CMDP Web Services Sampling XML Schema Definitions

Prepared for: Will Bowman
Product Owner
U.S. EPA
Office of Water

Prepared by: Attain, LLC

Modification History

Version Number	Date of Revision	Description of Changes	Revision Entered By
1.11.0	03/07/2018	• Increase size for numeric fields in Chem/Rad, Micro, Crypto, and Composite screens (as applicable): Sample Result, Sample Field Result and Measure, Reporting Limit • Correct XML name for <sampleReceivedDate> to <sampleReceivedDt> • Remove unnecessary DB columns from tables • Update XML tags • Added APPENDIX A - XML CHANGES RELATED TO RELEASE 1.11 (MARCH 2018)	Attain, LLC

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INTRODUCTION

ABOUT THIS DOCUMENT

This document contains supplemental information related to the file structure of Sample results data for the CMDP-State Database Interface Control Document (ICD) and CMDP-LIMS ICD. .

Sampling information submitted to CMDP will be delivered in the XML format.

SUPPORTED SAMPLE CATEGORIES

Type	Description
Sample Result	Chemical, radiological or *Cryptosporidium* sample results.
Operational Data	Water treatment operational data related to filtration and disinfection performance, such as turbidity measurements summaries, and chlorine residual measurement summaries.
Composite Data	Water samples from consecutive monitoring periods combined for purposes of a single analysis, most commonly for radionuclides sample analysis for small public water systems (PWS).

SOURCE ENTITIES

Source entity is the entity that reports the samples to a primacy agency.

Source Entity Name	Source Entity Code (2 Chars)	Description
Laboratory	LB	

SAMPLE DATA XML FILE STRUCTURE

This section provides details for the Sample Data XML File Structure.

Please Note: Both Sample Result Data and Operational Data can be submitted in one XML file. For illustrative purposes, Sample Result and Operational Data are presented in separate figures, Figure 1 – Overview of XML Structure for Sample Result Data and Figure 2 – Overview of XML Structure for Operational Data.

SAMPLE RESULT DATA

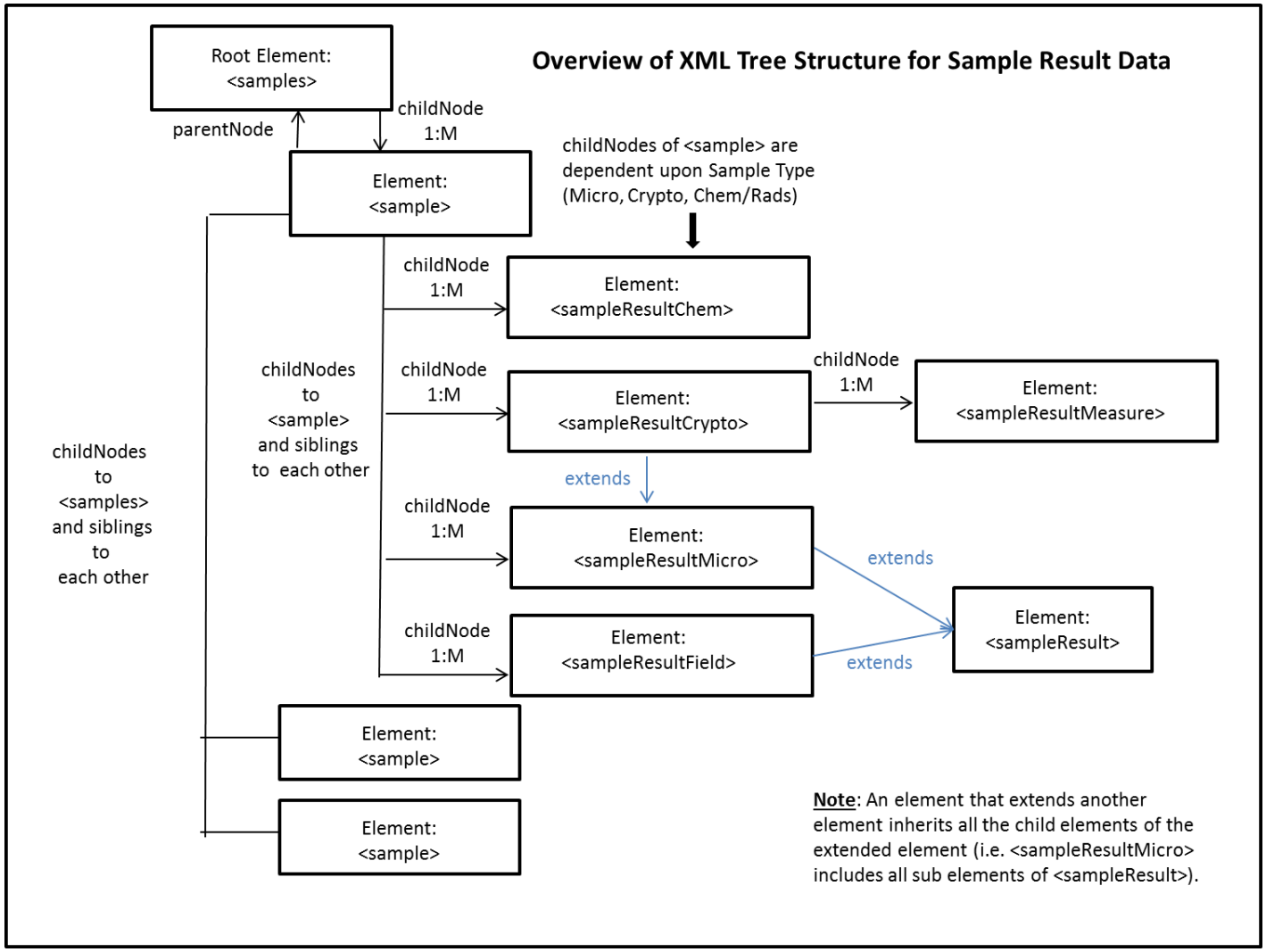

Figure 1 – Overview of XML Structure for Sample Result Data

The childNode(s) for sample data are dependent upon the Sample Type (Micro, Chem/Rads, Crypto). The table below details the valid childNodes based on Sample Type.

Table 1 – Sample Data: Valid childNodes based on Sample Type

Type	childNode (Element)
Microbial	sampleResultMicro sampleResultField
Chem/Radionuclides	sampleResultChem sampleResultField
Cryptosporidum	sampleResultCrypto >sampleResultMeasure sampleResultField

A.1.1 Sample Result Data XML Structure and data elements

The section below details fields and format related to Sample Data (Microbial, Chemical\Rads and Cryptosporidium). Sample Data must be generated in the XML format using the definitions detailed in the section below before pushing it to CMDP.

Table 2 – Operational Data XML Structure and data elements

> ➢ If you are currently submitting XML Sample data to CMDP, please see APPENDIX A - XML CHANGES RELATED TO RELEASE 1.11 (MARCH 2018) for a summary of the changes to the XML structure and data elements for CMDP Release 1.11.

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
samples	samples	XML Root Element				

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
>sample	sample					
	wsId	string	R	9 chars – first 2 chars for state code and next 7 chars for water system ID	Expected value is Federal ID assigned to the water system	
	facilityName	string	N/A	Accepted for will eventually be no longer supported. Use stateAssignedFacId.	GET contains Facility Name	
	stateAssignedFacId	string	R	Alphanumeric - 40 chars	State Assigned Facility Identifier / Code	
	samplingPointId	string	R	Alphanumeric - 40 chars	State Assigned Sampling Point Identification Code	
	samplingLocation	string	O	Alphanumeric - 250 chars	Sampling Point Location	
	sampleCd	string	R	Alphanumeric - 80 chars	Laboratory assigned Sample ID	
	sampleReceivedDt	string	O	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter in Sample Received Date in YYYY-MM-DD or MM/DD/YYYY format. GET contains YYYY-MM-DD 00:00 format.	**Federally required**
	collectionDate	string	R	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter Collection Date in YYYY-MM-DD or MM/DD/YYYY format	**Federally required**
	collectionTime	string	O	Time format: 00:00	Enter Collection Time in 00:00 format	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	legalEntityName	string	N/A	Accepted for POST but will eventually be no longer supported. Use laboratoryId.	GET contains Reporting Laboratory Name	
	laboratoryId	string	R		Expected value is 'Reporting Laboratory ID'. Used as a lookup field for Lab ID	
	sampleTypeName	string	N/A	Accepted for POST but will eventually be no longer supported. Use sampleTypeCd. **ST** - Split Blanks	GET contains Sample Type	**Federally required**
	sampleTypeCd	string	R	Submit Code (i.e. RT) [**Code] - [Description]**: (**Microbial /ChemsRads**) **RT** - Routine **RP** - Repeat **TG** - Triggered **CO** - Confirmation **SP** - Special **BB** - Batch Blanks **FB** - Field Blanks **PE** - Performance Evaluation **SB** - Shipping Blanks **ST** - Split Blanks **MR** - Maximum Residence Time **MS** - Matrix Spike [**Code] - [Description]**: (**Cryptosporidium**)	Expected value is the Sample Type code	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				RT - Field (i.e., Routine) **MS** - Matrix Spike **SP** - Special **PE** - Performance Evaluation **BB** - Batch Blanks **FB** - Field Blanks **SB** - Shipping Blanks **ST** - Split Blanks		
	sampleVolume	decimal	O	Precision 9, Scale 2 [0000000.00]	Sample Volume	**Federally required (Micobial, Crypto)**
	comments	string	O	Alphanumeric - 250 chars	Comments	
	collectorName	String	O	Alphanumeric - 250 chars	Comments	
	repeatLocationName	string	**C**	Original Site Downstream Upstream Source Alternative (RTCR) Other (TCR)	Req'd if is Sample Type is Repeat Enter one of the Repeat Location options	
	originalLabSampleCd	string	R	Alphanumeric - 80 chars	Req'd if is Sample Type is Repeat/Triggered/Confirmation Enter Original Laboratory assigned Sample ID	
	originalLegalEntityName	string	N/A	Alphanumeric - 40 chars	GET contains Original Reporting Laboratory Name	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	originalLaboratoryId	string	C	Alphanumeric - 40 chars	When Sample Type is Repeat/Triggered/Confirmation, Optional if Reporting Lab ID is the same as Original Lab ID, Required if Reporting Lab Id is different from Original lab ID. Enter Original Legal Entity Code (Lab ID)	
	originalCollectionDate	string	O	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter Original Collection Date in YYYY-MM-DD or MM/DD/YYYY format	
	sampleCategoryName	string	R	Microbial Chem/Radionuclides Cryptosporidium	Enter one of the Sample Category Name options	
sampleResult	[none]				Element that is extended by other elements.	
	analyteName	string	N/A	Accepted for POST but will eventually be no longer supported. Use analyteCd.	GET contains Analyte Name	
	analyteCd	string	R	**NOTE**: Valid values cannot be listed due to the large size of possible values (which is also dependent upon user primacyAgency)	Expected value is the Analyte Code	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				Analyte Codes for Sample Field only: **1013** - Free Chlorine Residual **1012** - Total Chlorine Residual **1996** - Temperature **0100** - Turbidity **1925** – pH **1006** – Chloramine **0999** – Chlorine **1905** - Color		
	methodCd	string	O	**NOTE**: Valid values cannot be listed due to the large size of possible values (which is also dependent upon user primacyAgency). Valid values are also dependent upon Analyte/Parameter (sampleResult.analyteCd)	Method Code If value submitted, must submit Method Name. Used as lookup for Method.	**Federally required**
	methodName	string	O	**NOTE**: Valid values cannot be listed due to the large size of possible values (which is also dependent upon user primacyAgency). Valid values are also dependent upon Analyte/Parameter (sampleResult.analyteCd)	Method Name If value submitted, must submit Method Code. Used as lookup for Method.	**Federally required**
	analysisStartDt	string	O	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Start Date YYYY-MM-DD or MM/DD/YYYY format	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	analysisStartTime	string	O	Time format: 00:00	Enter Analysis Start Time in 00:00 format	**Federally required**
	analysisComplDt	string	O	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Completed Date YYYY-MM-DD or MM/DD/YYYY format	
	analysisComplTime	string	O	Time format: 00:00	Enter Analysis Completed Time in 00:00 format	
	name	string	N/A	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.	GET contains Analyzing Laboratory Name	
	analyzingLabId	string	O	Alphanumeric - 80 chars	Analyzing Laboratory ID / Code	
	comments	string	O	Alphanumeric - 250 chars	Comments	
	volumeAssayed	decimal	O	Precision 9, Scale 2 [0000000.00]	Volume Assayed –(Microbial and ChemsRads) Per – (Cryptosporidium)	**Federally required (Microbial)**
>>sampleResultChem	sampleResultChem					
	See {sampleResult}			Extends {sampleResult} therefore all elements of sampleResult included.		
	notDetected	boolean	R	true false	Enter response whether analyte was Not Detected	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	result	Decimal	O	Precision 15, Scale 9 [000000.000000000]	Result Value. Federally Conditionally Required when "notDetected" is false.	**Federally Conditionally Required**
	resultUomName	String	O	C LANG NTU pH umho/cm TON CU mg/L ug/L ng/L pCi/L MFL	Federally Conditionally Required when "notDetected" is false.	**Federally Conditionally Required**
	standardDeviation	decimal	O	Precision 9, Scale 2 [0000000.00]	Standard Deviation. Federally Conditionally Required when "notDetected" is false.	**Federally Conditionally Required**
	reportingLevel	decimal	O	Precision 15, Scale 9 [000000.000000000]	Reporting Limit. Federally Conditionally Required when "notDetected" is false.	**Federally Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				C LANG NTU pH umho/cm TON CU mg/L ug/L ng/L pCi/L MFL		
	reportingLevelUomName	string	O		Federally Conditionally Required when "notDetected" is false.	**Federally Conditionally Required**
>>sampleResultMicro						
	See {sampleResult}			Extends {sampleResult} therefore all elements of sampleResult included.		
	apName	string	R	Submit Code (i.e. A) **[Code] - [Description]:** A - Absent P - Present	Enter response code of whether analyte was detected	**Federally required**
	count	int	O	Precision 7, Scale 0 [0000000]	Bacteria count in the sample. Refer to Crypto Rule for Federal Conditional Requirement.	**Federally Conditionally required (Crypto)**
	typeName	string	N/A	Accepted for POST but will eventually be no longer	GET contains Type Name	**Federally Conditionally required (Crypto)**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				supported. Use analyzingLabId.		
	typeCd	string	O	Colonies Tubes Most probable Number	Expected value is the type of Units – Microbial Occysts – Cryptosporidium. Refer to Crypto Rule for Federal Conditional Requirement.	**Federally Conditionally required (Crypto)**
	resultVolume	decimal	O	Precision 9, Scale 2 [0000000.00]	Volume. Refer to Crypto Rule for Federal Conditional Requirement.	**Federally Conditionally required (Crypto)**
	interferenceName	string	N/A	Accepted for POST but will eventually be no longer supported. Use interferenceCd.	GET contains Interference Name	
	interferenceCd	string	O	**CNFG** - Confluent Growth **TNTC -** Too Numerous to Count **TCNG -** Turbid Culture - no gas	Expected value is the Interference Name code	
	filteredVolExaminedName	String	O	**Y** – Yes **N** - No	Enter response code of whether 100% of filtered volume was examined (Cryptosporidium). Refer to Crypto Rule for Federal Conditional Requirement.	**Federally Conditionally Required (Crypto)**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	sourceTypeName	string	O	Flowing stream Lake Reservoir GWUDI	Enter one of the Source Type options	
>>sampleResultCrypto	sampleResultCrypto					
	See {sampleResultMicro}			Extends {sampleResult} therefore all elements of sampleResultMicro included.		
>>sampleResultField	sampleResultField					
	See {sampleResult}			Extends {sampleResult} therefore all elements of sampleResult included.		
	result	decimal	R	Precision 15, Scale 9 [000000.000000000]	Result	
	uomName	string	R	**1013** - Free Chlorine Residual: mg/l mL L **1012** - Total Chlorine Residual: mg/l mL L **1996** - Temperature: F C	Expected value is the code for the Result Unit Of Measure **NOTE**; Valid value depends on Parameter Value (sampleResult.analyteCd)	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				0100 - Turbidity: NTU **1925** - pH: ph **0999 – Chlorine:** mg/L mL L **1006 – Chloramine:** mg/L mL L **1905 - Color:** CU		
>>>sampleResultMeasure	sampleResultMeasure				**SampleResultMeasure is a child embedded inside SampleResultMicro(Cryptosporidium)**	
	measureName	string	N/A	Accepted for POST but will eventually be no longer supported. Use measureCd.		

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	measureCd	string	R	Submit Code (i.e. A) **[Code] - [Description]:** **SAMPLE VOL FILTER** - Sample Volume Filtered **SAMPLE VOL SPIKE** - Sample Volume Spiked **#OOCYSTS SPIKE** - Number of Oocysts Spiked **#FILTER USE** - Number of filters used **PACK PELLET VOL** - Packed Pellet Volume **#OOCYSTS** - Number of oocysts **#OOCYSTS CLC** - Calculated number of oocysts per volume **VOL RESSP C** - Volume of resuspended concentrate **VOL RESSP CP** - Volume of resuspended conc. processed	Expected value is the code for the Measure Code Name	
	result	decimal	R	Precision 9, Scale 2 [0000000.00]		
	uomName	string	R	N SAMP VOL SLIDE Org/100mL Org/l G L mL	Expected value is the type of Unit of Measure	

OPERATIONAL DATA XML FILE STRUCTURE

This section provides details for the Operational Data XML File Structure. Figure 2 – Overview of XML Structure for Operational Data depicts the overall XML Tree structure of the Operational Data submission. As previously mentioned, please note that both Sample Result and Operational Data can be submitted in one XML file.

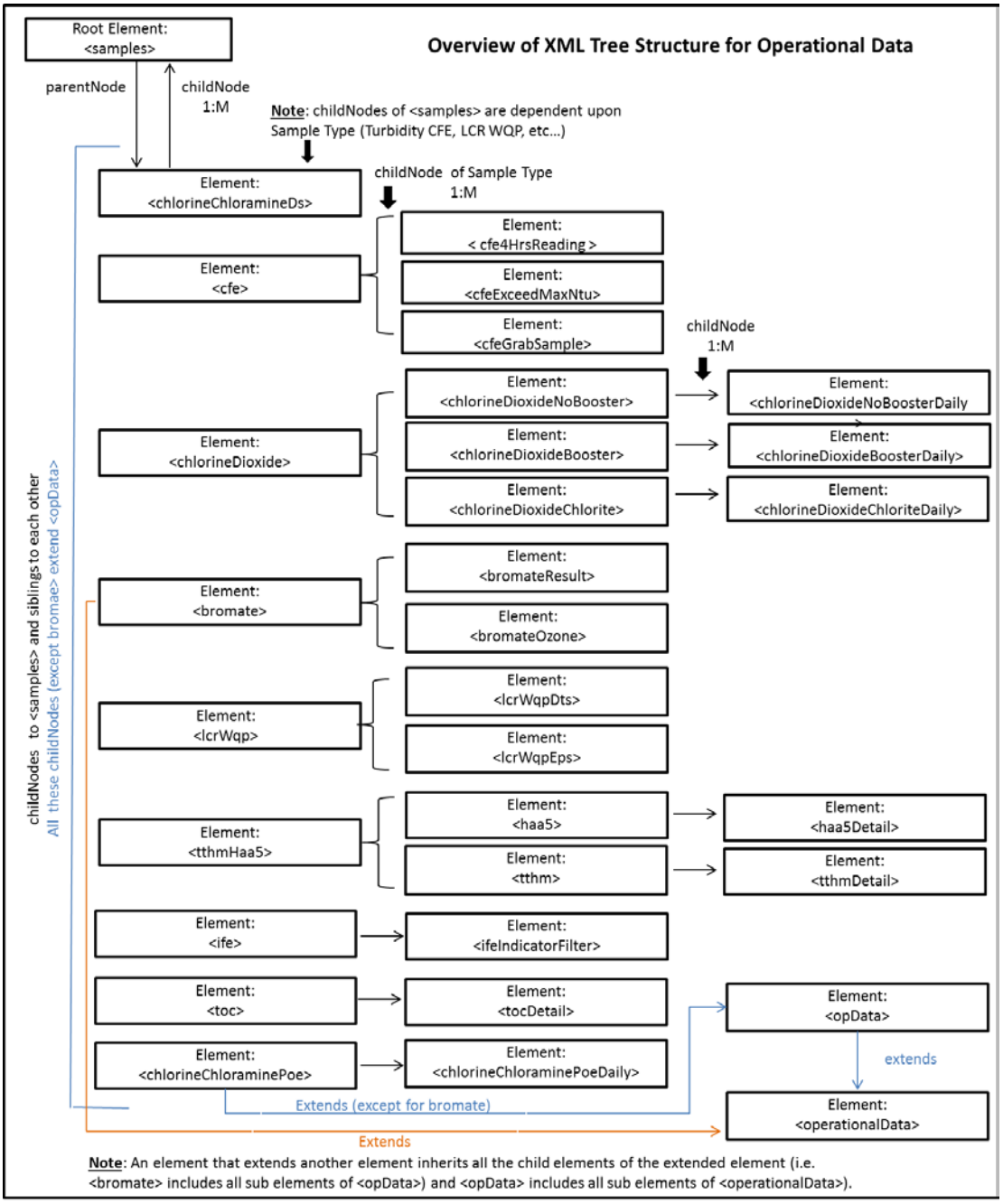

Figure 2 – Overview of XML Structure for Operational Data

The childNode(s) for Operational data are dependent upon the Sample Type (i.e. Turbidity CFE, Turbidity IFE, LCR WQP, etc…). Table 2 – Operational Data: Valid childNodes based on Sample Type details the valid childNodes based on Sample Type.

Table 3 – Operational Data: Valid childNodes based on Sample Type

Type	childNode (Element)
Turbidity CFE	cfe cfe4HrsReading cfeExceedMaxNtu cfeGrabSample
Turbidity IFE	ife ifeIndicatorFilter
Chlorine Dioxide and Chlorite	chlorineDioxide chlorineDioxideNoBooster >chlorineDioxideNoBoosterDaily chlorineDioxideBooster >chlorineDioxideBoosterDaily chlorineDioxideChlorite >chlorineDioxideChloriteDaily
Chlorine and Chloramines Entering DS	chlorineChloraminePoe >chlorineChloraminePoeDaily
Chlorine and Chloramines in DS	chlorineChloramineDs

Type	childNode (Element)
LCR WQP	lcrWqp >lcrWqpDts >lcrWqpEps
Total Organic Carbon	toc >tocDetail
Ozone Treatment (Bromate)	bromate >bromateResult >bromateOzone
TTHM and HAA5	tthmHaa5 >haa5 >>haa5Detail >tthm >>tthmDetail

A.1.2 Operational Data XML Structure and data elements

Table 4 – Operational Data XML Structure and data elements

> ➢ If you are currently submitting XML Sample data to CMDP, please see APPENDIX A - XML CHANGES RELATED TO RELEASE 1.11 (MARCH 2018) for a summary of the changes to the XML structure and data elements for CMDP Release 1.11.

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
samples	samples	XML Root Element				

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
operationalData	[none]				This element is extended by other elements.	
	wsId	string	R	9 chars – first 2 chars for state code and next 7 chars for water system ID	Federal ID assigned to the water system	
	facilityName	string	N/A	Accepted for POST but will eventually be no longer supported. Use stateAssignedFacId.	GET contains Facility Name	
	stateAssignedFacId	string	R	Alphanumeric – 40 chars	State Assigned Facility Identifier / Code (Not valid for LCR samples)	
	sampleType	string	R	Turbidity CFE Turbidity IFE Chlorine Dioxide and Chlorite Chlorine and Chloramines Entering DS Chlorine and Chloramines in DS LCR WQP Total Organic Carbon Generic Sample Type Ozone Treatment (Bromate) TTHM and HAA5	Enter one of the Sample Category options	
opData	[none]				This element is extended by other elements.	
	See {operationalData}			Extends {operationalData} therefore all elements of opData included.		

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	samplingPointId	string	R	Alphanumeric - 40 chars	Enter Sampling Points ID within the Facility (Not valid for CFE, IFE, Chlorine Chlormine DS Samples)	**Federally required** (Except: CFE, IFE, Chlorine Chlormine DS Samples)
	mntrgPeriodMonth	int	R	Integer value representing month (i.e. 1=Jan, 2=Feb, 3=March, etc…) quarter value (13 = Q1 , 14 = Q2 , 15 = Q3 , 16 = Q4)	Integer values are expected for Monitoring Period Month (TOC and TTHM are Quarterly)	**Federally required**
	mntrgPeriodYear	int	R	Format: YYYY Valid Values 2011 through current Year	Enter Monitoring Period – Year in YYYY format	**Federally required**
>chlorineChloramineDs	chlorineChloramineDs					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	quarterlyRunningAnnualAvg	decimal	O	Precision 5, Scale 3 [00.000]	Only applies when Reporting Period month is March, June, September, December	**Federally required**
	mrdlViolationName	string	O	Yes No	Enter response whether there is a MRDL Violation	**Federally required**
	numMeasurementsReq	Int	O	Precision 5, Scale 0 [00000]	Number of MRDL Measurements Required	
	numMeasurement	int	O	Precision 5, Scale 0 [00000]	Number of MRDL Measurements	**Federally required**
	monthlyAvg	decimal	O	Precision 5, Scale 3 [00.000]	Monthly Average	**Federally required**
	noOfMsrDetectedMtDSResi	int	O	Precision 5, Scale 0 [00000]	Number of Measurements Meeting Minimum DS Residual Requirement	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	pctMtDSResiReq	decimal	O	Precision 3, Scale 3 [000.000]	% Meeting Minimum DS Residual Requirement	**Federally required**
	preMonthPctMtDSResiReq	decimal	O	Precision 3, Scale 3 [000.000]	Previous Month % Meeting Minimum DS Residual Requirement	**Federally required**
	residualReportingTypeName	string	R	MRDL MRDL and DS RDC	Residual Reporting Type	
	rdcNumMeasurementsReq	Int	O	Precision 5, Scale 0 [00000]	Number of Minimum RDC Measurements Required	
	rdcNumMeasurement	int	O	Precision 5, Scale 0 [00000]	Number of Minimum RDC Measurements	**Federally required**
>cfe	cfe					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	monthlyHrsOperation	int	O	Precision 5, Scale 0 [00000]	Monthly hours of operation	
	totalReq	int	O	Precision 5, Scale 0 [00000]	Total Number of CFE Turbidity measurements required	
	totalTaken	int	R	Precision 5, Scale 0 [00000]	Total number of CFE Turbidity measurements taken during the month*	**Federally required**
	totalTakenLessThanIeswtr	int	R	Precision 5, Scale 0 [00000]	Total <= 0.3 NTU in measurements taken	**Federally required**
	readingExceedMaxNtuAllowedName	string	R	Y - Yes N - No	Enter response code whether any Turbidity CFE reading during the month exceed the maximum NTU allowed	
	lessThan015Ntu95pctMsrName	string	R	O - Not Reporting for LT2 Y - Yes N - No	Enter response code whether the CFE turbidity <= 0.15 NTU was in at least 95% of the measurements for the month	**Federally conditionally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
					Refer to CFE Rule for Federal Conditional Requirement.	
>cfeExceedMaxNtu	cfeExceedMaxNtu					
	occurredDt	string	R	Date format: YYYY-MM-DD or MM/DD/YYYY Must be within Reporting/Monitoring Period.	Enter Date in MM/DD/YYYY format Federally Conditionally required when "readingExceedMaxNtuAllowedName" is set to YES	**Federally conditionally required**
	turbidity	decimal	R	Precision 5, Scale 3 [00.000]	Turbidity (NTU)*. Federally Conditionally required when "readingExceedMaxNtuAllowedName" is set to YES	**Federally conditionally required**
	occurredTime	string	O	Time format: HH:MM Default value: 00:00	Enter Time in 00:00 format	
	duration	decimal	O	Precision 5, Scale 2 [000.00]	Duration (0.1 hour)	
>cfeGrabSample	cfeGrabSample					
	day	int	R	Valid day based on month	Enter valid Day within month	
	totalHrsFiltering	decimal	R	Precision 5, Scale 2 [000.00]	Total Hours Filtering (in Operation)*	
	maxTurbidity	decimal	R	Precision 5, Scale 3 [00.000]	Maximum Turbidity*	
	minTurbidity	decimal	O	Precision 5, Scale 3 [00.000]	Minimum Turbidity	
	avgTurbidity	decimal	O	Precision 5, Scale 3 [00.000]	Average Turbidity	
	gsTotalNumResult	int	O	Precision 5, Scale 0 [00000]	Grab Sample Reports – Total Number of Results	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	gsTotalResultExceed	int	O	Precision 5, Scale 2 [000.00]	Grab Sample Reports - # of Results Exceeding Max NTU	
	cmTotalHrResultRecorded	decimal	O	Precision 5, Scale 2 [000.00]	Continuous Monitoring Report – Total Hours Results Were Reported	
	cmTotalHrResultExceed	decimal	O	Precision 5, Scale 2 [000.00]	Continuous Monitoring: Total Hours Results Exceed Max NTU*	
>cfe4HrsReading	cfe4HrsReading					
	day	int	R	Valid day based on month	Enter valid Day within month	
	firstReading	decimal	O	Precision 5, Scale 3 [00.000]	12:00 AM or 1st Reading*	
	secondReading	decimal	O	Precision 5, Scale 3 [00.000]	4:00 AM or 2nd Reading*	
	thirdReading	decimal	O	Precision 5, Scale 3 [00.000]	8:00 AM or 3rd Reading*	
	fourthReading	decimal	O	Precision 5, Scale 3 [00.000]	12:00 PM or 4th Reading*	
	fifthReading	decimal	O	Precision 5, Scale 3 [00.000]	4:00 PM or 5th Reading*	
	sixthReading	decimal	O	Precision 5, Scale 3 [00.000]	8:00 PM or 6th Reading*	
	rawTurbidity	decimal	O	Precision 5, Scale 3 [00.000]	Raw Turbidity (once per day)*	
	hrsOperation	decimal	O	Precision 5, Scale 2 [000.00]	Hours of Operations	
>chlorineDioxide	chlorineDioxide					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	sampleCd	string	R	Alphanumeric – 25 chars	Enter Sample Id Code	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	name	string	N/A	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.	GET contains Reporting Lab Name	
	laboratoryId	string	R	**NOTE**: Valid values cannot be listed due to possible values being dependent upon user	Enter Reporting Lab Id	
	reportingCTValueName	string	O	Y - Yes N - No	Enter response code whether also Reporting for CT Values for LT2ESWTR (Toolbox reporting requirements)	
>chlorineDioxideNoBooster	chlorineDioxideNoBooster					
	daysUseClDioxide	int	O	Precision 5, Scale 0 [00000]	Number of Days where Chlorine Dioxide was used	
>>chlorineDioxideNoBoosterDaily	chlorineDioxideNoBoosterDaily					
	day	int	R	Valid day based on month	Enter valid Day within month	
	resultPoe	decimal	R	Precision 5, Scale 3 [00.000]	Result at POE (mg/L)	**Federally required**
	exceedMrdlName	string	R	Y - Yes N - No	Enter response code whether the Routine exceeds the MRDL (0.8 mg/L)*	**Federally required**
	exceed2ConsecDailyName	string	C Federally conditionally required	Y - Yes N - No	Enter response code whether Exceeded MRDL were two consecutive daily samples exceeded Federally Conditionally Required if “exceedMrdlName” is set to YES.	**Federally conditionally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	firstSample	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	1st Sample @First Customer (mg/L). Federally Conditionally Required if "exceedMrdlName" is set to YES.	**Federally conditionally required**
	secondSample	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	2nd Sample @1st Customer (mg/L) + 6 hours. Federally Conditionally Required if "exceedMrdlName" is set to YES.	**Federally conditionally required**
	thirdSample	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	3rd Sample @1st Customer (mg/L) + 12 hours. Federally Conditionally Required if "exceedMrdlName" is set to YES.	**Federally conditionally required**
	violationTypeName	string	C Federally conditionally required	Acute Non Acute No Violation	Enter one of the Violation Type choices Federally Conditionally Required if "exceedMrdlName" is set to YES.	**Federally conditionally required**
	notifyStateName	string	O	Y - Yes N - No	Enter response code whether to Notify State	
	notifyPublicName	string	O	Y - Yes N - No	Enter response code whether to Notify Public	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	lt2Temperature	decimal	C Federally conditionally required	Precision 3, Scale 1 [0.00]	LT 2Temperature. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2Concentration	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	LT 2Concentration. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2ContactTime	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	Contact Time. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2CtValue	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	LT2 CT Value. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2TTReqMetToolboxCrd	string	C Federally conditionally	Y - Yes N - No	Enter response code whether the LT2 Was a TT requirement met for toolbox credit Conditionally Required if “reportingCTValueName” is set to YES.	**Conditionally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
			required			
>chlorineDioxideBooster	chlorineDioxideBooster					
	daysUseClDioxide	int	O	Precision 5, Scale 0 [00000]	Number of Days where Chlorine Dioxide was used	
>>chlorineDioxideBoosterDaily	chlorineDioxideBoosterDaily					
	day	int	R	Valid day based on month	Enter valid Day within month	
	resultPoe	decimal	R		Enter Routine ClO2 Daily Result at POE (mg/L)*	**Federally required**
	exceedMrdlName	string	R	Y - Yes N - No	Enter response code whether the Routine exceeds the MRDL (0.8 mg/L)?*	**Federally required**
	exceed2ConsecDailyName	string	C Federally conditionally required	Y - Yes N - No	Enter response code whether Exceeded MRDL were two consecutive daily samples exceeded Federally Conditionally Required if “exceedMrdlName” is set to YES.	**Federally conditionally required**
	firstSample	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	1st Sample @ First Customer (mg/L)* Federally Conditionally Required if “exceedMrdlName” is set to YES.	**Federally conditionally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	secondSample	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	2nd Sample @ Average Residence Time Location (mg/l)* Federally Conditionally Required if “exceedMrdlName” is set to YES.	**Federally conditionally required**
	thirdSample	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	3rd Sample @ Maximum Residence Time Location (mg/l)* Federally Conditionally Required if “exceedMrdlName” is set to YES.	**Federally conditionally required**
	violationTypeName	string	C Federally conditionally required	Acute Non Acute No Violation	Enter one of the Violation Type choices Federally Conditionally Required if “exceedMrdlName” is set to YES.	**Federally conditionally required**
	notifyStateName	string	O	Y - Yes N - No	Enter response code whether to Notify State	
	notifyPublicName	string	O	Y - Yes N - No	Enter response code whether to Notify Public	
	lt2Temperature	decimal	O	Precision 3, scale 1 [00.0]	LT2 Temperature. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2Concentration	decimal	C Federally conditi	Precision 5, scale 3 [00.000]	LT2 Concentration. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
			onally required			
	lt2ContactTime	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	LT2 Contact Time. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2CtValue	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	LT2 CT Value. Federally Conditionally Required if “reportingCTValueName” is set to YES.	**Federally conditionally required**
	lt2RatioAchieved	decimal	C Federally conditionally required	Precision 6, Scale 3 [000.000]	LT2 Ratio Achieved. Conditionally Required if “reportingCTValueName” is set to YES.	**Conditionally required**
	lt2TTReqMetToolboxCrd	string	C Federally conditionally required	Y - Yes N - No	Enter response code whether LT2 TT requirement was met for toolbox credit Conditionally Required if “reportingCTValueName” is set to YES.	**Conditionally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
>chlorineDioxideChlorite	chlorineDioxideChlorite					
	totalNumSample	int	R	Precision 5, Scale 0 [00000]	Total number of samples taken in the last 3 months	**Federally Required**
	numMclViolation	int	R	Precision 5, Scale 0 [00000]	Number of MCL Violations for the Month	**Federally Required**
	monthlyArithmeticAvg	decimal	R	Precision 5, Scale 3 [00.000]	Monthly Arithmetic Average (DS 3-sample sets)	**Federally Required**
	name	string	ON/A	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Analyzing Lab NameEnter Analyzing Lab ID (if not reporting lab)	
	analyzingLabId	string	O		Enter Analyzing Lab ID (if not reporting lab)	
>>chlorineDioxideChloriteDaily	chlorineDioxideChloriteDaily					
	day	int	R	Valid day based on month	ch	
	resultPoe	decimal	R	Precision 5, scale 3 [00.000]	Routine ClO2 Daily Result at POE (mg/L)*	**Federally Required**
	rexceedMrdlName	string	R	Y - Yes N - No	Enter response code whether the Routine exceeds the MRDL (0.1 mg/L)?*	**Federally Required**
	firstSample	decimal	O	Precision 5, scale 3 [00.000]	1st Sample @ First Customer (mg/L)*	**Federally Required**
	secondSample	decimal	O	Precision 5, scale 3 [00.000]	2nd Sample @ Avg. Residence Time Location(mg/L)*	**Federally Required**
	thirdSample	decimal	O	Precision 5, scale 3 [00.000]	3rd Sample @ @ Avg. Residence Time Location(mg/L)*	**Federally Required**
	avgSampleSet	decimal	O	Precision 5, scale 3 [00.000]	Average of 3 Sample Set*	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	avgSampleSetExceedMclName	string	O	Y - Yes N - No	Enter response code whether 3-Sample Average Exceed Chlorite MCL (1.0 mg/L)	**Federally Required**
	notifyStateName	string	O	Y - Yes N - No	Enter response code whether to Notify State	
	notifyPublicName	string	O	Y - Yes N - No	Enter response code whether to Notify Public	
>bromate	bromate					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	reportingLabName	string	N/AO	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Reporting Lab NameEnter Reporting Lab ID	
	laboratoryId	string	O	Alphanumeric - 80 chars	Enter Reporting Lab ID	
	quarterlyBromateRaa	decimal	O	Precision 5, Scale 3 [00.000]	Quarterly Bromate RAA Applies only to March, June, September, Decem	**Federally Required**
	totalNumSampleTaken	int	O	Precision 5, Scale 0	Total number of samples taken Applies only to March, June, September, Decem	**Federally Required**
	reportingCtValueName	string	O	Y - Yes N - No	Enter response code whether also Reporting for CT Values for LT2ESWTR (Toolbox reporting requirements?	
>>bromateResult	bromateResult					
	resultDt	string	R	Date format: YYYY-MM-DDformat: YYYY-MM-DD or MM/DD/YYYY	Date should be within the Reporting Period and in YYYY-MM-DD formatYYYY-MM-DD or MM/DD/YYYY format	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	name	string	N/AO	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Analyzing Lab NameEnter Laboratory ID Name of lab that performed the analysis	
	analyzingLabId	string	O	Alphanumeric - 80 chars	Enter Analyzing Lab ID (if not reporting lab)	
	sampleCd	string	R	Alphanumeric - 20 chars	Enter Lab Sample ID	
	notDetected	boolean	R	True False	Enter response whether result was Not Detected	**Federally Required**
	result	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	Result Federally Conditionally Required if “notDetected” is false.	**Federally Conditionally Required**
	resultUomName	string	C Federally conditionally required	mg/L ug/L C LANG MFL ng/L NTU pH umho/cm pCi/L TON CU	Federally Conditionally Required if “notDetected” is false.	**Federally Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	reportingLimit	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	Reporting Limit. Federally Conditionally Required if “notDetected” is false.	**Federally Conditionally Required**
	reportingLimitUomName	string	C Federally conditionally required	mg/L ug/L C LANG MFL ng/L NTU pH umho/cm pCi/L TON CU	Expected value is the type of Reporting Limit UOM. Federally Conditionally Required if “notDetected” is false.	**Federally Conditionally Required**
	methodCdName	string	O	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected vaalue is Method Code. If value submitted, must submit Method Name. Analysis Method Name Code and Analysis Method Name is used as lookup for Method. Code	**Federally Required**
	methodName	string	O	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Name. If value is submitted, must submit Method Code. Analysis Method Code and Analysis Method Name is used as lookup for Method.	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	analysisStartDt	string	O	Date format: YYYY-MM-DDformat: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Start Date in YYYY-MM-DD formatYYYY-MM-DD or MM/DD/YYYY format. GET contains analysisStartDt and analysisStartTime in YYYY-MM-DD 00:00 format.	**Federally Required**
	analysisStartTime	string	O	Time format: HH:MM Default value: 00:00	Enter Analysis Start Time in 00:00 format	**Federally Required**
	analysisComplDt	string	O	Date format: YYYY-MM-DDformat: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Complete Date in YYYY-MM-DD. GET contains analysisComplDt and analysisComplTime in YYYY-MM-DD 00:00 format.	
	analysisComplTime	string	O	Time format: HH:MM Default value: 00:00	Enter Analysis Complete Time in 00:00 format	
>>bromateOzone	bromateOzone					
	day	int	R	Valid day based on month	Enter valid Day within month	
	temperature	decimal	O	Precision 3, scale 1 [00.0]	Temperature. Refer to Bromate rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	concentration	decimal	O	Precision 5, scale 3 [00.000]	Concentration. Refer to Bromate rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	contactTime	decimal	O	Precision 5, scale 3 [00.000]	Contact Time. Refer to Bromate rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	ctValue	decimal	O	Precision 5, scale 3 [00.000]	CT Value. Refer to Bromate rule for Federal Conditional Requirement.	**Federally Conditionally Required**
>lcrWqp	lcrWqp					

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	See {opData}			Extends {opData} therefore all elements of opData included.		
>>lcrWqpDts	lcrWqpDts					
	collectionDate	string	R	Date format: YYYY-MM-DDformat: YYYY-MM-DD or MM/DD/YYYY Must be within Reporting Period.	Enter Collection Date in YYYY-MM-DD formatYYYY-MM-DD or MM/DD/YYYY format *	**Federally Required**
	collectionTime	string	O	Time format: HH:MM Default value: 00:00	Enter Collection Time in 00:00 format	**Federally Required**
	facilityName	string	N/AO	Accepted for POST but will eventually be no longer supported. Use stateAssignedFacId.	GET contains Facility Name: Name given to the water system facility	**Federally Required**
	stateAssignedFacId	string	O	Alphanumeric – 40 chars	State Assigned Facility Identifier / Code (Not valid for LCR samples)	**Federally Required**
	samplingPointId	string	O	Alphanumeric - 40 chars	Sampling Points within the Facility	**Federally Required**
	analyteName		N/A	Accepted for POST but will eventually be no longer supported. Use analyteCd.	GET contains Analyte Name	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	analyteCd	string	R	Submit Code **Code] - [Name]**: **1925** - pH **1064** - Conductivity **1996** - Temperature **1927** - Alkanality Total **1044** - Orthophosphate **1049** - Silica **1019** - Calcium **1919** - Calcium	Expected value is Analyte/Parameter Code*	**Federally Required**
	measureValue	decimal	R	Precision 5, scale 3 [00.000]	Result	**Federally Required**
	measureUomName	string	R	uG/L pH C MG/L umho/cm	Expected value is the type of Unit of Measure*	**Federally Required**
	name	string	N/AO	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Analyzing Lab NameAnalyzing Lab Id (if not reporting lab)	
	analyzingLabId	string	O	Alphanumeric - 80 chars	Enter Analyzing Lab ID (if not reporting lab)	
	sampleCd	string	R	Alphanumeric - 100 chars	Lab Sample ID	
	analysisDate	string	O	Date format: YYYY-MM-DDformat: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Date in YYYY-MM-DD formatYYYY-MM-DD or MM/DD/YYYY format	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	methodCdmethodName	stringstring	OO	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible valuesList of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Code. If value submitted, must submit Method Name. Analysis Method Code and Analysis Method Name is used as lookup for Method.Analysis Method Name Used as lookup for Method Code	**Federally Required**
	methodName	string	O	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Name. If value is submitted, must submit Method Code. Analysis Method Code and Analysis Method Name is used as lookup for Method.	**Federally Required**
	collectedBy	string	O	Alphanumeric - 50 chars	Collected By	
	comments	string	O	Alphanumeric - 250 chars	Comments	
>>lcrWqpEps	lcrWqpEps					
	collectionDate	string	R	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY Must be within Reporting Period.	Enter Collection Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format*	**Federally Required**
	collectionTime	string	O	Time format: HH:MM Default value: 00:00	Enter Collection Time in 00:00 format	**Federally Required**
	facilityName	string	N/AO	Accepted for POST but will eventually be no longer supported. Use stateAssignedFacId.	GET contains Facility Name: Name given to the water system facility	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	stateAssignedFacId	string	O	Alphanumeric - 40 chars	State Assigned Facility Identifier / Code (Not valid for LCR samples)	**Federally Required**
	samplingPointId	string	O	Alphanumeric - 40 chars	Sampling Points within the Facility	**Federally Required**
	analyteName		N/A	Accepted for POST but will eventually be no longer supported. Use analyteCd.	GET contains Analyte Name	
	analyteCd	string	R	Submit Code **Code] - [Name]**: **1925** - pH **1064** - Conductivity **1996** - Temperature **1927** - Alkanality Total **1044** - Orthophosphate **1049** - Silica **1019** - Calcium **1919** - Calcium	Expected value is Analyte/Parameter Code*	**Federally Required**
	measureValue	decimal	R	Precision 5, scale 3 [00.000]	Result	**Federally Required**
	measureUomName	string	R	uG/L pH Unit C MG/L uMHO/cm	Expected value is the type of Unit of Measure*	**Federally Required**
	name	string	O	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Analyzing Lab NameAnalyzing Lab ID Name (if not reporting lab)	
	analyzingLabId	string	O	Alphanumeric - 80 chars	Enter Analyzing Lab ID (if not reporting lab)	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	sampleCd	string	R	Alphanumeric - 100 chars	Lab Sample ID, Assigned ID	
	analysisDate	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format	**Federally Required**
	methodCdmethodName	stringstring	OO	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible valuesList of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Code. If value submitted, must submit Method Name. Analysis Method Code and Analysis Method Name is used as lookup for Method. Analysis Method Name Used as lookup for Method Code	**Federally Required**
	methodName	string	O	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Name. If value is submitted, must submit Method Code. Analysis Method Code and Analysis Method Name is used as lookup for Method.	**Federally Required**
	collectedBy	string	O	Alphanumeric - 50 chars	Collected By	
	comments	string	O	Alphanumeric - 250 chars	Comments	
>tthmHaa5	tthmHaa5					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	reportingLabName	string	N/AO	Accepted for POST but will eventually be no longer supported. Use laboratoryId.	GET contains Reporting Lab NameReporting Laboratory ID Name	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	laboratoryId	string	O	Alphanumeric - 80 chars	Enter Reporting Lab ID	
>tthm	tthm					
	numSampleTaken	int	O	Precision 5, Scale 0 [00000]	Number of TTHM samples taken	**Federally Required**
>>tthmDetail	tthmDetail					
	tthmDt	string	R	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Date should be within the Reporting Period, and in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format	**Federally Required**
	sampleReceivedDtSampleReceivedDate	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Enter Sample Received Date < Analysis State Date, and in YYYY-MM-DD or MM/DD/YYYY format. GET contains YYYY-MM-DD 00:00 format.	**Federally required**
	name	string	N/AO	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Analyzing Lab NameAnalyzing Lab ID name (if not reporting lab)	
	analyzingLabId	string	O	Alphanumeric - 80 chars	Analyzing Lab ID (if not reporting lab)	
	sampleCd	string	R	Alphanumeric - 20 chars	Sample ID code, Assigned ID code	
	notDetected	boolean	R	True False	Enter response whether the Analyte was Not Detected	**Federally Required**
	result	decimal	O	Precision 5, scale 3 [00.000]	Result. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	resultUomName	string	C Federally conditionally required	MG/L UG/L NG/L	Expected value is the type of Result UOM. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	reportingLimit	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	Reporting Limit. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	reportingLimitUomName	string	C Federally conditionally required	MG/L UG/L NG/L	Expected value is the type of Reporting Limit UOM. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	methodCdmethodName	stringstring	OO	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible valuesList of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Code. If value submitted, must submit Method Name. Analysis Method Code and Analysis Method Name is used as lookup for Method. Analysis Method Name Used as lookup for Method Code	**Federally RequiredFederally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	methodName	string	O	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Name. If value is submitted, must submit Method Code. Analysis Method Code and Analysis Method Name is used as lookup for Method.	**Federally Required**
	analysisStartDt	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Start Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format. GET contains analysisStartDt and analysisStartTime in YYYY-MM-DD 00:00 format.	**Federally Required**
	analysisStartTime	string	O	Time format: HH:MM Default value: 00:00	Enter Analysis Start Time in 00:00 format	**Federally Required**
	analysisComplDt	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Complete Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format. GET contains analysisComplDt and analysisComplTime in YYYY-MM-DD 00:00 format.	
	analysisComplTime	string	O	Time format: HH:MM Default value: 00:00	Enter Analysis Complete Time in 00:00 format	
	samplingPointId	string	R	Alphanumeric - 40 chars	Sampling Points within the Facility	**Federally required**
	quarterlyLocationalRaa	decimal	O	Precision 5, Scale 3 [00.000]	TTHM Locational RAA	**Federally Required**
	locationalUomName	String	O	MG/L UG/L NG/L	Expected value is the type of Locational RAA UOM.	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
					Federally Required if "quarterlyLocationalRaa" value is entered.	
	lraaMclViolated	string	O	Y - Yes N - No	Enter response code of whether LRAA MCL was violated?	**Federally Required**
	volumeAssayed	decimal	O	Precision 9, Scale 2 [0000000.00]	Volume Assayed – defaulted to ML UOM..	**Federally required**
	collectorName	String	O	Alphanumeric - 250 chars	Sample Collector Name	
>>haa5	haa5					
	numSampleTaken	int	O	Precision 5, Scale 0 [00000]	Number of HAA5 samples taken	**Federally Required**
>>haa5Detail	haa5Detail					
	haa5Dt	string	R	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Date should be within the Reporting Period, and in MM/DD/YYYY	**Federally Required**
	sampleReceivedDtSampleReceivedDate	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Sample Received Date < Analysis State Date, and in MM/DD/YYYY formatEnter Sample Received Date in YYYY-MM-DD or MM/DD/YYYY format. GET contains YYYY-MM-DD 00:00 format.	**Federally required**
	name	string	N/AO	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.Alphanumeric - 80 chars	GET contains Analyzing Lab NameAnalyzing Lab ID name (if not reporting lab)	
	analyzingLabId	string	O	Alphanumeric - 80 chars	Analyzing Lab ID (if not reporting lab)	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	sampleCd	string	R	Alphanumeric - 20 chars	Sample Code	
	notDetected	boolean	R	True False	Enter response whether the Analyte was Not Detected	**Federally Required**
	result	decimal	O	Precision 5, scale 3 [00.000]	Result. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	resultUomName	string	O	MG/L UG/L NG/L	Expected value is the Result UOM. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	reportingLimit	decimal	O	Precision 5, scale 3 [00.000]	Reporting Limit. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	reportingLimitUomName	string	O		Reporting Limit UOM. Federally Conditionally Required if “notDetected” value is false.	**Federally Conditionally Required**
	methodCdmethodName	stringstring	OO	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible valuesList of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Code. If value submitted, must submit Method Name. Analysis Method Code and Analysis Method Name is used as lookup for Method. Analysis Method Name Used as lookup for Method Code	**Federally RequiredFederally Required**
	methodName	string	O	List of Methods used by selected Laboratory. **NOTE**: Valid values cannot be listed due to the large size of possible values	Expected value is Method Name. If value is submitted, must submit Method Code. Analysis Method Code and Analysis Method Name is used as lookup for Method.	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	analysisStartDt	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Start Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format. GET contains analysisStartDt and analysisStartTime in YYYY-MM-DD 00:00 format.	**Federally Required**
	analysisStartTime	string	O	Time format: HH:MM Default value: 00:00	Enter Analysis Start Time in 00:00 format	**Federally Required**
	analysisComplDt	string	O	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Complete Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format. GET contains analysisComplDt and analysisComplTime in YYYY-MM-DD 00:00 format.	
	analysisComplTime	string	O	Time format: HH:MM Default value: 00:00	Enter Analysis Complete Time Time in 00:00 format	
	samplingPointId	string	R	Alphanumeric - 40 chars	Sampling Points within the Facility	**Federally required**
	quarterlyLocationalRaa	decimal	O	Precision 5, Scale 3 [00.000]	HAA5 Locational LRAA	**Federally Required**
	locationalUomName	String	O	MG/L UG/L NG/L	Expected value is the Locational RAA UOM. Federally Required if “quarterlyLocationalRaa” value is entered.	**Federally Required**
	lraaMclViolated	string	O	Y - Yes N - No	Enter response code whether LRAA MCL violated	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	volumeAssayed	decimal	O	Precision 9, Scale 2 [0000000.00]	Volume Assayed – defaulted to ML UOM..	**Federally required**
	collectorName	String	O	Alphanumeric - 250 chars	Sample Collector Name	
>ife	ife					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	combinedPopServedName	string	R	Submit Code **[Code] - [Name]**: **lessthan10k** - Less than 10,000 **morethan10k** - Greater or Equal to 10,000	Combined Population Served	
	indFilterEffluent	string	R	Y - Yes N - No	Enter response code to Q1: Did you monitor each individual filter effluent continuously and record measurements at least every 15 minutes (or combined filter effluent for systems with two filters)?	**Federally required**
	contMntrgRestored14Days	string	C Federally conditionally required	Y - Yes N - No O - NA	**If combinedPopServedName lessthan10k**: Enter response code to Q2: If IFE continuous monitoring was interrupted, was continuous monitoring restored in 14 days or fewer (Y/N)? If No, please contact your State or Primacy Agency for required additional data. Conditionally Required if "indFilterEffluent" is set to NO.	**Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	contMntrgRestored5Days	string	C Federally conditionally required	Y - Yes N - No	**If combinedPopServedName morethan10k**: Enter response code to Q2: If IFE continuous monitoring was interrupted, was continuous monitoring restored in 5 working days or fewer? If No, please contact your State or Primacy Agency for required additional data. Conditionally Required if "indFilterEffluent" is set to NO.	**Conditionally Required**
	contMntrgRecEquipOffline	string	R	Y - Yes N - No	Enter response code to Q3: Did your system conduct grab sampling or manual recording every 4 hours while continuous monitoring equipment was offline? Conditionally Required if "indFilterEffluent" is set to NO.	**Conditionally Required**
	exceed1Ntu2Consec	string	R	Y - Yes N - No	**If combinedPopServedName lessthan10k**: Enter response code to Q4: Did any individual filter exceed 1.0 NTU in two consecutive measurements taken 15 minutes apart? If yes complete the table and indicate required follow-up action status (report cause if known). [IFE Event Type 'A'] **If combinedPopServedName morethan10k**: Enter response code to Q4: Did any individual filter exceed 1.0	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
					NTU in two consecutive measurements taken 15 minutes apart? If yes, complete the table and indicate required follow-up action status (i.e. filter profile). [IFE Event Type 'A']	
	exceed1Ntu2Consec3Mth	string	R	Y - Yes N - No	Enter response code to Q5: Did any individual filter exceed 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of three consecutive months? If yes complete the table and indicate required follow-up action status (i.e. Individual Filter Self-Assessment - IFSA). [IFE Event Type 'B']	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	exceed2Ntu	string	R	Y - Yes N - No	**If combinedPopServedName lessthan10k**: Enter response code to Q6: Did any individual filter exceed 2.0 NTU in two consecutive measurements taken15 minutes apart at any time in each of two consecutive months? If yes complete the table and indicate required follow-up action status (i.e. Comprehensive Performance Evaluation - CPE). [IFE Event Type 'C'] **If combinedPopServedName morethan10k**: Enter response code to Q6: Did any individual filter exceed 1.0 NTU in two consecutive measurements taken 15 minutes apart at any time in each of three consecutive months? If yes, complete the table and indicate required follow-up action status (i.e. Individual Filter Self-Assessment - IFSA). [IFE Event Type 'C']	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	exceed05Ntu	string	C Federally conditionally required	Y - Yes N - No	**If combinedPopServedName morethan10k**: Enter response code to Q5: Did any individual filter exceed 0.5 NTU in two consecutive measurements taken 15 minutes apart at the end of the first four hours of continuous operation after the filter has been backwashed, or otherwise taken offline? If yes, complete the table and indicate required follow-up action status (i.e. filter profile). [IFE Event Type 'B']	
	creditUsingToolboxOption	string	O	Y - Yes N - No	Enter response code to whether user is seeking credit for using toolbox option for IFE performance	
	greatThan03Ntu2ConsecName	string	C Federally conditionally required	Y - Yes N - No	Enter response code to whether IFE turbidity >0.3 NTU in two consecutive readings are 15 minutes apart during the month at any filter Federally Conditionally Required if "creditUsingToolboxOption" is set YES.	**Federally Conditionally Required**
	lessThan015Ntu95pctMsrName	string	C	Y - Yes N - No	Enter response code to whether IFE turbidity <= 0.15 NTU is in at least 95% of the measurements for the month at each filter Federally Conditionally Required if "creditUsingToolboxOption" is set YES.	**Federally Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
>>ifeIndicatorFilter	ifeIndicatorFilter					
	filterNum	string	R	Alphanumeric	Filter Number. Federally Conditionally Required if Q4, Q5, Q6 are set to YES.	**Federally Conditionally Required**
	indFilterEventName	string	R	A B C D (If combinedPopServedName is greater or equal to 10,000)	Expected value is response code for Individual Filter Event*	
	exceedingTriggerDate	string	R	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Federally Conditionally Required if Q4, Q5, Q6 are set to YES Enter in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format	**Federally Conditionally Required**
	exceedingTriggerTime	string	O	Time format: HH:MM Default value: 00:00	Federally Conditionally Required if Q4, Q5, Q6 are set to YES. Enter in 00:00 format	
	turbidity	decimal	R	Precision 5, Scale 3 [00.000]	Turbidity (NTU)* Federally Conditionally Required if Q4, Q5, Q6 are set to YES.	**Federally Conditionally Required**
>>chlorineChloramine Poe	chlorineChloramine Poe					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	samplingLocation	string	O		Sampling Location	
	waterSourceDisplay	string	N/AR	Accepted for POST but will eventually be no longer supported. Use waterSourceCd.FSW -	GET contains Water SourceEnter one of the Filtering/Water Source code options	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				Filtered Surface Water USW - Unfiltered Surface Water GW - Groundwater		
	waterSourceCd	string	R	FSW - Filtered Surface Water USW - Unfiltered Surface Water GW - Groundwater	Enter one of the Filtering/Water Source code options	
	minDisinfectResidualReq	decimal		Precision 5, Scale 3 [00.000]	Minimum Disinfectant Residual Req. at Sampling Location	
	numMeasurementsReq	Int	R	Precision 2, Scale 0 [00]	Number of Measurements Required	
	numMeasurementsTaken	Int	R	Precision 2, Scale 0 [00]	Number of Measurements Taken	
	numMeasureBelowMinimum	int		Precision 5, Scale 0 [00000]	Number of Measurements Below Minimum	
	usingChlorine	string	C Federally conditionally required	Y - Yes N - No	Enter response code of whether Using Chlorine. Conditionally Required if <“waterSourceCdDisplay>” is set to Unfiltered Surface Water.	**Conditionally Required**
>>chlorineChloramine PoeDaily	chlorineChloraminePoeDaily					
	day	int	R	Valid day based on month	Enter valid Day within month	
	operationStatusName	string	R	On Off	Enter response on Operation Status	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	minResidual	decimal	C Required if Minimum Residual < Minimum Required	Precision 5, Scale 3 [00.000]	Minimum Residual Measured	**Federally Required**
	residualMeasuredName	string	R	Free Total Combined	Enter one of the Type of Residual Measured options*	**Federally Required**
	duration	decimal	C Required if Minimum Residual < Minimum Required	Precision 5, scale 2 [000.00]	Duration < Minimum Residual (hours)+. Federally Conditionally Required if “minResidual” is less than “minDisinfectResidualReq”.	**Federally Conditionally Required**
	stateNotifyDt	string	C Required if Minimum Residual < Minim	Date Format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY	Date State Notified+ Federally Conditionally Required if “minResidual” is less than “minDisinfectResidualReq”.	**Federally Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
			um Requir ed			
	ph	decimal	R	Precision 4, scale 1 [000.0]	pH* Federally Conditionally Required if "usingChlorine" is set to YES	**Federally Conditionally Required**
	temperature	decimal	C Requir ed if Minim um Residu al at Entry Point is less than Fed Min Requir ed	Precision 3, scale 1 [00.0]	Temperature (C) * (Unfiltered Surface Water)	**Federally Required**
	disinfectConcentration	decimal	C Federa lly conditi onally require d	Precision 5, scale 3 [00.000]	Disinfectant Concentration (C) in mg/l* (Unfiltered Surface Water)	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	effDisinfectContactTime	decimal	C Required if Minimum Residual at Entry Point is less than Fed Min Required	Precision 5, scale 3 [00.000]	Effective Disinfectant Contact Time (T)* (Unfiltered Surface Water)	**Federally Required**
	requiredCt	decimal	C Required if Minimum Residual at Entry Point is less than Fed Min Required	Precision 5, scale 3 [00.000]	Required CT (min x mg/L) (Unfiltered Surface Water)	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	minActualCt	decimal	C Required if Minimum Residual at Entry Point is less than Fed Min Required	Precision 5, scale 3 [00.000]	CT Achieved (CT calc) (Unfiltered Surface Water)	**Federally Required**
	ct999	decimal	C Federally conditionally required	Precision 5, scale 3 [00.000]	CT99.9 (Unfiltered Surface Water)	**Federally Required**
	sumAll	decimal	C Required if Minimum Residual at Entry Point is less than Fed	Precision 5, scale 3 [00.000]	Sum of all CTcalc/CT99.9 at the first customer* (Unfiltered Surface Water)	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
			Min Required			
	achievedInactivationName	string	C Required if Minimum Residual at Entry Point is less than Fed Min Required	Yes No	Enter response whether Achieved Inactivation (Unfiltered Surface Water)	**Federally Required**
	comments	string	O	Alphanumeric - 250 chars	Comments	
>toc	toc					
	See {opData}			Extends {opData} therefore all elements of opData included.		
	sampleCd	string	R	Alphanumeric – 25 chars	Sample ID code	
	name	string	N/AR	Accepted for POST but will eventually be no longer supported. Use	GET contains Reporting Lab NameAnalyzing Lab ID name (if not reporting lab)	

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
				analyzingLabId.Alphanumeric - 80 chars		
	analyzingLabId	string	R	Alphanumeric - 80 chars	Reporting Lab ID	
	raaComputedQuarterly	decimal	C Enabled only for March, June, September and December	Precision 5, Scale 3 [00.000]	RAA of Monthly TOC Removal Ratios. Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	raaAlternativeComplCriteria	decimal	C Federally conditionally required	Precision 5, Scale 3 [00.000]	RAA for Alternative Compliance Criteria Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	numPairedSamples	int	C Enabled only for March, June, September and December		# of Paired Samples/Quarter*	**Federally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	stateCalculateRaa	string	R	Y - Yes N - No	Enter response code whether State Calculates RAAs are for DBP Precursors	
	complianceName	string	R	Y - Yes N - No	Enter response code whether the system is in compliance with the enhanced coagulation or enhanced softening percent removal requirements in 40 CFR 141.135(b)?	**Federally Required**
	month1ArithmeticAvgPct	decimal	O	Precision 5, Scale 2 [000.00]	Month 1 Arthmetic Average % Reduction of TOC	
	month2ArithmeticAvgPct	decimal	O	Precision 5, Scale 2 [000.00]	Month 2 Arthmetic Average % Reduction of TOC	
	month3ArithmeticAvgPct	decimal	O	Precision 5, Scale 2 [000.00]	Month 3 Arthmetic Average % Reduction of TOC	
>>tocDetail	tocDetail					
	tocDt	string	R	Date format: MM/DD/YYYYDate format: YYYY-MM-DD or MM/DD/YYYY Cannot be a future date	Enter Date in MM/DD/YYYY formatin YYYY-MM-DD or MM/DD/YYYY format*	**Federally required**
	rawWaterToc	decimal	R	Precision 5, Scale 2 [000.00]	Raw Water TOC*	**Federally required**
	checkRawLessThan2Name	string	R	Yes No	Check Raw <=2.0*	
	rawWaterAlkalinity	decimal	R	Precision 5, Scale 2 [000.00]	Raw Water Alkalinity*	**Federally required**
	finishedWaterToc	decimal	R	Precision 5, Scale 2 [000.00]	Finished Water TOC	**Federally required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	step1ReqTocRemovalPct	decimal	C Federally conditionally required	Precision 5, Scale 2 [000.00] Must be between 0 and 100	Step 1 Req. TOC Removal % Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	step1ActualTocRemovalPct	decimal	C Federally conditionally required	Precision 5, Scale 2 [000.00] Must be between 0 and 100	Step 1Actual TOC Removal % Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	step1Ratio	decimal	C Federally conditionally required	Precision 4, Scale 2 [00.00]	Step 1 RemovalRatio. Calculated: step1ReqTocRemovalPct/ step1ActualTocRemovalPct Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	altComp	int	O	Precision 3	RAA for Alternative Compliance Criteria Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	altRatioAssigned	decimal	C Federally conditionally required	Precision 5, Scale 2 [000.00]	Alt. Ratio Assigned Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description	Additional Designations
	step2ReqTocRemovalPct	decimal	O	Precision 5, Scale 2 [000.00] Must be between 0 and 100	Step 2 Req. TOC Removal % Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	step2ActualTocRemovalPct	decimal	O	Precision 5, Scale 2 [000.00] Must be between 0 and 100	Step 2 Actual TOC Removal % Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	step2Ratio	decimal	O	Precision 4, Scale 2 [00.00]	Step 2 RemovalRatio Calculated: step2ReqTocRemovalPct/ step2ActualTocRemovalPct Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	step2RemovalAchievedName	string	O	Yes No	Enter response whether Removal was Achieved Refer to TOC rule for Federal Conditional Requirement.	**Federally Conditionally Required**
	comments	string	O	Alphanumeric - 250 chars	Comments	
	lt2RatioAchieved	decimal	C Federally conditionally required	Precision 6, Scale 3 [000.000]	LT2 Ratio Achieved. Conditionally Required if “reportingCTValueName” is set to YES.	**Conditionally required**

COMPOSITE DATA XML FILE STRUCTURE

A.1.3 Composite XML Structure and data elements

Table 5 – Composite XML Structure and data elements

> ➢ If you are currently submitting XML Sample data to CMDP, please see APPENDIX A - XML CHANGES RELATED TO RELEASE 1.11 (MARCH 2018) for a summary of the changes to the XML structure and data elements for CMDP Release 1.11.

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description
samples	samples	XML Root Element			
>compositeSample	compositeSample				
	compositeSampleId	R			Lab assigned Composite Sample ID
	compositeDate	R			Enter Composite Sample Date in YYYY-MM-DD or MM/DD/YYYY format
	samplePurposeName			Submit Code (i.e. RT) [**Code] - [Description]**: **FS** -Field Surveillance **SS** -Sanitary Survey	
	sampleVolumeName	decimal	O	Precision 9, Scale 2 [0000000.00]	Sample Volume (ML)
	legalEntityName	String	N/A	Accepted for POST but will eventually be no longer supported. Use laboratoryId.	GET contains Laboratory Name

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description
	laboratoryId	String	R		Laboratory ID
	rad	boolean		true false	Enter response For Radionuclides
>sample	sample				
	wsId	string	R	9 chars – first 2 chars for state code and next 7 chars for water system ID	Expected value is Water System ID followed by the Federal ID assigned to the water system
	facilityName	string	N/A	Accepted for POST but will eventually be no longer supported. Use stateAssignedFacId.	GET contains Facility Name
	stateAssignedFacId	string	R	Alphanumeric - 40 chars	State Assigned Facility Identifier / Code
	samplingPointId	string	R	Alphanumeric - 40 chars	State Assigned Sampling Point ID
	samplingLocation	string	O	Alphanumeric - 250 chars	Free Form Text
	sampleCd	string	R	Alphanumeric - 80 chars	Laboratory assigned Sample ID
	collectionDate	string	R	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter Collection Date in YYYY-MM-DD or MM/DD/YYYY format
	collectionTime	string	O	Time format: 00:00	Enter Collection Time in 00:00 format
	legalEntityName	string	N/A	Accepted for POST but will eventually be no longer supported. Use laboratoryId.	GET contains Reporting Laboratory Name
	laboratoryId	string	R	Alphanumeric - 40 chars	Reporting Laboratory ID
	sampleTypeName	string	N/A	Accepted for POST but will eventually be no longer supported. Use sampleTypeCd.	GET contains Sample Type Name

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description
	sampleTypeCd	string	R	Submit Code (i.e. RT) [**Code] - [Description]**: (**Microbial /ChemsRads**) **RT** - Routine **RP** - Repeat **TG** - Triggered **CO** - Confirmation **SP** - Special **BB** - Batch Blanks **FB** - Field Blanks **PE** - Performance Evaluation **SB** - Shipping Blanks **ST** - Split Blanks **MR** - Maximum Residence Time **MS** - Matrix Spike [**Code] - [Description]**: (**Cryptosporidium**) **RT** - Field (i.e., Routine) **MS** - Matrix Spike **SP** - Special **PE** - Performance Evaluation **BB** - Batch Blanks **FB** - Field Blanks **SB** - Shipping Blanks **ST** - Split Blanks	Expected value is the Sample Type code
	sampleVolume	decimal	O	Precision 9, Scale 2 [0000000.00]	Sample Volume
	comments	string	O	Alphanumeric - 250 chars	Comments
	repeatLocationName	string	**C**	Original Site Downstream Upstream	Req'd if is Sample Type is Repeat Enter one of the Repeat Location options

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description
				Source Alternative (RTCR) Other (TCR)	
	originalLabSampleCd	string	R	Alphanumeric - 80 chars	Req'd if is Sample Type is Repeat/Triggered/Confirmation Original Laboratory assigned Sample ID
	sampleCategoryName	string	R	Composite	Sample Category Name
>compositeSampleResultChem	compositeSampleResultChem				
	analyteName		N/A	Accepted for POST but will eventually be no longer supported. Use analyteCd.	GET contains Analyte Name
	analyteCd	string	R	**NOTE**: Valid values cannot be listed due to the large size of possible values (which is also dependent upon user primacyAgency)	Analyte Code Name
	methodCd	string	O	**NOTE**: Valid values cannot be listed due to the large size of possible values (which is also dependent upon user primacyAgency)	Method Code If value submitted, must submit Method Name. Used as lookup for Method.
	methodName	string	O	**NOTE**: Valid values cannot be listed due to the large size of possible values (which is	Method Code If value submitted, must submit Method Code. Used as lookup for Method.

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description
				also dependent upon user primacyAgency)	
	analysisStartDt	string	O	Date format: YYYY-MM-DD or MM/DD/YYYY	Enter Analysis Start Date in YYYY-MM-DD or MM/DD/YYYY format
	analysisStartTime	string	O	Time format: 00:00	Enter Analysis Start Time in 00:00 format
	analysisComplDt	string	O	Date format: YYYY-MM-DD or MM/DD/YYYY	Analysis Completed Date in YYYY-MM-DD or MM/DD/YYYY format
	analysisComplTime	string	O	Time format: 00:00	Enter Analysis Completed Time in 00:00 format
	name	string	N/A	Accepted for POST but will eventually be no longer supported. Use analyzingLabId.	GET contains Analyzing Lab Name
	analyzingLabId	string	O	Alphanumeric - 80 chars	Analyzing Laboratory ID
	comments	string	O	Alphanumeric - 250 chars	
	volumeAssayed	string	O	1 5 10 100 400 500	Enter one of the Volume Assayed –(Microbial and ChemsRads) options Per – (Cryptosporidium)
	notDetected	boolean	R	true false	Enter response whether the Analyte was Not Detected
	result	decimal	O	Precision 15, Scale 9 [000000.000000000]	Result Value
	resultUomName	string	O	C LANG NTU pH	Expected value is the type of Result Unit of Measure

XML Element	XML Element Name	Data Type	Required (R), Optional (O), Conditional (C)	Format/Valid Values	Description
				umho/cm TON CU mg/L ug/L ng/L pCi/L MFL	
	standardDeviation	decimal	O	Precision 9, Scale 2 [0000000.00]	Standard Deviation
	reportingLevel	decimal	O	Precision 15, Scale 9 [000000.000000000]	Reporting Limit
	reportingLevelUomName	string	O	C LANG NTU pH umho/cm TON CU mg/L ug/L ng/L pCi/L MFL	Expected value is the type of Reporting Limit Unit of Measure

APPENDIX A - XML CHANGES RELATED TO RELEASE 1.11 (MARCH 2018)

Changes were made to the XML structure and data elements for CMDP Release 1.11. Although these changes are noted in the main tables above, a summary of the specific changes are being provided below.

NOTE: This appendix is <u>applicable only to users who are currently submitting</u> (POST) sampling data of any type into CMDP. <u>If you are creating an XML file to submit any sample data type to CMDP for the first time, this information does not apply</u>, because you should be structuring your XML based on the updated XML schema tags as detailed in the tables above.

REQUIRED CHANGES FOR POST (SAMPLE DATA INTO CMDP)

The following changes were made to the Method elements and are required for submission (POST). **Note: if either element has a value, both are required.**

Original XML Tag	New XML Tag	Description	Note (Element)	Nodes2
				opDataBromateResult
			bromateResult	opDataLcrWqpDts
			lcrWqpDts	opDataLcrWqpEps
			lcrWqpEps	opDataHaa5Detail
			haa5Detail	opDataTthmDetail
			tthmDetail	sampleResult
			sampleResult	compositeSampleResultChem
methodName	methodCd	Method Code	compositeSampleResultChem	
methodName	methodName	Method Name	same as above	same as above

OPTIONAL CHANGES FOR POST (SAMPLE DATA INTO CMDP)

The following changes were made to XML elements for Sample Data submission (POST).

- **While the tags listed under the "Original XML tag" column may still be used, it is strongly recommended that submitters update their XML submissions to use the values under the "New XML Tag" column**. The Original XML tag will eventually be no longer supported (for POST data into CMDP) in a future release.

Original XML Tag	New XML Tag	Description	Node (Element)
analyteName	analyteCd	Analyte Code	sampleResult compositeSampleResultChem
facilityName	stateAssignedFacId	State Assigned Facility ID	operationalData lcrWqpDts lcrWqpEps sample compositeSample
legalEntityName	laboratoryId	Reporting Lab ID	sample compositeSample
originalLegalEntityName	originalLaboratoryId	Original Reporting Lab ID	sample
name	analyzingLabId	Analyzing Lab Id	bromateResult chlorineDioxideChlorite lcrWqpDts lcrWqpEps haa5Detail tthmDetail sampleResult compositeSampleResultChem
name	laboratoryId	Reporting Lab Id	chlorineDioxide toc
reportingLabName	laboratoryId	Reporting Lab Id	bromate opDataTthmHaa5
sampleTypeName	sampleTypeCd	Sample Type	sample
interferenceName	interferenceCd	Interference	sampleResultMicro
measureName	measureCd	Measures	sampleResultMeasure
waterSourceDisplay	waterSourceCd	Filtering/Water Source	chlorineChloraminePoe
typeName	typeCd	Units	sampleResultMicro