

CONTINUING EDUCATION FOR WATER OPERATORS

MARIANA ISLANDS WATER OPERATOR ASSOCIATION
AUGUST 17, 2016
PACIFIC ISLANDS CLUB, SAIPAN

TODAY'S AGENDA

- ABOUT CONTINUING EDUCATION
- MAIN EVENT
 - HOW GROUNDWATER IMPACTS BIOLOGICAL COMMUNITIES IN SAIPAN'S LAGOON
 - EPA HEALTH ADVISORY OF PFOS/PFOA AND HOW THAT AFFECTS SAIPAN
 - HOW TO CONDUCT A LEVEL 1 ASSESSMENT TO COMPLY WITH THE REVISED TOTAL COLIFORM RULE
- CURRENT EVENTS
 - CORPUS CHRISTI BOIL WATER NOTICE

IS THIS TRAINING REQUIRED?

NO

WHY HAVE CONTINUING EDUCATION?

- BECQ REGULATIONS REQUIRE CERTIFIED OPERATORS TO HAVE 10 CONTACT HOURS OF CONTINUING EDUCATION PER YEAR (30 CONTACT HOURS IN 3 YEARS) TO MAINTAIN CERTIFICATION.
- BECQ IS NOT REQUIRED TO OFFER TRAINING (AND NO LONGER OFFERS TRAINING – NO \$\$)
- WHERE WOULD OPERATORS GET TRAINING?

OTHER TRAINING OPTIONS

- PROFESSIONAL TRAINING PROVIDED BY YOUR EMPLOYER (SAFETY, PUMP MAINTENANCE, LAB PROCEDURES, ETC.)
- COLLEGE CLASSES
- CONFERENCES OR WORKSHOPS BY PROFESSIONAL ORGANIZATIONS OR AGENCIES
- CORRESPONDENCE COURSES
- ON-LINE OPPORTUNITIES

NOT CONTINUING EDUCATION

- MEETINGS WITH BECQ OR EPA
- SURVEYS OR INSPECTIONS BY BECQ OR EPA
- READING JOURNAL ARTICLES OR TEXTBOOKS BY YOURSELF
- GOOGLING WATER OPERATOR STUFF ON THE INTERNET

WHEN SHOULD TRAINING BE OFFERED?

- BECQ SURVEYED ALL CERTIFIED OPERATORS
- RESULTS
 - ONE 3 HOUR SESSION EVERY 3 MONTHS
 - IN MORNING
 - ON A WEDNESDAY
- **FIRST SESSION SEPTEMBER 6, 2006** (3 WEEKS SHORT OF 10 YEARS!)

2006 – 2008 (DEQ)

- SEPTEMBER 6, 2006: CHLORINATION
- NOVEMBER 8, 2006: USING A PUMP CURVE
- FEBRUARY 7, 2007: CROSS CONNECTION
- MAY 9, 2007: REGULATIONS – CCR, PNR
- AUGUST 8, 2007: SIZING PRESSURE TANKS
- NOVEMBER 26, 2007: PWS WORKSHOP
- FEBRUARY 20, 2008: FLUORIDATION
- MAY 2008: PROCESS CONTROLS (ROBERT BROKATE, HRWA)
- AUGUST 2008: SLOW SAND FILTERS
- NOVEMBER 12, 2008: TCR AND CONTROL VALVES

2009 MIWOA

- MARCH 25, 2009: SECURITY AND FILTERS
- MAY 13, 2009: ALTERNATIVE ENERGY, CCR, COMPLIANCE
- AUGUST 5, 2009: GEOLOGY OF SAIPAN, GWR
- OCTOBER 9, 2009: GWR WORKSHOP
- DECEMBER 2, 2009: VALVES, SPILLS, WALKERTON

2010 MIWOA

- FEBRUARY 3, 2010: SAFETY, HAZARDOUS MATERIALS
- MAY 5, 2010: BEH & DEQ, CROSS CONNECTIONS
- AUGUST 11, 2010: WASTEWATER COLLECTION/TREATMENT
- NOVEMBER 3, 2010: RESPONSE TO DISEASE OUTBREAK

2011 MIWOA

- FEBRUARY 2011: CHEMICAL INJECTION PUMPS (HRWA)
- MAY 2011: RADIATION, RADIONUCLIDE RULE
- JULY 2011: UTILITY POLICIES & PROCEDURES; STANDARD OPERATING PROCEDURES (HRWA)
- NOVEMBER 2011: LEAK DETECTION

2012 MIWOA

- FEBRUARY 2012: BOTTLED WATER; REVERSE OSMOSIS; BOTTLE SANITATION
- MAY 2, 2012: INSPECTING TANKS; WATER METERS
- AUGUST 8, 2012: WASTEWATER MEMBRANE FILTRATION (LAO LAO GOLF RESORT)
- NOVEMBER 2012: METERING AND MEASURING FLOW

2013 MIWOA

- FEBRUARY: CORROSION CONTROL FOR PB & CU
- MAY: PIPE FOR WATER & SEWER
- SEPTEMBER: GREASE TRAPS
- DECEMBER: COOK ISLANDS WATER SYSTEM; MILITARY R/O; CALCIUM HYPOCHLORITE

2014 MIWOA

- FEBRUARY: WEST VIRGINIA CHEMICAL SPILL
- MAY: TEEEX SMALL WATER SYSTEM
- AUGUST: PUBLIC RELATIONS BY HRWA
- SEPTEMBER: TEEEX SMALL WATER SYSTEMS

2015 MIWOA

- FEBRUARY: DISEASE TRANSMISSION/PREVENTION
- MAY: CHUUK TYPHOON (MAYSAK); MAUI WELLS; MAPPING NITRATES
- JULY: UNC ENVIRONMENTAL FINANCE CENTER
- OCTOBER: STORIES FROM SOUDELOR

2016 MIWOA

- JANUARY: PUBLIC WATER SYSTEM WORKSHOP, RTCR
- MARCH: UNC ENVIRONMENTAL FINANCE CENTER
- APRIL: EUROPINS – SAMPLING
- AUGUST: GROUNDWATER -> SAIPAN LAGOON, PFOS/PFOA, LEVEL 1 ASSESSMENT RTCR

THIS TRAINING IS FOR YOU!

WE'LL DO WHAT WE CAN TO MAKE IT WHAT YOU WANT IT TO BE!

MARIANA ISLANDS WATER OPERATORS ASSOCIATION

SUGGESTIONS FOR TRAINING

- POSSIBLE TOPICS FOR UPCOMING SESSIONS:
 - REVISED TOTAL COLIFORM RULE ASSESSMENTS (TODAY!)
 - BACKFLOW PREVENTION DEVICE TESTING
 - RAINWATER
 - STORM WATER AND EROSION CONTROL
 - ASBESTOS PIPE REMOVAL AND MANAGEMENT
 - ARE YOU A HAZARDOUS WASTE HANDLER?

CE CREDIT

- MAKE SURE TO SIGN-IN AND PAY TO GET CREDIT FOR CLASS
- CERTIFICATES ARE MADE FROM THE SIGN-IN LIST (AND RECEIPT BOOK)
- NAME – AS IT APPEARS ON THE SIGN-IN SHEET
- NOTE E-MAIL ADDRESS CHANGE ON SIGN-IN SHEET
- ATTENDANCE CERTIFICATES ARE POSTED TO THE WEBSITE

MAIN EVENT

DR. DANA OKANO & DR. RYAN OKANO
HOW GROUNDWATER IMPACTS BIOLOGICAL COMMUNITIES IN SAIPAN'S LAGOON

10 MINUTE BREAK



MAIN EVENT

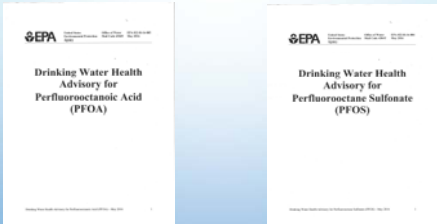
EPA HEALTH ADVISORY ON PFOS/PFOA AND HOW THAT AFFECTS SAIPAN

PFOS/PFOA HEALTH ADVISORY

- RELEASED ON THURSDAY MAY 19, 2016
- PRESS RELEASE FROM JOEL BEAUVAIS
- OFFICIAL ANNOUNCEMENT
 - LIFETIME HEALTH ADVISORIES
 - HEALTH EFFECTS SUPPORT DOCUMENTS
 - PFOS – PERFLUOROOCTANE SULFONATE
 - PFOA – PERFLUOROOCTANOIC ACID



PFOA / PFOS



PRE-MAY 19, 2016

- WEDNESDAY MAY 18, 2016 – EPA CALLS BECQ
 - TELLS BECQ ABOUT PFOS/PFOA HEALTH ADVISORIES TO BE ANNOUNCED MAY 19
 - PFOS/PFOA WERE DETECTED ON SAIPAN IN 2015 DURING UCMR3
 - WE NEED TO INFORM THE GOVERNOR
 - CUC NEEDS TO HAVE A PLAN FOR INFORMING THE PUBLIC AND TAKING ACTION

WHAT IS UCMR3?

- UNREGULATED CONTAMINANT MONITORING RULE (ROUND 3)
- FOUND AT 40 CFR 141.40 MONITORING REQUIREMENTS FOR UNREGULATED CONTAMINANTS
- APPLIES TO:
 - TRANSIENT NON-COMMUNITY SYSTEM IF NOTIFIED BY EPA OR STATE – LIST 3 (EPA PAYS)
 - COMMUNITY WATER SYSTEMS/NTNC – LARGE OVER 10,000 PEOPLE
 - ASSESSMENT MONITORING – LIST 1 – LARGE OVER 10,000 PEOPLE (REQUIRED)
 - SCREENING SURVEY – LIST 2 – OVER 100,000 (REQUIRED)
 - PRE-SCREEN TESTING – LIST 3 IF NOTIFIED BY EPA
 - SMALL SYSTEMS – IF SELECTED, ONLY 1 LIST AND EPA PAYS

UCMR CONTAMINANT LIST

- LIST 1: ASSESSMENT MONITORING CHEMICALS
 - VOCs – 7 COMPOUNDS
 - SOCS – 1 COMPOUND (1,4-DIOXANE)
 - METALS – VANADIUM, MOLYBDENUM, COBALT, STRONTIUM
 - CHROMIUM 6
 - OXYHALIDE ANION – CHLORATE
 - PERFLUORINATED COMPOUNDS – PFOS, PFOA, PFNA, PFHXS, PFHPA, PFBS

UCMR CONTAMINANT LIST

- LIST 2: SCREENING SURVEY
 - HORMONES – 7 COMPOUNDS
- LIST 3: PRE-SCREEN TESTING
 - MICROBIOLOGICAL CONTAMINANTS – ENTEROVIRUSES, NOROVIRUSES
 - TOTAL CHROMIUM

CUC – LIST 1

- FREQUENCY:
 - FOR GROUNDWATER – TWICE IN A CONSECUTIVE 12 MONTH PERIOD –
 - MUST OCCUR 5-7 MONTHS APART
- LOCATION
 - ENTRY POINTS TO THE DISTRIBUTION SYSTEM
- REPORTING
 - ELECTRONIC – PWS REPORTS DIRECTLY TO EPA, NO BECQ INVOLVEMENT

CUC

- SAMPLED IN FEBRUARY 2015
 - 5 MONTHS LATER IS JULY
- AUGUST 2, 2015 – **TYPHOON SOUDELOR!**
- NEXT ROUND IN FINALIZED IN OCTOBER 2015
 - SOME SAMPLES NOT GOOD
 - RESAMPLED IN FEBRUARY 2016
- FINAL RESULTS IN APRIL 2016

SO WHAT WHERE THE RESULTS?

Sample ID	Analyte	Sample Date	Final	Units
01249-01249EP-IF-208	Perfluoro octanesulfonic acid - PFOS	2/22/2015	7 ug/l	
01249-01249EP-IF-208	Perfluoro octanesulfonic acid - PFOS	10/29/2015	4.9 ug/l	
90014-01088EP-Isley Reservoir	Perfluoro octanesulfonic acid - PFOS	2/22/2015	0.17 ug/l	
90014-01088EP-Isley Reservoir	Perfluoro octanesulfonic acid - PFOS	2/7/2016	0.097 ug/l	
90015-01106EP-Isley Reservoir 1	Perfluoro octanesulfonic acid - PFOS	10/29/2015	0.21 ug/l	
90032-01207EP-IF-28 EP	Perfluoro octanesulfonic acid - PFOS	2/22/2015	0.042 ug/l	
90039-01243EP-KV 21 to 25 EP	Perfluoro octanesulfonic acid - PFOS	11/5/2015	0.042 ug/l	
01249-01249EP-IF-208	Perfluoro octanoic acid - PFOA	2/22/2015	0.22 ug/l	
01249-01249EP-IF-208	Perfluoro octanoic acid - PFOA	10/29/2015	0.2 ug/l	

WHAT DID THESE RESULTS MEAN?

- LIFETIME HEALTH ADVISORY
- COMBINED PFOA + PFOS

70 PARTS PER TRILLION

HEALTH ADVISORY PFOS+PFOA

70 PARTS PER TRILLION

70 ng/l (pptr)

0.070 ug/l (ppb)

0.000070 mg/l (ppm)

0.000000070 g/l (ppth)

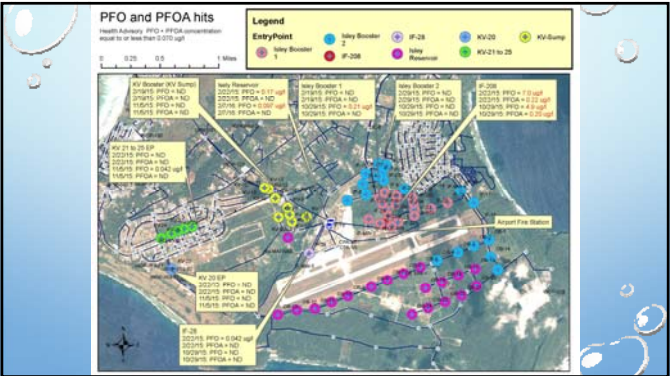
PARTS PER TRILLION ANALOGIES

- 1 SQUARE INCH IN 250 SQUARE MILES
- 1 SECOND IN NEARLY 32,000 YEARS
- 1 OUNCE IN 7.5 BILLION GALLONS OF WATER

METHOD REPORTING LEVEL (MRL)

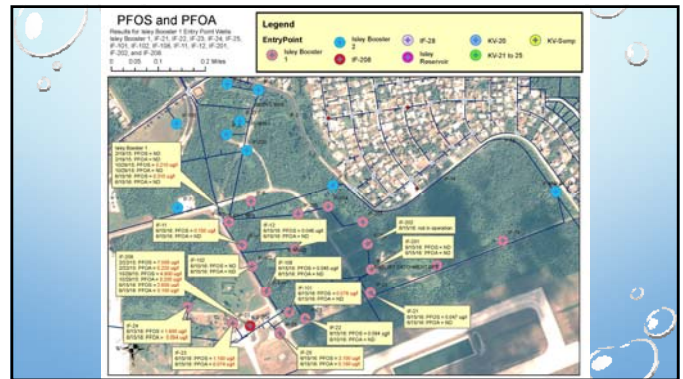
PFOS = 0.040 ug/l (ppb)

PFOA = 0.020 ug/l (ppb)

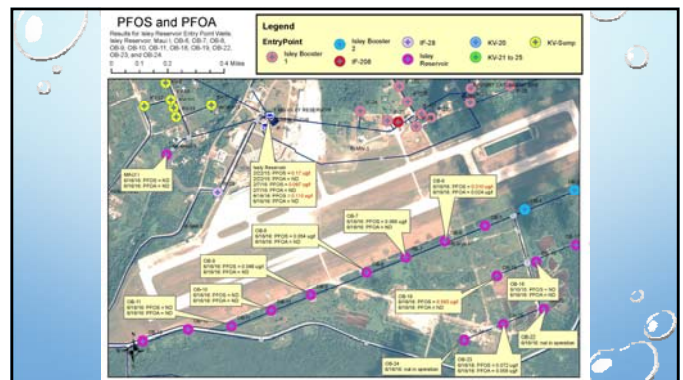




- NO ACTION NEEDED
- ENTRY POINT BELOW LIFETIME HEALTH ADVISORY
- DETECTION AT ONLY ONE WELL AND IT IS BELOW LIFETIME HEALTH ADVISORY



- RESULT ON 6/15/16 AT 310 ppb (HIGHER THAN BEFORE)
- EVEN AFTER IF-208 OFF
- IF-208 DROPPING
- IF-23, IF-24, IF-25 PRETTY HIGH
- IF-101 BARELY OVER & IF-11 ABOUT 2 X LHA
- MASS BALANCE (OPEN SPREADSHEET)
- PLAN: REMOVE IF-23, IF-24, IF-25 FROM SERVICE, RE-SAMPLE IB-1



- RESULT ON 6/16/16 SLIGHTLY HIGHER
- NOT AS MANY HIGH WELLS
- ONLY OB-6 AND OB-19
- MASS BALANCE AGAIN ([OPEN SPREADSHEET](#))
- MUST BE ANOTHER WELL(S) CONTRIBUTING CONTAMINATION
- PLAN: INACTIVATE OB-6, OB-19 AND OB-5, RESAMPLE IR

- INACTIVATE 3 WELLS CONTRIBUTING TO ISLEY RESERVOIR
- INACTIVATE 3 WELLS CONTRIBUTING TO ISLEY BOOSTER 1
- RESAMPLE ISLEY RESERVOIR AND ISLEY BOOSTER 1

RESAMPLE / MORE PUBLIC EDUCATION

- SAMPLES COLLECTED AUGUST 1, 2016
 - ISLEY BOOSTER 1
 - ISLEY RESERVOIR
 - + 1 FIELD BLANK
- AUGUST 2, 2016
 - CONF CALL W/ EPA -> MORE PUBLIC EDUCATION
 - HEALTH EFFECTS – MOTHERS/INFANTS

PUBLIC EDUCATION

- CUC ISSUES ANOTHER NOTICE
- BECQ MEETS WITH PUBLIC HEALTH
 - FOCUS ON MOTHERS/INFANTS



RESULTS

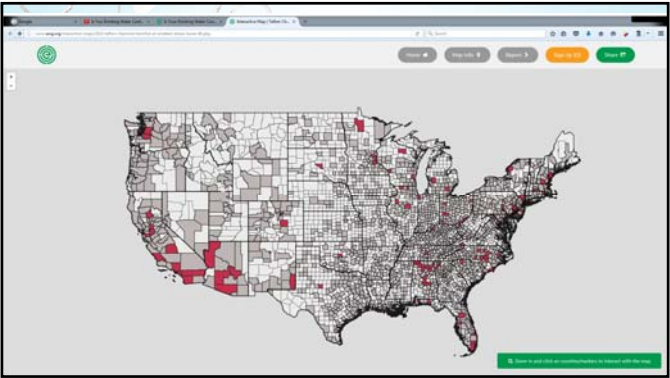
- PRELIMINARY RESULTS ON AUGUST 15, 2016
 - ISLEY BOOSTER 1 = NO DETECT
 - ISLEY RESERVOIR = (RECOVERY ISSUE)

HEALTH EFFECTS

- THE HEALTH ADVISORY IS BASED ON:
 - STUDIES ON LAB ANIMALS
 - STUDIES ON PEOPLE THAT WERE EXPOSED (EPIDEMIOLOGICAL STUDY)
- EXPOSURE TO PFOA & PFOS OVER CERTAIN LEVELS MAY RESULTS IN:
 - DEVELOPMENTAL EFFECTS TO FETUSES DURING PREGNANCY OR TO BREASTFED INFANTS (LOW BIRTHWEIGHT, ACCELERATED PUBERTY, SKELETAL VARIATIONS)
 - CANCER (TESTICULAR, KIDNEY)
 - LIVER EFFECTS
 - IMMUNE EFFECTS (ANTIBODY PRODUCTION)
 - THYROID EFFECTS
 - AND OTHER EFFECTS (CHOLESTEROL CHANGES)

WHERE ELSE?

COMPOUND	# results	detects	> 70 ppt	#PWS	detects	> 70 ppt
PFOS	36,149	285	119	4,864	94	46
PFOA	36,148	354	31	4,864	108	13



HOW TO REMOVE PFOS/PFOA FROM WATER

WATER RESEARCH FOUNDATION (WRF) EVALUATED 15 WATER TREATMENT PLANTS


INEFFECTIVE (PFASS)	MODERATELY EFFECTIVE	HIGHLY EFFECTIVE
AERATION	ANION EXCHANGE (PFOA)	ANION EXCHANGE (PFOS)
CHLORINE DIOXIDE		NANOFILTRATION
DISSOLVED AIR FLOTATION		REVERSE OSMOSIS
COAGULATION/FLOCCULATION		GRANULAR ACTIVATED CARBON
SEDIMENTATION		
GRANULAR FILTRATION		
MICROFILTRATION		
ANION EXCHANGE (SOME PFASS)		

Source: www.wateronline.com/doc/how-to-remove-pfoa-and-pfos-0001

WHAT NOW ON SAIPAN?

- PFOA AND PFOS WILL NOT LIKELY BE "REGULATED" BY EPA IN THE FUTURE
- BECQ WILL REQUIRE CUC TO MONITOR FOR PFOA AND PFOS (QUARTERLY FOR NOW)
- CUC WILL HAVE TO EVALUATE THEIR SYSTEM
 - HOW TO MAKE UP LOSS OF 7 WELLS (OUT OF ~ 138 WELLS)
 - DO THEY TREAT WATER?
 - GAC PROBABLY LESS EXPENSIVE THAN R/O
- AVERAGE CONSUMER – TRY TO MINIMIZE EXPOSURE

10 MINUTE BREAK



MAIN EVENT

HOW TO CONDUCT A LEVEL 1 ASSESSMENT TO COMPLY WITH THE RTCR

WHAT IS A LEVEL 1 ASSESSMENT? WHY DO I NEED TO DO ONE?

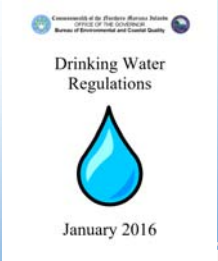
- LET'S REVIEW THE REVISED TOTAL COLIFORM RULE

REVISED TOTAL COLIFORM RULE

CNMI BECQ IMPLEMENTATION

ADOPTION OF NEW REGULATIONS

- OCTOBER 28, 2015 – PROPOSED
- DECEMBER 28, 2015 – FINAL
- REFERENCES JULY 1, 2014 VERSION OF 40 CFR 141
- ADDS NEW SUBPART Y – REVISED TOTAL COLIFORM RULE



EFFECTIVE DATE



2016

SAMPLE SITING PLANS

FEDERAL REQUIREMENT

- 141.853(A)(1) SYSTEMS MUST DEVELOP A WRITTEN SAMPLE SITING PLAN THAT IDENTIFIES:
 - SAMPLING SITES (ROUTINE AND REPEAT SITES), AND SOURCE WATER IF REQUIRED BY GWR
 - COLLECTION SCHEDULE
 - NO LATER THAN MARCH 31, 2016...
- PLANS ARE SUBJECT TO STATE REVIEW AND REVISION

CNMI PUBLIC WATER SYSTEMS

- ALL PWS IN CNMI ALREADY HAVE SAMPLE SITING PLANS
- KEEP THE SAMPLE SITING PLANS YOU HAVE
- THEY WILL BE REVIEWED DURING THE NEXT SANITARY SURVEY

SAMPLING FREQUENCY

FEDERAL REQUIREMENTS

- ALLOWS SOME SYSTEMS TO MONITOR:
 - MONTHLY
 - QUARTERLY
 - AND ANNUALLY OR INITIAL

CNMI DIRECTIONS


- ALL SYSTEMS MUST MONITOR:

MONTHLY

- NO REDUCED MONITORING (AT THIS TIME)


TREATMENT TECHNIQUE TRIGGERS

- LEVEL 1

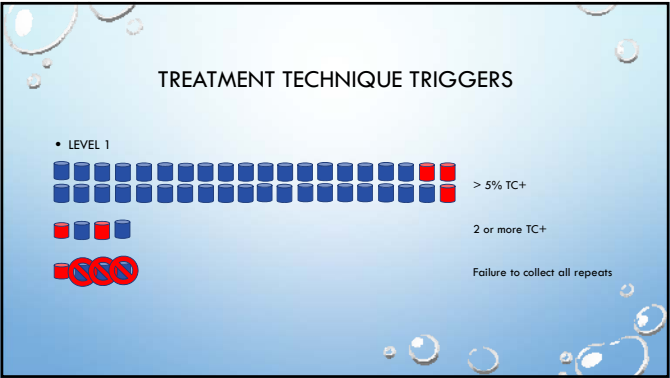
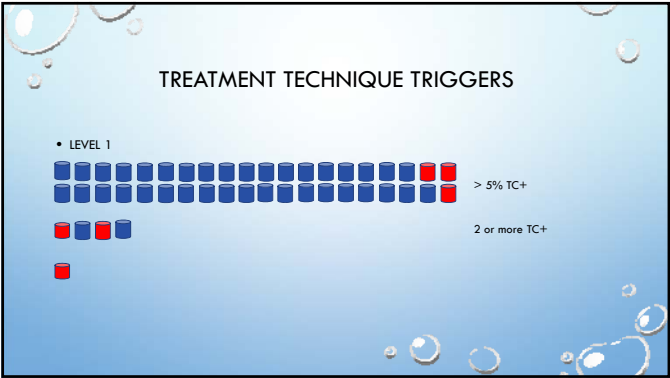
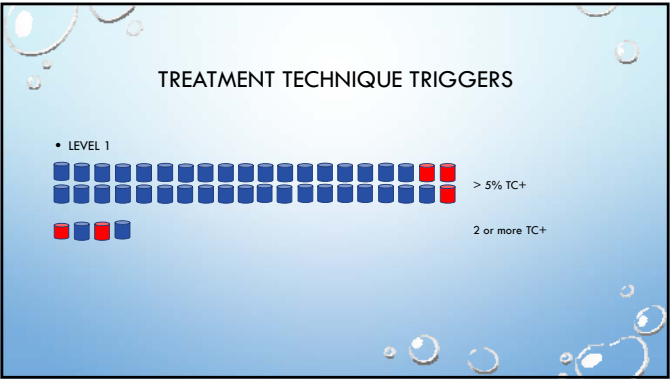
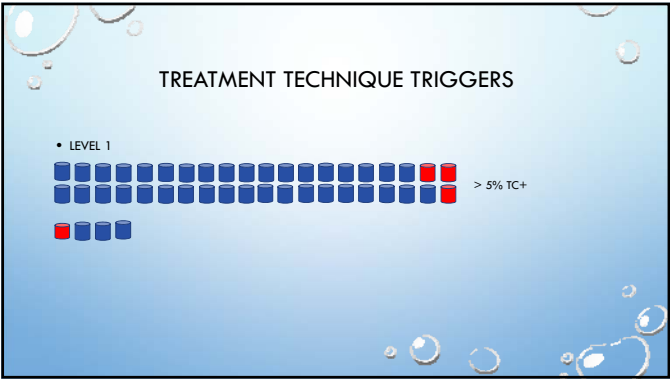
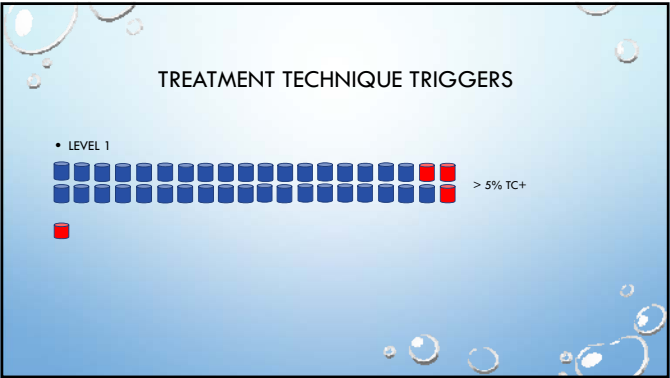
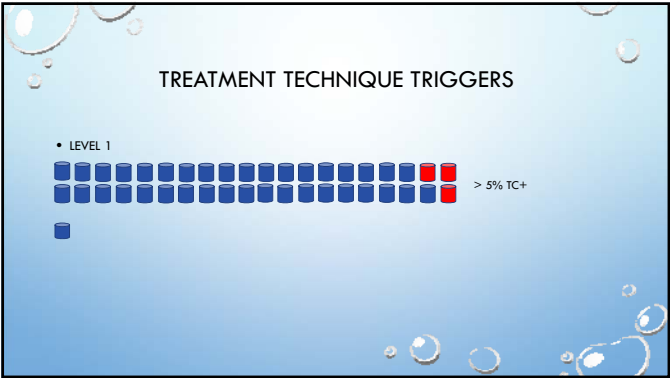


TREATMENT TECHNIQUE TRIGGERS

- LEVEL 1



> 5% TC+



TREATMENT TECHNIQUE TRIGGERS

- LEVEL 2

E. COLI MCL VIOLATION

2nd Level 1 Trigger w/in 12 months

WHO CONDUCTS ASSESSMENTS?

- PWS IS RESPONSIBLE FOR ASSESSMENT BEING COMPLETED
- LEVEL 1: A SELF-ASSESSMENT CONDUCTED BY A RESPONSIBLE PARTY FROM THE PWS
- LEVEL 2: MUST BE CONDUCTED BY A PARTY APPROVED BY THE STATE

BECQ Recommends Operator-in-Charge

Same as Sanitary Survey

- BECQ PERSONNEL TRAINED TO PERFORM SANITARY SURVEYS
- BEH PERSONNEL TRAINED TO PERFORM SANITARY SURVEYS
- PE TRAINED TO PERFORM SANITARY SURVEYS AND APPROVED BY BECQ
- REHS TRAINED TO PERFORM SANITARY SURVEYS AND APPROVED BY BECQ
- OTHER PERSONNEL TRAINED TO PERFORM SANITARY SURVEYS AND APPROVED BY BECQ

ASSESSMENTS

- CONDUCTED USING A WRITTEN FORM
- FORM MUST DESCRIBE
 - SANITARY DEFECTS DETECTED
 - CORRECTIVE ACTIONS COMPLETED
 - PROPOSED TIMETABLE FOR CORRECTIVE ACTIONS NOT ALREADY COMPLETED
- MAY NOTE THAT NO DEFECTS WERE DETECTED
- MUST BE SUBMITTED TO STATE WITHIN 30 DAYS AFTER SYSTEM LEARNS IT EXCEEDED TRIGGER

WHERE CAN A PWS GET A COPY OF THE LEVEL 1 ASSESSMENT FORM?

www.MarianasOperators.org

Mariana Islands Water Operator Association

Home

PFOS and PFDA Health Advisory

PFOS info

Level 1 Trigger info

Training Calendar

Sanitary Surveys

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Level 2 Trigger

Level 3 Trigger

Level 4 Trigger

Level 5 Trigger

Level 6 Trigger

Level 7 Trigger

Level 8 Trigger

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Mariana Islands Water Operator Association

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PFOS and PFDA Health Advisory

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Level 100 Trigger

CHM Bureau of Environmental and Coastal Quality - Safe Drinking Water Program - Level 1 Assessment Form

System Name: _____ PWS ID #: _____

Operator in Responsible Charge: _____ PWS contact info: _____

Date Level 1 Trigger Exceeded: _____ Date Level 1 Assessment Completed: _____

Questions	Response (Yes/No)	Assessed (Yes/No)	Issue Description	Corrective Action Taken (Including Date)
1. Evaluate sample site: - Sample site location - Sample site access - Sample site security				
2. Sample protocol followed and reviewed: - Sample protocol - Sample site access - Sample site security				
3. Have any of the following occurred at selected facilities since the collection of the sample? - Distribution facilities - Distribution facilities - Distribution facilities				
4. Have there been any recent operational changes to the system? - Distribution facilities - Distribution facilities - Distribution facilities				
5. Distribution facilities: - Distribution facilities - Distribution facilities - Distribution facilities				

No. 10-100-000

CHM Bureau of Environmental and Coastal Quality - Safe Drinking Water Program - Level 1 Assessment Form

System Name: _____ PWS ID #: _____

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5. Distribution facilities: - Distribution facilities - Distribution facilities - Distribution facilities				

No. 10-100-000

CHM Bureau of Environmental and Coastal Quality - Safe Drinking Water Program - Level 1 Assessment Form

System Name: _____ PWS ID #: _____

Operator in Responsible Charge: _____ PWS contact info: _____

Date Level 1 Trigger Exceeded: _____ Date Level 1 Assessment Completed: _____

Questions	Response (Yes/No)	Assessed (Yes/No)	Issue Description	Corrective Action Taken (Including Date)
1. Evaluate sample site: - Sample site location - Sample site access - Sample site security				
2. Sample protocol followed and reviewed: - Sample protocol - Sample site access - Sample site security				
3. Have any of the following occurred at selected facilities since the collection of the sample? - Distribution facilities - Distribution facilities - Distribution facilities				
4. Have there been any recent operational changes to the system? - Distribution facilities - Distribution facilities - Distribution facilities				
5. Distribution facilities: - Distribution facilities - Distribution facilities - Distribution facilities				

No. 10-100-000

CHM Bureau of Environmental and Coastal Quality - Safe Drinking Water Program - Level 1 Assessment Form

System Name: _____ PWS ID #: _____

Operator in Responsible Charge: _____ PWS contact info: _____

Date Level 1 Trigger Exceeded: _____ Date Level 1 Assessment Completed: _____

Questions	Response (Yes/No)	Assessed (Yes/No)	Issue Description	Corrective Action Taken (Including Date)
1. Evaluate sample site: - Sample site location - Sample site access - Sample site security				
2. Sample protocol followed and reviewed: - Sample protocol - Sample site access - Sample site security				
3. Have any of the following occurred at selected facilities since the collection of the sample? - Distribution facilities - Distribution facilities - Distribution facilities				
4. Have there been any recent operational changes to the system? - Distribution facilities - Distribution facilities - Distribution facilities				
5. Distribution facilities: - Distribution facilities - Distribution facilities - Distribution facilities				

No. 10-100-000

THE FORM IS OFFICIAL DOCUMENTATION

- FILL IN TOP PORTION
- SYSTEM NAME & PWS ID #
- PWS CONTACT INFO
- OPERATOR IN RESPONSIBLE CHARGE & CONTACT INFO
- DATE THE LEVEL 1 TRIGGER WAS EXCEEDED
- DATE THE LEVEL 1 ASSESSMENT WAS COMPLETED (W/ IN 30 DAYS)

CHM Bureau of Environmental and Coastal Quality - Safe Drinking Water Program - Level 1 Assessment Form

System Name: _____ PWS ID #: _____

Operator in Responsible Charge: _____ PWS contact info: _____

Date Level 1 Trigger Exceeded: _____ Date Level 1 Assessment Completed: _____

COVER ALL ASSESSMENT AREAS

- SAMPLE SITE
- SAMPLE PROTOCOL
- DISTRIBUTION OR TREATMENT INTERRUPTIONS
- OPERATIONAL CHANGES
- DISTRIBUTION FACILITIES
- STORAGE TANKS
- TREATMENT PROCESSES
- SOURCES - WELL/RAINWATER

CHM Bureau of Environmental and Coastal Quality - Safe Drinking Water Program - Level 1 Assessment Form

System Name: _____ PWS ID #: _____

Operator in Responsible Charge: _____ PWS contact info: _____

Date Level 1 Trigger Exceeded: _____ Date Level 1 Assessment Completed: _____

COMPLETE ALL COLUMNS

- REVIEWED? – (CHECK IF COMPLETED OR TYPE N/A)
- ISSUE(S) FOUND? (Y/N)
- ISSUE DESCRIPTION – IF AN ISSUE WAS FOUND, THEN DESCRIBE IT
- CORRECTIVE ACTION TAKE (INCLUDING DATE)
 - OR SCHEDULED DATE WHEN CORRECTIVE ACTION IS TO BE TAKEN AFTER CONSULTATION WITH BECQ

and Coastal Quality – Safe Drinking Water Program - Level 3 Assessment Form

PWS ID # _____

PWS contact info: _____

Date Level 3 Assessment Completed: _____

Assessment Status (Completed or type N/A)	Issues Found? (Y/N)	Issue Description	Corrective Action Taken (including date)

Assessor: _____

FINALLY

- SIGN THE BOTTOM
- SUBMIT COMPLETED FORM W/ IN 30 DAYS OF TRIGGER EVENT

Additional comments: _____

Area name of station contributing form: _____ Signature: _____ Date: _____

Reviewed by BECQ:

<input type="checkbox"/> Assessment has been successfully completed.	
<input type="checkbox"/> Only need for TC, no problem is identified.	
<input type="checkbox"/> Issue has occurred but not reported.	
<input type="checkbox"/> Issue not reported and/or problem not resolved.	
<input type="checkbox"/> Other (please specify): _____	

CORRECTIVE ACTIONS

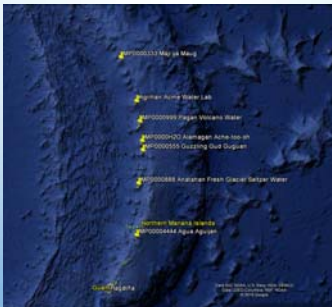
- SYSTEMS MUST CORRECT SANITARY DEFECTS IDENTIFIED IN ASSESSMENTS
- IF NOT COMPLETED BEFORE FORM SUBMITTED TO STATE, MUST FOLLOW TIMETABLE APPROVED BY STATE DURING A CONSULTATION



VIOLATIONS

- E. COLI MCL – EC+ FOLLOWING A TC+
- TREATMENT TECHNIQUE – EXCEEDS TRIGGER BUT FAILS TO CONDUCT ASSESSMENT
- MONITORING VIOLATION – FAILURE TO COLLECT REQUIRED SAMPLES
- REPORTING VIOLATION – FAILURE TO SUBMIT A MONITORING REPORT OR ASSESSMENT

PWS EXAMPLES



EXAMPLE 1 - PAGAN

- PWS ID # MP0000999
- PAGAN VOLCANO WATER – BOTTLED WATER COMPANY
- SERVE ALL 25 PEOPLE ON PAGAN
- HAVE A WELL
- CHLORINATE – RESIDUAL = 0.5 MG/L
- REQUIRED TO TAKE 1 SAMPLE A MONTH
 - SAMPLES ANALYZED AT AGRIHAN ACME WATER LAB



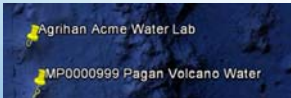
EXAMPLE 1 CONTINUED...

- TAKE SAMPLE ON TUESDAY AUGUST 9, 2016
 - SEND TO AGRIHAN VIA ALBATROSS
- GET RESULT THE FOLLOWING DAY WEDNESDAY AUGUST 10, 2016 – **TC+**



EXAMPLE 1 CONTINUED...

- HAS AN RTCR TRIGGER BEEN EXCEEDED?
 - **NOT YET**
- WHAT DOES PAGAN DO NEXT?
 - 3 REPEATS REQUIRED
 - THEY ONLY HAVE ONE TAP (NO UPSTREAM/DOWNSTREAM)
 - FILL THREE 100 ML BOTTLES, AT 1 HOUR INTERVALS
 - SEND TO AGRIHAN ON WEDNESDAY AUGUST 10, 2016



EXAMPLE 1 CONTINUED...

- WATER SOURCE IS A WELL (GROUNDWATER)
- DO THEY DO SOURCE WATER MONITORING TO COMPLY WITH GROUNDWATER RULE?
- **NO** – THEY ARE CHLORINATING. DECLARED 4 LOG VIRUS REMOVAL BECAUSE RESIDUAL = 0.5 MG/L
- RECORD CHLORINE RESIDUAL DAILY (COMPLIANCE MONITORING)



EXAMPLE 1 CONTINUED...

"40 CFR 141.858(a)(3) Repeat monitoring... The system must continue to collect additional sets of repeat samples until either total coliforms are not detected in one complete set of repeat samples or the system determines that a coliform treatment technique trigger ... has been exceeded as a result of a repeat sample being TC+ and notifies [BECQ]."

- AGRIHAN SENDS RESULTS THU AUG 11
 - 1 OF THE THREE REPEATS = **TC+**
- HAS AN RTCR TRIGGER BEEN EXCEEDED?
 - YES – 1 ROUTINE + 1 REPEAT
- WHAT DOES PAGAN DO?
 - PERFORM LEVEL 1 ASSESSMENT
 - **DUE ON 9/11/16**
 - WHAT ABOUT MORE REPEATS?
 - **NOT REQUIRED – TRIGGER EXCEEDED**

EXAMPLE 1 – LEVEL 1 ASSESSMENT

- SYSTEM NAME: **Pagan Volcano Water**
- PWS CONTACT INFO: **Box 100, Pagan, MP 670 299 9999**
- OPERATOR IN RESPONSIBLE CHARGE: **Pedro Pagan**
- DATE LEVEL 1 TRIGGER EXCEEDED: **8/11/2016**
- DATE LEVEL 1 ASSESSMENT COMPLETED: **8/12/2016**

System Name		Operator		Date	
System Name		Operator		Date	
1. System Name		2. Operator		3. Date	
4. System Type		5. System Size		6. System Age	
7. System Location		8. System Status		9. System Notes	
10. System Description		11. System Details		12. System Comments	
13. System History		14. System Records		15. System Data	
16. System Logs		17. System Reports		18. System Alerts	
19. System Maintenance		20. System Repairs		21. System Upgrades	
22. System Inspections		23. System Audits		24. System Reviews	
25. System Evaluations		26. System Assessments		27. System Findings	
28. System Recommendations		29. System Actions		30. System Results	
31. System Follow-up		32. System Closure		33. System Archiving	
34. System Backup		35. System Restore		36. System Recovery	
37. System Security		38. System Access		39. System Permissions	
40. System Settings		41. System Configuration		42. System Parameters	
43. System Defaults		44. System Overrides		45. System Exceptions	
46. System Exceptions		47. System Alerts		48. System Notifications	
49. System Messages		50. System Logs		51. System Reports	
52. System Data		53. System Records		54. System History	
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58. System Assessment		59. System Findings		60. System Recommendations	
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67. System Restore		68. System Recovery		69. System Security	
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106. System Exceptions		107. System Alerts		108. System Notifications	
109. System Messages		110. System Data		111. System Records	
112. System History		113. System Audit		114. System Review	
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163. System Overrides		164. System Exceptions		165. System Alerts	
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187. System Permissions		188. System Settings		189. System Configuration	
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262. System Findings		263. System Recommendations		264. System Actions	
265. System Results		266. System Follow-up		267. System Closure	
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319. System Assessment		320. System Findings		321. System Recommendations	
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445. System Recovery		446. System Security		447. System Access	
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532. System Recovery		533. System Security		534. System Access	
535. System Permissions		536. System Settings		537. System Configuration	
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553. System Recommendations		554. System Actions		555. System Results	
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634. System History		635. System Audit		636. System Review	
637. System Evaluation		638. System Assessment		639. System Findings	
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643. System Follow-up		644. System Closure		645. System Archiving	
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655. System Defaults		656. System Overrides		657. System Exceptions	
658. System Alerts		659. System Notifications		660. System Messages	
661. System Data		662. System Records		663. System History	
664. System Audit		665. System Review		666. System Evaluation	
667. System Assessment		668. System Findings		669. System Recommendations	
670. System Actions	</				

EXAMPLE 1 – SAMPLE PROTOCOL

- SAMPLE PROTOCOL FOLLOWED AND REVIEWED
 - FLUSH TAP
 - REMOVE AERATOR
 - NO SWIVEL
 - FRESH SAMPLE BOTTLES
 - SAMPLE STORAGE ACCEPTABLE
- CHECK
 - ISSUE FOUND: Y
 - ISSUE DESCRIPTION: ALBATROSS NOT VERY CLEAN
 - CORRECTIVE ACTION GAVE ALBATROSS A BATH 8/12/16

EXAMPLE 1 – INTERRUPTION OF SERVICE/TREATMENT

- HAVE ANY OF THE FOLLOWING OCCURRED AT RELEVANT FACILITIES PRIOR TO COLLECTION OF TC SAMPLES?
 - INTERRUPTION OF TREATMENT PROCESS
 - LOSS OF PRESSURE
 - O&M ACTIVITIES THAT COULD HAVE TC+
 - VALDALISM
 - UNSANITARY CONDITIONS
 - FIRE FIGHTING, FLUSHING, BROKEN PIPE
- CHECK
 - ISSUE FOUND: N
 - ISSUE DESCRIPTION: NONE
 - CORRECTION ACTION TAKEN: NONE

EXAMPLE 1 – OPERATIONAL CHANGES

- HAVE THERE BEEN ANY RECENT OPERATIONAL CHANGES TO THE SYSTEM
 - SOURCES INTRODUCED
 - TREATMENT OR OPERATIONAL CHANGES
 - POTENTIAL SOURCES OF CONTAMINATION
- CHECK
 - ISSUE FOUND: N
 - ISSUE DESCRIPTION: NONE
 - CORRECTIVE ACTION: NONE

EXAMPLE 1 – DISTRIBUTION SYSTEM

- DISTRIBUTION SYSTEM:
 - SYSTEM PRESSURE
 - CROSS CONNECTION
 - PUMP STATION
 - AIR RELIEF VALVE
 - FIRE HYDRANTS OR BLOW OFFS
 - BREAKS
 - REPAIRS
- CHECK
 - ISSUE FOUND: Y
 - ISSUE DESCRIPTION: BROKEN WATER PIPE
 - CORRECTIVE ACTION: REPAIRED PIPE 8/13/16

EXAMPLE 1 – STORAGE TANK



- STORAGE TANKS
 - SCREENS
 - SECURITY
 - ACCESS OPENING
 - CONDITION OF TANK
 - VENT
 - DRAIN OVERFLOW
 - PRESSURE TANK
 - O&M
- CHECK
 - ISSUE FOUND: N
 - ISSUE DESCRIPTION: NONE
 - CORRECTIVE ACTION: NONE

EXAMPLE 1 – TREATMENT PROCESS

- TREATMENT PROCESS
 - INTERRUPTIONS
 - POE/POU
 - SOFTENERS
 - O&M
- CHECK
 - ISSUE FOUND: Y
 - ISSUE DESCRIPTION: MIXING TANK USED AS STORAGE SHELF
 - CORRECTIVE ACTION: CLEANED UP MIXING TANK AREA 8/12/16



EXAMPLE 1 - WELL

- SOURCE – WELL
 - SANITARY SEAL
 - VENT SCREENED
 - AIR GAP
 - CROSS CONNECTION
 - SECURITY
 - PUMP TO WASTE LINE
- CHECK
 - ISSUE FOUND: Y
 - ISSUE DESCRIPTION: ELECTRICAL CABLE NOT SEALED, NO SCREENED VENT
 - CORRECTIVE ACTION: IMPROVED SANITARY SEAL AND INSTALLED SCREENED VENT 8/15/16



EXAMPLE 1 - COMPLETE

- COMPLETE THE FORM
- DOCUMENT ACTIONS TAKEN AND DATE
- SIGN FORM
- SUBMIT TO BECQ
- LEVEL 1 ASSESSMENT COMPLETE

EXAMPLE 2 - ANATAHAN



- MP0000888
- ANATAHAN FRESH GLACIER SELTZER WATER
- SURFACE WATER: REVERSE/OSMOSIS
- COLLECT 1 SAMPLE A MONTH TUE AUG 6
- RESULT WED AUG 7 TC+
- HAS TRIGGER BEEN EXCEEDED?
- DO THEY COLLECT REPEATS?

EXAMPLE 2 - ANATAHAN



- NO TRIGGER YET
- YES COLLECT 3 REPEATS
 - REPEATS COME BACK TC-
- WHAT ABOUT SOURCE WATER MONITORING FOR GROUNDWATER RULE?
 - NO, USING SURFACE WATER

EXAMPLE 3 - AGUIJAN

- MP0000444 AGUA AGUIJAN
- GROUNDWATER
- CHLORINATE – RESIDUAL = 0.2 MG/L
- REQUIRED TO SAMPLE 5 SITES A MONTH
- COLLECT SAMPLES ON TUESDAY AUG 6
- WED AUG 7 RESULTS – 3 TC+
- HAS TRIGGER BEEN EXCEEDED?
- DO THEY HAVE TO COLLECT REPEATS?




EXAMPLE 3 CONTINUED...

- YES TO BOTH
- 40 CFR 141.858(a)(3) ... If a trigger is exceeded as a result of a routine sample being TC+, systems are required to conduct only one round of repeat monitoring for each TC + routine sample".
- Declared 4-log virus removal and are doing daily chlorine residual monitoring and recording results – no source water monitoring



RTCR SUMMARY

- WHEN THERE IS A CONFIRMED TC+
- PWS HAS TO ASSESS SYSTEM
- TAKE ACTION
- DOCUMENT ACTION



END OF CLASS

SEE YOU ALL IN NOVEMBER

CONTACT INFORMATION

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