

GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	1/14/2016	01/14/16
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)	28.0	N/S	27.5	28.0	27.5	27.5	N/S	28.0	28.0	27.5	N/S	N/S	27.5	27.5
pH	7.36	N/S	7.32	7.11	7.23	7.17	N/S	7.59	7.28	7.22	N/S	N/S	7.16	7.01
TURBIDITY (NTU)	0.23	N/S	0.07	0.07	0.16	0.10	N/S	0.17	0.24	0.07	N/S	N/S	0.09	0.13
CONDUCTIVITY (µmho)	607	N/S	595	840	567	618	N/S	602	1390	1581	N/S	N/S	2150	1338
CALCIUM HARDNESS (mg/L CaCO ₃)	288.0	N/S	280.0	280.0	270.0	280.0	N/S	284.0	384.0	396.0	N/S	N/S	450.0	396.0
TOTAL HARDNESS (mg/L CaCO ₃)	232.0	N/S	288.0	292.0	276.0	286.0	N/S	296.0	420.0	410.0	N/S	N/S	496.0	404.0
CHLORIDES (Mg/l Cl)	27.0	N/S	40.0	91.5	27.0	53.0	N/S	64.0	235.9	292.4	N/S	N/S	431.8	215.4
TOTAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	POS	POS	N/S	NEG	NEG	POS	N/S	N/S	POS	NEG
ECOLI (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	POS	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	281	N/S	282	304	258	280	N/S	279	308	304	N/S	N/S	315	318

REMARKS:

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/14/16	01/28/16
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	27.5	28.0	27.5	28.0	28.0	N/S	N/S	N/S	27.5	27.5	28.0	N/S
pH	7.03	7.04	7.00	7.08	7.15	7.57	7.44	N/S	N/S	N/S	7.26	7.25	7.44	N/S
TURBIDITY (NTU)	0.08	0.08	0.08	0.08	0.07	0.10	0.11	N/S	N/S	N/S	0.07	0.11	0.09	N/S
CONDUCTIVITY (µmho)	983	1164	1493	1835	1558	583	556	N/S	N/S	N/S	599	609	572	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	284.0	248.0	396.0	380.0	310.0	264.0	252.0	N/S	N/S	N/S	270.0	270.0	250.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	300.0	272.0	428.0	428.0	360.0	272.0	260.0	N/S	N/S	N/S	276.0	272.0	280.0	N/S
CHLORIDES (Mg/l Cl ⁻)	133.4	228.9	239.9	348.9	299.4	43.5	51.5	N/S	N/S	N/S	52.0	46.0	70.0	N/S
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	POS	POS	N/S	N/S	N/S	NEG	POS	NEG	N/S
ECOLI (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)	255	211	329	310	242	256	235	N/S	N/S	N/S	264	255	255	N/S

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16
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)	27.5	27.5	27.5	27.0	N/S	27.0	27.0	27.5	N/S	N/S	27.5	N/S	N/S	N/S
pH	8.04	7.90	7.88	7.64	N/S	7.72	7.88	7.70	N/S	N/S	7.73	N/S	N/S	N/S
TURBIDITY (NTU)	0.12	0.18	0.08	0.08	N/S	0.07	0.11	0.14	N/S	N/S	0.08	N/S	N/S	N/S
CONDUCTIVITY (µmho)	659	501	464	586	N/S	568	441	1075	N/S	N/S	547	N/S	N/S	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	176.0	198.0	196.0	236.0	N/S	230.0	172.0	180.0	N/S	N/S	210.0	N/S	N/S	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	232.0	200.0	220.0	252.0	N/S	248.0	212.0	264.0	N/S	N/S	250.0	N/S	N/S	N/S
CHLORIDES (Mg/l Cl)	77.0	49.5	49.5	60.5	N/S	74.5	39.5	206.4	N/S	N/S	53.0	N/S	N/S	N/S
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	N/S	NEG	POS	NEG	N/S	N/S	NEG	N/S	N/S	N/S
ECOLI (cfu/100mL)	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	N/S	N/S	N/S
TOTAL ALKALINITY (mg/L CaCO ₃)	180	182	174	212	N/S	199	170	178	N/S	N/S	193	N/S	N/S	N/S

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	01/28/16	01/28/16	01/28/16	01/28/16	01/28/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16
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 (OC)	27.5	27.0	27.5	27.5	27.5	27.0	N/S	N/S	27.0	N/S	27.0	N/S	27.0	27.0
pH	7.61	7.56	7.43	7.89	7.71	7.02	N/S	N/S	7.12	N/S	7.09	N/S	7.06	7.13
TURBIDITY (NTU)	0.08	0.10	0.09	0.07	0.11	0.08	N/S	N/S	0.08	N/S	0.11	N/S	0.24	0.42
CONDUCTIVITY (µmho)	591	671	778	463	621	690	N/S	N/S	602	N/S	646	N/S	1411	982
CALCIUM HARDNESS (mg/L CaCO ₃)	204.0	230.0	252.0	196.0	200.0	210.0	N/S	N/S	248.0	N/S	232.0	N/S	210.0	224.0
TOTAL HARDNESS (mg/L CaCO ₃)	224.0	256.0	276.0	216.0	256.0	256.0	N/S	N/S	260.0	N/S	264.0	N/S	292.0	292.0
CHLORIDES (Mg/l Cl)	74.0	68.5	88.0	47.5	67.5	96.5	N/S	N/S	82.0	N/S	73.0	N/S	316.9	172.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	NEG	N/S	NEG	N/S	NEG	POS
ECOLI (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	NEG	N/S	NEG	N/S	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	187	205	213	205	205	215	N/S	N/S	217	N/S	216	N/S	169	216

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16
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	27.0	27.0	N/S	28.0	27.5	27.5	N/S	N/S	27.5	27.5	28.0	N/S	27.5
pH	N/S	7.21	7.33	N/S	7.23	7.85	7.74	N/S	N/S	7.76	7.67	7.66	N/S	7.74
TURBIDITY (NTU)	N/S	0.14	0.16	N/S	0.19	0.13	0.13	N/S	N/S	0.11	0.12	0.16	N/S	0.11
CONDUCTIVITY (µmho)	N/S	698	400	N/S	602	720	695	N/S	N/S	606	639	635	N/S	595
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	228.0	176.0	N/S	212.0	228.0	236.0	N/S	N/S	192.0	196.0	192.0	N/S	208.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	270.0	200.0	N/S	232.0	264.0	256.0	N/S	N/S	224.0	236.0	230.0	N/S	248.0
CHLORIDES (Mg/I Cl)	N/S	100.5	56.5	N/S	76.0	102.5	87.5	N/S	N/S	98.5	88.0	94.5	N/S	76.0
TOTAL COLIFORM (cfu/100mL)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	POS	N/S	NEG
ECOLI (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	215	161	N/S	195	208	203	N/S	N/S	175	190	189	N/S	190

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

1ST QUARTER 2016

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	02/04/16	02/04/16	02/04/16	02/04/16	02/04/16	02/11/16	02/16/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/19/16	02/11/16
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)	28.0	27.5	28.0	27.5	27.0	28.0	28.0	27.5	28.0	27.0	27.5	28.0	27.5	28.5
pH	7.89	7.58	7.76	7.61	7.54	7.47	6.98	7.47	7.47	7.34	7.37	7.27	7.11	7.25
TURBIDITY (NTU)	0.10	0.19	0.10	0.11	0.12	0.17	0.09	0.21	0.11	0.07	0.07	0.10	0.10	0.08
CONDUCTIVITY (µmho)	411	750	420	594	600	535	557	516	571	723	524	594	585.0	609
CALCIUM HARDNESS (mg/L CaCO ₃)	164.0	204.0	188.0	196.0	220.0	200.0	214.0	214.0	226.0	224.0	224.0	256.0	252.0	214.0
TOTAL HARDNESS (mg/L CaCO ₃)	196.0	230.0	210.0	228.0	264.0	252.0	244.0	258.0	270.0	258.0	238.0	278.0	270.0	244.0
CHLORIDES (Mg/l Cl)	42.0	130.9	39.5	88.5	73.0	42.0	44.5	31.0	38.5	97.0	58.5	33.5	34.5	62.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	POS	POS	POS	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG
ECOLI (cfu/100mL)	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	161	182	174	189	220	223	226	230	227	209	216	247	238	209

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1ST QUARTER 2016**

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/11/16	02/25/16	02/25/16
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	28.0	27.0	28.0	28.0	27.0	28.0	28.0	27.0	28.0	28.0	N/S
pH	7.41	7.32	7.47	7.37	7.39	7.49	7.51	7.49	7.42	7.43	7.37	7.34	7.49	N/S
TURBIDITY (NTU)	0.06	0.09	0.06	0.08	0.07	0.09	0.08	0.07	0.06	0.07	0.07	0.07	0.07	N/S
CONDUCTIVITY (µmho)	691	699	388	592	497	484	605	512	642	480	514	774	701	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	226.0	218.0	166.0	228.0	230.0	196.0	238.0	198.0	236.0	224.0	234.0	222.0	200.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	266.0	254.0	194.0	276.0	250.0	218.0	272.0	220.0	280.0	232.0	276.0	260.0	216.0	N/S
CHLORIDES (Mg/l Cl)	115.5	90.0	33.0	70.0	22.0	32.5	54.5	71.0	58.0	34.0	69.5	108.5	119.5	N/S
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	N/S
ECOLI (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S
TOTAL ALKALINITY (mg/L CaCO ₃)	220	207	156	234	222	197	237	198	241	207	234	211	178	N/S

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16	02/25/16
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 (°C)	27.0	N/S	27.0	28.0	28.0	27.0	27.5	27.0	27.0	27.5	27.0	27.5	28.0	27.5
pH	7.46	N/S	7.56	7.60	7.86	7.54	7.74	7.61	7.75	7.83	6.97	7.77	7.74	7.69
TURBIDITY (NTU)	0.27	N/S	0.09	0.08	0.08	0.08	0.09	0.09	0.11	0.07	0.09	0.09	0.06	0.09
CONDUCTIVITY (µmho)	720	N/S	688	1161	684	498	569	1044	729	472	897.0	521	464	444
CALCIUM HARDNESS (mg/L CaCO ₃)	200.0	N/S	208.0	208.0	204.0	204.0	200.0	204.0	212.0	220.0	186.0	216.0	196.0	212.0
TOTAL HARDNESS (mg/L CaCO ₃)	230.0	N/S	236.0	272.0	232.0	210.0	236.0	276.0	236.0	224.0	218.0	228.0	228.0	220.0
CHLORIDES (Mg/l Cl)	126.9	N/S	95.0	218.4	117.5	40.0	74.0	220.4	107.5	31.0	153.4	54.0	26.0	19.5
TOTAL COLIFORM (cfu/100mL)	NEG	N/S	POS	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
ECOLI (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	188	N/S	186	186	173	189	188	187	185	193	183	188	192	186

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	02/25/16	02/25/16	02/25/16	02/16/16	02/25/16	02/25/16	01/28/16	03/01/16	03/01/16	03/01/16	03/01/16	03/01/16	03/01/16	01/14/16
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	27.5	N/S	N/S	N/S	26.5	26.5	28.0	27.5
pH	7.63	7.71	7.71	6.90	7.69	7.99	7.42	N/S	N/S	N/S	7.34	7.61	7.42	7.10
TURBIDITY (NTU)	0.06	0.09	0.09	0.28	0.05	0.07	0.08	N/S	N/S	N/S	0.13	0.14	0.30	0.07
CONDUCTIVITY (µmho)	447	1227	1164	516	453	443	1050	N/S	N/S	N/S	407	290	163	775
CALCIUM HARDNESS (mg/L CaCO ₃)	204.0	204.0	210.0	196.0	196.0	196.0	250.0	N/S	N/S	N/S	190.0	104.0	20.0	268.0
TOTAL HARDNESS (mg/L CaCO ₃)	212.0	276.0	276.0	206.0	216.0	212.0	292.0	N/S	N/S	N/S	196.0	112.0	58.0	270.0
CHLORIDES (Mg/l Cl)	20.0	240.9	230.4	55.0	30.0	52.0	185.4	N/S	N/S	N/S	23.5	29.0	31.0	94.0
TOTAL COLIFORM (cfu/100mL)	POS	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	POS	NEG	NEG	NEG
ECOLI (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)	184	186	191	200	185	189	209	N/S	N/S	N/S	187	100	53	228

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
1ST QUARTER 2016**

SAMPLE NO.	127	128	129											
DATE	03/08/16	03/08/16	03/08/16											
LOCATION	GIAA-1	GIAA-2	GIAA-3											
TEMPERATURE (0C)	28.0	28.0	N/S											
pH	7.81	7.78	N/S											
TURBIDITY (NTU)	0.29	0.06	N/S											
CONDUCTIVITY (µmho)	600	530	N/S											
CALCIUM HARDNESS (mg/L CaCO ₃)	198.0	202.0	N/S											
TOTAL HARDNESS (mg/L CaCO ₃)	234.0	212.0	N/S											
CHLORIDES (Mg/l Cl')	71.0	54.5	N/S											
TOTAL COLIFORM (cfu/100mL)	POS	NEG	N/S											
ECOLI (cfu/100mL)	NEG	NEG	N/S											
TOTAL ALKALINITY (mg/L CaCO ₃)	192	194	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 2016

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	06/17/16	04/07/16	04/07/16
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)	27.5	N/S	27.0	28.0	27.5	27.5	N/S	27.5	28.0	28.0	N/S	29.0	28.0	27.0
pH	7.93	N/S	7.80	7.48	7.55	7.38	N/S	7.46	7.07	7.09	N/S	7.28	7.07	7.29
TURBIDITY (NTU)	0.17	N/S	0.19	0.16	0.09	0.07	N/S	0.27	0.12	0.08	N/S	0.23	0.17	0.12
CONDUCTIVITY (µmho)	801	N/S	638	859	573	629	N/S	605	1458	1787	N/S	641	2230	1385
CALCIUM HARDNESS (mg/L CaCO ₃)	230.0	N/S	240.0	318.0	272.0	274.0	N/S	278.0	350.0	408.0	N/S	280.0	346.0	310.0
TOTAL HARDNESS (mg/L CaCO ₃)	294.0	N/S	246.0	322.0	274.0	292.0	N/S	288.0	380.0	440.0	N/S	286.0	502.0	404.0
CHLORIDES (Mg/l Cl ⁻)	31.5	N/S	36.0	108.5	30.5	38.0	N/S	42.0	303.9	357.4	N/S	20.5	478.8	232.4
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	N/S	NEG	NEG	NEG	POS	N/S	NEG	NEG	NEG	N/S	NEG	NEG	NEG
E COLI (PRESENCE/ABSENCE)	NEG	N/S	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	279	N/S	280	298	267	286	N/S	280	316	305	N/S	296	318	317

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 2016

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	04/07/16	06/09/16
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	28.0	27.5	N/S	N/S	N/S	27.5	28.0	27.5	27.5
pH	7.25	7.38	7.24	7.16	7.25	7.61	7.58	N/S	N/S	N/S	7.49	7.37	7.45	7.81
TURBIDITY (NTU)	0.29	0.19	0.13	0.18	0.09	0.18	0.14	N/S	N/S	N/S	0.24	0.14	0.14	0.31
CONDUCTIVITY (µmho)	1034	1244	1578	1937	1624	641	605	N/S	N/S	N/S	683	615	570	941.0
CALCIUM HARDNESS (mg/L CaCO ₃)	226.0	264.0	412.0	310.0	268.0	244.0	260.0	N/S	N/S	N/S	278.0	248.0	244.0	200.0
TOTAL HARDNESS (mg/L CaCO ₃)	328.0	286.0	472.0	430.0	392.0	304.0	266.0	N/S	N/S	N/S	296.0	280.0	260.0	250.0
CHLORIDES (Mg/l Cl ⁻)	181.4	249.4	283.9	394.3	333.4	49.5	63.0	N/S	N/S	N/S	52.5	45.0	56.5	154.4
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	POS	POS	NEG	POS	POS	POS	N/S	N/S	N/S	NEG	POS	NEG	POS
E COLI (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	258	210	319	311	255	256	240	N/S	N/S	N/S	271	259	256	196.0

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 2016

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16
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)	27.5	27.5	27.5	27.0	N/S	27.0	27.0	27.5	N/S	N/S	27.0	N/S	N/S	27.0
pH	7.66	7.46	7.37	7.80	N/S	7.55	7.44	7.44	N/S	N/S	7.63	N/S	N/S	7.47
TURBIDITY (NTU)	0.14	0.07	0.06	0.06	N/S	0.07	0.15	0.09	N/S	N/S	0.08	N/S	N/S	0.15
CONDUCTIVITY (µmho)	669	501	480	534	N/S	575	443	1086	N/S	N/S	590	N/S	N/S	639
CALCIUM HARDNESS (mg/L CaCO ₃)	134.0	112.0	144.0	174.0	N/S	174.0	124.0	136.0	N/S	N/S	174.0	N/S	N/S	178.0
TOTAL HARDNESS (mg/L CaCO ₃)	202.0	218.0	188.0	218.0	N/S	220.0	184.0	240.0	N/S	N/S	222.0	N/S	N/S	242.0
CHLORIDES (Mg/l Cl ⁻)	86.5	42.5	41.0	49.5	N/S	58.5	40.5	218.4	N/S	N/S	85.0	N/S	N/S	60.0
TOTAL COLIFORM (PRESENCE/ABSENCE)	POS	NEG	NEG	NEG	N/S	NEG	NEG	POS	N/S	N/S	NEG	N/S	N/S	NEG
E COLI (PRESENCE/ABSENCE)	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)	201	184	182	192	N/S	200	171	174	N/S	N/S	214	N/S	N/S	226

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 2016

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	04/21/16	04/21/16	04/21/16	04/21/16	04/21/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16
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	27.0	28.0	27.0	27.5	28.0	28.0	N/S	28.0	N/S	27.0	27.0	28.0	28.0
pH	7.44	7.46	7.31	7.40	7.34	7.38	7.32	N/S	7.28	N/S	7.10	7.27	7.19	7.27
TURBIDITY (NTU)	0.13	0.12	0.07	0.05	0.08	0.06	0.15	N/S	0.08	N/S	0.09	0.22	0.07	0.16
CONDUCTIVITY (µmho)	634	647	763	464	617	689	688	N/S	616	N/S	657	635	1083	975
CALCIUM HARDNESS (mg/L CaCO ₃)	178.0	224.0	212.0	164.0	166.0	186.0	186.0	N/S	196.0	N/S	206.0	198.0	184.0	206.0
TOTAL HARDNESS (mg/L CaCO ₃)	214.0	236.0	256.0	188.0	220.0	232.0	230.0	N/S	226.0	N/S	236.0	218.0	226.0	250.0
CHLORIDES (Mg/l Cl ⁻)	78.0	68.0	98.0	41.5	63.5	84.5	78.0	N/S	58.0	N/S	98.0	80.0	210.9	164.4
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
E COLI (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	198	213	221	176	199	216	211	N/S	216	N/S	216	198	169	218

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 2016

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16
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	28.0	27.0	N/S	27.0	28.0	28.0	N/S	N/S	27.0	27.0	27.5	N/S	27.5
pH	N/S	7.19	7.68	N/S	7.24	7.48	7.48	N/S	N/S	7.46	7.53	7.47	N/S	7.64
TURBIDITY (NTU)	N/S	0.07	0.06	N/S	0.10	0.06	0.07	N/S	N/S	0.08	0.08	0.10	N/S	0.07
CONDUCTIVITY (µmho)	N/S	769	406	N/S	625	717	686	N/S	N/S	614	628	628	N/S	591
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	206.0	160.0	N/S	186.0	210.0	192.0	N/S	N/S	192.0	182.0	184.0	N/S	196.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	240.0	162.0	N/S	210.0	226.0	224.0	N/S	N/S	210.0	210.0	212.0	N/S	210.0
CHLORIDES (Mg/l Cl ⁻)	N/S	106.0	34.0	N/S	78.5	98.0	96.5	N/S	N/S	88.5	99.0	86.0	N/S	82.5
TOTAL COLIFORM (PRESENCE/ABSENCE)	N/S	POS	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	NEG	POS	N/S	POS
E COLI (PRESENCE/ABSENCE)	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	213	159	N/S	194	208	201	N/S	N/S	167	186	185	N/S	189

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 2016

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	04/27/16	04/27/16	04/27/16	04/27/16	04/27/16	04/29/16	06/23/16	04/28/16	04/28/16	04/28/16	04/28/16	04/28/16	04/28/16	04/29/16
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	28.0	27.5	28.0	28.0	27.5	27.0	28.0	28.0	28.0	27.5
pH	7.70	7.45	7.59	7.40	7.28	7.58	7.34	7.47	7.64	7.42	7.45	7.38	7.34	7.20
TURBIDITY (NTU)	0.06	0.34	0.06	0.07	0.06	0.10	0.10	0.23	0.08	0.10	0.18	0.10	0.07	0.08
CONDUCTIVITY (µmho)	409	671	420	586	612	528	552	524	564	688	518	585	582	608
CALCIUM HARDNESS (mg/L CaCO ₃)	154.0	176.0	166.0	188.0	196.0	206	182.0	214.0	198.0	198.0	200.0	240.0	228.0	200.0
TOTAL HARDNESS (mg/L CaCO ₃)	178.0	194.0	178.0	190.0	230.0	242.0	228.0	236.0	260.0	236.0	264.0	264.0	260.0	222.0
CHLORIDES (Mg/l Cl ⁻)	49.0	100.0	44.0	76.0	80.0	47.5	23.0	46.5	55.5	97.0	60.5	43.5	44.5	89.0
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG
E COLI (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	159	173	169	184	215	218	219	230	226	207	214	247	244	208

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 2016

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	04/29/16	04/28/16	04/28/16	04/29/16	04/28/16	05/12/16	04/28/16	04/28/16	04/28/16	04/28/16	04/28/16	05/12/16	05/05/16	05/05/16
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	27.0	27.5	27.0	27.0	27.5	27.0	27.5	27.5	27.0	27.5	27.5	N/S
pH	7.10	7.44	7.48	7.14	7.43	7.02	7.12	7.15	7.10	7.13	7.37	7.03	7.24	N/S
TURBIDITY (NTU)	0.07	0.08	0.10	0.10	0.09	0.07	0.07	0.07	0.07	0.08	0.10	0.10	0.12	N/S
CONDUCTIVITY (µmho)	687.0	655.0	388	583	492	482	597	504	627	477	516	755	692	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	208.0	196.0	156.0	232.0	210.0	190.0	224.0	188.0	220.0	200.0	226.0	208.0	180.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	234.0	230.0	168.0	234.0	238.0	208.0	244.0	204.0	254.0	208.0	244.0	244.0	216.0	N/S
CHLORIDES (Mg/l Cl ⁻)	99.5	94.0	55.5	53.0	43.5	48.0	65.0	52.0	66.5	39.0	34.5	100.5	95.0	N/S
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	N/S
E COLI (PRESENCE/ABSENCE)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S
TOTAL ALKALINITY (mg/L CaCO ₃)	219	209	155	235	215	191	233	195	239	204	231	211	175	N/S

REMARKS:

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2016

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16
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	N/S	28.0	28.0	28.0	28.0	28.0	27.0	27.0	27.5	27.0	27.0	27.0	27.0
pH	7.25	N/S	7.24	7.22	7.24	7.26	7.19	7.35	7.52	7.55	7.66	7.59	7.58	7.62
TURBIDITY (NTU)	0.40	N/S	0.07	0.06	0.07	0.07	0.06	0.25	0.10	0.11	0.07	0.20	0.10	0.10
CONDUCTIVITY (µmho)	669	N/S	671	1117	679	496	564	991	699	471	976	500	459	442
CALCIUM HARDNESS (mg/L CaCO ₃)	184.0	N/S	196.0	204.0	184.0	192.0	196.0	200.0	200.0	196.0	212.0	188.0	196.0	188.0
TOTAL HARDNESS (mg/L CaCO ₃)	236.0	N/S	232.0	272.0	216.0	204.0	216.0	244.0	224.0	204.0	260.0	212.0	220.0	212.0
CHLORIDES (Mg/l Cl ⁻)	92.5	N/S	81.0	205.9	99.0	40.0	64.5	184.9	98.5	27.0	166.9	48.5	37.5	36.5
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	N/S	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS	NEG
E COLI (PRESENCE/ABSENCE)	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	182	N/S	184	183	171	188	178	183	185	190	184	184	191	186

REMARKS:

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

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

2ND QUARTER 2016

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	05/05/16	04/21/16	05/12/16	05/12/16	05/12/16	05/12/16	05/12/16	05/12/16	04/07/16
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	28.0	28.0	N/S	27.0	27.5	27.0	N/S	N/S	N/S	27.0	29.0	29.5	28.0
pH	7.45	7.46	7.43	N/S	7.14	7.62	7.30	N/S	N/S	N/S	7.19	7.34	7.57	7.31
TURBIDITY (NTU)	0.08	0.08	0.08	N/S	0.06	0.09	0.08	N/S	N/S	N/S	0.07	0.16	0.07	0.08
CONDUCTIVITY (µmho)	445	1144	1098	N/S	448	440	1055	N/S	N/S	N/S	406	288	166	748
CALCIUM HARDNESS (mg/L CaCO ₃)	184.0	224.0	232.0	N/S	204.0	180.0	224.0	N/S	N/S	N/S	172.0	80.0	24.0	238.0
TOTAL HARDNESS (mg/L CaCO ₃)	216.0	260.0	260.0	N/S	208.0	204.0	260.0	N/S	N/S	N/S	192.0	100.0	56.0	278.0
CHLORIDES (Mg/l Cl ⁻)	44.5	210.9	221.9	N/S	43.5	44.0	197.4	N/S	N/S	N/S	35.0	41.5	40.0	86.5
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	POS	NEG	N/S	NEG	NEG	POS	N/S	N/S	N/S	POS	NEG	NEG	NEG
E COLI (PRESENCE/ABSENCE)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	N/S	POS	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	184	183	189	N/S	182	188	210	N/S	N/S	N/S	183	89	58	234

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

2ND QUARTER 2016

SAMPLE NO.	127	128	129											
DATE	06/07/16	06/07/16	06/07/16											
LOCATION	GIAA-1	GIAA-2	GIAA-3											
TEMPERATURE (0C)	28.0	28.0	N/S											
pH	7.68	7.45	N/S											
TURBIDITY (NTU)	0.24	0.15	N/S											
CONDUCTIVITY (µmho)	669	553.0	N/S											
CALCIUM HARDNESS (mg/L CaCO ₃)	206.0	200.0	N/S											
TOTAL HARDNESS (mg/L CaCO ₃)	228.0	218.0	N/S											
CHLORIDES (Mg/l Cl ⁻)	101.5	77.0	N/S											
TOTAL COLIFORM (PRESENCE/ABSENCE)	NEG	NEG	N/S											
E COLI (PRESENCE/ABSENCE)	NEG	NEG	N/S											
TOTAL ALKALINITY (mg/L CaCO ₃)	193	190	N/S											

REMARKS:

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GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

3RD QUARTER 2016

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	07/07/16	07/07/16	07/07/16	07/07/16	07/13/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/13/16	07/07/16	07/07/16
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)	28.0	N/S	28.0	28.0	28.0	28.0	N/S	28.0	28.0	28.0	N/S	28.0	28.0	28.0
pH	6.97	N/S	7.03	6.76	7.06	6.95	N/S	7.31	6.90	6.90	N/S	7.15	6.85	7.00
TURBIDITY (NTU)	0.18	N/S	0.22	0.10	0.20	0.11	N/S	0.22	0.08	0.08	N/S	0.10	0.15	0.49
CONDUCTIVITY (µmho)	593	N/S	581	873	574	637	N/S	599	1424	1938	N/S	1083	2230	1420
CALCIUM HARDNESS (mg/L CaCO ₃)	278.0	N/S	274.0	306.0	260.0	296.0	N/S	294.0	340.0	368.0	N/S	270.0	420.0	360.0
TOTAL HARDNESS (mg/L CaCO ₃)	296.0	N/S	294.0	320.0	280.0	300.0	N/S	312.0	450.0	476.0	N/S	316.0	498.0	436.0
CHLORIDES (Mg/l Cl ⁻)	36.0	N/S	40.5	109.5	40.0	63.5	N/S	62.0	237.4	383.8	N/S	193.9	443.8	237.4
TOTAL COLIFORM (cfu/100mL)	POS	N/S	NEG	POS	POS	POS	N/S	NEG	POS	POS	N/S	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	POS	NEG	NEG	N/S	NEG	NEG	NEG	N/S	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	280	N/S	278	300	268	288	N/S	278	312	306	N/S	262	320	322

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2016**

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/07/16	07/12/16	07/07/16	07/07/16	07/13/16
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 (°C)	28.0	28.0	28.0	29.0	28.0	29.0	28.0	N/S	N/S	28.0	27.5	28.0	28.0	28.0
pH	7.06	7.13	7.10	6.97	7.05	7.35	7.32	N/S	N/S	7.36	7.07	7.31	7.33	7.43
TURBIDITY (NTU)	0.15	0.11	0.09	0.08	0.10	0.10	0.16	N/S	N/S	0.22	0.12	0.13	0.50	0.34
CONDUCTIVITY (µmho)	1081	1322	1674	2140	1705	747	700	N/S	N/S	660	1013	610	564	1060
CALCIUM HARDNESS (mg/L CaCO ₃)	288.0	230.0	408.0	400.0	310.0	280.0	272.0	N/S	N/S	288.0	284.0	268.0	262.0	156.0
TOTAL HARDNESS (mg/L CaCO ₃)	304.0	304.0	416.0	474.0	398.0	314.0	288.0	N/S	N/S	314.0	326.0	280.0	278.0	290.0
CHLORIDES (Mg/l Cl)	154.9	238.9	309.9	470.8	377.8	90.5	77.5	N/S	N/S	74.5	137.4	59.0	32.5	184.9
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	POS	POS	N/S	N/S	NEG	NEG	POS	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	N/S	NEG	NEG	POS	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	264	218	326	314	254	248	234	N/S	N/S	272	280	256	255	161

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2016**

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16
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	28.0	N/S	27.5	N/S	27.0	28.0	28.0	N/S	N/S	27.5	N/S	N/S	28.0
pH	7.32	7.41	N/S	7.10	N/S	7.11	7.25	7.14	N/S	N/S	7.17	N/S	N/S	7.20
TURBIDITY (NTU)	0.25	0.13	N/S	0.14	N/S	0.08	0.08	0.11	N/S	N/S	0.08	N/S	N/S	0.10
CONDUCTIVITY (µmho)	657	498	N/S	587	N/S	572	451	1088	N/S	N/S	518	N/S	N/S	612
CALCIUM HARDNESS (mg/L CaCO ₃)	176.0	170.0	N/S	208.0	N/S	216.0	152.0	176.0	N/S	N/S	210.0	N/S	N/S	232.0
TOTAL HARDNESS (mg/L CaCO ₃)	230.0	236.0	N/S	248.0	N/S	244.0	204.0	268.0	N/S	N/S	248.0	N/S	N/S	252.0
CHLORIDES (Mg/l Cl ⁻)	113.5	46.5	N/S	81.5	N/S	68.0	47.0	233.4	N/S	N/S	74.0	N/S	N/S	61.5
TOTAL COLIFORM (cfu/100mL)	POS	NEG	N/S	NEG	N/S	NEG	NEG	NEG	N/S	N/S	NEG	N/S	N/S	POS
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)	195	194	N/S	214	N/S	205	180	182	N/S	N/S	200	N/S	N/S	227

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
3RD QUARTER 2016**

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	07/13/16	07/13/16	07/13/16	07/13/16	07/13/16	07/28/16	08/03/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16
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	27.0	27.5	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	7.12	7.06	7.20	7.20	7.70	7.32	N/S	7.52	N/S	7.42	7.41	7.21	7.31
TURBIDITY (NTU)	0.08	0.64	0.11	0.08	0.07	0.07	0.19	N/S	0.13	N/S	0.08	0.10	0.07	0.06
CONDUCTIVITY (µmho)	624	634	755	463	590	682	632	N/S	609	N/S	650	610	1111	931
CALCIUM HARDNESS (mg/L CaCO ₃)	212.0	216.0	230.0	188.0	176.0	196.0	210.0	N/S	186.0	N/S	232.0	228.0	200.0	236.0
TOTAL HARDNESS (mg/L CaCO ₃)	240.0	256.0	268.0	204.0	240.0	240.0	252.0	N/S	242.0	N/S	256.0	234.0	254.0	284.0
CHLORIDES (Mg/l Cl)	95.0	75.5	106.5	70.0	38.0	79.0	63.5	N/S	65.5	N/S	72.5	74.5	215.9	128.4
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)	205	217	220	205	184	216	217	N/S	214	N/S	217	202	171	221

REMARKS:

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2016**

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	27.0	27.0	N/S	28.0	N/S	27.5	N/S	N/S	27.0	27.0	27.0	N/S	28.0
pH	N/S	7.35	7.76	N/S	7.34	N/S	7.27	N/S	N/S	7.74	7.74	7.52	N/S	7.61
TURBIDITY (NTU)	N/S	0.07	0.07	N/S	0.14	N/S	0.08	N/S	N/S	0.07	0.06	0.09	N/S	0.07
CONDUCTIVITY (µmho)	N/S	767	405	N/S	631	N/S	698	N/S	N/S	590	625	631	N/S	580
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	226.0	172.0	N/S	212.0	N/S	228.0	N/S	N/S	184.0	194.0	204.0	N/S	210.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	280.0	182.0	N/S	222.0	N/S	244.0	N/S	N/S	204.0	220.0	228.0	N/S	232.0
CHLORIDES (Mg/l Cl ⁻)	N/S	144.4	105.0	N/S	44.0	N/S	78.0	N/S	N/S	21.5	77.0	79.0	N/S	73.0
TOTAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	N/S	NEG	N/S	N/S	NEG	NEG	POS	N/S	NEG
FECAL COLIFORM (cfu/100mL)	N/S	NEG	NEG	N/S	NEG	N/S	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	218	167	N/S	199	N/S	211	N/S	N/S	171	190	193	N/S	195

REMARKS:

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P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2016**

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	07/28/16	07/28/16	07/28/16	07/28/16	07/28/16	08/09/16	08/09/16	08/09/16	08/09/16	09/15/16	08/09/16	08/09/16	08/09/16	08/09/16
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	27.0	N/S	28.0	27.5	27.5	27.5	27.5	28.0	27.5	27.5
pH	7.77	7.50	7.66	7.48	7.35	N/S	7.22	7.26	7.16	7.02	7.17	7.19	7.08	6.98
TURBIDITY (NTU)	0.07	0.06	0.07	0.07	0.06	N/S	0.06	0.19	0.09	0.08	0.08	0.08	0.07	0.06
CONDUCTIVITY (µmho)	425	695	421	566	607	N/S	537	530	568	591	514	585	583	601
CALCIUM HARDNESS (mg/L CaCO ₃)	168.0	198.0	184.0	192.0	222.0	N/S	200.0	218.0	210.0	214.0	206.0	238.0	236.0	206.0
TOTAL HARDNESS (mg/L CaCO ₃)	180.0	222.0	192.0	220.0	252.0	N/S	230.0	272.0	246.0	240.0	228.0	266.0	270.0	234.0
CHLORIDES (Mg/l Cl ⁻)	81.0	82.0	39.5	92.0	58.5	N/S	37.0	36.5	43.0	60.0	38.0	34.5	34.5	67.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	N/S	NEG	POS	NEG	POS	NEG	NEG	POS	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	NEG	POS	NEG	NEG	NEG	NEG	POS	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	164	177	175	187	225	N/S	222	235	236	198	221	258	255	208

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 2016**

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/09/16	08/18/16	08/18/16
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	27.5	27.0	28.0	27.0	27.5	27.5	27.5	27.5	27.5	27.5
pH	6.96	7.00	7.14	7.37	7.11	7.33	6.96	6.98	6.79	6.82	7.05	7.39	7.14	7.25
TURBIDITY (NTU)	0.06	0.10	0.09	0.07	0.07	0.10	0.07	0.08	0.07	0.07	0.08	0.10	0.10	0.10
CONDUCTIVITY (µmho)	663	655	387	583	493	482	584	500	607	478	521	765	666	806
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	190.0	194.0
TOTAL HARDNESS (mg/L CaCO ₃)	226.0	230.0	172.0	246.0	230.0	204.0	250.0	206.0	254.0	212.0	240.0	242.0	204.0	224.0
CHLORIDES (Mg/l Cl ⁻)	80.0	77.5	41.0	42.5	32.0	69.0	73.0	57.5	63.0	49.5	34.0	97.5	103.0	133.9
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	POS
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	222	213	162	238	210	199	239	198	241	208	240	217	180	190

REMARKS:

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**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
3RD QUARTER 2016**

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16
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	N/S	27.0	27.5	27.5	27.5	27.0	27.0	27.5	27.5	N/S	27.0	27.0	27.0
pH	7.25	N/S	7.29	7.12	7.25	7.19	7.10	7.11	7.30	7.13	N/S	7.12	7.17	7.14
TURBIDITY (NTU)	0.44	N/S	0.08	0.06	0.13	0.06	0.06	0.34	0.08	0.06	N/S	0.09	0.06	0.07
CONDUCTIVITY (umho)	656	N/S	674	1068	671	491	566	961	697	470	N/S	487	456	438
CALCIUM HARDNESS (mg/L CaCO ₃)	194.0	N/S	202.0	202.0	186.0	202.0	204.0	196.0	192.0	200.0	N/S	194.0	200.0	196.0
TOTAL HARDNESS (mg/L CaCO ₃)	224.0	N/S	224.0	254.0	208.0	218.0	218.0	244.0	222.0	216.0	N/S	206.0	212.0	200.0
CHLORIDES (Mg/l Cl)	105.0	N/S	99.5	207.9	92.0	36.0	71.0	174.9	95.5	35.0	N/S	42.5	21.5	20.0
TOTAL COLIFORM (cfu/100mL)	POS	N/S	NEG	NEG	NEG	NEG	POS	POS	NEG	NEG	N/S	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	185	N/S	189	184	172	193	191	187	188	195	N/S	190	198	190

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 3RD QUARTER 2016

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	08/18/16	07/13/16	08/25/16	08/25/16	08/25/16	08/25/16	08/25/16	08/25/16	07/07/16
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 (OC)	27.0	27.5	27.5	N/S	27.0	27.0	27.0	N/S	N/S	N/S	29.0	29.0	27.0	28.0
pH	7.13	7.31	7.33	N/S	7.49	7.54	7.07	N/S	N/S	N/S	7.45	7.22	7.70	7.15
TURBIDITY (NTU)	0.06	0.08	0.07	N/S	0.07	0.07	0.07	N/S	N/S	N/S	0.09	0.23	0.07	0.10
CONDUCTIVITY (µmho)	437	1081	1020	N/S	450	442	1021	N/S	N/S	N/S	298	291	238	751
CALCIUM HARDNESS (mg/L CaCO ₃)	196.0	214.0	204.0	N/S	188.0	188.0	236.0	N/S	N/S	N/S	100.0	96.0	20.0	258.0
TOTAL HARDNESS (mg/L CaCO ₃)	200.0	262.0	250.0	N/S	200.0	200.0	252.0	N/S	N/S	N/S	116.0	104.0	40.0	290.0
CHLORIDES (Mg/l Cl ⁻)	34.0	219.4	196.9	N/S	29.5	23.5	145.4	N/S	N/S	N/S	43.0	33.5	45.5	105.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	N/S	NEG	NEG	NEG	N/S	N/S	N/S	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	182	184	190	N/S	189	185	211	N/S	N/S	N/S	116	114	34	230

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 2016**

SAMPLE NO.	127	128	129	130										
DATE	08/29/16	08/29/16	08/29/16	09/14/16										
LOCATION	GIAA-1	GIAA-2	GIAA-3	TUMON MAUI WELL										
TEMPERATURE (0C)	27.0	27.0	N/S	28.0										
pH	6.74	6.82	N/S	7.05										
TURBIDITY (NTU)	0.07	0.07	N/S	0.06										
CONDUCTIVITY (µmho)	623	579	N/S	772										
CALCIUM HARDNESS (mg/L CaCO ₃)	216.0	210.0	N/S	218.0										
TOTAL HARDNESS (mg/L CaCO ₃)	224.0	226.0	N/S	256.0										
CHLORIDES (Mg/l Cl)	70.5	58.0	N/S	115.5										
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
TOTAL ALKALINITY (mg/L CaCO ₃)	200	205	N/S	210										

REMARKS:

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GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

**QUARTERLY CHEMICAL DEEPWELL ANALYSIS
4TH QUARTER 2016**

SAMPLE NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14
DATE	10/06/16	10/06/16	10/06/16	10/05/16	10/06/16	10/06/16	10/06/16	10/06/16	10/05/16	10/06/16	10/06/16	10/06/16	10/05/16	10/06/16
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)	27.0	N/S	28.0	28.0	29.0	27.0	N/S	27.0	28.0	27.0	N/S	N/S	28.0	27.0
pH	7.56	N/S	7.50	7.26	7.47	7.29	N/S	7.41	7.07	7.10	N/S	N/S	7.58	7.21
TURBIDITY (NTU)	0.18	N/S	0.27	0.06	0.06	0.20	N/S	0.28	0.08	0.08	N/S	N/S	0.13	0.08
CONDUCTIVITY (µmho)	603	N/S	579	847	569	637	N/S	560	1424	1876	N/S	N/S	2220	1391
CALCIUM HARDNESS (mg/L CaCO ₃)	274.0	N/S	236.0	312.0	244.0	292.0	N/S	234.0	372.0	364.0	N/S	N/S	408.0	350.0
TOTAL HARDNESS (mg/L CaCO ₃)	276.0	N/S	280.0	338.0	250.0	302.0	N/S	278.0	422.0	450.0	N/S	N/S	454.0	410.0
CHLORIDES (Mg/l Cl ⁻)	17.0	N/S	35.0	87.0	40.0	47.0	N/S	40.5	237.4	358.4	N/S	N/S	438.8	231.9
TOTAL COLIFORM (cfu/100mL)	POS	N/S	NEG	NEG	NEG	POS	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)	393	N/S	354	346	256	355	N/S	330	370	360	N/S	N/S	366	370

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

4TH QUARTER 2016

SAMPLE NO.	15	16	17	18	19	20	21	22	23	24	25	26	27	28
DATE	10/06/16	10/06/16	10/05/16	10/06/16	10/06/16	10/06/16	10/06/16	10/06/16	10/06/16	10/06/16	10/06/16	10/06/16	10/06/16	10/12/16
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)	29.0	27.0	28.0	27.5	27.0	N/S	N/S	N/S	N/S	N/S	28.0	28.0	27.0	28.0
pH	7.95	7.40	7.35	7.14	7.22	N/S	N/S	N/S	N/S	N/S	7.11	7.13	7.64	7.44
TURBIDITY (NTU)	0.07	0.13	0.08	0.19	0.10	N/S	N/S	N/S	N/S	N/S	0.10	0.14	0.13	0.13
CONDUCTIVITY (µmho)	1058	1139	1707	2140	1581	N/S	N/S	N/S	N/S	N/S	759	612	568	970
CALCIUM HARDNESS (mg/L CaCO ₃)	274.0	202.0	386.0	348.0	274.0	N/S	N/S	N/S	N/S	N/S	250.0	240.0	242.0	160.0
TOTAL HARDNESS (mg/L CaCO ₃)	328.0	272.0	454.0	454.0	356.0	N/S	N/S	N/S	N/S	N/S	300.0	262.0	266.0	250.0
CHLORIDES (Mg/l Cl ⁻)	148.9	200.4	316.4	451.8	281.4	N/S	N/S	N/S	N/S	N/S	67.5	44.5	29.5	172.4
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	NEG	N/S	N/S	N/S	N/S	N/S	POS	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)	310	262	375	373	280	N/S	N/S	N/S	N/S	N/S	331	323	329	249

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

REMARKS:

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QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2016

SAMPLE NO.	29	30	31	32	33	34	35	36	37	38	39	40	41	42
DATE	10/12/16	10/12/16	10/12/16	10/13/16	10/12/16	10/13/16	10/12/16	10/12/16	10/12/16	10/12/16	10/13/16	10/12/16	10/12/16	10/12/16
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)	29.0	28.0	N/S	28.0	N/S	28.0	28.0	28.0	N/S	N/S	28.0	N/S	N/S	27.5
pH	7.46	7.41	N/S	7.47	N/S	7.41	7.48	7.68	N/S	N/S	7.41	N/S	N/S	7.32
TURBIDITY (NTU)	0.13	0.07	N/S	0.06	N/S	0.06	0.06	0.06	N/S	N/S	0.06	N/S	N/S	0.06
CONDUCTIVITY (µmho)	645	501	N/S	586	N/S	552	463	1185	N/S	N/S	530	N/S	N/S	630
CALCIUM HARDNESS (mg/L CaCO ₃)	162.0	160.0	N/S	198.0	N/S	200.0	144.0	164.0	N/S	N/S	204.0	N/S	N/S	222.0
TOTAL HARDNESS (mg/L CaCO ₃)	230.0	208.0	N/S	234.0	N/S	228.0	198.0	270.0	N/S	N/S	232.0	N/S	N/S	252.0
CHLORIDES (Mg/l Cl ⁻)	79.5	59.0	N/S	63.5	N/S	58.0	54.0	237.4	N/S	N/S	52.0	N/S	N/S	71.0
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG	N/S	NEG	NEG	POS	N/S	N/S	POS	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)	243	211	N/S	246	N/S	225	218	214	N/S	N/S	222	N/S	N/S	265

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

4TH QUARTER 2016

SAMPLE NO.	43	44	45	46	47	48	49	50	51	52	53	54	55	56
DATE	10/13/16	10/13/16	10/13/16	10/12/16	10/12/16	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	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	28.0	27.5	27.5	N/S	27.5	N/S	27.5	28.0	28.0	27.5
pH	7.42	7.22	7.47	7.58	7.56	7.28	7.74	N/S	7.59	N/S	7.68	7.14	7.39	7.96
TURBIDITY (NTU)	0.06	0.13	0.15	0.05	0.06	0.07	0.11	N/S	0.11	N/S	0.08	0.10	0.07	0.07
CONDUCTIVITY (µmho)	532	656	761	469	584	681	679	N/S	679	N/S	646	619	1090	939
CALCIUM HARDNESS (mg/L CaCO ₃)	186.0	214.0	216.0	184.0	160.0	194.0	194.0	N/S	202.0	N/S	220.0	208.0	188.0	220.0
TOTAL HARDNESS (mg/L CaCO ₃)	212.0	252.0	264.0	196.0	226.0	242.0	258.0	N/S	232.0	N/S	238.0	250.0	268.0	270.0
CHLORIDES (Mg/l Cl ⁻)	64.0	77.0	95.0	37.5	61.5	82.5	88.5	N/S	62.5	N/S	65.0	72.0	214.4	132.4
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)	199	235	236	215	237	235	228	N/S	234	N/S	240	217	185	237

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

4TH QUARTER 2016

SAMPLE NO.	57	58	59	60	61	62	63	64	65	66	67	68	69	70
DATE	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	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 (0C)	N/S	27.5	28.0	N/S	27.5	28.0	28.0	N/S	N/S	28.0	29.0	28.0	N/S	27.0
pH	N/S	7.93	7.46	N/S	7.38	7.35	7.53	N/S	N/S	7.57	7.55	7.49	N/S	7.75
TURBIDITY (NTU)	N/S	0.27	0.06	N/S	0.06	0.06	0.06	N/S	N/S	0.05	0.06	0.06	N/S	0.07
CONDUCTIVITY (µmho)	N/S	729	412	N/S	626	684	716	N/S	N/S	594	643	916	N/S	588
CALCIUM HARDNESS (mg/L CaCO ₃)	N/S	216.0	176.0	N/S	200.0	212.0	212.0	N/S	N/S	200.0	196.0	200.0	N/S	210.0
TOTAL HARDNESS (mg/L CaCO ₃)	N/S	252.0	204.0	N/S	248.0	252.0	256.0	N/S	N/S	228.0	240.0	240.0	N/S	250.0
CHLORIDES (Mg/l Cl ⁻)	N/S	153.9	64.5	N/S	105.0	81.0	115.0	N/S	N/S	75.0	110.0	81.5	N/S	87.5
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	NEG	NEG	N/S	N/S	NEG	NEG	NEG	N/S	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	N/S	230	180	N/S	209	219	222	N/S	N/S	181	198	202	N/S	199

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

4TH QUARTER 2016

SAMPLE NO.	71	72	73	74	75	76	77	78	79	80	81	82	83	84
DATE	10/20/16	10/20/16	10/20/16	10/20/16	10/20/16	10/26/16	10/26/16	10/26/16	10/27/16	10/27/16	10/27/16	10/26/16	10/26/16	10/27/16
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	28.0	28.0	28.0	27.5	N/S	28.0	28.0	27.5	27.0	27.5	28.0	28.0	28.0
pH	7.72	7.64	7.61	7.54	7.77	N/S	7.33	7.42	7.87	7.53	7.47	7.29	7.25	7.63
TURBIDITY (NTU)	0.18	0.06	0.05	0.05	0.07	N/S	0.08	0.18	0.10	0.08	0.06	0.09	0.07	0.11
CONDUCTIVITY (µmho)	436	705	425	568	602	N/S	535	509	554	652	507	581	569	563
CALCIUM HARDNESS (mg/L CaCO ₃)	172.0	192.0	188.0	196.0	206.0	N/S	236.0	222.0	216.0	216.0	216.0	248.0	240.0	196.0
TOTAL HARDNESS (mg/L CaCO ₃)	204.0	220.0	208.0	220.0	244.0	N/S	246.0	244.0	248.0	236.0	232.0	276.0	274.0	224.0
CHLORIDES (Mg/l Cl')	55.0	106.0	64.5	70.5	63.5	N/S	34.0	42.0	57.5	68.0	30.0	44.0	48.0	58.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	N/S	NEG	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)	171	191	187	192	231	N/S	225	231	234	211	219	256	257	210

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

REMARKS:

CERTIFIED BY: _____

GUAM WATERWORKS AUTHORITY

P.O. BX. 3010 AGANA GU. 96910

QUARTERLY CHEMICAL DEEPWELL ANALYSIS

4TH QUARTER 2016

SAMPLE NO.	85	86	87	88	89	90	91	92	93	94	95	96	97	98
DATE	10/27/16	10/27/16	10/26/16	10/27/16	12/30/16	10/27/16	10/27/16	10/27/16	10/27/16	10/27/16	10/26/16	10/27/16	11/01/16	11/01/16
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	27.0	28.0	29.0	27.0	27.0	27.5	27.5	28.0	28.0	28.0	27.0	N/S	28.0
pH	7.47	7.50	7.44	7.39	7.02	7.46	7.37	7.47	7.33	7.32	7.23	7.29	N/S	7.68
TURBIDITY (NTU)	0.07	0.07	0.16	0.07	0.08	0.05	0.06	0.07	0.09	0.08	0.10	0.07	N/S	0.11
CONDUCTIVITY (µmho)	644	646	325	574	490	483	572	492	608	480	516	764	N/S	796
CALCIUM HARDNESS (mg/L CaCO ₃)	208.0	208.0	158.0	216.0	192.0	196.0	216.0	192.0	224.0	208.0	234.0	210.0	N/S	190.0
TOTAL HARDNESS (mg/L CaCO ₃)	244.0	244.0	166.0	260.0	204.0	228.0	270.0	220.0	268.0	228.0	250.0	256.0	N/S	236.0
CHLORIDES (Mg/l Cl ⁻)	64.5	65.0	57.5	49.5	30.0	45.0	44.0	42.5	56.5	35.0	64.5	93.5	N/S	95.5
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	NEG	NEG	POS	NEG	NEG	NEG	NEG	NEG	NEG	NEG	N/S	POS
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	215	161	239	215	199	235	200	265	207	241	218	N/S	189

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

4TH QUARTER 2016

SAMPLE NO.	99	100	101	102	103	104	105	106	107	108	109	110	111	112
DATE	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16
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)	29.0	N/S	27.0	27.5	27.0	27.5	28.0	29.0	29.0	27.0	29.0	27.0	27.0	27.5
pH	7.49	N/S	7.40	7.39	7.86	7.55	7.56	7.79	7.77	7.56	7.99	7.80	7.59	7.53
TURBIDITY (NTU)	0.37	N/S	0.07	0.06	0.15	0.06	0.06	0.09	0.07	0.08	0.15	0.09	0.08	0.07
CONDUCTIVITY (µmho)	643	N/S	682	1094	674	490	573	974	706	472	282	499	461	437
CALCIUM HARDNESS (mg/L CaCO ₃)	190.0	N/S	212.0	224.0	204.0	212.0	196.0	204.0	216.0	208.0	196.0	196.0	204.0	200.0
TOTAL HARDNESS (mg/L CaCO ₃)	232.0	N/S	240.0	268.0	228.0	224.0	240.0	248.0	224.0	220.0	216.0	228.0	236.0	220.0
CHLORIDES (Mg/l Cl ⁻)	98.0	N/S	82.5	200.9	94.5	49.5	63.5	172.4	100.5	47.5	120.0	48.0	38.0	33.5
TOTAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	POS	NEG	NEG	NEG	POS	NEG	POS	NEG	NEG	NEG
FECAL COLIFORM (cfu/100mL)	NEG	N/S	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG	NEG
TOTAL ALKALINITY (mg/L CaCO ₃)	191	N/S	191	185	190	184	186	188	196	191	185	196	194	189

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 2016

SAMPLE NO.	113	114	115	116	117	118	119	120	121	122	123	124	125	126
DATE	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	11/01/16	10/13/16	11/09/16	11/09/16	11/09/16	11/09/16	11/09/16	11/09/16	10/06/16
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	28.0	27.0	N/S	27.0	28.0	27.0	N/S	N/S	N/S	28.0	27.0	28.0	N/S
pH	7.50	7.51	7.48	N/S	7.63	7.89	7.35	N/S	N/S	N/S	7.43	7.99	7.73	N/S
TURBIDITY (NTU)	0.19	0.11	0.07	N/S	0.07	0.07	0.05	N/S	N/S	N/S	0.66	0.15	0.08	N/S
CONDUCTIVITY (µmho)	438	1065	1047	N/S	450	442	996	N/S	N/S	N/S	423	282	127	N/S
CALCIUM HARDNESS (mg/L CaCO ₃)	196.0	208.0	208.0	N/S	188.0	188.0	222.0	N/S	N/S	N/S	188.0	84.0	12.0	N/S
TOTAL HARDNESS (mg/L CaCO ₃)	216.0	260.0	276.0	N/S	210.0	210.0	274.0	N/S	N/S	N/S	196.0	110.0	32.0	N/S
CHLORIDES (Mg/l Cl ⁻)	25.5	208.4	189.4	N/S	33.0	33.0	162.4	N/S	N/S	N/S	27.0	38.5	40.5	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)	193	185	190	N/S	189	191	228	N/S	N/S	N/S	189	110	37	N/S

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 2016**

SAMPLE NO.	127	128	129	130										
DATE	12/13/16	12/12/16	12/12/16	12/12/16										
LOCATION	GIAA-1	GIAA-2	GIAA-3	TUMON MAUI WELL										
TEMPERATURE (0C)	28.0	27.0	N/S	27.0										
pH	7.10	7.45	N/S	7.28										
TURBIDITY (NTU)	0.06	0.08	N/S	0.07										
CONDUCTIVITY (µmho)	590	527	N/S	787										
CALCIUM HARDNESS (mg/L CaCO ₃)	186.0	174.0	N/S	200.0										
TOTAL HARDNESS (mg/L CaCO ₃)	196.0	196.0	N/S	220.0										
CHLORIDES (Mg/l Cl ⁻)	67.0	59.0	N/S	108.0										
TOTAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
FECAL COLIFORM (cfu/100mL)	NEG	NEG	N/S	NEG										
TOTAL ALKALINITY (mg/L CaCO ₃)	198	190	N/S	202										

REMARKS:

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

CERTIFIED BY: _____