MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel. 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory Report

for

Guam Water Authority
Government of Guam

P.O. Box 3010

Agana , GU 96910

Attention: Carmen Sian-Denton
Fax: (671) 637-2592

DATE OF ISSUE
NOV 1 2 2007
MWH LABORATORIES

ACCREDITED IN ACCORDANCE WITH nelac 01114CA

JCH Jim Hein
Project Manager

Report#: 220067
Project: DRINKING
PO#: 270994-000-0

Laboratory certifies that the test results meet all **NELAC** requirements unless noted in the Comments section or the Case Narrative. Following the cover page are Comments, Data Report, Hits Report, totaling 3 page[s].

ND 3679

MWH Laboratories
MONTGOMERY WATSON HARZA
750 Royal Oaks, Suite 100
Monrovia, California 91016
Phone: (626) 386-1100
(800) 566-5227
Fax: (626) 386-1101

CHAIN OF CUSTODY RECORD

220067

MWH LABS USE ONLY

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY:

SAMPLES LOGGED IN BY:

SAMPLE TEMP WHEN REC'D AT LAB: (Compliance 4°+/- 2°C)

SAMPLES REC'D DAY OF COLLECTION ☐ (check for yes)

CONDITION OF BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ___ (check for yes) (check for yes)

TO BE COMPLETED BY SAMPLER

COMPANY, UTILITY or PROJECT: GWA

SYSTEM #:

COMPLIANCE SAMPLES ☑ - Requires state forms ☐ NON-COMPLIANCE SAMPLES ☐

REGULATION INVOLVED: [illegible]

Type of samples (circle one): ROUTINE SPECIAL CONFIRMATION

Compliance Plans (NPDES, RCRA, ..)

MWH LABS CLIENT CODE:

P.O. # / JOB # / PROJECT:

SEE ATTACHED BOTTLE ORDER FOR ANALYSES ☑ (check for yes). OR

LIST ANALYSES REQUIRED BELOW (enter number of bottles sent for each test for each sample)

SAMPLER PRINTED NAME AND SIGNATURE: R. VILLAGOMEZ

TAT requested: rush by adv notice only

STD ___ 1 week ___ 3 day ___ 2 day ___ 1 day ___

SAMPLE DATE	SAMPLE TIME	SITE NAME OR SAMPLE I.D.	STATION # or LOCATION	MATRIX *	GRAB	COMP	BI OAS												SAMPLER COMMENTS
10/16		N. DET	STT	WW		X	X												

* MATRIX TYPES: RSW = Raw Surface Water; RGW = Raw Ground Water; CFW = Chloramination Finished Water; FW = Other Finished Water; CWW = Chlorinated Waste Water; WW = Other Waste Water; BW = Bottled Water; SW = Storm Water; SO = Soil; SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY:	[signature]	R. VILLAGOMEZ	GWA LAB TECH	10/16/07	
RECEIVED BY:	[signature]	(CMS DELIVERY)	[illegible]	10/16/07	
RELINQUISHED BY:					
RECEIVED BY:					
RELINQUISHED BY:					
RECEIVED BY:					

C-O-C# ___

PAGE ___ OF ___

CONFIRMED

ND 3680

MWH Laboratories
A Division of MWH Americas,Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 10/19/07

Submittal Form & Purchase Order 99-30017

***REPORTING REQUIREMENTS:** *Do Not Combine Report with any other samples submitted under different MWH project numbers!*
Report & Invoice must have the MWH Project Number **220067** Sub PO# **99-30017** and Job # **1000046**

Report all quality control data according to Method. Include dates analyzed, date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Michael Machuzak**
Aquatic Bioassay & Consulting Labs

29 North Olive Street
Ventura, CA 93001

(805) 643-5621 x15 Fax (805) 643-2930

Reports: Elena Montanez / Christine Lewis Sub-contracting Administrator
EMAIL TO: mwhlabs-subcontractreports@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1118 / 1137 Fax (626) 386-1122
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

GUAM

MWH Project #	Report Due:	Sub PO#
220067	11/03/07	99-30017

ncl

	Use MWH Lab # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	Container
1 BIOAS	2710190380	N DIST STP	Bioassay-CHRON. CERIODAPHNIA	10/16/07	dw	CHECK SUB QUOTE SQ006 FOR CORRECT BOTTLES!SHORT HOLDING TIME!!!!

ND 3681

Relinquished by: Sample Control Date 10/19/07 Time MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Received by: Date Time

An Acknowledgement of Receipt is requested to attn: Christine Lewis

MWH Laboratories, a Division of MWH Americas, Inc.
750 Royal Oaks Avenue Suite 100
Monrovia CA 91016 (626) 386-1100 FAX (626) 386-1124

Bottle Order for Guam Water Authority

Standing

Client Code GWA
Project Code DRINKING
PO# / Job#
Blanket PO 280039-000OP EX 09/30/07

W Weekly
Week 6
Period

Linda Geddes Your MWL Project Manager
(626) 386-1183 Direct Phone/Voice Mail

SO# 37040 8329 RS 0

Sampler: Please Return this Paper with your samples

Created by GJY
Order Date 07/02/07
Date Needed by Client
Date Samples to Arrive at MWL
SHIP LOCATION

Ship Sample Kits to
Guam Water Authority
Procurement and Supply Warehouse
Government of Guam
P.O. Box 3010
Agana, Guam 96910

ATTN: Carmen Sian-Denton, Francis
PHONE: (671) 632-9697, 637-2895

Send Report to
Guam Water Authority
Government of Guam
P.O. Box 3010
Agana, Guam 96910

ATTN: Carmen Sian-Denton, Francis
PHONE: (671) 637-2895
FAX: (671) 637-2592

Billing Address
Guam Water Authority
Government of Guam
P.O. Box 3010
Agana, Guam 96910

Quote#
GJY

# of Samples	Tests	Bottles-Qty for each sample, type & preservative if any	UN#	Important Comments
1	BIOAS - TOXICITY TESTING DEFINITIVE CHRON. CERIODAPHNIA WITH 5 DILUTIONS AT 12.5, 25, 50, 75 & 100%	3 1-GAL CUBIETAINERS	1150	**SHIPPING:** Label coolers. **ANNUAL W.E. TOXICITY** **BAZA Week 9** **UMATAC Week 22,** **N. DIST Week 31** **AGANA Week 44** INCLUDE: **- Extra Blue Ice, COC, TSCA form, Commercial Invoice** **SAMPLERS:** ***CALL MWLABS TWO WORK DAYS PRIOR TO SAMPLING*** *Collect 3 gals. per site, ONE SITE PER WEEK.* Ship directly to the sub lab: **Aquatic Bioassay & Consulting Labs** 29 North Olive Street Ventura, CA 93001 attn: Michael Machuzak **(805) 643-5621** - Please describe the test listed above to the right on the COC sent with the samples

ctiveCode Status Date Shipped Carrier Qty of Coolers Tracking Number Prepared By

SCANNED

ND 3682

MWH Laboratories
750 Royal Oaks Drive, Monrovia, CA 91016
PHONE: 626-386-1100/FAX: 626-386-1101

ACKNOWLEDGMENT OF SAMPLES RECEIVED

Guam Water Authority
Government of Guam
P.O. Box 3010
Agana, GU 96910
Attn: Carmen Sian-Denton
Phone: (671) 637-2895

Customer Code: GWA
PO#: 270994-000-OP
Group#: 220067
Project#: DRINKING
Proj Mgr: James C. Hein
Phone: (626) 386-1189

The following samples were received from you on **10/19/07**. They have been scheduled for the tests listed beside each sample. If this information is incorrect, please contact your service representative. Thank you for using MWH Laboratories.

Sample#	Sample Id	Matrix	Sample Date
	Tests Scheduled		
2710190380	N DIST STP	Water	16-oct-2007
	BIOAS		

Test Acronym Description

Test Acronym	Description
BIOAS	Bioassay(Sub)

CONFIRMED

ND 3683

TCH

MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
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Tel. 626 386 1100
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1 800 566 LABS (1 800 566 5227)

Report
Comments
#220067

Group Comments

Analytical results for Chronic Ceriodaphnia are submitted by Aquatic Bioassay & Consulting Laboratories Ventura, CA ELAP # 1907

ND 3684

MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel 626 386 1100
Fax 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory
Hits Report
#220067

Guam Water Authority
Carmen Sian-Denton
Government of Guam
P.O. Box 3010
Agana , GU 96910

Samples Received
19-oct-2007 15:10:40

Analyzed	Sample#	Sample ID	Result	Federal MCL	UNITS	MRL
	2710190380	N DIST STP				
10/19/07	Bioassay(Sub)		100		%	

SUMMARY OF POSITIVE DATA ONLY.

ND 3685

MWH Laboratories
A Division of MWH Americas, Inc.

750 Royal Oaks Drive, Suite 100
Monrovia, California 91016-3629
Tel: 626 386 1100
Fax: 626 386 1101
1 800 566 LABS (1 800 566 5227)

Laboratory
Data Report
#220067

Guam Water Authority
Carmen Sian-Denton
Government of Guam
P.O. Box 3010
Agana , GU 96910

Samples Received
10/19/07

Prepared	Analyzed	QC Ref#	Method	Analyte	Result	Units	MRL	Dilution
N DIST STP (2710190380) Sampled on 10/16/07 00:00								
	10/19/07 00:00		(CAC TITLE 22)	Bioassay(Sub)	100	%	0	1

ND 3686

GWA
220067

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC.

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

November 2, 2007

Ms. Christine Lewis
MWH Laboratories
750 Royal Oaks Dr.. Suite 100
Monrovia, CA 910

Dear Ms. Lewis:

We are pleased to present the enclosed revised bioassay report. The test was conducted under guidelines prescribed in *Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms, EPA-821-R-02-013.* Results were as follows:

CLIENT:	MWH Laboratories
SAMPLE ID.:	#2710190380
DATE RECEIVED:	19 Oct – 07
ABC LAB NO.:	MWH1007.329

CHRONIC CERIODAPHNIA SURVIVAL & REPRODUCTION BIOASSAY

SURVIVAL	NOEC =	100.00 %
	TU (c) =	1.00
	IC25 =	>100.00 %
	IC50 =	>100.00 %
REPRODUCTION	NOEC =	100.00 %
	TU (c) =	1.00
	IC25 =	>100.00 %
	IC50 =	>100.00 %

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

29 NORTH OLIVE STREET, VENTURA, CA 93001 • (805) 643-5621

-7 Day Survival

Start Date:	10/19/2007	Test ID:	MWH1007329	Sample ID:	CA8000027
End Date:	10/26/2007	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	10/16/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	#2710190380				

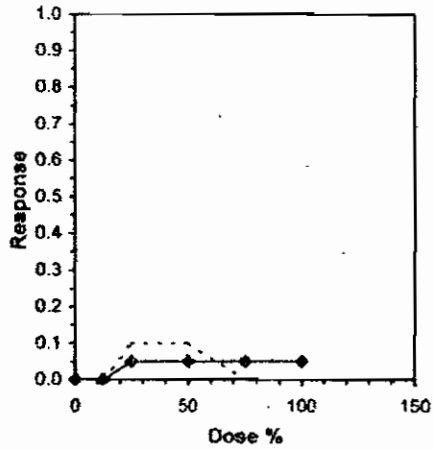
Conc-%	1	2	3	4	5	6	7	8	9	10
N Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
12.5	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
25	0.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
50	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	0.0000	1.0000
75	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
100	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000

Conc-%	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Isotonic Mean	Isotonic N-Mean
N Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
12.5	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000
25	0.9000	0.9000	1	9	10	10	0.5000	0.0500	0.9500	0.9500
50	0.9000	0.9000	1	9	10	10	0.5000	0.0500	0.9500	0.9500
75	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0.9500	0.9500
100	1.0000	1.0000	0	10	10	10	1.0000	0.0500	0.9500	0.9500

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	100	>100		1
Treatments vs N.Control				

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL	Skew
IC05	>100			
IC10	>100			
IC15	>100			
IC20	>100			
IC25	>100			
IC40	>100			
IC50	>100			

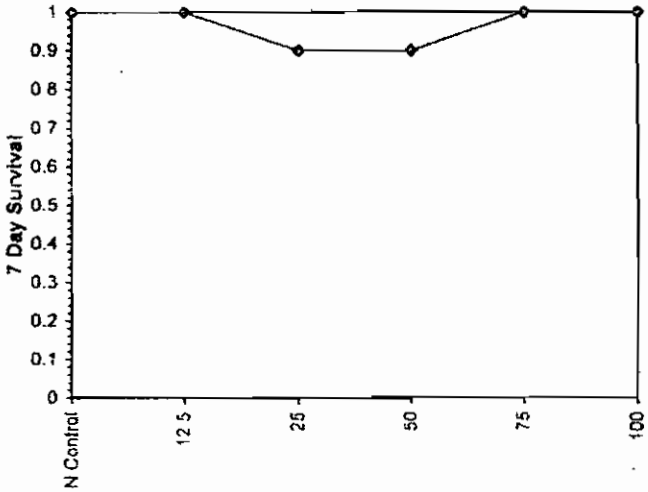


ND 3688

-7 Day Survival

Start Date:	10/19/2007	Test ID:	MWH1007329	Sample ID:	CA8000027
End Date:	10/26/2007	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	10/16/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	#2710190380				

Dose-Response Plot



ND 3689

-Reproduction

Start Date:	10/19/2007	Test ID:	MWH1007329	Sample ID:	CA8000027
End Date:	10/26/2007	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	10/16/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	#2710190380				

Conc-%	1	2	3	4	5	6	7	8	9	10
N Control	36.000	26.000	19.000	30.000	27.000	33.000	23.000	30.000	32.000	36.000
12.5	27.000	27.000	32.000	34.000	44.000	38.000	42.000	43.000	27.000	36.000
25	10.000	30.000	21.000	22.000	36.000	20.000	23.000	21.000	25.000	25.000
50	24.000	24.000	24.000	22.000	24.000	34.000	30.000	31.000	9.000	49.000
75	17.000	19.000	19.000	28.000	31.000	32.000	24.000	27.000	30.000	27.000
100	26.000	30.000	24.000	14.000	20.000	27.000	27.000	25.000	28.000	26.000

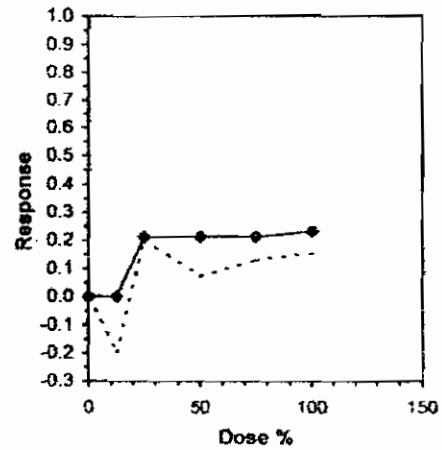
			Transform: Untransformed						1-Tailed		Isotonic	
Conc-%	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	29.200	1.0000	29.200	19.000	36.000	18.882	10				32.100	1.0000
12.5	35.000	1.1986	35.000	27.000	44.000	19.190	10	-1.911	2.287	6.940	32.100	1.0000
25	23.300	0.7979	23.300	10.000	36.000	29.042	10	1.944	2.287	6.940	25.267	0.7871
50	27.100	0.9281	27.100	9.000	49.000	37.770	10	0.692	2.287	6.940	25.267	0.7871
75	25.400	0.8699	25.400	17.000	32.000	21.258	10	1.252	2.287	6.940	25.267	0.7871
100	24.700	0.8459	24.700	14.000	30.000	18.607	10	1.483	2.287	6.940	24.700	0.7695

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Kolmogorov D Test indicates normal distribution (p > 0.01)	0.698	1.035	0.15635	1.79636
Bartlett's Test indicates equal variances (p = 0.19)	7.39363	15.0863		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	100	>100		1	6.94013	0.23768	178.35	46.0574	0.00452	5, 54
Treatments vs N Control										

Linear Interpolation (200 Resamples)

Point	%	SD	95% CL		Skew
IC05	15.436	1.359	14.663	19.516	2.6407
IC10	18.372	9.044	16.861	52.784	4.7362
IC15	21.308				
IC20	24.244				
IC25	>100				
IC40	>100				
IC50	>100				

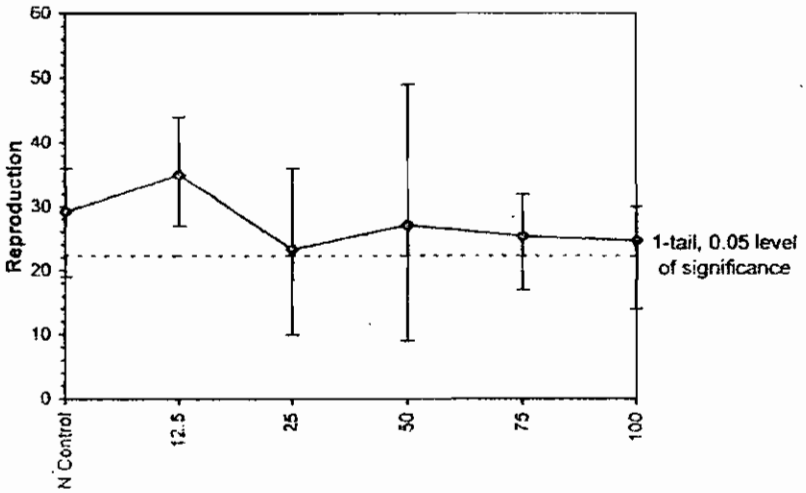


ND 3690

-Reproduction

Start Date:	10/19/2007	Test ID:	MWH1007329	Sample ID:	CA8000027
End Date:	10/26/2007	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	10/16/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	#2710190380				

Dose-Response Plot



ND 3691

Reproduction

Start Date:	10/19/2007	Test ID:	MWH1007329	Sample ID:	CA8000027
End Date:	10/26/2007	Lab ID:	CAABC	Sample Type:	EFF1-POTW
Sample Date:	10/16/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	#2710190380				

Auxiliary Data Summary

Conc-%	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.20	24.00	25.00	0.34	2.42	8
12.5		24.25	24.00	25.00	0.35	2.46	8
25		24.25	24.00	25.00	0.35	2.43	8
50		24.28	24.00	25.00	0.36	2.46	8
75		24.31	24.00	24.90	0.37	2.51	8
100		24.35	24.00	24.90	0.41	2.64	8
N Control	pH	8.16	8.00	8.30	0.15	4.75	8
12.5		7.91	7.80	8.00	0.08	3.65	8
25		7.80	7.60	7.90	0.11	4.19	8
50		7.74	7.50	7.90	0.16	5.17	8
75		7.71	7.40	8.00	0.21	5.94	8
100		7.65	7.30	8.00	0.24	6.47	8
N Control	Dissolved Oxygen	7.38	6.60	8.00	0.42	8.75	8
12.5		6.09	4.30	7.90	1.27	18.52	8
25		5.98	4.20	8.10	1.42	19.97	8
50		5.90	4.10	8.20	1.48	20.62	8
75		4.98	0.20	8.10	2.36	30.90	8
100		5.78	4.00	8.10	1.55	21.54	8
N Control	Hardness mg/L	89.75	86.00	92.00	3.11	1.96	8
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
75		0.00	0.00	0.00	0.00		0
100		168.00	168.00	168.00	0.00	0.00	8
N Control	Alkalinity mg/L	64.38	60.00	67.00	3.62	2.96	8
12.5		0.00	0.00	0.00	0.00		0
25		0.00	0.00	0.00	0.00		0
50		0.00	0.00	0.00	0.00		0
75		0.00	0.00	0.00	0.00		0
100		220.00	220.00	220.00	0.00	0.00	8
N Control	Conductivity	346.63	318.00	362.00	13.78	1.07	8
12.5		414.38	360.00	475.00	43.58	1.59	8
25		488.50	391.00	525.00	55.66	1.53	8
50		562.50	487.00	601.00	42.95	1.17	8
75		650.63	585.00	699.00	41.33	0.99	8
100		753.13	689.00	781.00	31.41	0.74	8

ND 3692

MWH Laboratories
A Division of MWH Americas, Inc.
750 Royal Oaks Drive Suite 100
Monrovia, CA 91016-3629
Ph (626) 386-1100 Fax (626) 386-1095

Date 10/19/07

Submittal Form & Purchase Order 99-30017

*REPORTING REQUIREMENTS: *Do Not Combine Report with any other samples submitted under different MWH project numbers!*
Report & Invoice must have the MWH Project Number 220067 Sub PO# 99-30017 and Job # 1000046

Report all quality control data according to Method, include dates analyzed, date extracted (if extracted) and Method reference on the report.
Results must have Complete data & QC with Approval Signature. See reverse side for List of Terms and Conditions

Ship To **Michael Machuzak**
Aquatic Bioassay & Consulting Labs

29 North Olive Street
Ventura, CA 93001

(805) 643-5621 x15 Fax (805) 643-2930

Reports: Elena Montanez / Christine Lewis Sub-contracting Administrator
EMAIL TO: mwhlabs-subcontractreports@mwhglobal.com
MWH Laboratories 750 Royal Oaks Dr. Ste. 100, Monrovia, CA 91016
Phone (626) 386-1118 / 1137 Fax (626) 386-1122
Invoices to: MWH LABORATORIES
Accounts Payable PO BOX 6610, Broomfield, CO 80021

Provide in each Report the Specified State Certification # & Exp Date for requested tests + matrix

GUAM

MWH Project #	Report Due:	Sub PO#
220067	11/03/07	99-30017

ncl

	Lab # for ID	Client Sample ID for reference only	Analysis Requested	Sample Date & Time	Matrix	Container
BIOAS	2710190380	N DIST STP	Bioassay-CHRON. CERIODAPHNIA	10/16/07	dw	[illegible]

Chlorine 2.0 /
Temp @ Receipt = 8.8°C

Relinquished by: _____ Sample Control Date 10/19/07 Time _____

Received by: [signature] Date 10-19-07 Time 1[illegible]

MUST HAVE NOTIFICAION IF TEMP IS GREATER THAN 6 OR LESS THAN 2 CELSIUS

Page 1

An Acknowledgement of Receipt is requested to attn: Christine Lewis

ND 3693

MWH Laboratories
MONTGOMERY WATSON HARZA
750 Royal Oaks, Suite 100
Monrovia, California 91016
Phone: (626) 386-1100
(800) 566-5227
Fax: (626) 386-1101

CHAIN OF CUSTODY RECORD

MWH LABS USE ONLY

LOGIN COMMENTS:

SAMPLES CHECKED AGAINST COC BY:

SAMPLES LOGGED IN BY:

SAMPLE TEMP WHEN REC'D AT LAB: (Compliance 4 +/- 2°C)

SAMPLES REC'D DAY OF COLLECTION (check for yes)

CONDITION OF BLUE ICE: FROZEN ___ PARTIALLY FROZEN ___ THAWED ___

(check for yes) (check for yes)

TO BE COMPLETED BY SAMPLER

COMPANY, UTILITY or PROJECT: GWA

SYSTEM #:

COMPLIANCE SAMPLES ✓ NON-COMPLIANCE SAMPLES
Requires state forms
REGULATION INVOLVED: (Phase V, NPDES, FDA,)
Type of samples (circle one) ROUTINE SPECIAL CONFIRMATION

MWH LABS CLIENT CODE:

P.O. # / JOB # / PROJECT:

SEE ATTACHED BOTTLE ORDER FOR ANALYSES ✓ (check for yes), OR
LIST ANALYSES REQUIRED BELOW (enter number of bottles sent for each test for each sample)

SAMPLER PRINTED NAME AND SIGNATURE: R. VILLAGOMEZ / [signature]

TAT requested: rush by adv notice only
STD ___ 1 week ___ 3 day ___ 2 day ___ 1 day ___

SAMPLE DATE	SAMPLE TIME	SITE NAME OR SAMPLE I.D.	STATION # or LOCATION	MATRIX *	GRAB	COMP	BIOAS	SAMPLER COMMENTS
10/16		N. DET	STT	WW		X	X	

* MATRIX TYPES: RSW = Raw Surface Water; RGW = Raw Ground Water; CFW = Chlor(am)inated Finished Water; FW = Other Finished Water; CWW = Chlorinated Waste Water; WW = Other Waste Water; BW = Bottled Water; SW = Storm Water; SO = Soil; SL = Sludge

	SIGNATURE	PRINT NAME	COMPANY/TITLE	DATE	TIME
RELINQUISHED BY	[signature]	R. VILLAGOMEZ	GWA LAB TECH	10/16/07	
RECEIVED BY	[signature]	C.M.S. DELTO	GWA	10/16/07	
RELINQUISHED BY					
RECEIVED BY	[signature]	E. MATURINO	AQUATIC BIOASSAY	10-19-07	1130
RELINQUISHED BY					
RECEIVED BY					

TEMP. @ RECEIPT: 8.8 °C
CHLORINE = <0.1

C.O.C. ___

PAGE ___ OF ___

ND 3694

MWH Laboratories, a Division of MWH Americas, Inc.
750 Royal Oaks Avenue Suite 100
Monrovia CA 91016 (626) 386-1100 FAX (626) 386-1124

Bottle Order for Guam Water Authority

Standing

Client Code GWA
Project Code DRINKING
PO# / Job#
Blanket PO 280039-000OP EX 09/30/07

W Weekly
Period
Week 6

Linda Geddes Your MWL Project Manager
(626) 386-1163 Direct Phone/Voice Mail

SO# 37040 8328 RS
0

Created by GJY
Order Date 07/02/07

Date Needed by Client

Date Samples to Arrive at MWL

SHIP LOCATION

Sampler: Please Return this Paper with your samples

Ship Sample Kits to
Guam Water Authority
Procurement and Supply Warehouse
Government of Guam
P.O. Box 3010
Agana, Guam 96910

ATTN: Carmen Sian-Denton, Francis
PHONE: (671) 632-9697, 637-2895

Send Report to
Guam Water Authority
Government of Guam
P.O. Box 3010
Agana, Guam 96910

ATTN: Carmen Sian-Denton, Francis
PHONE: (671) 637-2895
FAX: (671) 637-2592

Billing Address
Guam Water Authority
Government of Guam
P.O. Box 3010
Agana, Guam 96910

Quote#
GJY

# of Samples	Tests	Bottles-Qty for each sample, type & preservative if any	UN#	Important Comments
1	BIOAS - TOXICITY TESTING DEFINITIVE CHRON. CERIODAPHNIA WITH 5 DILUTIONS AT 12.5, 25, 50, 75 & 100%	3 1-GAL CUBIETAINERS	1150	

SHIPPING:
Label coolers:
ANNUAL W.E. TOXICITY
BAZA Week 9
UMATAC Week 22,
N. DIST Week 31
AGANA Week 44
INCLUDE:
- Extra Blue Ice, COC, TSCA form, Commercial Invoice

SAMPLERS:
CALL MWLABS TWO WORK DAYS PRIOR TO SAMPLING
Collect 3 gals. per site, ONE SITE PER WEEK. Ship directly to the sub lab:
Aquatic Bioassay & Consulting Labs
29 North Olive Street
Ventura, CA 93001
attn Michael Machuzak
(805) 643-5621
- Please describe the test listed above to the right on the COC sent with the samples

ActiveCode	Status	Date Shipped	Carrier	Qty of Coolers	Tracking Number	Prepared By

ND 3695

TOXIC SUBSTANCE CONTROL ACT (TSCA) CERTIFICATION

DATE: 10 / 16 / 07

(CHECK ONE SECTION ONLY)

POSITIVE CERTIFICATION:

X "I CERTIFY THAT ALL CHEMICAL SUBSTANCES IN THIS SHIPMENT COMPLY WITH ALL APPLICABLE RULES OR ORDERS UNDER TSCA AND THAT I AM NOT OFFERING A CHEMICAL SUBSTANCE FOR ENTRY IN VIOLATION OF TSCA OR ANY APPLICABLE RULE OR ORDER THEREUNDER."

- OR -

NEGATIVE CERTIFICATION:

____ "I CERTIFY THAT ALL CHEMICALS IN THIS SHIPMENT ARE NOT SUBJECT TO TSCA."

COMPANY NAME: MWH Laboratory

COMPANY ADDRESS: 750 Royal Oaks Drive, Suite #100, Monrovia, CA. 91016

AUTHORIZED NAME:

AUTHORIZED SIGNATURE: James C. Hi

TITLE:

AWB#: 754 2361 433

RETURN TO:

IF THE CERTIFIER IS UNSURE IF THEIR CHEMICAL SUBSTANCE IS SUBJECT TO TSCA COMPLIANCE, CONTACT THE ENVIRONMENTAL PROTECTION AGENCY, TSCA ASSISTANCE OFFICE, WASHINGTON, D.C., (202) 554-1404 BETWEEN 8:30 AM AND 5:00 PM EST.

REVISED May 7, 1990 toxic.392

ND 3696

AQUATIC
BIOASSAY &
CONSULTING
LABORATORIES, INC

TOXICITY TESTING • OCEANOGRAPHIC RESEARCH

CHRONIC CERIODAPHNIA SURVIVAL AND REPRODUCTION BIOASSAY

DATE: 11 October - 07

STANDARD TOXICANT: Copper Chloride

ENDPOINT: SURVIVAL

NOEC = 5.00 ug/l

IC25 = 4.67 ug/l
IC50 = 6.43 ug/l

ENDPOINT: REPRODUCTION

NOEC = 5.00 ug/l

IC25 = 4.22 ug/l
IC50 = 5.75 ug/l

Yours very truly,

Thomas (Tim) Mikel
Laboratory Director

29 NORTH OLIVE STREET, VENTURA, CA 93001 • (805) 643-5621

-7 Day Survival

Start Date:	10/11/2007	Test ID:	CER101107	Sample ID:	CA0000000
End Date:	10/18/2007	Lab ID:	CAABC	Sample Type:	CUCL-Copper chloride
Sample Date:	10/11/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	Standard Toxicant				

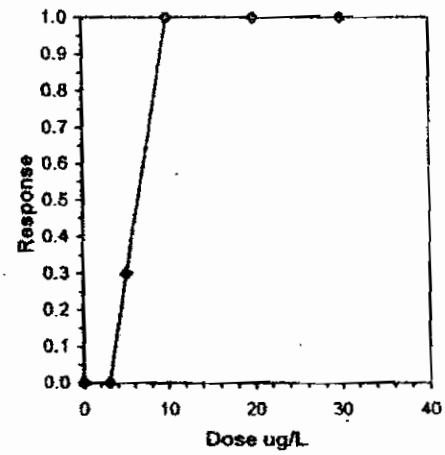
Conc-ug/L	1	2	3	4	5	6	7	8	9	10
N Control	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
3	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000	1.0000
5	1.0000	1.0000	0.0000	1.0000	1.0000	1.0000	0.0000	0.0000	1.0000	1.0000
10	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
20	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
30	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Conc-ug/L	Mean	N-Mean	Resp	Not Resp	Total	N	Fisher's Exact P	1-Tailed Critical	Isotonic Mean	Isotonic N-Mean
N Control	1.0000	1.0000	0	10	10	10			1.0000	1.0000
3	1.0000	1.0000	0	10	10	10	1.0000	0.0500	1.0000	1.0000
5	0.7000	0.7000	3	7	10	10	0.1053	0.0500	0.7000	0.7000
10	0.0000	0.0000	10	0	10	10			0.0000	0.0000
20	0.0000	0.0000	10	0	10	10			0.0000	0.0000
30	0.0000	0.0000	10	0	10	10			0.0000	0.0000

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU
Fisher's Exact Test	5	10	7.07107	
Treatments vs N Control				

Linear Interpolation (200 Resamples)

Point	ug/L	SD	95% CL		Skew
IC05	3.3333	0.4318	3.1667	5.2500	2.8097
IC10	3.6667	0.5798	3.3333	5.5000	1.4287
IC15	4.0000	0.6063	3.5000	5.7500	0.9161
IC20	4.3333	0.6512	3.6667	6.0000	0.4688
IC25	4.6667	0.6735	3.8333	6.2500	0.2857
IC40	5.7143	0.7566	4.3333	7.0000	-0.2615
IC50	6.4286	0.7797	4.6667	7.5000	-0.7397



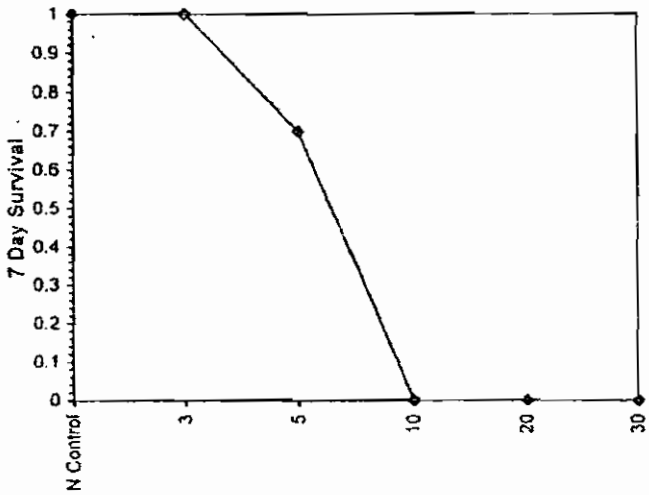
 ToxCalc v5.0.23 Reviewed by: PO

ND 3698

-7 Day Survival

Start Date:	10/11/2007	Test ID:	CER101107	Sample ID:	CA0000000
End Date:	10/18/2007	Lab ID:	CAABC	Sample Type:	CUCL-Copper chloride
Sample Date:	10/11/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	Standard Toxicant				

Dose-Response Plot



ToxCalc v5.0.23

Reviewed by: _____

ND 3699

-Reproduction

Start Date:	10/11/2007	Test ID:	CER101107	Sample ID:	CA0000000
End Date:	10/18/2007	Lab ID:	CAABC	Sample Type:	CUCL-Copper chloride
Sample Date:	10/11/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	Standard Toxicant				

Conc-ug/L	1	2	3	4	5	6	7	8	9	10
N Control	16.000	13.000	13.000	22.000	25.000	18.000	14.000	10.000	15.000	15.000
3	24.000	29.000	23.000	23.000	34.000	5.000	16.000	33.000	16.000	20.000
5	13.000	9.000	0.000	21.000	28.000	24.000	2.000	0.000	2.000	14.000
10	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
20	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
30	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

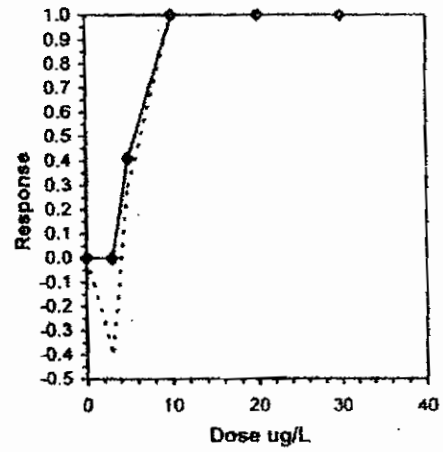
			Transform: Untransformed					1-Tailed			Isotonic	
Conc-ug/L	Mean	N-Mean	Mean	Min	Max	CV%	N	t-Stat	Critical	MSD	Mean	N-Mean
N Control	16.100	1.0000	16.100	10.000	25.000	27.847	10				19.200	1.0000
3	22.300	1.3851	22.300	5.000	34.000	39.096	10	-1.678	1.999	7.386	19.200	1.0000
5	11.300	0.7019	11.300	0.000	28.000	92.255	10	1.299	1.999	7.386	11.300	0.5885
10	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000
20	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000
30	0.000	0.0000	0.000	0.000	0.000	0.000	10				0.000	0.0000

Auxiliary Tests	Statistic	Critical	Skew	Kurt
Shapiro-Wilk's Test indicates normal distribution (p > 0.01)	0.98272	0.9	0.08737	-0.2286
Bartlett's Test indicates equal variances (p = 0.06)	5.5757	9.21035		

Hypothesis Test (1-tail, 0.05)	NOEC	LOEC	ChV	TU	MSDu	MSDp	MSB	MSE	F-Prob	df
Dunnett's Test	5	10	7.07107		7.38578	0.45874	304.133	68.263	0.02128	2, 27
Treatments vs N Control										

Linear Interpolation (200 Resamples)

Point	ug/L	SD	95% CL		Skew
IC05	3.2430	0.3604	3.1427	5.0094	3.6073
IC10	3.4861	0.4193	3.2853	5.2720	2.8027
IC15	3.7291	0.5002	3.4289	5.5347	1.9886
IC20	3.9722	0.5647	3.5718	5.7973	1.5618
IC25	4.2152	0.6175	3.7148	6.0600	1.2971
IC40	4.9443	0.7798	4.1436	6.8480	0.8128
IC50	5.7522	0.8979	4.4295	7.3733	0.4283



ToxCalc v5.0.23

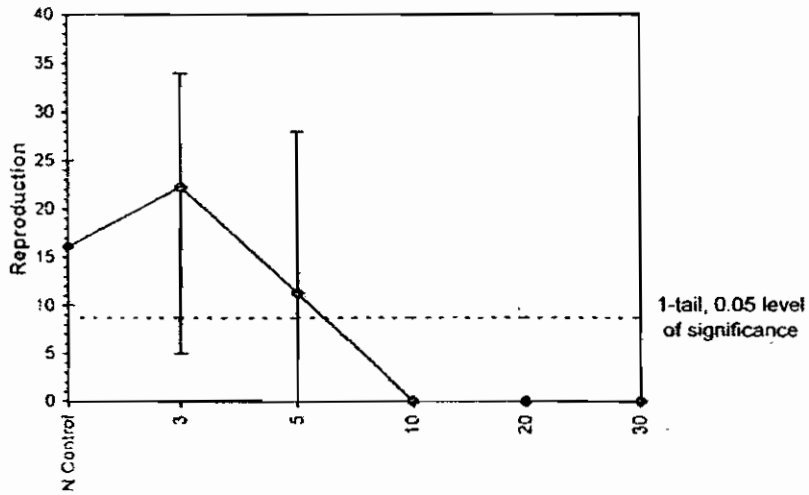
Reviewed by: [illegible]

ND 3700

Reproduction

Start Date:	10/11/2007	Test ID:	CER101107	Sample ID:	CA0000000
End Date:	10/18/2007	Lab ID:	CAABC	Sample Type:	CUCL-Copper chloride
Sample Date:	10/11/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	Standard Toxicant				

Dose-Response Plot



ToxCalc v5.0.23

Reviewed by: Da

ND 3701

Reproduction

Start Date:	10/11/2007	Test ID:	CER101107	Sample ID:	CA0000000
End Date:	10/18/2007	Lab ID:	CAABC	Sample Type:	CUCL-Copper chloride
Sample Date:	10/11/2007	Protocol:	EPA-821-R-02-013	Test Species:	CD-Ceriodaphnia dubia
Comments:	Standard Toxicant				

Auxiliary Data Summary

Conc-ug/L	Parameter	Mean	Min	Max	SD	CV%	N
N Control	Temp C	24.33	24.00	24.80	0.35	2.44	8
3		24.33	24.00	24.80	0.35	2.44	8
5		24.33	24.00	24.80	0.35	2.44	8
10		24.43	24.00	24.80	0.34	2.40	6
20		24.43	24.00	24.80	0.34	2.40	6
30		24.43	24.00	24.80	0.34	2.40	6
N Control	pH	8.29	8.20	8.30	0.04	2.27	8
3		8.05	7.80	8.20	0.15	4.83	8
5		8.06	7.90	8.20	0.12	4.27	8
10		6.68	0.10	8.20	3.23	26.88	6
20		8.02	7.80	8.20	0.15	4.79	6
30		8.00	7.80	8.20	0.15	4.92	6
N Control	DO mg/L	6.99	6.10	7.60	0.47	9.78	8
3		6.65	6.10	7.40	0.44	10.02	8
5		6.73	6.20	7.50	0.38	9.18	8
10		6.77	6.20	7.60	0.47	10.11	6
20		6.80	6.20	7.60	0.45	9.88	6
30		6.80	6.10	7.60	0.48	10.21	6
N Control	Hardness mg/L	93.25	89.00	98.00	3.11	1.89	8
3		0.00	0.00	0.00	0.00		0
5		0.00	0.00	0.00	0.00		0
10		0.00	0.00	0.00	0.00		0
20		0.00	0.00	0.00	0.00		0
30		91.00	91.00	91.00	0.00	0.00	6
N Control	Cond umhos	341.38	330.00	347.00	5.29	0.67	8
3		345.38	337.00	359.00	10.06	0.92	8
5		330.50	321.00	344.00	8.47	0.88	8
10		328.80	321.00	338.00	6.72	0.79	5
20		326.40	322.00	333.00	4.83	0.67	5
30		332.83	330.00	338.00	2.79	0.50	6
N Control	Alkalinity mg/L	63.25	60.00	67.00	2.66	2.58	8
3		0.00	0.00	0.00	0.00		0
5		0.00	0.00	0.00	0.00		0
10		0.00	0.00	0.00	0.00		0
20		0.00	0.00	0.00	0.00		0
30		65.00	65.00	65.00	0.00	0.00	6

ND 3702

Michael Lee/R9/USEPA/US
07/22/2008 08:50 AM

To Richard Remigio/R9/USEPA/US@EPA
cc
bcc
Subject Re: Fw: Agana and N. District WET Tests and RW Monitoring

Rich,

I have asked GWA to send to us formally and asked whether there were any earlier WET tests done and if so, to send.

Mike

Richard Remigio/R9/USEPA/US

Richard Remigio/R9/USEPA/US
07/21/2008 05:01 PM

To Michael Lee/R9/USEPA/US@EPA
cc
Subject Re: Fw: Agana and N. District WET Tests and RW Monitoring

Hi Mike,

Thank you very much for following up on this. As far as a formal submission, I have seen most of our pemittees submit NPDES-related materials through snail mail a/o email out of courtesy. Usually, the reports/DMRs sent to us are read and placed into our own records and eventually re-evaluated for renewal. Since this has bearing towards 301(h), I would recommend an official submittal to our offices.

Are you aware if there are any other previous toxicity reports done as early as 2001?

Rich

Richard Remigio - Environmental Engineer
NPDES Permits Office
U.S. Environmental Protection Agency- Region 9
75 Hawthorne Street, WTR-5
San Francisco, CA 94105

P: 415. 947.4113
F: 415. 947.3545
remigio.richard@epa.gov
Michael Lee/R9/USEPA/US

Michael Lee/R9/USEPA/US
07/21/2008 09:47 AM

To Richard Remigio/R9/USEPA/US@EPA
cc

Subject Fw: Agana and N. District WET Tests and RW Monitoring

Rich,

See attached WET tests for Agana and N. District. Do you we need to have these sent to us more formally, i.e., cover letter?

Mike

---- Forwarded by Michael Lee/R9/USEPA/US on 07/21/2008 09:45 AM ----

"Carmen Sian-Denton" <cdenton@ite.net>

07/18/2008 03:14 PM

To "Paul J. Kemp" <paulkemp@ite.net>, Michael Lee/R9/USEPA/US@EPA

cc "Don Antrobus" <dantrobus@guamwaterworks.org>, "Julie Shane" <jshane@guamwaterworks.org>, "John M. Benavente" <gpagm@ite.net>

Subject Re: Agana and N. District WET Tests and RW Monitoring

Hafa Adai Mike,

I've attached the Agana STP bioassay done in Dec 07 and the NDSTP bioassay done in Oct 07. They are scheduled to be done again later this year. Do you need this to be formally certified by our Compliance Officer?

Carmen

----- Original Message -----
From: <Lee.Michael@epa.gov>
To: "Carmen Denton" <cdenton@guamwaterworks.org>; "Paul J. Kemp" <paulkemp@ite.net>
Cc: "Don Antrobus" <dantrobus@guamwaterworks.org>; "Julie Shane" <jshane@guamwaterworks.org>; "John M. Benavente" <gpagm@ite.net>
Sent: Thursday, July 17, 2008 4:24 PM
Subject: Agana and N. District WET Tests and RW Monitoring

>
> Dear Carmen and Paul,
>
> As part of our Permits Office's ongoing review of GWA's NPDES permit
> renewal application for Northern District, they noted in GWA's cover
> letter for the revised permit renewal application that GWA would be
> doing a WET test (see attached letter). However, we have not been able
> to find a copy of the WET results in our files. Could you let us know
> if you have performed these tests. If so, could you send or if you had
> already submitted could you please resend the results of the tests. If
> not, we would like to have the WET test performed as you had stated in
> your letter.
>
> Also, I would like to bring up the need for GWA to restart its off-shore
> receiving water monitoring program in accordance with the current permit
> requirements for the Agana and Northern District STPs. Currently, GWA
> is performing the nearshore receiving water monitoring but not the

> off-shore monitoring. The off-shore monitoring has not been done for
> sometime and needs to be re-implemented in accordance with the
> respective permits.
>
> If you have any questions, please let me know.
>
> Sincerely,
>
> Mike
>
>
>
> (See attached file: Northern District Cover.pdf)
>
> No virus found in this incoming message.
> Checked by AVG - http://www.avg.com
> Version: 8.0.138 / Virus Database: 270.5.1/1559 - Release Date: 7/17/2008
> 6:08 PM
>
>
[attachment "220067 - ND (Bioassay) 10-16-07.pdf" deleted by Richard Remigio/R9/USEPA/US] [attachment "225061 - Agana (Bioassay) 12-11-07.pdf" deleted by Richard Remigio/R9/USEPA/US]