08	0.11
CONDUCTIVITY (µmho)	466	620	738	467	560	657	661	N/S	580	N/S	615	596	1181	1103
CALCIUM HARDNESS (mg/L CaCO ₃)	184.0	220.0	220.0	190.0	170.0	208.0	220.0	N/S	224.0	N/S	232.0	208.0	208.0	236.0
TOTAL HARDNESS (mg/L CaCO ₃)	206.0	256.0	270.0	206.0	240.0	272.0	260.0	N/S	264.0	N/S	264.0	260.0	276.0	300.0
CHLORIDES (Mg/l Cl ⁻)	49.5	73.5	94.0	48.5	63.5	91.5	83.0	N/S	73.5	N/S	75.0	74.5	224.9	166.9
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	POS	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	178	220	232	189	201	216	215	N/S	221	N/S	220	210	182	229

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	10/18/17	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16
LOCATION	D-10	D-11	D-12	D-13	D-14	D-15	D-16	D-17	D-18	D-19	D-20	D-21	D-22	D-24
TEMPERATURE (°C)	N/S	27.0	27.0	N/S	27.5	27.5	27.5	N/S	N/S	27.0	27.0	27.5	N/S	27.0
pH	N/S	7.90	7.38	N/S	7.88	7.73	7.51	N/S	N/S	7.25	7.23	7.25	N/S	7.81
TURBIDITY (NTU)	N/S	0.07	0.08	N/S	0.11	0.10	0.10	N/S	N/S	0.06	0.05	0.08	N/S	0.12
CONDUCTIVITY (µmho)	N/S	696	419	N/S	607	655	679	N/S	N/S	600	645	598	N/S	578
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	230.0	216.0	N/S	224.0	196.0	224.0	N/S	N/S	204.0	212.0	210.0	N/S	224.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	260.0	232.0	N/S	256.0	256.0	254.0	N/S	N/S	230.0	250.0	232.0	N/S	236.0
CHLORIDES (Mg/l Cl ⁻)	N/S	85.5	44.5	N/S	71.5	64.0	95.5	N/S	N/S	68.0	85.0	70.0	N/S	67.5
TOTAL COLIFORM (cfu/100mL)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
FECAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	221	175	N/S	215	206	207	N/S	N/S	185	200	198	N/S	200

REMARKS:

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CERTIFIED BY: _____



P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	10/18/17	10/18/17	10/18/17	10/18/17	10/18/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17
LOCATION	D-25	D-26	D-27	D-28	EX-5A	Y-1	Y-2	Y-3	Y-4A	Y-5	Y-6	Y-7	Y-9	Y-10
TEMPERATURE (0C)	27.0	27.5	27.5	27.0	27.5	N/S	28.0	29.0	27.5	27.0	27.5	28.5	28.0	27.5
pH	7.63	7.71	7.65	7.57	7.51	N/S	7.12	7.22	7.08	7.01	7.19	7.08	7.05	7.15
TURBIDITY (NTU)	0.13	0.11	0.22	0.10	0.07	N/S	0.26	0.21	0.28	0.14	0.09	0.08	0.09	0.07
CONDUCTIVITY (µmho)	462	928	423	567	587	N/S	514	473	540	649	492	560	543	541
CALCIUM HARDNESS (mg/L CaCO ₃)	188.0	204.0	208.0	208.0	210.0	N/S	216.0	204.0	216.0	216.0	216.0	240.0	244.0	216.0
TOTAL HARDNESS (mg/L CaCO ₃)	196.0	250.0	216.0	232.0	252.0	N/S	256.0	230.0	256.0	256.0	252.0	292.0	292.0	248.0
CHLORIDES (Mg/l Cl ⁻)	48.5	165.4	32.5	56.0	60.5	N/S	59.5	29.0	30.0	86.5	30.0	44.5	41.0	48.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	POS	NEG	POS	N/S	NEG	POS	POS	NEG	NEG	NEG	POS	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	POS	NEG	NEG	N/S	NEG	POS	NEG	NEG	NEG	NEG	POS	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	170	192	186	196	223	N/S	232	231	236	215	221	252	242	214

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

REMARKS:

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GUAM WATERWORKS AUTHORITY

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	10/26/17	11/01/17	11/01/17
LOCATION	Y-12	Y-14	Y-15	Y-16	Y-17	Y-18	Y-19	Y-20	Y-21	Y-22	Y-23	GH-501	F-1	F-2
TEMPERATURE (0C)	N/S	27.5	27.5	27.5	27.5	27.5	28.0	27.5	27.5	27.5	27.5	27.5	27.5	27.5
pH	N/S	7.14	7.37	7.55	7.50	7.45	7.34	7.32	7.33	7.39	7.17	7.29	7.56	7.44
TURBIDITY (NTU)	N/S	0.07	0.06	0.06	0.07	0.06	0.11	0.08	0.07	0.07	0.07	0.11	0.08	0.20
CONDUCTIVITY (µmho)	N/S	605	361	559	483	473	547	491	571	466	506	771	689	824
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	212.0	160.0	230.0	230.0	196.0	236.0	192.0	216.0	212.0	236.0	224.0	190.0	200.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	256.0	190.0	268.0	252.0	220.0	256.0	230.0	260.0	236.0	268.0	276.0	224.0	252.0
CHLORIDES (Mg/l Cl ⁻)	N/S	59.5	45.5	38.0	28.5	61.5	44.0	43.5	54.5	27.0	33.0	109.5	100.0	152.4
TOTAL COLIFORM (cfu/100mL)	N/S	POS	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	POS
FECAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	216	160	242	231	205	237	200	240	211	244	218	182	194

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER.

CERTIFIED BY: _____



P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	12/14/17
LOCATION	F-3	F-4	F-5	F-6	F-7	F-8	F-9	F-10	F-11	F-12	F-13	F-15	F-16	F-17
TEMPERATURE (0C)	27.5	27.0	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.5	27.0	27.0	27.0	27.5
pH	7.35	7.23	7.27	7.31	7.70	7.13	7.95	7.92	7.89	7.94	7.20	7.76	7.75	7.6
TURBIDITY (NTU)	0.66	0.39	0.11	0.08	0.10	0.08	0.09	0.13	0.09	0.08	0.13	0.10	0.10	0.1
CONDUCTIVITY (µmho)	702	797	693	1187	666	494	605	1105	755	468	1192	539	466	437.0
CALCIUM HARDNESS (mg/L CaCO ₃)	196.0	216.0	208.0	212.0	196.0	208.0	204.0	204.0	212.0	212.0	220.0	208.0	208.0	200.0
TOTAL HARDNESS (mg/L CaCO ₃)	236.0	260.0	240.0	276.0	228.0	236.0	240.0	264.0	248.0	220.0	280.0	232.0	230.0	236.0
CHLORIDES (Mg/l Cl ⁻)	100.0	118.5	104.0	225.4	95.5	44.5	73.0	195.4	111.5	36.0	244.4	57.5	37.5	19.5
TOTAL COLIFORM (cfu/100mL)	NEG	POS	NEG	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	-
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	-
TOTAL ALKALINITY (mg/L CaCO ₃)	194	212	192	191	179	201	194	190	192	196	192	196	201	190

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER.

CERTIFIED BY: _____



P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2017

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	11/01/17	10/12/17	11/16/17	11/16/17	12/14/17	12/14/18	11/16/17	11/16/17	12/14/17
LOCATION	F-18	F-19	F-20	AG-1	AG-2A	HGC-2	H-1	MJ-1	MJ-5	ASAN	SRSP	FENA	UGUM	NAS-1
TEMPERATURE (0C)	27.0	27.5	27.5	27.0	27.0	27.0	27.0	N/S	N/S	N/S	22.0	29.5	31.0	27.0
pH	7.72	7.69	7.61	7.77	7.84	7.74	7.06	N/S	N/S	N/S	7.48	7.57	6.54	7.14
TURBIDITY (NTU)	0.08	1.10	0.13	0.09	0.07	0.10	0.06	N/S	N/S	N/S	0.13	0.10	0.17	0.08
CONDUCTIVITY (µmho)	438	1094	1190	547	447	436	911	N/S	N/S	N/S	405	298	191.4	696
CALCIUM HARDNESS (mg/L CaCO ₃)	208.0	208.0	216.0	204.0	192.0	190.0	224.0	N/S	N/S	N/S	196.0	112.0	20.0	234.0
TOTAL HARDNESS (mg/L CaCO ₃)	220.0	280.0	276.0	232.0	204.0	216.0	272.0	N/S	N/S	N/S	214.0	150.0	50.0	252.0
CHLORIDES (Mg/l Cl ⁻)	24.0	213.9	131.4	63.0	35.0	35.5	158.9	N/S	N/S	N/S	26.0	34.5	26.5	82.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	POS	NEG	NEG	NEG	N/S	N/S	N/S	POS	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	192	196	196	204	192	195	212	N/S	N/S	N/S	193	117	46	230

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND WASTEWATER

CERTIFIED BY: _____

GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
4TH QUARTER 2017**

SAMPLE NO.	127	128	129	130										
DATE	12/14/17	12/14/17	12/14/17	12/14/17										
LOCATION	GIAA-1	GIAA-2	GIAA-3	TUMON MAUI WELL										
TEMPERATURE (0C)	27.0	27.0	N/S	27.0										
pH	7.18	7.32	N/S	7.32										
TURBIDITY (NTU)	0.10	0.09	N/S	0.10										
CONDUCTIVITY (µmho)	583	515	N/S	755										
CALCIUM HARDNESS (mg/L CaCO ₃)	188.0	206.0	N/S	252.0										
TOTAL HARDNESS (mg/L CaCO ₃)	216.0	222.0	N/S	262.0										
CHLORIDES (Mg/l Cl')	75.0	60.0	N/S	110.0										
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	POS										
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
TOTAL ALKALINITY (mg/L CaCO ₃)	197	199	N/S	208										

REMARKS:

ANALYZED IN ACCORDANCE WITH STANDARD METHODS FOR THE EXAMINATION OF WATER AND
WASTEWATER

CERTIFIED BY: _____