EBERLINE ANALYTICAL

SDG 8626

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
SDG 8626
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Tritium	
Preparation batch 7726-116						
S210013-01			8626-001	OUTFALL 019 (440-25512-1	U	
S210013-03			8626-003	Lab Control Sample	ok	
S210013-04			8626-004	Method Blank	U	
S210013-05			8626-005	Duplicate (S210013-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	500	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7726-116			2σ prep error 10.0 %	Reference Lab Notebook 7726-116												
S210013-01			OUTFALL 019 (440-25512-1	189	0.0100			100		150			19	10/22/12	10/23	LSC-006
S210013-03			Lab Control Sample	1860	0.0100			10		150				10/22/12	10/23	LSC-006
S210013-04			Method Blank	1870	0.0100			10		150				10/22/12	10/23	LSC-006
S210013-05			Duplicate (S210013-01)	183	0.0100			100		150			19	10/22/12	10/23	LSC-006
Nominal values and limits from method				500	0.0100					100			180			

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 1030 ± 1940
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/26/12

EBERLINE ANALYTICAL

SDG 8626

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8626
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Ra-226	
Preparation batch 7726-116						
S210013-01			8626-001	OUTFALL 019 (440-25512-1	U	
S210013-02			8626-002	TRIP-BLANK (440-25512-2)	U	
S210013-03			8626-003	Lab Control Sample	ok	
S210013-04			8626-004	Method Blank	U	
S210013-05			8626-005	Duplicate (S210013-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7726-116			2σ prep error 16.4 %	Reference Lab Notebook 7726-116												
S210013-01			OUTFALL 019 (440-25512-1	0.721	0.100			100		123			19	10/23/12	10/23	RN-011
S210013-02			TRIP-BLANK (440-25512-2)	0.654	0.100			100		123			19	10/23/12	10/23	RN-012
S210013-03			Lab Control Sample	0.711	0.100			100		123				10/23/12	10/23	RN-016
S210013-04			Method Blank	0.622	0.100			100		123				10/23/12	10/23	RN-014
S210013-05			Duplicate (S210013-01)	0.650	0.100			100		123			19	10/23/12	10/23	RN-015
Nominal values and limits from method				1.00	0.100					50			180			

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.672 ± 0.085
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 10/26/12

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/26/12

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/26/12

SDG 8626
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DATA SHEET

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

SDG 8626
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/26/12

SDG 8626
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 10/26/12

SDG 8626
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

SDG 8626
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

METHOD SUMMARY

correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

* Count times are underlined if less than the nominal value

METHOD SUMMARY

specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

SDG 8626
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

TestAmerica Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bousselaire, Jonathan	Carrier Tracking No(s):	COC No: 440-12356.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jonathan.bousselaire@testamericainc.com		Page: Page 1 of 1
Company: Eberline Services		Analysis Requested		Job #: 440-25512-1
Address: 2030 Wright Avenue,	Due Date Requested: 10/18/2012			Preservation Codes:
City: Richmond	TAT Requested (days):			A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2SO3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - ph 4-5, Z - other (specify)
State, Zip: CA, 94804				
Phone:	PO #:			Other:
Email:	WO #:			
Project Name: Quarterly Outfall 019	Project #: 44002624			
Site: Boeing SSFL	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT/ Gross Alpha	SUBCONTRACT/ Gross Beta	SUBCONTRACT/ Radium Combined	SUBCONTRACT/ Strontium 90	SUBCONTRACT/ Tritium	SUBCONTRACT/ Uranium, Combined	SUBCONTRACT/ Gamma Spec K-40 CS-137	Total Number of containers	Special Instructions/Note:
			Preservation Code:												
Outfall 019 (440-25512-1)	10/4/12	10:25 Pacific		Water			X	X	X	X	X	X	X		
Trip Blank-Eberline (440-25512-2)	10/5/12	13:45 Pacific		Water			X	X	X	X	X	X	X		

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company
Vu Bach	10/5/12 17:00	TAI	FedEx	10/5/12 17:00	
Relinquished by: FED EX	Date/Time: 10/06/12	Company	Received by: RICHMOND MATAWARAN	Date/Time: 10/06/12	Company: EBERLINE SVCS.
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No | Custody Seal No.: | Cooler Temperature(s) °C and Other Remarks:

2nd checked by Rusty x No extra bottle!

EBERLINE SERVICES

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 10/06/12 CoC No. 440-12356-1

Container I.D. No. ICE CHEST Requested TAT (Days) — P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [ ] No [ ] N/A [X]
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [X]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix W
7. Number of containers per sample: _____ (Or see CoC X)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [X] Not preserved [ ] pH <2 Preservative HNO3 9y 10/9/12
13. Describe any anomalies: ~~ALSO RECEIVED 1 BOTTLE NOT LISTED ON THE COC.~~ No extra Bottle
~~(BOTTLE #18B, QUARTERLY OUTFALL 019 - COMP, RADIO-CHEMISTRY ANALYSIS, 500ML AMBER; SAMPLE DATE: 10/04/12 TIME: 1025)~~
14. ~~Was P.M.~~ notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by RTM Date: 10/08/12 Time: 0820

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
ALL SAMPLES	<80						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 100482 Calibration date 6 DEC 11

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Quarterly Outfall 019** **GRAB**
Project Manager: Bronwyn Kelly R-E BANAG O Sampler: ADAM GOLDEN BERG	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	VOCs 624 + Freon 113	Oil & Grease (1664-HEM)	Settleable Solids	Conductivity	Comments
Outfall 019	W	VOAs	5	10-3-2012 10:00	HCl	1A, 1B, 1C, 1D, 1E	X				
Outfall 019	W	1L Amber	2	"	HCl	2A, 2B		X			
Outfall 019	W	1L Poly	1	"	None	3			X		
Outfall 019	W	500 mL Poly	2	"	None	4A, 4B				X	
Trip Blanks	W	VOAs	3	10-3-2012 10:00	HCl	5A, 5B, 5C	X				

ANALYSIS REQUIRED

Field readings:
(Log in and include in report Temp and pH)

Temp °F = 68°
pH = 7.26
DO = 3.59 mg/L

Time of readings = 10:00

These Samples are the Grab Portion of Outfall 019 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By	Date/Time	Received By	Date/Time
	10-3-2012 12:15		10-3-12 12:15
	10-3-12 18:55		
			10/03/12 18:55

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ____
48 Hour: ____ 5 Day: ____ Normal: X

Sample Integrity: (Check)
Intact: X On Ice: X

Data Requirements: (Check)
No Level IV: __ All Level IV: ____ NPDES Level IV: X

4.6 °C

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Quarterly Outfall 019** **COMPOSITE Time Weighted**
Project Manager: Bronwyn Kelly Sampler:	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn, Hardness as $CaCO_3$	TCDD (and all congeners)	BOD_5 (20 degrees C)	Surfactants (MBAS)	Cl, SO_4, NO_3+NO_2-N, Perchlorate	Nitrate-N, Nitrite-N	Turbidity, TDS, TSS	Ammonia-N (350.2)	Alpha BHC (608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)					Comments
							ANALYSIS REQUIRED														
Outfall 019	W	1L Poly	1	10-4-2012 1025	HNO_3	6A	X														
Outfall 019 Dup	W	1L Poly	1		HNO_3	6B	X														
Outfall 019	W	1L Amber	2		None	7A, 7B		X													
Outfall 019	W	1L Poly	1		None	8			X												
Outfall 019	W	500 mL Poly	2		None	9A, 9B				X											
Outfall 019	W	500 mL Poly	2		None	10A, 10B					X										
Outfall 019	W	500 mL Poly	1		None	11						X									
Outfall 019	W	500 mL Poly	2		None	12A, 12B							X								
Outfall 019	W	500 mL Poly	1		H_2SO_4	13								X							
Outfall 019	W	1L Amber	2		None	14A, 14B									X						
Outfall 019	W	1L Amber	2	10-4-2012 1025	None	15A, 15B										X					

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 019 for this storm event.
These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
	10-4-2012 12:45		10-4-12 12:45
Relinquished By	Date/Time:	Received By	Date/Time:
	10-4-12 17:50		10/4/12 1750
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: _____
48 Hour: _____ 5 Day: _____ Normal: _____

Sample Integrity: (Check)
Intact: ✓ On Ice: X

Data Requirements: (Check)
No Level IV: _____ All Level IV: _____ NPDES Level IV: _____

5.4 3.1

CHAIN OF CUSTODY FORM

Client Name/Address:
MWH-Arcadia
618 Michillinda Ave, Suite 200
Arcadia, CA 91007

Test America Contact: Debby Wilson

Project:
Boeing-SSFL NPDES
Quarterly Outfall 019
COMPOSITE Time Weighted

Project Manager: Bronwyn Kelly

Sampler:

Phone Number:
(626) 568-6691
Fax Number:
(626) 568-6515

ANALYSIS REQUIRED

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn, Hardness as CaCO3	Total Organic Carbon	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Acute Toxicity	Cyanide	Chronic Toxicity	Comments
Outfall 019	W	1L Poly	1	10-4-2012 1025	None	16	X						Filter w/in 24hrs of receipt at lab
Outfall 019	W	250 mL Glass	1		HCl	17							
Outfall 019	W	2.5 Gal Cube	1		None	18A							ed and unpreserved analysis
		500 mL Amber	1		None	18B							
Outfall 019	W	1 Gal Cube	1		None	19							
Outfall 019	W	500 mL Poly	1	10-4-2012 1025	NaOH	20							
~~Outfall 019~~	~~W~~	~~1 Gal Poly~~	~~1~~		~~None~~	~~21~~							test if first or second rain events of the year

Acute Tox direct sent to ATL. No container

COC Page 2 of 3 and Pag

These must be added to th

Relinquished By	Date/Time:	Received By	Date/Time:
	10-4-2012 12:45		10-4-12 12:45
Relinquished By	Date/Time:	Received By	Date/Time:
	10-4-12 17:50		10/4/12 1750
Relinquished By	Date/Time:	Received By	Date/Time:

Turnaround time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ____
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check)
Intact: ____ On Ice: ____

Data Requirements: (Check)
No Level IV: _ All Level IV: __ NPDES Level IV: ____

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-25324-1

Login Number: 25324

List Source: TestAmerica Irvine

List Number: 1

Creator: Perez, Angel

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Rick Banaga/Adam Goldenberg
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-25324-1

Login Number: 25512

List Source: TestAmerica Irvine

List Number: 1

Creator: Perez, Angel

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	False	Not listed on the coc.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

APPENDIX F

Section 5

Outfall 019 – November 1 & 2, 2012

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-28429-1

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	440-28429-1
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Outfall 019	440-28539-1	440-28539-1	Water	11/2/2012 10:00:00 AM	1613B, 200.7, 200.7 (Diss), 245.1, 245.1 Diss, 314.0, 900. 901.1, 903.1, 904, 905, 906,

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD 1613—Dioxin/Furans

Reviewed By: L. Calvin
Date Reviewed: December 19, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Dioxins and Furans (DVP-19, Rev. 0), USEPA Method 1613*, and the *National Functional Guidelines Chlorinated Dioxin/Furan Data Review* (8/02).

- Holding Times: Extraction and analytical holding times were met. The water sample was extracted and analyzed within one year of collection.

- Instrument Performance: Instrument performance criteria were met. Following are findings associated with instrument performance.

    - GC Column Performance: A Windows Defining Mix (WDM) containing the first and last eluting congeners of each descriptor and isomer specificity compounds was analyzed prior to the initial calibration sequence and at the beginning of each analytical sequence. The GC column performance in the calibrations was acceptable, with the height of the valley between the closely eluting isomers and 2,3,7,8-TCDD reported as less than 25%.

    - Mass Spectrometer Performance: The mass spectrometer performance was acceptable with the static resolving power greater than 10,000.

- Calibration: Calibration criteria were met.

    - Initial Calibration: Initial calibration criteria were met. The initial calibration was acceptable with %RSDs ≤20% for the 15 native compounds (calibration by isotope dilution) and ≤35% for the two native and all labeled compounds (calibration by internal standard). The relative retention times and ion abundance ratios were within the Method 1613 QC limits for all standards.

    - Continuing Calibration: Calibration verification (VER) consisted of a mid-level standard (CS3) analyzed at the beginning of each analytical sequence. The VERs were acceptable with the concentrations within the acceptance criteria listed in Table 6 of EPA Method 1613. The ion abundance ratios and relative retention times were within the method QC limits.

- Blanks: The method blank had reported detects reported for 1,2,3,4,6,7,8-HpCDD, 1,2,3,4,6,7,8-HpCDF, OCDD, and totals for HpCDD and HpCDF. Some method blank results were reported as EMPCs; however, the reviewer deemed it appropriate to use all method blank results to qualify sample results. Sample results for the individual isomer

method blank contaminants were qualified as nondetected, "U," at the levels of contamination. The detected total results associated with method blank contamination were also qualified as nondetected, "U," as the peaks comprising the totals for HpCDD and HpCDF in the sample were present at comparable concentrations in the method blank.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the acceptance criteria.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: This SDG had no identified field duplicate samples.

- Internal Standards Performance: The labeled internal standard recoveries for the sample were within the acceptance criteria listed in Table 7 of Method 1613.

- Compound Identification: Compound identification was verified. The laboratory analyzed for polychlorinated dioxins/furans by EPA Method 1613.

- Compound Quantification and Reported Detection Limits: Compound quantitation was verified by recalculating any reportable sample concentrations. The laboratory calculated and reported compound-specific detection limits. Any detects below the laboratory lower calibration level were qualified as estimated, "J." Any detects reported between the estimated detection limit (EDL) and the reporting limit (RL) were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Nondetects are valid to the EDL.

  Reported EMPC results previously qualified as nondetected for method blank contamination were not further qualified as EMPCs. The results for individual HxCDF isomers reported as EMPCs were qualified as estimated nondetects, "UJ," at the level of the EMPC. As all peaks comprising total HxCDF were identified as EMPCs, the result was also qualified as an estimated nondetect "UJ."

B. EPA METHODS 200.7 and 245.1—Zinc and Mercury

Reviewed By: P. Meeks
Date Reviewed: December 19, 2012

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.7, 245.1*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: Analytical holding times, six months for ICP metals and 28 days for mercury, were met.

- Calibration: Calibration criteria were met. Mercury initial calibration r^2 values were ≥0.995 and all initial and continuing calibration recoveries were within 90-110% for the ICP metals and 85-115% for mercury. The total mercury CRA was recovered at 68%; therefore, nondetected total mercury in the sample was qualified as estimated, "UJ." Remaining CRDL/CRI recoveries were within the control limits of 70-130%.

- Blanks: Method blanks and CCBs had no detects.

- Interference Check Samples: Recoveries were within 80-120%. Zinc was not present in the ICSA solution at concentrations indicative of matrix interference.

- Blank Spikes and Laboratory Control Samples: Recoveries were within laboratory-established QC limits.

- Laboratory Duplicates: No laboratory duplicate analyses were performed on a sample in this SDG.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG for zinc or mercury. Method accuracy was evaluated based on LCS results

- Serial Dilution: No serial dilution analyses were performed on a sample in this SDG.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either "J+" or "J-"; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

C. EPA METHOD 314.0—Perchlorate

Reviewed By: P. Meeks
Date Reviewed: December 19, 2012

The sample listed in Table 1 for this analysis was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-20, Rev. 0), EPA Method 314.0*, and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The analytical holding time, 28 days, was met.

- Calibration: Calibration criteria were met. The initial calibration r^2 values were $\geq$0.995 and all initial and continuing calibration recoveries were within 90-110%. The IPC recovery was within the method-established control limit of 80-120%, and the ICCS recovery was within the method-established control limit of 75-125%.

- Blanks: The method blank and CCBs had no detects.

- Blank Spikes and Laboratory Control Samples: Recoveries were within the method-established QC limits of 85-115%.

- Laboratory Duplicates: No laboratory duplicate analyses were performed.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed on the sample in this SDG. Method accuracy was evaluated based on LCS results.

- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. Reported nondetects are valid to the reporting limit.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

D. VARIOUS EPA METHODS — Radionuclides

Reviewed By: P. Meeks
Date Reviewed: December 19, 2012

The samples listed in Table 1 for these analyses were validated based on the guidelines outlined in the *EPA Methods 900.0, 901.1, 903.1, 904.0, 905.0, and 906.0, ASTM Method D-5174,* and the *National Functional Guidelines for Inorganic Data Review* (10/04).

- Holding Times: The tritium sample was analyzed within 180 days of collection. All remaining aliquots were preserved within the five-day holding time.

- Calibration: The laboratory calibration information included the standard certificates and applicable preparation/dilutions logs for NIST-traceability.

  The gross alpha detector efficiency was less than 20%; therefore, nondetected gross alpha in the sample was qualified as estimated, "UJ." The remaining detector efficiencies were greater than 20%.

  The tritium aliquot was spiked for efficiency determination; therefore, no calibration was necessary. All chemical yields were at least 40% and were considered acceptable. The gamma spectroscopy analytes were determined at the maximum photopeak energy. The kinetic phosphorescence analyzer (KPA) was calibrated immediately prior to the sample analysis. All KPA calibration check standard recoveries were within 90-110% and were deemed acceptable.

- Blanks: There were no analytes detected in the method blanks or the KPA CCBs.

- Blank Spikes and Laboratory Control Samples: Radium-228 was recovered at 123%, above the control limits of 83-117%; however, radium-228 was not detected in the site sample. The remaining recoveries were within laboratory-established control limits.

- Laboratory Duplicates: Laboratory duplicate analyses were performed on the sample in this SDG for all analytes. All RPDs were within the laboratory-established control limits.

- Matrix Spike/Matrix Spike Duplicate: No MS/MSD analyses were performed for the sample in this SDG. Method accuracy was evaluated based on the LCS results.

- Sample Result Verification: An EPA Level IV review was performed for the sample in this data package. The sample results and MDAs reported on the sample result form were verified against the raw data and no calculation or transcription errors were noted. Any detects between the MDA and the reporting limit were qualified as estimated, "J," and coded with "DNQ," in order to comply with the NPDES permit. Reported nondetects are valid to the MDA. Total uranium, normally reported in aqueous units, was converted to pCi/L using the conversion factor of 0.67 for naturally occurring uranium.

- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

    - Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

    - Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-28429-1

Analysis Method 1613B

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
1,2,3,4,6,7,8-HpCDD	35822-46-9	ND	0.000048	0.0000007	ug/L	J,DX MB	U	B
1,2,3,4,6,7,8-HpCDF	67562-39-4	ND	0.000048	0.0000005	ug/L	J,DX MB	U	B
1,2,3,4,7,8,9-HpCDF	55673-89-7	ND	0.000048	0.0000010	ug/L		U	
1,2,3,4,7,8-HxCDD	39227-28-6	ND	0.000048	0.0000004	ug/L		U	
1,2,3,4,7,8-HxCDF	70648-26-9	ND	0.000048	0.0000002	ug/L	J,DX	UJ	*III
1,2,3,6,7,8-HxCDD	57653-85-7	ND	0.000048	0.0000004	ug/L		U	
1,2,3,6,7,8-HxCDF	57117-44-9	ND	0.000048	0.0000002	ug/L	J,DX	UJ	*III
1,2,3,7,8,9-HxCDD	19408-74-3	ND	0.000048	0.0000004	ug/L		U	
1,2,3,7,8,9-HxCDF	72918-21-9	ND	0.000048	0.0000003	ug/L		U	
1,2,3,7,8-PeCDD	40321-76-4	ND	0.000048	0.0000009	ug/L		U	
1,2,3,7,8-PeCDF	57117-41-6	ND	0.000048	0.0000006	ug/L		U	
2,3,4,6,7,8-HxCDF	60851-34-5	ND	0.000048	0.0000002	ug/L	J,DX	UJ	*III
2,3,4,7,8-PeCDF	57117-31-4	ND	0.000048	0.0000008	ug/L		U	
2,3,7,8-TCDD	1746-01-6	ND	0.0000097	0.0000005	ug/L		U	
2,3,7,8-TCDF	51207-31-9	ND	0.0000097	0.0000003	ug/L		U	
OCDD	3268-87-9	ND	0.000097	0.0000018	ug/L	J,DX MB	U	B
OCDF	39001-02-0	ND	0.000097	0.0000016	ug/L		U	
Total HpCDD	37871-00-4	ND	0.000048	0.0000007	ug/L	J,DX MB	U	B
Total HpCDF	38998-75-3	ND	0.000048	0.0000007	ug/L	J,DX MB	U	B
Total HxCDD	34465-46-8	ND	0.000048	0.0000004	ug/L		U	
Total HxCDF	55684-94-1	ND	0.000048	0.0000002	ug/L	J,DX	UJ	*III
Total PeCDD	36088-22-9	ND	0.000048	0.0000009	ug/L		U	
Total PeCDF	30402-15-4	ND	0.000048	0.0000006	ug/L		U	
Total TCDD	41903-57-5	ND	0.0000097	0.0000005	ug/L		U	
Total TCDF	30402-14-3	ND	0.0000097	0.0000003	ug/L		U	

Analysis Method 200.7 Rev 4.4

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Zinc	7440-66-6	ND	20	6.0	ug/L		U	
Zinc, Dissolved	7440-66-6	ND	20	6.0	ug/L		U	

Analysis Method 245.1

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Mercury	7439-97-6	ND	0.20	0.10	ug/L		UJ	C
Mercury, Dissolved	7439-97-6	ND	0.20	0.10	ug/L		U	

Analysis Method 314.0

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Perchlorate	14797-73-0	ND	4.0	0.95	ug/L		U	

Analysis Method Gamma Spec K-40 CS-137

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Cesium-137	10045973	0.12	20	1.3	pCi/L	U	U	
Potassium-40	13966002	-4.98	25	36.2	pCi/L	U	U	

Analysis Method Gross Alpha

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Gross Beta	12587472	2.24	4	2.01	pCi/L	J	J	DNQ
GrossAlpha	12587461	0.938	3	1.73	pCi/L	U	UJ	C

Analysis Method Radium Combined

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Radium-226	13982633	0.211	1	0.797	pCi/L	U	U	
Radium-228	15262201	0.229	1	0.414	pCi/L	U	U	

Analysis Method Strontium 90

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Strontium-90	10098972	-0.05	2	0.779	pCi/L	U	U	

Analysis Method Tritium

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Tritium	10028178	35.7	500	173	pCi/L	U	U	

Analysis Method Uranium, Combined

Sample Name Outfall 019 **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-28539-1 **Sample Date:** 11/2/2012 10:00:00 AM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Uranium, Total	NA	0.591	1	0.023	pCi/L	J	J	DNQ

APPENDIX F

Section 6

Outfall 019 – November 1 & 2, 2012

Test America Analytical Laboratory Report

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-28429-1
Client Project/Site: Monthly Outfall 019
Sampling Event: Quarterly Outfall 019

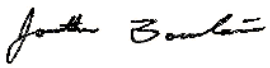
For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

Attn: Bronwyn Kelly

Authorized for release by:
12/11/2012 5:09:26 PM

Jonathan Bousselaire
Project Manager I
jonathan.bousselaire@testamericainc.com

I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



Jonathan Bousselaire
Project Manager I
12/11/2012 5:09:26 PM

Table of Contents

Cover Page 1
Table of Contents 3
Sample Summary 4
Client Sample Results 5
Chronicle 10
QC Sample Results 12
QC Association 32
Definitions 38
Certification Summary 40
Subcontract Data 41
Chain of Custody 82
Receipt Checklists 85

Sample Summary

Client: MWH Americas Inc
Project/Site: Monthly Outfall 019

TestAmerica Job ID: 440-28429-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-28429-1	Outfall 019 Grab	Water	11/01/12 08:30	11/01/12 17:40
440-28429-2	Trip Blank	Water	11/01/12 08:30	11/01/12 17:40
440-28539-1	Outfall 019	Water	11/02/12 10:00	11/02/12 17:10
440-28539-2	Trip Blank	Water	11/02/12 14:00	11/02/12 17:10

Client: MWH Americas Inc
Project/Site: Monthly Outfall 019

TestAmerica Job ID: 440-28429-1

Client Sample ID: Outfall 019 Grab

Lab Sample ID: 440-28429-1

Date Collected: 11/01/12 08:30
Matrix: Water
Date Received: 11/01/12 17:40

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			11/08/12 05:50	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			11/08/12 05:50	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			11/08/12 05:50	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			11/08/12 05:50	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			11/08/12 05:50	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			11/08/12 05:50	1
Benzene	ND		0.50	0.28	ug/L			11/08/12 05:50	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			11/08/12 05:50	1
Chloroform	ND		0.50	0.33	ug/L			11/08/12 05:50	1
Ethylbenzene	ND		0.50	0.25	ug/L			11/08/12 05:50	1
Tetrachloroethene	ND		0.50	0.32	ug/L			11/08/12 05:50	1
Toluene	ND		0.50	0.36	ug/L			11/08/12 05:50	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			11/08/12 05:50	1
Vinyl chloride	ND		0.50	0.40	ug/L			11/08/12 05:50	1
Trichloroethene	ND		0.50	0.26	ug/L			11/08/12 05:50	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			11/08/12 05:50	1
Xylenes, Total	ND		1.5	0.90	ug/L			11/08/12 05:50	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*90*		*80 - 120*		*11/08/12 05:50*	*1*
Dibromofluoromethane (Surr)	*113*		*80 - 120*		*11/08/12 05:50*	*1*
Toluene-d8 (Surr)	*99*		*80 - 120*		*11/08/12 05:50*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		4.7	1.3	mg/L		11/14/12 04:59	11/14/12 05:20	1

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Settleable Solids	ND		0.10	0.10	mL/L/Hr			11/02/12 15:25	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-28429-2

Date Collected: 11/01/12 08:30
Matrix: Water
Date Received: 11/01/12 17:40

Method: 624 - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			11/08/12 06:20	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			11/08/12 06:20	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			11/08/12 06:20	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			11/08/12 06:20	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			11/08/12 06:20	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			11/08/12 06:20	1
Benzene	ND		0.50	0.28	ug/L			11/08/12 06:20	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			11/08/12 06:20	1
Chloroform	ND		0.50	0.33	ug/L			11/08/12 06:20	1
Ethylbenzene	ND		0.50	0.25	ug/L			11/08/12 06:20	1
Tetrachloroethene	ND		0.50	0.32	ug/L			11/08/12 06:20	1
Toluene	ND		0.50	0.36	ug/L			11/08/12 06:20	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			11/08/12 06:20	1
Vinyl chloride	ND		0.50	0.40	ug/L			11/08/12 06:20	1
Trichloroethene	ND		0.50	0.26	ug/L			11/08/12 06:20	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-28429-2

Date Collected: 11/01/12 08:30

Matrix: Water

Date Received: 11/01/12 17:40

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			11/08/12 06:20	1
Xylenes, Total	ND		1.5	0.90	ug/L			11/08/12 06:20	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*91*		*80 - 120*		*11/08/12 06:20*	*1*
Dibromofluoromethane (Surr)	*116*		*80 - 120*		*11/08/12 06:20*	*1*
Toluene-d8 (Surr)	*101*		*80 - 120*		*11/08/12 06:20*	*1*

Client Sample ID: Outfall 019

Lab Sample ID: 440-28539-1

Date Collected: 11/02/12 10:00

Matrix: Water

Date Received: 11/02/12 17:10

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		5.66	0.0943	ug/L		11/06/12 14:41	11/10/12 02:54	1
Bis(2-ethylhexyl) phthalate	**3.29**	**J,DX**	4.72	1.60	ug/L		11/06/12 14:41	11/10/12 02:54	1
N-Nitrosodimethylamine	ND	BA	4.72	0.0943	ug/L		11/06/12 14:41	11/10/12 02:54	1
Pentachlorophenol	ND		4.72	0.377	ug/L		11/06/12 14:41	11/10/12 02:54	1
2,4-Dinitrotoluene	ND		4.72	0.189	ug/L		11/06/12 14:41	11/10/12 02:54	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*101*		*40 - 120*	*11/06/12 14:41*	*11/10/12 02:54*	*1*
2-Fluorobiphenyl	*78*		*50 - 120*	*11/06/12 14:41*	*11/10/12 02:54*	*1*
2-Fluorophenol	*74*		*30 - 120*	*11/06/12 14:41*	*11/10/12 02:54*	*1*
Nitrobenzene-d5	*94*		*45 - 120*	*11/06/12 14:41*	*11/10/12 02:54*	*1*
Phenol-d6	*74*		*35 - 120*	*11/06/12 14:41*	*11/10/12 02:54*	*1*
Terphenyl-d14	*104*		*50 - 125*	*11/06/12 14:41*	*11/10/12 02:54*	*1*

Method: 608 Pesticides - Organochlorine Pesticides Low level

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	**0.0025**	**J,DX**	0.0047	0.0024	ug/L		11/06/12 19:56	11/07/12 17:59	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*74*		*35 - 115*	*11/06/12 19:56*	*11/07/12 17:59*	*1*
DCB Decachlorobiphenyl (Surr)	*81*		*45 - 120*	*11/06/12 19:56*	*11/07/12 17:59*	*1*

Method: 300.0 - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	**35**		10	8.0	mg/L			11/03/12 01:24	20
Nitrate as N	ND		0.11	0.080	mg/L			11/03/12 01:10	1
Nitrate Nitrite as N	ND		0.26	0.11	mg/L			11/03/12 01:10	1
Sulfate	**150**		10	8.0	mg/L			11/03/12 01:24	20
Nitrite as N	ND		0.15	0.11	mg/L			11/03/12 01:10	1

Method: 314.0 - Perchlorate (IC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			11/05/12 22:07	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.0000097	0.00000052	ug/L		11/20/12 11:43	12/01/12 14:26	1

Client: MWH Americas Inc
Project/Site: Monthly Outfall 019

TestAmerica Job ID: 440-28429-1

Client Sample ID: Outfall 019
Date Collected: 11/02/12 10:00
Date Received: 11/02/12 17:10

Lab Sample ID: 440-28539-1
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Analyte	Result	Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDF	ND		0.0000097	0.00000030	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,7,8-PeCDD	ND		0.000048	0.00000096	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,7,8-PeCDF	ND		0.000048	0.00000064	ug/L		11/20/12 11:43	12/01/12 14:26	1
2,3,4,7,8-PeCDF	ND		0.000048	0.00000080	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,4,7,8-HxCDD	ND		0.000048	0.00000045	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,6,7,8-HxCDD	ND		0.000048	0.00000045	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,7,8,9-HxCDD	ND		0.000048	0.00000041	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,4,7,8-HxCDF	**0.00000073**	**J,DX**	0.000048	0.00000027	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,6,7,8-HxCDF	**0.00000057**	**J,DX**	0.000048	0.00000024	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,7,8,9-HxCDF	ND		0.000048	0.00000035	ug/L		11/20/12 11:43	12/01/12 14:26	1
2,3,4,6,7,8-HxCDF	**0.00000088**	**J,DX**	0.000048	0.00000026	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,4,6,7,8-HpCDD	**0.0000091**	**J,DX MB**	0.000048	0.00000077	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,4,6,7,8-HpCDF	**0.0000025**	**J,DX MB**	0.000048	0.00000053	ug/L		11/20/12 11:43	12/01/12 14:26	1
1,2,3,4,7,8,9-HpCDF	ND		0.000048	0.00000100	ug/L		11/20/12 11:43	12/01/12 14:26	1
OCDD	**0.000063**	**J,DX MB**	0.000097	0.00000180	ug/L		11/20/12 11:43	12/01/12 14:26	1
OCDF	ND		0.000097	0.00000160	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total TCDD	ND		0.0000097	0.00000052	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total TCDF	ND		0.0000097	0.00000030	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total PeCDD	ND		0.000048	0.00000096	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total PeCDF	ND		0.000048	0.00000064	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total HxCDD	ND		0.000048	0.00000041	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total HxCDF	**0.0000030**	**J,DX**	0.000048	0.00000028	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total HpCDD	**0.000014**	**J,DX MB**	0.000048	0.00000077	ug/L		11/20/12 11:43	12/01/12 14:26	1
Total HpCDF	**0.0000072**	**J,DX MB**	0.000048	0.00000078	ug/L		11/20/12 11:43	12/01/12 14:26	1

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*67*		*25 - 164*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-2,3,7,8-TCDF	*71*		*24 - 169*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,7,8-PeCDD	*62*		*25 - 181*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,7,8-PeCDF	*58*		*24 - 185*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-2,3,4,7,8-PeCDF	*60*		*21 - 178*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,4,7,8-HxCDD	*85*		*32 - 141*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,6,7,8-HxCDD	*69*		*28 - 130*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,4,7,8-HxCDF	*83*		*26 - 152*	*11/20/12 11:43*	*12/01/12 14:26*	*1*

Client Sample ID: Outfall 019
Date Collected: 11/02/12 10:00
Date Received: 11/02/12 17:10

Lab Sample ID: 440-28539-1
Matrix: Water

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Isotope Dilution	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-1,2,3,6,7,8-HxCDF	*93*		*26 - 123*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,7,8,9-HxCDF	*86*		*29 - 147*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-2,3,4,6,7,8-HxCDF	*89*		*28 - 136*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*76*		*23 - 140*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*81*		*28 - 143*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*79*		*26 - 138*	*11/20/12 11:43*	*12/01/12 14:26*	*1*
13C-OCDD	*77*		*17 - 157*	*11/20/12 11:43*	*12/01/12 14:26*	*1*

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*107*		*35 - 197*	*11/20/12 11:43*	*12/01/12 14:26*	*1*

Method: 200.7 Rev 4.4 - Metals (ICP) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		11/09/12 09:16	11/12/12 23:37	1

Method: 200.7 Rev 4.4 - Metals (ICP) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		11/07/12 12:03	11/08/12 14:17	1

Method: 200.8 - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		11/05/12 10:02	11/07/12 01:35	1
Copper	**0.59**	**J,DX**	2.0	0.50	ug/L		11/05/12 10:02	11/07/12 01:35	1
Lead	ND		1.0	0.20	ug/L		11/05/12 10:02	11/07/12 01:35	1
Selenium	ND		2.0	0.50	ug/L		11/05/12 10:02	11/07/12 01:35	1

Method: 200.8 - Metals (ICP/MS) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		11/08/12 13:29	11/09/12 21:46	1
Copper	ND		2.0	0.50	ug/L		11/08/12 13:29	11/09/12 21:46	1
Lead	ND		1.0	0.20	ug/L		11/08/12 13:29	11/09/12 21:46	1
Selenium	ND		2.0	0.50	ug/L		11/08/12 13:29	11/09/12 21:46	1

Method: 245.1 - Mercury (CVAA)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		11/11/12 16:30	11/12/12 16:51	1

Method: 245.1 - Mercury (CVAA) - Dissolved

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		11/12/12 13:05	11/12/12 19:53	1

General Chemistry

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	**0.10**		0.10	0.040	NTU			11/03/12 13:05	1
Total Dissolved Solids	**560**		10	10	mg/L			11/07/12 09:44	1
Total Suspended Solids	ND		10	10	mg/L			11/06/12 21:10	1
Cyanide, Total	ND		5.0	3.0	ug/L		11/13/12 18:49	11/14/12 00:14	1
Ammonia (as N)	**0.280**	**J,DX**	0.400	0.157	mg/L		11/08/12 18:46	11/08/12 20:10	1
Total Organic Carbon	ND		1.0	0.75	mg/L			11/09/12 03:30	1
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			11/02/12 22:06	1
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			11/03/12 08:30	1

Client: MWH Americas Inc
Project/Site: Monthly Outfall 019

TestAmerica Job ID: 440-28429-1

Client Sample ID: Outfall 019

Lab Sample ID: 440-28539-1

Date Collected: 11/02/12 10:00

Matrix: Water

Date Received: 11/02/12 17:10

Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cs-137	0.12	U	20		pCi/L		11/13/12 00:00	11/14/12 00:00	1
K-40	-4.98	U	25		pCi/L		11/13/12 00:00	11/14/12 00:00	1

Method: Gross Alpha - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Beta	2.24	J	4		pCi/L		11/20/12 00:00	11/26/12 14:59	1
GrossAlpha	0.938	U	3		pCi/L		11/20/12 00:00	11/26/12 14:59	1

Method: Radium Combined - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ra-226	0.211	U	1		pCi/L		11/26/12 00:00	11/26/12 12:41	1
Ra-228	0.229	U	1		pCi/L		11/26/12 00:00	11/26/12 12:41	1

Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sr-90	-0.05	U	2		pCi/L		11/26/12 00:00	11/26/12 13:48	1

Method: Tritium - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	35.7	U	500		pCi/L		11/21/12 00:00	11/22/12 22:44	1

Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
U Total	0.591	J	1		pCi/L		11/14/12 00:00	11/14/12 00:00	1

Client Sample ID: Trip Blank

Lab Sample ID: 440-28539-2

Date Collected: 11/02/12 14:00

Matrix: Water

Date Received: 11/02/12 17:10

Method: Gamma Spec K-40 CS-137 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cs-137	-0.7	U	20		pCi/L		11/13/12 00:00	11/14/12 00:00	1
K-40	-0.52	U	25		pCi/L		11/13/12 00:00	11/14/12 00:00	1

Method: Gross Alpha - Gross Alpha/Beta

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Beta	-0.392	U	4		pCi/L		11/20/12 00:00	11/21/12 10:08	1
GrossAlpha	-0.108	U	3		pCi/L		11/20/12 00:00	11/21/12 10:08	1

Method: Radium Combined - RAD-226-228 combined

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ra-226	0.024	U	1		pCi/L		11/26/12 00:00	11/26/12 12:41	1
Ra-228	-0.017	U	1		pCi/L		11/26/12 00:00	11/26/12 12:41	1

Method: Strontium 90 - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sr-90	0.442	U	2		pCi/L		11/26/12 00:00	11/26/12 13:48	1

Method: Uranium, Combined - General Sub Contract Method

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
U Total	-0.003	U	1		pCi/L		11/14/12 00:00	11/14/12 00:00	1

Client Sample ID: Outfall 019 Grab

Lab Sample ID: 440-28429-1

Date Collected: 11/01/12 08:30

Matrix: Water

Date Received: 11/01/12 17:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	65064	11/08/12 05:50	RM	TAL IRV
Total/NA	Analysis	SM 2540F		1	1080 mL	1080 mL	63856	11/02/12 15:25	TM	TAL IRV
Total/NA	Prep	1664A			1055 mL	1000 mL	66642	11/14/12 04:59	DA	TAL IRV
Total/NA	Analysis	1664A		1			66643	11/14/12 05:20	DA	TAL IRV

Client Sample ID: Trip Blank

Lab Sample ID: 440-28429-2

Date Collected: 11/01/12 08:30

Matrix: Water

Date Received: 11/01/12 17:40

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	624		1	10 mL	10 mL	65064	11/08/12 06:20	RM	TAL IRV

Client Sample ID: Outfall 019

Lab Sample ID: 440-28539-1

Date Collected: 11/02/12 10:00

Matrix: Water

Date Received: 11/02/12 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	625			1060 mL	2 mL	64655	11/06/12 14:41	AG	TAL IRV
Total/NA	Analysis	625		1			65744	11/10/12 02:54	AI	TAL IRV
Total/NA	Prep	608			1060 mL	2 mL	64809	11/06/12 19:56	AB	TAL IRV
Total/NA	Analysis	608 Pesticides		1			65003	11/07/12 17:59	CN	TAL IRV
Total/NA	Analysis	300.0		1	1 mL	1.0 mL	63736	11/03/12 01:10	NN	TAL IRV
Total/NA	Analysis	300.0		20	1 mL	1.0 mL	63737	11/03/12 01:24	NN	TAL IRV
Total/NA	Analysis	314.0		1	1 mL	1.0 mL	64210	11/05/12 22:07	CH	TAL IRV
Total/NA	Prep	1613B			1031.4 mL	20.0 uL	6166	11/20/12 11:43	ML	TAL WSC
Total/NA	Analysis	1613B		1			6718	12/01/12 14:26	MG	TAL WSC
Total Recoverable	Prep	200.2			50 mL	50 mL	64312	11/05/12 10:02	EN	TAL IRV
Total Recoverable	Analysis	200.8		1			64877	11/07/12 01:35	NH	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	64969	11/07/12 12:03	ND	TAL IRV
Dissolved	Analysis	200.7 Rev 4.4		1			65371	11/08/12 14:17	DT	TAL IRV
Dissolved	Prep	200.2			50 mL	50 mL	65352	11/08/12 13:29	ND	TAL IRV
Dissolved	Analysis	200.8		1			66099	11/09/12 21:46	NH	TAL IRV
Dissolved	Prep	245.1			20 mL	20 mL	66034	11/12/12 13:05	MM	TAL IRV
Dissolved	Analysis	245.1		1			66300	11/12/12 19:53	DB	TAL IRV
Total/NA	Prep	245.1			20 mL	20 mL	65797	11/11/12 16:30	MM	TAL IRV
Total/NA	Analysis	245.1		1			66301	11/12/12 16:51	DB	TAL IRV
Total Recoverable	Prep	200.2			50 mL	50 mL	65608	11/09/12 09:16	EN	TAL IRV
Total Recoverable	Analysis	200.7 Rev 4.4		1			66341	11/12/12 23:37	VS	TAL IRV
Total/NA	Analysis	SM 5540C		1	100 mL	100 mL	63978	11/02/12 22:06	CC	TAL IRV
Total/NA	Analysis	SM5210B		1			64012	11/03/12 08:30	TAI	TAL IRV
Total/NA	Analysis	180.1		1			64040	11/03/12 13:05	EC	TAL IRV
Total/NA	Analysis	SM 2540D		1	100 mL	100 mL	64823	11/06/12 21:10	DK	TAL IRV

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Monthly Outfall 019

TestAmerica Job ID: 440-28429-1

Client Sample ID: Outfall 019

Lab Sample ID: 440-28539-1

Date Collected: 11/02/12 10:00

Matrix: Water

Date Received: 11/02/12 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	SM 2540C		1	100 mL	100 mL	64929	11/07/12 09:44	XL	TAL IRV
Total/NA	Prep	SM 4500 NH3 B			50 mL	50 mL	65483	11/08/12 18:46	NC	TAL IRV
Total/NA	Analysis	SM 4500 NH3 C		1			65500	11/08/12 20:10	NC	TAL IRV
Total/NA	Analysis	SM 5310B		1			65527	11/09/12 03:30		TAL IRV
Total/NA	Prep	Distill/CN			50 mL	50 mL	66606	11/13/12 18:49	SP	TAL IRV
Total/NA	Analysis	SM 4500 CN E		1			66637	11/14/12 00:14	BT	TAL IRV
Total/NA	Prep	General Prep		1			8627_P	11/13/12 00:00		Eber-Rich
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8627	11/14/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/20/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha		1			8627	11/26/12 14:59		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/26/12 00:00		Eber-Rich
Total/NA	Analysis	Radium Combined		1			8627	11/26/12 12:41		Eber-Rich
Total/NA	Analysis	Strontium 90		1			8627	11/26/12 13:48		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/21/12 00:00		Eber-Rich
Total/NA	Analysis	Tritium		1			8627	11/22/12 22:44		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8627	11/14/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/14/12 00:00		Eber-Rich

Client Sample ID: Trip Blank

Lab Sample ID: 440-28539-2

Date Collected: 11/02/12 14:00

Matrix: Water

Date Received: 11/02/12 17:10

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	General Prep		1			8627_P	11/13/12 00:00		Eber-Rich
Total/NA	Analysis	Gamma Spec K-40 CS-137		1			8627	11/14/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/20/12 00:00		Eber-Rich
Total/NA	Analysis	Gross Alpha		1			8627	11/21/12 10:08		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/26/12 00:00		Eber-Rich
Total/NA	Analysis	Radium Combined		1			8627	11/26/12 12:41		Eber-Rich
Total/NA	Analysis	Strontium 90		1			8627	11/26/12 13:48		Eber-Rich
Total/NA	Analysis	Uranium, Combined		1			8627	11/14/12 00:00		Eber-Rich
Total/NA	Prep	General Prep		1			8627_P	11/14/12 00:00		Eber-Rich

Laboratory References:

Eber-Rich = Eberline - Richmond, 2030 Wright Avenue, Richmond, CA 94804

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

TAL WSC = TestAmerica West Sacramento, 880 Riverside Parkway, West Sacramento, CA 95605, TEL (916)373-5600

Method: 624 - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-65064/4
Matrix: Water
Analysis Batch: 65064

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,1-Trichloroethane	ND		0.50	0.30	ug/L			11/07/12 19:50	1
1,1,2-Trichloroethane	ND		0.50	0.30	ug/L			11/07/12 19:50	1
1,1-Dichloroethane	ND		0.50	0.40	ug/L			11/07/12 19:50	1
Trichlorotrifluoroethane(F-113)	ND		5.0	0.50	ug/L			11/07/12 19:50	1
1,1-Dichloroethene	ND		0.50	0.42	ug/L			11/07/12 19:50	1
1,2-Dichloroethane	ND		0.50	0.28	ug/L			11/07/12 19:50	1
Benzene	ND		0.50	0.28	ug/L			11/07/12 19:50	1
Carbon tetrachloride	ND		0.50	0.28	ug/L			11/07/12 19:50	1
Chloroform	ND		0.50	0.33	ug/L			11/07/12 19:50	1
Ethylbenzene	ND		0.50	0.25	ug/L			11/07/12 19:50	1
Tetrachloroethene	ND		0.50	0.32	ug/L			11/07/12 19:50	1
Toluene	ND		0.50	0.36	ug/L			11/07/12 19:50	1
Trichlorofluoromethane	ND		0.50	0.34	ug/L			11/07/12 19:50	1
Vinyl chloride	ND		0.50	0.40	ug/L			11/07/12 19:50	1
Trichloroethene	ND		0.50	0.26	ug/L			11/07/12 19:50	1
cis-1,2-Dichloroethene	ND		0.50	0.32	ug/L			11/07/12 19:50	1
Xylenes, Total	ND		1.5	0.90	ug/L			11/07/12 19:50	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
4-Bromofluorobenzene (Surr)	*94*		*80 - 120*		*11/07/12 19:50*	*1*
Dibromofluoromethane (Surr)	*105*		*80 - 120*		*11/07/12 19:50*	*1*
Toluene-d8 (Surr)	*100*		*80 - 120*		*11/07/12 19:50*	*1*

Lab Sample ID: LCS 440-65064/5
Matrix: Water
Analysis Batch: 65064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	25.0	27.5		ug/L		110	65 - 135
1,1,2-Trichloroethane	25.0	22.7		ug/L		91	70 - 125
1,1-Dichloroethane	25.0	24.3		ug/L		97	70 - 125
1,1-Dichloroethene	25.0	23.8		ug/L		95	70 - 125
1,2-Dichloroethane	25.0	25.6		ug/L		103	60 - 140
Benzene	25.0	22.6		ug/L		90	70 - 120
Carbon tetrachloride	25.0	29.5		ug/L		118	65 - 140
Chloroform	25.0	23.6		ug/L		95	70 - 130
Ethylbenzene	25.0	24.3		ug/L		97	75 - 125
Tetrachloroethene	25.0	27.2		ug/L		109	70 - 125
Toluene	25.0	24.6		ug/L		98	70 - 120
Trichlorofluoromethane	25.0	30.6		ug/L		123	65 - 145
Vinyl chloride	25.0	25.0		ug/L		100	55 - 135
Trichloroethene	25.0	26.5		ug/L		106	70 - 125
cis-1,2-Dichloroethene	25.0	25.4		ug/L		102	70 - 125
m,p-Xylene	50.0	53.5		ug/L		107	75 - 125
o-Xylene	25.0	27.4		ug/L		110	75 - 125
Xylenes, Total	75.0	80.9		ug/L		108	70 - 125

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-65064/5
Matrix: Water
Analysis Batch: 65064

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Surrogate	LCS %Recovery	LCS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*109*		*80 - 120*
Toluene-d8 (Surr)	*101*		*80 - 120*

Lab Sample ID: 440-28378-F-2 MS
Matrix: Water
Analysis Batch: 65064

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
1,1,1-Trichloroethane	ND		25.0	27.8		ug/L		111	65 - 140
1,1,2-Trichloroethane	ND		25.0	21.9		ug/L		88	65 - 130
1,1-Dichloroethane	ND		25.0	23.7		ug/L		95	65 - 130
1,1-Dichloroethene	ND		25.0	23.7		ug/L		95	60 - 130
1,2-Dichloroethane	ND		25.0	25.1		ug/L		100	60 - 140
Benzene	ND		25.0	22.8		ug/L		91	65 - 125
Carbon tetrachloride	ND		25.0	30.9		ug/L		124	65 - 140
Chloroform	0.46	J,DX	25.0	23.1		ug/L		91	65 - 135
Ethylbenzene	ND		25.0	25.4		ug/L		102	65 - 130
Tetrachloroethene	ND		25.0	29.6		ug/L		118	65 - 130
Toluene	ND		25.0	24.9		ug/L		100	70 - 125
Trichlorofluoromethane	0.38	J,DX	25.0	31.7		ug/L		125	60 - 145
Vinyl chloride	ND		25.0	25.9		ug/L		104	45 - 140
Trichloroethene	0.52		25.0	27.8		ug/L		109	65 - 125
cis-1,2-Dichloroethene	ND		25.0	24.7		ug/L		99	65 - 130
m,p-Xylene	ND		50.0	55.4		ug/L		111	65 - 130
o-Xylene	ND		25.0	28.0		ug/L		112	65 - 125
Xylenes, Total	ND		75.0	83.4		ug/L		111	60 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
4-Bromofluorobenzene (Surr)	*100*		*80 - 120*
Dibromofluoromethane (Surr)	*104*		*80 - 120*
Toluene-d8 (Surr)	*100*		*80 - 120*

Lab Sample ID: 440-28378-F-2 MSD
Matrix: Water
Analysis Batch: 65064

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
1,1,1-Trichloroethane	ND		25.0	27.0		ug/L		108	65 - 140	3	20
1,1,2-Trichloroethane	ND		25.0	21.9		ug/L		87	65 - 130	0	25
1,1-Dichloroethane	ND		25.0	23.8		ug/L		95	65 - 130	1	20
1,1-Dichloroethene	ND		25.0	24.1		ug/L		96	60 - 130	2	20
1,2-Dichloroethane	ND		25.0	25.0		ug/L		100	60 - 140	0	20
Benzene	ND		25.0	23.3		ug/L		93	65 - 125	2	20
Carbon tetrachloride	ND		25.0	30.6		ug/L		122	65 - 140	1	25
Chloroform	0.46	J,DX	25.0	22.4		ug/L		88	65 - 135	3	20
Ethylbenzene	ND		25.0	24.9		ug/L		99	65 - 130	2	20
Tetrachloroethene	ND		25.0	28.5		ug/L		114	65 - 130	4	20

Method: 624 - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 440-28378-F-2 MSD
Matrix: Water
Analysis Batch: 65064

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Toluene	ND		25.0	24.9		ug/L		100	70 - 125	0	20
Trichlorofluoromethane	0.38	J,DX	25.0	30.5		ug/L		120	60 - 145	4	25
Vinyl chloride	ND		25.0	26.1		ug/L		104	45 - 140	1	30
Trichloroethene	0.52		25.0	27.5		ug/L		108	65 - 125	1	20
cis-1,2-Dichloroethene	ND		25.0	24.4		ug/L		98	65 - 130	1	20
m,p-Xylene	ND		50.0	53.9		ug/L		108	65 - 130	3	25
o-Xylene	ND		25.0	27.6		ug/L		110	65 - 125	2	20
Xylenes, Total	ND		75.0	81.5		ug/L		109	60 - 130	2	20

Surrogate	*MSD %Recovery*	*MSD Qualifier*	*Limits*
4-Bromofluorobenzene (Surr)	*98*		*80 - 120*
Dibromofluoromethane (Surr)	*102*		*80 - 120*
Toluene-d8 (Surr)	*102*		*80 - 120*

Method: 625 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-64655/1-A
Matrix: Water
Analysis Batch: 65744

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64655

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2,4,6-Trichlorophenol	ND		6.00	0.100	ug/L		11/06/12 12:58	11/09/12 18:51	1
Bis(2-ethylhexyl) phthalate	ND		5.00	1.70	ug/L		11/06/12 12:58	11/09/12 18:51	1
N-Nitrosodimethylamine	ND		5.00	0.100	ug/L		11/06/12 12:58	11/09/12 18:51	1
Pentachlorophenol	ND		5.00	0.400	ug/L		11/06/12 12:58	11/09/12 18:51	1
2,4-Dinitrotoluene	ND		5.00	0.200	ug/L		11/06/12 12:58	11/09/12 18:51	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
2,4,6-Tribromophenol	*96*		*40 - 120*	*11/06/12 12:58*	*11/09/12 18:51*	*1*
2-Fluorobiphenyl	*97*		*50 - 120*	*11/06/12 12:58*	*11/09/12 18:51*	*1*
2-Fluorophenol	*68*		*30 - 120*	*11/06/12 12:58*	*11/09/12 18:51*	*1*
Nitrobenzene-d5	*83*		*45 - 120*	*11/06/12 12:58*	*11/09/12 18:51*	*1*
Phenol-d6	*68*		*35 - 120*	*11/06/12 12:58*	*11/09/12 18:51*	*1*
Terphenyl-d14	*90*		*50 - 125*	*11/06/12 12:58*	*11/09/12 18:51*	*1*

Lab Sample ID: LCS 440-64655/2-A
Matrix: Water
Analysis Batch: 65744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64655

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,4,6-Trichlorophenol	10.0	9.537		ug/L		95	20 - 139
Bis(2-ethylhexyl) phthalate	10.0	10.81		ug/L		108	61 - 126
N-Nitrosodimethylamine	10.0	8.142		ug/L		81	20 - 143
Pentachlorophenol	10.0	6.053		ug/L		61	20 - 137

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2,4,6-Tribromophenol	*104*		*40 - 120*

Method: 625 - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 440-64655/2-A
Matrix: Water
Analysis Batch: 65744

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64655

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
2-Fluorobiphenyl	*96*		*50 - 120*
2-Fluorophenol	*80*		*30 - 120*
Nitrobenzene-d5	*94*		*45 - 120*
Phenol-d6	*80*		*35 - 120*
Terphenyl-d14	*103*		*50 - 125*

Lab Sample ID: LCSD 440-64655/3-A
Matrix: Water
Analysis Batch: 65744

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 64655

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
2,4,6-Trichlorophenol			10.0	8.890		ug/L		89	20 - 139	7	30
Bis(2-ethylhexyl) phthalate			10.0	9.751		ug/L		98	61 - 126	10	20
N-Nitrosodimethylamine			10.0	6.540	BA	ug/L		65	20 - 143	22	20
Pentachlorophenol			10.0	6.166		ug/L		62	20 - 137	2	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
2,4,6-Tribromophenol	*93*		*40 - 120*
2-Fluorobiphenyl	*83*		*50 - 120*
2-Fluorophenol	*70*		*30 - 120*
Nitrobenzene-d5	*76*		*45 - 120*
Phenol-d6	*72*		*35 - 120*
Terphenyl-d14	*92*		*50 - 125*

Method: 608 Pesticides - Organochlorine Pesticides Low level

Lab Sample ID: MB 440-64809/1-A
Matrix: Water
Analysis Batch: 65003

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 64809

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
alpha-BHC	ND		0.0050	0.0025	ug/L		11/06/12 19:56	11/07/12 16:08	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*78*		*35 - 115*	*11/06/12 19:56*	*11/07/12 16:08*	*1*
DCB Decachlorobiphenyl (Surr)	*83*		*45 - 120*	*11/06/12 19:56*	*11/07/12 16:08*	*1*

Lab Sample ID: LCS 440-64809/2-A
Matrix: Water
Analysis Batch: 65003

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 64809

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
alpha-BHC			0.500	0.491		ug/L		98	45 - 115		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
Tetrachloro-m-xylene	*81*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*86*		*45 - 120*

Method: 608 Pesticides - Organochlorine Pesticides Low level (Continued)

Lab Sample ID: LCSD 440-64809/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 65003 — **Prep Batch: 64809**

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
alpha-BHC			0.500	0.452		ug/L		90	45 - 115	8	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
Tetrachloro-m-xylene	*75*		*35 - 115*
DCB Decachlorobiphenyl (Surr)	*81*		*45 - 120*

Method: 300.0 - Anions, Ion Chromatography

Lab Sample ID: MB 440-63736/17 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63736

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Nitrate as N	ND		0.11	0.080	mg/L			11/02/12 18:59	1
Nitrate Nitrite as N	ND		0.26	0.11	mg/L			11/02/12 18:59	1
Nitrite as N	ND		0.15	0.11	mg/L			11/02/12 18:59	1

Lab Sample ID: LCS 440-63736/38 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63736

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N			1.13	1.16		mg/L		103	90 - 110		
Nitrate Nitrite as N			2.65	2.75		mg/L		104	90 - 110		
Nitrite as N			1.52	1.59		mg/L		104	90 - 110		

Lab Sample ID: 440-28523-C-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63736

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Nitrate as N	ND		11.3	15.7	LM	mg/L		139	80 - 120		
Nitrate Nitrite as N	ND		26.5	36.6	LM	mg/L		138	80 - 120		
Nitrite as N	ND		15.2	20.9	LM	mg/L		138	80 - 120		

Lab Sample ID: 440-28523-C-1 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63736

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Nitrate as N	ND		11.3	15.0	LM	mg/L		133	80 - 120	4	20
Nitrate Nitrite as N	ND		26.5	35.0	LM	mg/L		132	80 - 120	4	20
Nitrite as N	ND		15.2	20.0	LM	mg/L		131	80 - 120	5	20

Method: 300.0 - Anions, Ion Chromatography (Continued)

Lab Sample ID: MB 440-63737/17 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63737

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chloride	ND		0.50	0.40	mg/L			11/02/12 18:59	1
Sulfate	ND		0.50	0.40	mg/L			11/02/12 18:59	1

Lab Sample ID: LCS 440-63737/38 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63737

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	5.00	4.81		mg/L		96	90 - 110
Sulfate	10.0	9.74		mg/L		97	90 - 110

Lab Sample ID: 440-28523-C-1 MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63737

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Chloride	150		50.0	211	LM	mg/L		121	80 - 120
Sulfate	490		100	600	BB	mg/L		114	80 - 120

Lab Sample ID: 440-28523-C-1 MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63737

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chloride	150		50.0	210		mg/L		119	80 - 120	0	20
Sulfate	490		100	603	BB	mg/L		117	80 - 120	0	20

Method: 314.0 - Perchlorate (IC)

Lab Sample ID: MB 440-64210/5 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64210

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Perchlorate	ND		4.0	0.95	ug/L			11/05/12 07:32	1

Lab Sample ID: LCS 440-64210/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64210

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	25.0	25.4		ug/L		102	85 - 115

Lab Sample ID: MRL 440-64210/2 MRL — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64210

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	4.00	3.83	J,DX	ug/L		96	

Method: 314.0 - Perchlorate (IC) (Continued)

Lab Sample ID: 440-28500-E-3 MS
Matrix: Water
Analysis Batch: 64210

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Perchlorate	ND		25.0	26.5		ug/L		106	80 - 120

Lab Sample ID: 440-28500-E-3 MSD
Matrix: Water
Analysis Batch: 64210

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Perchlorate	ND		25.0	27.3		ug/L		109	80 - 120	3	20

Method: 1613B - Dioxins and Furans (HRGC/HRMS)

Lab Sample ID: MB 320-6166/1-A
Matrix: Water
Analysis Batch: 6718

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6166

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		0.000010	0.00000060	ug/L		11/20/12 11:43	12/01/12 13:42	1
2,3,7,8-TCDF	ND		0.000010	0.00000041	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,7,8-PeCDD	ND		0.000050	0.0000019	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,7,8-PeCDF	ND		0.000050	0.0000015	ug/L		11/20/12 11:43	12/01/12 13:42	1
2,3,4,7,8-PeCDF	ND		0.000050	0.0000017	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,4,7,8-HxCDD	ND		0.000050	0.0000010	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,6,7,8-HxCDD	ND		0.000050	0.00000095	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,7,8,9-HxCDD	ND		0.000050	0.00000089	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,4,7,8-HxCDF	ND		0.000050	0.00000065	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,6,7,8-HxCDF	ND		0.000050	0.00000061	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,7,8,9-HxCDF	ND		0.000050	0.0000011	ug/L		11/20/12 11:43	12/01/12 13:42	1
2,3,4,6,7,8-HxCDF	ND		0.000050	0.00000061	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,4,6,7,8-HpCDD	0.0000141	J,DX	0.000050	0.0000023	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,4,6,7,8-HpCDF	0.00000337	J,DX	0.000050	0.0000013	ug/L		11/20/12 11:43	12/01/12 13:42	1
1,2,3,4,7,8,9-HpCDF	ND		0.000050	0.0000024	ug/L		11/20/12 11:43	12/01/12 13:42	1
OCDD	0.0000898	J,DX	0.00010	0.0000049	ug/L		11/20/12 11:43	12/01/12 13:42	1
OCDF	ND		0.00010	0.0000042	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total TCDD	ND		0.000010	0.00000060	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total TCDF	ND		0.000010	0.00000041	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total PeCDD	ND		0.000050	0.0000019	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total PeCDF	ND		0.000050	0.0000015	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total HxCDD	ND		0.000050	0.00000089	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total HxCDF	ND		0.000050	0.00000061	ug/L		11/20/12 11:43	12/01/12 13:42	1
Total HpCDD	0.0000189	J,DX	0.000050	0.0000023	ug/L		11/20/12 11:43	12/01/12 13:42	1

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: MB 320-6166/1-A
Matrix: Water
Analysis Batch: 6718

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 6166

Analyte	MB Result	MB Qualifier	RL	EDL	Unit	D	Prepared	Analyzed	Dil Fac
Total HpCDF	0.00000971	J,DX	0.000050	0.0000018	ug/L		11/20/12 11:43	12/01/12 13:42	1

Isotope Dilution	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
13C-2,3,7,8-TCDD	*54*		*25 - 164*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-2,3,7,8-TCDF	*64*		*24 - 169*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,7,8-PeCDD	*35*		*25 - 181*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,7,8-PeCDF	*32*		*24 - 185*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-2,3,4,7,8-PeCDF	*37*		*21 - 178*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,4,7,8-HxCDD	*32*		*32 - 141*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,6,7,8-HxCDD	*39*		*28 - 130*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,4,7,8-HxCDF	*41*		*26 - 152*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,6,7,8-HxCDF	*42*		*26 - 123*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,7,8,9-HxCDF	*36*		*29 - 147*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-2,3,4,6,7,8-HxCDF	*44*		*28 - 136*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,4,6,7,8-HpCDD	*32*		*23 - 140*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,4,6,7,8-HpCDF	*35*		*28 - 143*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-1,2,3,4,7,8,9-HpCDF	*32*		*26 - 138*	*11/20/12 11:43*	*12/01/12 13:42*	*1*
13C-OCDD	*27*		*17 - 157*	*11/20/12 11:43*	*12/01/12 13:42*	*1*

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
37Cl4-2,3,7,8-TCDD	*113*		*35 - 197*	*11/20/12 11:43*	*12/01/12 13:42*	*1*

Lab Sample ID: LCS 320-6166/2-A
Matrix: Water
Analysis Batch: 6427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 6166

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
2,3,7,8-TCDD	0.000200	0.000176		ug/L		88	67 - 158
2,3,7,8-TCDF	0.000200	0.000182		ug/L		91	75 - 158
1,2,3,7,8-PeCDD	0.00100	0.000919		ug/L		92	70 - 142
1,2,3,7,8-PeCDF	0.00100	0.00102		ug/L		102	80 - 134
2,3,4,7,8-PeCDF	0.00100	0.000995		ug/L		99	68 - 160
1,2,3,4,7,8-HxCDD	0.00100	0.00107		ug/L		107	70 - 164
1,2,3,6,7,8-HxCDD	0.00100	0.00107		ug/L		107	76 - 134
1,2,3,7,8,9-HxCDD	0.00100	0.00107		ug/L		107	64 - 162
1,2,3,4,7,8-HxCDF	0.00100	0.000944		ug/L		94	72 - 134
1,2,3,6,7,8-HxCDF	0.00100	0.000923		ug/L		92	84 - 130
1,2,3,7,8,9-HxCDF	0.00100	0.000924		ug/L		92	78 - 130
2,3,4,6,7,8-HxCDF	0.00100	0.000939		ug/L		94	70 - 156
1,2,3,4,6,7,8-HpCDD	0.00100	0.000965		ug/L		97	70 - 140
1,2,3,4,6,7,8-HpCDF	0.00100	0.00104		ug/L		104	82 - 122
1,2,3,4,7,8,9-HpCDF	0.00100	0.00106		ug/L		106	78 - 138
OCDD	0.00200	0.00198		ug/L		99	78 - 144
OCDF	0.00200	0.00211		ug/L		106	63 - 170

Isotope Dilution	*LCS %Recovery*	*LCS Qualifier*	*Limits*
13C-2,3,7,8-TCDD	*66*		*20 - 175*
13C-2,3,7,8-TCDF	*68*		*22 - 152*

Method: 1613B - Dioxins and Furans (HRGC/HRMS) (Continued)

Lab Sample ID: LCS 320-6166/2-A
Matrix: Water
Analysis Batch: 6427

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 6166

Isotope Dilution	LCS %Recovery	LCS Qualifier	Limits
13C-1,2,3,7,8-PeCDD	66		21 - 227
13C-1,2,3,7,8-PeCDF	63		21 - 192
13C-2,3,4,7,8-PeCDF	66		13 - 328
13C-1,2,3,4,7,8-HxCDD	69		21 - 193
13C-1,2,3,6,7,8-HxCDD	81		25 - 163
13C-1,2,3,4,7,8-HxCDF	79		19 - 202
13C-1,2,3,6,7,8-HxCDF	87		21 - 159
13C-1,2,3,7,8,9-HxCDF	80		17 - 205
13C-2,3,4,6,7,8-HxCDF	85		22 - 176
13C-1,2,3,4,6,7,8-HpCDD	77		26 - 166
13C-1,2,3,4,6,7,8-HpCDF	80		21 - 158
13C-1,2,3,4,7,8,9-HpCDF	76		20 - 186
13C-OCDD	76		13 - 199

Surrogate	LCS %Recovery	LCS Qualifier	Limits
37Cl4-2,3,7,8-TCDD	107		35 - 197

Method: 200.7 Rev 4.4 - Metals (ICP)

Lab Sample ID: MB 440-65608/1-A
Matrix: Water
Analysis Batch: 66341

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 65608

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		11/09/12 09:16	11/12/12 22:49	1

Lab Sample ID: LCS 440-65608/2-A
Matrix: Water
Analysis Batch: 66341

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 65608

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	500	542		ug/L		108	85 - 115

Lab Sample ID: 440-28422-A-4-B MS
Matrix: Water
Analysis Batch: 66341

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 65608

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	ND		500	534		ug/L		107	70 - 130

Lab Sample ID: 440-28422-A-4-C MSD
Matrix: Water
Analysis Batch: 66341

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 65608

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	ND		500	527		ug/L		105	70 - 130	1	20

Method: 200.7 Rev 4.4 - Metals (ICP) (Continued)

Lab Sample ID: MB 440-64377/1-B — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 65371 — **Prep Batch: 64969**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Zinc	ND		20	6.0	ug/L		11/07/12 12:03	11/08/12 14:05	1

Lab Sample ID: LCS 440-64377/2-B — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 65371 — **Prep Batch: 64969**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	500	511		ug/L		102	85 - 115

Lab Sample ID: 440-28503-B-1-C MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 65371 — **Prep Batch: 64969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Zinc	ND		500	513		ug/L		103	70 - 130

Lab Sample ID: 440-28503-B-1-D MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 65371 — **Prep Batch: 64969**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Zinc	ND		500	508		ug/L		102	70 - 130	1	20

Method: 200.8 - Metals (ICP/MS)

Lab Sample ID: MB 440-64312/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 64877 — **Prep Batch: 64312**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		11/05/12 10:02	11/07/12 00:12	1
Copper	ND		2.0	0.50	ug/L		11/05/12 10:02	11/07/12 00:12	1
Lead	ND		1.0	0.20	ug/L		11/05/12 10:02	11/07/12 00:12	1
Selenium	ND		2.0	0.50	ug/L		11/05/12 10:02	11/07/12 00:12	1

Lab Sample ID: LCS 440-64312/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total Recoverable**
Analysis Batch: 64877 — **Prep Batch: 64312**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	76.5		ug/L		96	85 - 115
Copper	80.0	76.7		ug/L		96	85 - 115
Lead	80.0	81.5		ug/L		102	85 - 115
Selenium	80.0	81.0		ug/L		101	85 - 115

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 440-28453-A-4-B MS ^5
Matrix: Water
Analysis Batch: 64877

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 64312

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		80.0	71.2		ug/L		89	70 - 130
Copper	11		80.0	75.1		ug/L		80	70 - 130
Lead	ND		80.0	70.9		ug/L		89	70 - 130
Selenium	110		80.0	176		ug/L		88	70 - 130

Lab Sample ID: 440-28453-A-4-C MSD ^5
Matrix: Water
Analysis Batch: 64877

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 64312

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		80.0	73.7		ug/L		92	70 - 130	3	20
Copper	11		80.0	77.5		ug/L		83	70 - 130	3	20
Lead	ND		80.0	72.6		ug/L		91	70 - 130	2	20
Selenium	110		80.0	180		ug/L		93	70 - 130	2	20

Lab Sample ID: MB 440-64377/1-C
Matrix: Water
Analysis Batch: 66099

Client Sample ID: Method Blank
Prep Type: Dissolved
Prep Batch: 65352

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cadmium	ND		1.0	0.10	ug/L		11/08/12 13:29	11/09/12 21:41	1
Copper	ND		2.0	0.50	ug/L		11/08/12 13:29	11/09/12 21:41	1
Lead	ND		1.0	0.20	ug/L		11/08/12 13:29	11/09/12 21:41	1
Selenium	ND		2.0	0.50	ug/L		11/08/12 13:29	11/09/12 21:41	1

Lab Sample ID: LCS 440-64377/2-C
Matrix: Water
Analysis Batch: 66099

Client Sample ID: Lab Control Sample
Prep Type: Dissolved
Prep Batch: 65352

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	80.0	81.4		ug/L		102	85 - 115
Copper	80.0	82.1		ug/L		103	85 - 115
Lead	80.0	79.6		ug/L		100	85 - 115
Selenium	80.0	80.0		ug/L		100	85 - 115

Lab Sample ID: 440-28539-1 MS
Matrix: Water
Analysis Batch: 66099

Client Sample ID: Outfall 019
Prep Type: Dissolved
Prep Batch: 65352

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cadmium	ND		80.0	78.2		ug/L		98	70 - 130
Copper	ND		80.0	74.2		ug/L		93	70 - 130
Lead	ND		80.0	75.5		ug/L		94	70 - 130
Selenium	ND		80.0	76.2		ug/L		95	70 - 130

Method: 200.8 - Metals (ICP/MS) (Continued)

Lab Sample ID: 440-28539-1 MSD — **Client Sample ID: Outfall 019**
Matrix: Water — **Prep Type: Dissolved**
Analysis Batch: 66099 — **Prep Batch: 65352**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cadmium	ND		80.0	78.4		ug/L		98	70 - 130	0	20
Copper	ND		80.0	72.8		ug/L		91	70 - 130	2	20
Lead	ND		80.0	75.6		ug/L		94	70 - 130	0	20
Selenium	ND		80.0	76.5		ug/L		96	70 - 130	0	20

Method: 245.1 - Mercury (CVAA)

Lab Sample ID: MB 440-65797/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66301 — **Prep Batch: 65797**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		11/11/12 16:30	11/12/12 16:18	1

Lab Sample ID: LCS 440-65797/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66301 — **Prep Batch: 65797**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	7.31		ug/L		91	85 - 115

Lab Sample ID: 440-28907-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66301 — **Prep Batch: 65797**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	ND		8.00	7.79		ug/L		97	70 - 130

Lab Sample ID: 440-28907-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66301 — **Prep Batch: 65797**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		8.00	7.49		ug/L		94	70 - 130	4	20

Lab Sample ID: MB 440-66034/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66300 — **Prep Batch: 66034**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.20	0.10	ug/L		11/12/12 13:05	11/12/12 19:46	1

Lab Sample ID: LCS 440-66034/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66300 — **Prep Batch: 66034**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Mercury	8.00	8.54		ug/L		107	85 - 115

Method: 245.1 - Mercury (CVAA) (Continued)

Lab Sample ID: LCSD 440-66034/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66300 — **Prep Batch: 66034**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	8.00	8.64		ug/L		108	85 - 115	1	20

Method: 1664A - HEM and SGT-HEM

Lab Sample ID: MB 440-66642/1-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66643 — **Prep Batch: 66642**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
HEM	ND		5.0	1.4	mg/L		11/14/12 04:59	11/14/12 05:20	1

Lab Sample ID: LCS 440-66642/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66643 — **Prep Batch: 66642**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
HEM	20.0	18.4		mg/L		92	78 - 114

Lab Sample ID: LCSD 440-66642/3-A — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66643 — **Prep Batch: 66642**

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
HEM	20.0	17.7		mg/L		88	78 - 114	4	11

Method: 180.1 - Turbidity, Nephelometric

Lab Sample ID: MB 440-64040/6 — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64040

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Turbidity	0.0400		0.10	0.040	NTU			11/03/12 13:05	1

Lab Sample ID: MRL 440-64040/3 MRL — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64040

Analyte	Spike Added	MRL Result	MRL Qualifier	Unit	D	%Rec	%Rec. Limits
Turbidity	0.100	0.120		NTU		120	

Lab Sample ID: 440-28523-F-1 DU — **Client Sample ID: Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64040

Analyte	Sample Result	Sample Qualifier	DU Result	DU Qualifier	Unit	D	RPD	RPD Limit
Turbidity	4.8		4.83		NTU		2	20

Method: SM 2540C - Solids, Total Dissolved (TDS)

Lab Sample ID: MB 440-64929/1
Matrix: Water
Analysis Batch: 64929

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Dissolved Solids	ND		10	10	mg/L			11/07/12 09:44	1

Lab Sample ID: LCS 440-64929/2
Matrix: Water
Analysis Batch: 64929

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Dissolved Solids			1000	1030		mg/L		103	90 - 110		

Lab Sample ID: 440-28399-J-1 DU
Matrix: Water
Analysis Batch: 64929

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Dissolved Solids	1100			1080		mg/L				2	10

Method: SM 2540D - Solids, Total Suspended (TSS)

Lab Sample ID: MB 440-64823/1
Matrix: Water
Analysis Batch: 64823

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Suspended Solids	ND		10	10	mg/L			11/06/12 21:10	1

Lab Sample ID: LCS 440-64823/2
Matrix: Water
Analysis Batch: 64823

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Total Suspended Solids			1000	1000		mg/L		100	85 - 115		

Lab Sample ID: 440-28757-B-1 DU
Matrix: Water
Analysis Batch: 64823

Client Sample ID: Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Total Suspended Solids	150			154		mg/L				2	10

Method: SM 4500 CN E - Cyanide, Total (Low Level)

Lab Sample ID: MB 440-66606/1-A
Matrix: Water
Analysis Batch: 66637

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 66606

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cyanide, Total	ND		5.0	3.0	ug/L		11/13/12 18:49	11/14/12 00:14	1

Method: SM 4500 CN E - Cyanide, Total (Low Level) (Continued)

Lab Sample ID: LCS 440-66606/2-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66637 — **Prep Batch: 66606**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	100	100		ug/L		100	90 - 110

Lab Sample ID: 440-28767-A-1-B MS — **Client Sample ID: Matrix Spike**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66637 — **Prep Batch: 66606**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Cyanide, Total	ND		100	95.5		ug/L		96	70 - 115

Lab Sample ID: 440-28767-A-1-C MSD — **Client Sample ID: Matrix Spike Duplicate**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 66637 — **Prep Batch: 66606**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Cyanide, Total	ND		100	94.7		ug/L		95	70 - 115	1	15

Method: SM 4500 NH3 C - Ammonia

Lab Sample ID: MB 440-65483/2-A — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 65500 — **Prep Batch: 65483**

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ammonia (as N)	ND		0.400	0.157	mg/L		11/08/12 18:46	11/08/12 20:10	1

Lab Sample ID: LCS 440-65483/1-A — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 65500 — **Prep Batch: 65483**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	10.0	9.240		mg/L		92	85 - 115

Lab Sample ID: 440-28539-1 MS — **Client Sample ID: Outfall 019**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 65500 — **Prep Batch: 65483**

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Ammonia (as N)	0.280	J,DX	10.0	9.800		mg/L		95	70 - 120

Lab Sample ID: 440-28539-1 MSD — **Client Sample ID: Outfall 019**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 65500 — **Prep Batch: 65483**

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Ammonia (as N)	0.280	J,DX	10.0	9.800		mg/L		95	70 - 120	0	15

Method: SM 5310B - Organic Carbon, Total (TOC)

Lab Sample ID: MB 440-65527/8
Matrix: Water
Analysis Batch: 65527

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Organic Carbon	ND		1.0	0.75	mg/L			11/08/12 20:28	1

Lab Sample ID: LCS 440-65527/7
Matrix: Water
Analysis Batch: 65527

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	10.0	10.2		mg/L		102	90 - 110

Lab Sample ID: 440-28809-D-1 MS
Matrix: Water
Analysis Batch: 65527

Client Sample ID: Matrix Spike
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Total Organic Carbon	ND		5.00	5.54		mg/L		111	80 - 120

Lab Sample ID: 440-28809-D-1 MSD
Matrix: Water
Analysis Batch: 65527

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Total Organic Carbon	ND		5.00	5.41		mg/L		108	80 - 120	2	20

Method: SM 5540C - Methylene Blue Active Substances (MBAS)

Lab Sample ID: MB 440-63978/4
Matrix: Water
Analysis Batch: 63978

Client Sample ID: Method Blank
Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Methylene Blue Active Substances	ND		0.10	0.050	mg/L			11/02/12 22:06	1

Lab Sample ID: LCS 440-63978/3
Matrix: Water
Analysis Batch: 63978

Client Sample ID: Lab Control Sample
Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	0.250	0.249		mg/L		100	90 - 110

Lab Sample ID: 440-28539-1 MS
Matrix: Water
Analysis Batch: 63978

Client Sample ID: Outfall 019
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Methylene Blue Active Substances	ND		0.250	0.247		mg/L		99	50 - 125

Method: SM 5540C - Methylene Blue Active Substances (MBAS) (Continued)

Lab Sample ID: 440-28539-1 MSD — **Client Sample ID: Outfall 019**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 63978

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Methylene Blue Active Substances	ND		0.250	0.277		mg/L		111	50 - 125	12	20

Method: SM5210B - BOD, 5 Day

Lab Sample ID: USB 440-64012/1 USB — **Client Sample ID: Method Blank**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64012

Analyte	USB Result	USB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Biochemical Oxygen Demand	ND		2.0	0.50	mg/L			11/03/12 08:30	1

Lab Sample ID: LCS 440-64012/4 — **Client Sample ID: Lab Control Sample**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64012

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Biochemical Oxygen Demand	199	175		mg/L		88	85 - 115

Lab Sample ID: LCSD 440-64012/5 — **Client Sample ID: Lab Control Sample Dup**
Matrix: Water — **Prep Type: Total/NA**
Analysis Batch: 64012

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Biochemical Oxygen Demand	199	192		mg/L		97	85 - 115	9	20

Method: Gross Alpha - Gross Alpha/Beta

Lab Sample ID: S211019-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Cs-137	-0.501	U	20		pCi/L		11/13/12 00:00	11/14/12 00:00	1
K-40	8.6	U	25		pCi/L		11/13/12 00:00	11/14/12 00:00	1
U Total	0	U	1		pCi/L		11/14/12 00:00	11/14/12 00:00	1

Lab Sample ID: S211019-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Gross Beta	-0.509	U	4		pCi/L		11/20/12 00:00	11/21/12 10:08	1
GrossAlpha	-0.225	U	3		pCi/L		11/20/12 00:00	11/21/12 10:08	1

Method: Gross Alpha - Gross Alpha/Beta (Continued)

Lab Sample ID: S211019-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tritium	26.3	U	500		pCi/L		11/21/12 00:00	11/22/12 22:44	1

Lab Sample ID: S211019-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ra-226	0.048	U	1		pCi/L		11/26/12 00:00	11/26/12 12:41	1

Lab Sample ID: S211019-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Ra-228	-0.048	U	1		pCi/L		11/26/12 00:00	11/26/12 12:55	1

Lab Sample ID: S211019-04 — **Client Sample ID: Method Blank**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Blank Result	Blank Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Sr-90	0.327	U	2		pCi/L		11/26/12 00:00	11/26/12 13:48	1

Lab Sample ID: S211019-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Cobalt-60	402	376		pCi/L		94	80 - 120
Cs-137	484	483		pCi/L		100	80 - 120
U Total	62.5	60.5		pCi/L		97	80 - 120

Lab Sample ID: S211019-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Gross Beta	27.9	28.6		pCi/L		102	70 - 130
GrossAlpha	33.7	38.3		pCi/L		114	70 - 130

Lab Sample ID: S211019-03 — **Client Sample ID: Lab Control Sample**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Tritium	2140	2090		pCi/L		98	80 - 120

Method: Gross Alpha - Gross Alpha/Beta (Continued)

Lab Sample ID: S211019-03
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ra-226			50.1	58.7		pCi/L		117	80 - 120		

Lab Sample ID: S211019-03
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Ra-228			4.11	5.07		pCi/L		123	60 - 140		

Lab Sample ID: S211019-03
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Sr-90			18.4	18.2		pCi/L		99	80 - 120		

Lab Sample ID: S211019-05
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: OUTFALL 019(440-28539-1) DU
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
U Total	0.591	J		0.613	J	pCi/L				4	

Lab Sample ID: S211019-05
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: OUTFALL 019(440-28539-1) DU
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Cs-137	0.12	U		-0.516	U	pCi/L				0	
K-40	-4.98	U		10.2	U	pCi/L				0	

Lab Sample ID: S211019-05
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: OUTFALL 019(440-28539-1) DU
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Tritium	35.7	U		-34.7	U	pCi/L				0	

Lab Sample ID: S211019-05
Matrix: WATER
Analysis Batch: 8627

Client Sample ID: OUTFALL 019(440-28539-1) DU
Prep Type: Total/NA
Prep Batch: 8627_P

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Ra-226	0.211	U		0.353	U	pCi/L				0	

Method: Gross Alpha - Gross Alpha/Beta (Continued)

Lab Sample ID: S211019-05 — **Client Sample ID: OUTFALL 019(440-28539-1) DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Sr-90	-0.05	U		0.072	U	pCi/L				0	

Lab Sample ID: S211019-05 — **Client Sample ID: OUTFALL 019(440-28539-1) DU**
Matrix: WATER — **Prep Type: Total/NA**
Analysis Batch: 8627 — **Prep Batch: 8627_P**

Analyte	Sample Result	Sample Qualifier		Duplicate Result	Duplicate Qualifier	Unit	D			RPD	RPD Limit
Gross Beta	2.24	J		2.27	J	pCi/L				1	
GrossAlpha	0.938	U		1.19	U	pCi/L				0	

GC/MS VOA

Analysis Batch: 65064

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28378-F-2 MS	Matrix Spike	Total/NA	Water	624	
440-28378-F-2 MSD	Matrix Spike Duplicate	Total/NA	Water	624	
440-28429-1	Outfall 019 Grab	Total/NA	Water	624	
440-28429-2	Trip Blank	Total/NA	Water	624	
LCS 440-65064/5	Lab Control Sample	Total/NA	Water	624	
MB 440-65064/4	Method Blank	Total/NA	Water	624	

GC/MS Semi VOA

Prep Batch: 64655

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	625	
LCS 440-64655/2-A	Lab Control Sample	Total/NA	Water	625	
LCSD 440-64655/3-A	Lab Control Sample Dup	Total/NA	Water	625	
MB 440-64655/1-A	Method Blank	Total/NA	Water	625	

Analysis Batch: 65744

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	625	64655
LCS 440-64655/2-A	Lab Control Sample	Total/NA	Water	625	64655
LCSD 440-64655/3-A	Lab Control Sample Dup	Total/NA	Water	625	64655
MB 440-64655/1-A	Method Blank	Total/NA	Water	625	64655

GC Semi VOA

Prep Batch: 64809

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	608	
LCS 440-64809/2-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-64809/3-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-64809/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 65003

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	608 Pesticides	64809
LCS 440-64809/2-A	Lab Control Sample	Total/NA	Water	608 Pesticides	64809
LCSD 440-64809/3-A	Lab Control Sample Dup	Total/NA	Water	608 Pesticides	64809
MB 440-64809/1-A	Method Blank	Total/NA	Water	608 Pesticides	64809

HPLC/IC

Analysis Batch: 63736

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28523-C-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-28523-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-28539-1	Outfall 019	Total/NA	Water	300.0	
LCS 440-63736/38	Lab Control Sample	Total/NA	Water	300.0	
MB 440-63736/17	Method Blank	Total/NA	Water	300.0	

HPLC/IC (Continued)

Analysis Batch: 63737

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28523-C-1 MS	Matrix Spike	Total/NA	Water	300.0	
440-28523-C-1 MSD	Matrix Spike Duplicate	Total/NA	Water	300.0	
440-28539-1	Outfall 019	Total/NA	Water	300.0	
LCS 440-63737/38	Lab Control Sample	Total/NA	Water	300.0	
MB 440-63737/17	Method Blank	Total/NA	Water	300.0	

Analysis Batch: 64210

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28500-E-3 MS	Matrix Spike	Total/NA	Water	314.0	
440-28500-E-3 MSD	Matrix Spike Duplicate	Total/NA	Water	314.0	
440-28539-1	Outfall 019	Total/NA	Water	314.0	
LCS 440-64210/4	Lab Control Sample	Total/NA	Water	314.0	
MB 440-64210/5	Method Blank	Total/NA	Water	314.0	
MRL 440-64210/2 MRL	Lab Control Sample	Total/NA	Water	314.0	

Specialty Organics

Prep Batch: 6166

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	1613B	
LCS 320-6166/2-A	Lab Control Sample	Total/NA	Water	1613B	
MB 320-6166/1-A	Method Blank	Total/NA	Water	1613B	

Analysis Batch: 6427

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 320-6166/2-A	Lab Control Sample	Total/NA	Water	1613B	6166

Analysis Batch: 6718

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	1613B	6166
MB 320-6166/1-A	Method Blank	Total/NA	Water	1613B	6166

Metals

Prep Batch: 64312

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28453-A-4-B MS ^5	Matrix Spike	Total Recoverable	Water	200.2	
440-28453-A-4-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-28539-1	Outfall 019	Total Recoverable	Water	200.2	
LCS 440-64312/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-64312/1-A	Method Blank	Total Recoverable	Water	200.2	

Analysis Batch: 64877

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28453-A-4-B MS ^5	Matrix Spike	Total Recoverable	Water	200.8	64312
440-28453-A-4-C MSD ^5	Matrix Spike Duplicate	Total Recoverable	Water	200.8	64312
440-28539-1	Outfall 019	Total Recoverable	Water	200.8	64312
LCS 440-64312/2-A	Lab Control Sample	Total Recoverable	Water	200.8	64312
MB 440-64312/1-A	Method Blank	Total Recoverable	Water	200.8	64312

Metals (Continued)

Prep Batch: 64969

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28503-B-1-C MS	Matrix Spike	Dissolved	Water	200.2	
440-28503-B-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.2	
440-28539-1	Outfall 019	Dissolved	Water	200.2	
LCS 440-64377/2-B	Lab Control Sample	Dissolved	Water	200.2	
MB 440-64377/1-B	Method Blank	Dissolved	Water	200.2	

Prep Batch: 65352

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Dissolved	Water	200.2	
440-28539-1 MS	Outfall 019	Dissolved	Water	200.2	
440-28539-1 MSD	Outfall 019	Dissolved	Water	200.2	
LCS 440-64377/2-C	Lab Control Sample	Dissolved	Water	200.2	
MB 440-64377/1-C	Method Blank	Dissolved	Water	200.2	

Analysis Batch: 65371

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28503-B-1-C MS	Matrix Spike	Dissolved	Water	200.7 Rev 4.4	64969
440-28503-B-1-D MSD	Matrix Spike Duplicate	Dissolved	Water	200.7 Rev 4.4	64969
440-28539-1	Outfall 019	Dissolved	Water	200.7 Rev 4.4	64969
LCS 440-64377/2-B	Lab Control Sample	Dissolved	Water	200.7 Rev 4.4	64969
MB 440-64377/1-B	Method Blank	Dissolved	Water	200.7 Rev 4.4	64969

Prep Batch: 65608

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28422-A-4-B MS	Matrix Spike	Total Recoverable	Water	200.2	
440-28422-A-4-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.2	
440-28539-1	Outfall 019	Total Recoverable	Water	200.2	
LCS 440-65608/2-A	Lab Control Sample	Total Recoverable	Water	200.2	
MB 440-65608/1-A	Method Blank	Total Recoverable	Water	200.2	

Prep Batch: 65797

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	245.1	
440-28907-A-1-B MS	Matrix Spike	Total/NA	Water	245.1	
440-28907-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	
LCS 440-65797/2-A	Lab Control Sample	Total/NA	Water	245.1	
MB 440-65797/1-A	Method Blank	Total/NA	Water	245.1	

Prep Batch: 66034

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Dissolved	Water	245.1	
LCS 440-66034/2-A	Lab Control Sample	Total/NA	Water	245.1	
LCSD 440-66034/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	
MB 440-66034/1-A	Method Blank	Total/NA	Water	245.1	

Analysis Batch: 66099

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Dissolved	Water	200.8	65352
440-28539-1 MS	Outfall 019	Dissolved	Water	200.8	65352
440-28539-1 MSD	Outfall 019	Dissolved	Water	200.8	65352
LCS 440-64377/2-C	Lab Control Sample	Dissolved	Water	200.8	65352

Metals (Continued)

Analysis Batch: 66099 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-64377/1-C	Method Blank	Dissolved	Water	200.8	65352

Analysis Batch: 66300

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Dissolved	Water	245.1	66034
LCS 440-66034/2-A	Lab Control Sample	Total/NA	Water	245.1	66034
LCSD 440-66034/3-A	Lab Control Sample Dup	Total/NA	Water	245.1	66034
MB 440-66034/1-A	Method Blank	Total/NA	Water	245.1	66034

Analysis Batch: 66301

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	245.1	65797
440-28907-A-1-B MS	Matrix Spike	Total/NA	Water	245.1	65797
440-28907-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	245.1	65797
LCS 440-65797/2-A	Lab Control Sample	Total/NA	Water	245.1	65797
MB 440-65797/1-A	Method Blank	Total/NA	Water	245.1	65797

Analysis Batch: 66341

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28422-A-4-B MS	Matrix Spike	Total Recoverable	Water	200.7 Rev 4.4	65608
440-28422-A-4-C MSD	Matrix Spike Duplicate	Total Recoverable	Water	200.7 Rev 4.4	65608
440-28539-1	Outfall 019	Total Recoverable	Water	200.7 Rev 4.4	65608
LCS 440-65608/2-A	Lab Control Sample	Total Recoverable	Water	200.7 Rev 4.4	65608
MB 440-65608/1-A	Method Blank	Total Recoverable	Water	200.7 Rev 4.4	65608

General Chemistry

Analysis Batch: 63856

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28429-1	Outfall 019 Grab	Total/NA	Water	SM 2540F	

Analysis Batch: 63978

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM 5540C	
440-28539-1 MS	Outfall 019	Total/NA	Water	SM 5540C	
440-28539-1 MSD	Outfall 019	Total/NA	Water	SM 5540C	
LCS 440-63978/3	Lab Control Sample	Total/NA	Water	SM 5540C	
MB 440-63978/4	Method Blank	Total/NA	Water	SM 5540C	

Analysis Batch: 64012

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM5210B	
LCS 440-64012/4	Lab Control Sample	Total/NA	Water	SM5210B	
LCSD 440-64012/5	Lab Control Sample Dup	Total/NA	Water	SM5210B	
USB 440-64012/1 USB	Method Blank	Total/NA	Water	SM5210B	

Analysis Batch: 64040

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28523-F-1 DU	Duplicate	Total/NA	Water	180.1	
440-28539-1	Outfall 019	Total/NA	Water	180.1	

General Chemistry (Continued)

Analysis Batch: 64040 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
MB 440-64040/6	Method Blank	Total/NA	Water	180.1	
MRL 440-64040/3 MRL	Lab Control Sample	Total/NA	Water	180.1	

Analysis Batch: 64823

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM 2540D	
440-28757-B-1 DU	Duplicate	Total/NA	Water	SM 2540D	
LCS 440-64823/2	Lab Control Sample	Total/NA	Water	SM 2540D	
MB 440-64823/1	Method Blank	Total/NA	Water	SM 2540D	

Analysis Batch: 64929

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28399-J-1 DU	Duplicate	Total/NA	Water	SM 2540C	
440-28539-1	Outfall 019	Total/NA	Water	SM 2540C	
LCS 440-64929/2	Lab Control Sample	Total/NA	Water	SM 2540C	
MB 440-64929/1	Method Blank	Total/NA	Water	SM 2540C	

Prep Batch: 65483

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM 4500 NH3 B	
440-28539-1 MS	Outfall 019	Total/NA	Water	SM 4500 NH3 B	
440-28539-1 MSD	Outfall 019	Total/NA	Water	SM 4500 NH3 B	
LCS 440-65483/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 B	
MB 440-65483/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 B	

Analysis Batch: 65500

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM 4500 NH3 C	65483
440-28539-1 MS	Outfall 019	Total/NA	Water	SM 4500 NH3 C	65483
440-28539-1 MSD	Outfall 019	Total/NA	Water	SM 4500 NH3 C	65483
LCS 440-65483/1-A	Lab Control Sample	Total/NA	Water	SM 4500 NH3 C	65483
MB 440-65483/2-A	Method Blank	Total/NA	Water	SM 4500 NH3 C	65483

Analysis Batch: 65527

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM 5310B	
440-28809-D-1 MS	Matrix Spike	Total/NA	Water	SM 5310B	
440-28809-D-1 MSD	Matrix Spike Duplicate	Total/NA	Water	SM 5310B	
LCS 440-65527/7	Lab Control Sample	Total/NA	Water	SM 5310B	
MB 440-65527/8	Method Blank	Total/NA	Water	SM 5310B	

Prep Batch: 66606

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	Distill/CN	
440-28767-A-1-B MS	Matrix Spike	Total/NA	Water	Distill/CN	
440-28767-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	Distill/CN	
LCS 440-66606/2-A	Lab Control Sample	Total/NA	Water	Distill/CN	
MB 440-66606/1-A	Method Blank	Total/NA	Water	Distill/CN	

General Chemistry (Continued)

Analysis Batch: 66637

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	SM 4500 CN E	66606
440-28767-A-1-B MS	Matrix Spike	Total/NA	Water	SM 4500 CN E	66606
440-28767-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	SM 4500 CN E	66606
LCS 440-66606/2-A	Lab Control Sample	Total/NA	Water	SM 4500 CN E	66606
MB 440-66606/1-A	Method Blank	Total/NA	Water	SM 4500 CN E	66606

Prep Batch: 66642

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28429-1	Outfall 019 Grab	Total/NA	Water	1664A	
LCS 440-66642/2-A	Lab Control Sample	Total/NA	Water	1664A	
LCSD 440-66642/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	
MB 440-66642/1-A	Method Blank	Total/NA	Water	1664A	

Analysis Batch: 66643

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28429-1	Outfall 019 Grab	Total/NA	Water	1664A	66642
LCS 440-66642/2-A	Lab Control Sample	Total/NA	Water	1664A	66642
LCSD 440-66642/3-A	Lab Control Sample Dup	Total/NA	Water	1664A	66642
MB 440-66642/1-A	Method Blank	Total/NA	Water	1664A	66642

Subcontract

Analysis Batch: 8627

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	Gamma Spec	8627_P
440-28539-1	Outfall 019	Total/NA	Water	K-40 CS-137 Gross Alpha	8627_P
440-28539-1	Outfall 019	Total/NA	Water	Radium Combined	8627_P
440-28539-1	Outfall 019	Total/NA	Water	Strontium 90	8627_P
440-28539-1	Outfall 019	Total/NA	Water	Tritium	8627_P
440-28539-1	Outfall 019	Total/NA	Water	Uranium, Combined	8627_P
440-28539-2	Trip Blank	Total/NA	Water	Gamma Spec	8627_P
440-28539-2	Trip Blank	Total/NA	Water	K-40 CS-137 Gross Alpha	8627_P
440-28539-2	Trip Blank	Total/NA	Water	Radium Combined	8627_P
440-28539-2	Trip Blank	Total/NA	Water	Strontium 90	8627_P
440-28539-2	Trip Blank	Total/NA	Water	Uranium, Combined	8627_P
S211019-03	Lab Control Sample	Total/NA	WATER	Gross Alpha	8627_P
S211019-04	Method Blank	Total/NA	WATER	Gross Alpha	8627_P
S211019-05	OUTFALL 019(440-28539-1) DU	Total/NA	WATER	Gross Alpha	8627_P

Prep Batch: 8627_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-28539-1	Outfall 019	Total/NA	Water	General Prep	
440-28539-2	Trip Blank	Total/NA	Water	General Prep	
S211019-03	Lab Control Sample	Total/NA	WATER	General Prep	
S211019-04	Method Blank	Total/NA	WATER	General Prep	
S211019-05	OUTFALL 019(440-28539-1) DU	Total/NA	WATER	General Prep	

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

GC/MS Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
BA	Relative percent difference out of control

GC Semi VOA

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

HPLC/IC

Qualifier	Qualifier Description
LM	MS and/or MSD above acceptance limits. See Blank Spike (LCS)
BB	Sample > 4X spike concentration
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Dioxin

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL
MB	Analyte present in the method blank

Metals

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

General Chemistry

Qualifier	Qualifier Description
J,DX	Estimated value; value < lowest standard (MQL), but >than MDL

Subcontract

Qualifier	Qualifier Description
U	The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.
J	The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)

Glossary (Continued)

Abbreviation	These commonly used abbreviations may or may not be present in this report.
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Monthly Outfall 019

TestAmerica Job ID: 440-28429-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-13
Arizona	State Program	9	AZ0671	10-13-13
California	LA Cty Sanitation Districts	9	10256	01-31-13
California	NELAC	9	1108CA	01-31-13
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-13
Hawaii	State Program	9	N/A	01-31-13
Nevada	State Program	9	CA015312007A	07-31-13
New Mexico	State Program	6	N/A	01-31-13
Northern Mariana Islands	State Program	9	MP0002	01-31-13
Oregon	NELAC	10	4005	09-12-13
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-13

Laboratory: TestAmerica West Sacramento

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
A2LA	DoD ELAP		2928-01	01-31-14
Alaska (UST)	State Program	10	UST-055	12-18-12
Arizona	State Program	9	AZ0708	08-11-13
Arkansas DEQ	State Program	6	88-0691	06-17-13
California	NELAC	9	1119CA	01-31-13
Colorado	State Program	8	N/A	08-31-13
Connecticut	State Program	1	PH-0691	06-30-13
Florida	NELAC	4	E87570	06-30-13
Guam	State Program	9	N/A	08-31-13
Hawaii	State Program	9	N/A	01-31-13
Illinois	NELAC	5	200060	03-17-13
Kansas	NELAC	7	E-10375	10-31-13
Louisiana	NELAC	6	30612	06-30-13
Michigan	State Program	5	9947	01-31-13
Nevada	State Program	9	CA44	07-31-13
New Jersey	NELAC	2	CA005	06-30-13
New York	NELAC	2	11666	04-01-13
Northern Mariana Islands	State Program	9	MP0007	01-31-13
Oregon	NELAC	10	CA200005	03-28-13
Pennsylvania	NELAC	3	68-01272	03-31-13
South Carolina	State Program	4	87014	06-30-13
Texas	NELAC	6	T104704399-08-TX	05-31-13
US Fish & Wildlife	Federal		LE148388-0	02-28-13
USDA	Federal		P330-11-00436	12-30-14
Utah	NELAC	8	QUAN1	01-31-13
Washington	State Program	10	C581	05-05-13
West Virginia	State Program	3	9930C	12-31-12
West Virginia DEP	State Program	3	334	07-31-13
Wyoming	State Program	8	8TMS-Q	01-31-13

EBERLINE SERVICES

EBERLINE ANALYTICAL CORPORATION
2030 Wright Avenue
Richmond, California 94804-3849
Phone (510) 235-2633 Fax (510) 235-0438
Toll Free (800) 841-5487
www.eberlineservices.com

November 29, 2012

Ms. Debby Wilson
Test America Irvine
17461 Derian Ave., Ste. 100
Irvine, CA 92614

Reference: Test America-Irvine Project #44002624, Job #440-28539-1
Eberline Analytical Report S211019-8627
Sample Delivery Group 8627

Dear Ms. Wilson:

Enclosed is a Level IV CLP-like data package (on CD) for two water samples received under Test America Project No. 44002624. The samples were received on November 6, 2012.

Please call me, if you have any questions concerning the enclosed report.

Sincerely,

Joseph Verville
Client Services Manager

NJV/

Enclosure: Level IV CLP-like Data Package CD

1.0 General Comments

Sample delivery group 8627 consists of the analytical results and supporting documentation for two water samples. Sample ID's and reference dates/times are given in the Sample Summary section of the Summary Data report. The samples were received as stated on the chain-of-custody document. Any discrepancies are noted on the Eberline Analytical Sample Receipt Checklist. No holding times were exceeded.

2.0 Quality Control

Quality Control Samples consisted of laboratory control samples (LCS), method blanks, and duplicate analyses. Included in the data package are copies of the Eberline Analytical radiometrics data sheets. The radiometrics data sheets for the QC LCS and QC blank samples indicate Eberline Analytical's standard QC aliquot of 1.0 sample; results for those QC types are calculated as pCi/sample. The QC LCS and QC blank sample results reported in the Summary Data Section have been divided by the appropriate method specific aliquot (see the Lab Method Summaries for specific aliquots) in order to make the results comparable to the field sample results. All QC sample results were within required control limits.

3.0 Method Errors

The error for each result is an estimate of the significant random uncertainties incurred in the measurement process. These are propagated to each final result. They include the counting (Poisson) uncertainty, as well as those intrinsic errors due to carrier or tracer standardization, aliquoting, counter efficiencies, weights, or volumes. The following method errors were propagated to the count error to calculate the 2σ error (Total):

Analysis	Method Error
Gross alpha	20.6%
Gross beta	11.0%
Tritium	10.0%
Sr-90	10.4%
Ra-226	16.4%
Ra-228	10.4%
Uranium, Total	
Gamma Spec.	7.0%

4.0 Analysis Notes

4.1 Gross Alpha/Gross Beta Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.2 Tritium Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.3 Strontium-90 Analysis – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.4 Radium-226 Analysis –. No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.5 Radium-228 Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits

4.6 Total Uranium Analysis - No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

4.7 Gamma Spectroscopy – No problems were encountered during the processing of the samples. All quality control sample results were within required control limits.

5.0 Case Narrative Certification Statement

"I certify that this data package is in compliance with the SOW, both technically and for completeness, for other than the conditions detailed above. Release of the data obtained in this hard copy data package has been authorized by the Laboratory Manager or a designee, as verified by the following signature."

11/29/12

Joseph Verville
Client Services Manager

Date

SDG 8627	Client Test America, Inc.
Contact Joseph Verville	Contract 44002624

S U M M A R Y D A T A S E C T I O N

T A B L E O F C O N T E N T S

About this section	1
Sample Summaries	3
Prep Batch Summary	5
Work Summary	6
Method Blanks	8
Lab Control Samples	9
Duplicates	10
Data Sheets	11
Method Summaries	13
Report Guides	21
End of Section	35

Prepared by

Reviewed by

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-TOC
Version	3.06
Report date	11/29/12

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

ABOUT THE DATA SUMMARY SECTION

The Data Summary Section of a Data Package has all data, in several useful orders, necessary for first level, routine review of the data package for a Sample Delivery Group (SDG). This section follows the Data Package Narrative, which has an overview of the data package and a discussion of special problems. It is followed by the Raw Data Section, which has full details.

The Data Summary Section has several groups of reports:

SAMPLE SUMMARIES

The Sample and QC Summary Reports show all samples, including QC samples, reported in one SDG. These reports cross-reference client and lab sample identifiers.

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches (lab groupings reflecting how work was organized) relevant to the reported SDG with information necessary to check the completeness and consistency of the SDG.

WORK SUMMARY

The Work Summary Report shows all samples and work done on them relevant to the reported SDG.

METHOD BLANKS

The Method Blank Reports, one for each Method Blank relevant to the SDG, show all results and primary supporting information for the blanks.

LAB CONTROL SAMPLES

The Lab Control Sample Reports, one for each Lab Control Sample relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DUPLICATES

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

ABOUT THE DATA SUMMARY SECTION

The Duplicate Reports, one for each Duplicate and Original sample pair relevant to the SDG, show all results, differences and primary supporting information for these QC samples.

MATRIX SPIKES

The Matrix Spike Reports, one for each Spiked and Original sample pair relevant to the SDG, show all results, recoveries and primary supporting information for these QC samples.

DATA SHEETS

The Data Sheet Reports, one for each client sample in the SDG, show all results and primary supporting information for these samples.

METHOD SUMMARIES

The Method Summary Reports, one for each test used in the SDG, show all results, QC and method performance data for one analyte on one or two pages. (A test is a short code for the method used to do certain work to the client's specification.)

REPORT GUIDES

The Report Guides, one for each of the above groups of reports, have documentation on how to read the associated reports.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

LAB SAMPLE SUMMARY

SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

LAB SAMPLE ID	CLIENT SAMPLE ID	LOCATION	MATRIX	LEVEL	SAS NO	CHAIN OF CUSTODY	COLLECTED
S211019-01	OUTFALL 019(440-28539-1)	SSFL	WATER			440-14116.1	11/02/12 10:00
S211019-02	TRIP-BLANK (440-28539-2)	SSFL	WATER			440-14116.1	11/02/12 14:00
S211019-03	Lab Control Sample		WATER				
S211019-04	Method Blank		WATER				
S211019-05	Duplicate (S211019-01)	SSFL	WATER				11/02/12 10:00

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

QC SUMMARY

SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

QC BATCH	CHAIN OF CUSTODY	CLIENT SAMPLE ID	MATRIX	% MOIST	SAMPLE AMOUNT	BASIS AMOUNT	DAYS SINCE RECEIVED	DAYS SINCE COLL	LAB SAMPLE ID	DEPARTMENT SAMPLE ID
8627	440-14116.1	OUTFALL 019(440-28539-1)	WATER		10 L		11/06/12	4	S211019-01	8627-001
		TRIP-BLANK (440-28539-2)	WATER		10 L		11/06/12	4	S211019-02	8627-002
		Method Blank	WATER						S211019-04	8627-004
		Lab Control Sample	WATER						S211019-03	8627-003
		Duplicate (S211019-01)	WATER		10 L		11/06/12	4	S211019-05	8627-005

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-QS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

PREP BATCH SUMMARY

SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

TEST	MATRIX	METHOD	PREPARATION BATCH	ERROR 2σ %	PLANCHETS ANALYZED CLIENT	MORE	RE	BLANK	LCS	DUP/ORIG	MS/ORIG	QUALIFIERS
Beta Counting												
AC	WATER	Radium-228 in Water	7726-125	10.4	2			1	1			
SR	WATER	Strontium-90 in Water	7726-125	10.4	2			1	1	1/1		
Gas Proportional Counting												
80A	WATER	Gross Alpha in Water	7726-125	20.6	2			1	1	1/1		
80B	WATER	Gross Beta in Water	7726-125	11.0	2			1	1	1/1		
Gamma Spectroscopy												
GAM	WATER	Gamma Emitters in Water	7726-125	7.0	2			1	1	1/1		
Kinetic Phosphorimetry												
U_T	WATER	Uranium, Total	7726-125		2			1	1	1/1		
Liquid Scintillation Counting												
H	WATER	Tritium in Water	7726-125	10.0	1			1	1	1/1		
Radon Counting												
RA	WATER	Radium-226 in Water	7726-125	16.4	2			1	1	1/1		

Blank, LCS, Duplicate and Spike planchets are those in the same preparation batch as some Client sample.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-PBS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

SDG 8627
Contact Joseph Verville

LAB WORK SUMMARY

Client Test America, Inc.
Contract 44002624

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY / SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S211019-01	OUTFALL 019(440-28539-1)		8627-001	80A/80		11/26/12	11/26/12	BW	Gross Alpha in Water
11/02/12	SSFL	WATER	8627-001	80B/80		11/26/12	11/26/12	BW	Gross Beta in Water
11/06/12	440-14116.1		8627-001	AC		11/26/12	11/27/12	BW	Radium-228 in Water
			8627-001	GAM		11/14/12	11/19/12	MWT	Gamma Emitters in Water
			8627-001	H		11/22/12	11/27/12	BW	Tritium in Water
			8627-001	RA		11/26/12	11/26/12	BW	Radium-226 in Water
			8627-001	SR		11/26/12	11/28/12	BW	Strontium-90 in Water
			8627-001	U_T		11/14/12	11/14/12	TSC	Uranium, Total
S211019-02	TRIP-BLANK (440-28539-2)		8627-002	80A/80		11/21/12	11/26/12	BW	Gross Alpha in Water
11/02/12	SSFL	WATER	8627-002	80B/80		11/21/12	11/26/12	BW	Gross Beta in Water
11/06/12	440-14116.1		8627-002	AC		11/26/12	11/27/12	BW	Radium-228 in Water
			8627-002	GAM		11/14/12	11/19/12	MWT	Gamma Emitters in Water
			8627-002	RA		11/26/12	11/26/12	BW	Radium-226 in Water
			8627-002	SR		11/26/12	11/28/12	BW	Strontium-90 in Water
			8627-002	U_T		11/14/12	11/14/12	TSC	Uranium, Total
S211019-03	Lab Control Sample		8627-003	80A/80		11/21/12	11/26/12	BW	Gross Alpha in Water
		WATER	8627-003	80B/80		11/21/12	11/26/12	BW	Gross Beta in Water
			8627-003	AC		11/26/12	11/27/12	BW	Radium-228 in Water
			8627-003	GAM		11/14/12	11/19/12	MWT	Gamma Emitters in Water
			8627-003	H		11/22/12	11/27/12	BW	Tritium in Water
			8627-003	RA		11/26/12	11/26/12	BW	Radium-226 in Water
			8627-003	SR		11/26/12	11/28/12	BW	Strontium-90 in Water
			8627-003	U_T		11/14/12	11/14/12	TSC	Uranium, Total
S211019-04	Method Blank		8627-004	80A/80		11/21/12	11/26/12	BW	Gross Alpha in Water
		WATER	8627-004	80B/80		11/21/12	11/26/12	BW	Gross Beta in Water
			8627-004	AC		11/26/12	11/27/12	BW	Radium-228 in Water
			8627-004	GAM		11/14/12	11/19/12	MWT	Gamma Emitters in Water
			8627-004	H		11/22/12	11/27/12	BW	Tritium in Water
			8627-004	RA		11/26/12	11/26/12	BW	Radium-226 in Water
			8627-004	SR		11/26/12	11/28/12	BW	Strontium-90 in Water
			8627-004	U_T		11/14/12	11/14/12	TSC	Uranium, Total

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

WORK SUMMARY, cont.

Client Test America, Inc.
Contract 44002624

LAB SAMPLE / COLLECTED / RECEIVED	CLIENT SAMPLE ID / LOCATION / CUSTODY	SAS no	MATRIX	PLANCHET	TEST	SUF-FIX	ANALYZED	REVIEWED	BY	METHOD
S211019-05	Duplicate (S211019-01)			8627-005	80A/80		11/26/12	11/26/12	BW	Gross Alpha in Water
11/02/12	SSFL		WATER	8627-005	80B/80		11/26/12	11/26/12	BW	Gross Beta in Water
11/06/12				8627-005	GAM		11/15/12	11/19/12	MWT	Gamma Emitters in Water
				8627-005	H		11/22/12	11/27/12	BW	Tritium in Water
				8627-005	RA		11/26/12	11/26/12	BW	Radium-226 in Water
				8627-005	SR		11/26/12	11/28/12	BW	Strontium-90 in Water
				8627-005	U_T		11/14/12	11/14/12	TSC	Uranium, Total

COUNTS OF TESTS BY SAMPLE TYPE

TEST	SAS no	METHOD	REFERENCE	CLIENT	MORE	RE	BLANK	LCS	DUP SPIKE	TOTAL
80A/80		Gross Alpha in Water	900.0	2			1	1	1	5
80B/80		Gross Beta in Water	900.0	2			1	1	1	5
AC		Radium-228 in Water	904.0	2			1	1		4
GAM		Gamma Emitters in Water	901.1	2			1	1	1	5
H		Tritium in Water	906.0	1			1	1	1	4
RA		Radium-226 in Water	903.1	2			1	1	1	5
SR		Strontium-90 in Water	905.0	2			1	1	1	5
U_T		Uranium, Total	5174	2			1	1	1	5
TOTALS				15			8	8	7	38

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LWS
Version 3.06
Report date 11/29/12

METHOD BLANK

SDG	8627	Client	Test America, Inc.
Contact	Joseph Verville	Contract	44002624
Lab sample id	S211019-04	Client sample id	Method Blank
Dept sample id	8627-004	Material/Matrix	WATER

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GrossAlpha	12587461	-0.225	0.29	0.600	3.00	U	80A
Gross Beta	12587472	-0.509	0.55	0.939	4.00	U	80B
Tritium	10028178	26.3	100	170	500	U	H
Ra-226	13982633	0.048	0.40	0.711	1.00	U	RA
Ra-228	15262201	-0.048	0.29	0.434	1.00	U	AC
Sr-90	10098972	0.327	0.48	0.895	2.00	U	SR
U Total		0	0.010	0.023	1.00	U	U_T
K-40	13966002	8.60	320	272	25.0	U	GAM
Cs-137	10045973	-0.501	7.7	10.8	20.0	U	GAM

QC-BLANK #82924

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/29/12

EBERLINE ANALYTICAL

SDG 8627

8627-003 Lab Control Sample

LAB CONTROL SAMPLE

SDG 8627 Client Test America, Inc.

Contact Joseph Verville Contract 44002624

Lab sample id S211019-03 Client sample id Lab Control Sample

Dept sample id 8627-003 Material/Matrix WATER

ANALYTE	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ADDED pCi/L	2σ ERR pCi/L	REC %	2σ LMTS (TOTAL)	PROTOCOL LIMITS
GrossAlpha	38.3	2.0	0.529	3.00		80A	33.7	1.3	114	76-124	70-130
Gross Beta	28.6	1.2	0.806	4.00		80B	27.9	1.1	102	87-113	70-130
Tritium	2090	160	181	500		H	2140	86	98	87-113	80-120
Ra-226	58.7	2.4	0.571	1.00		RA	50.1	2.0	117	80-120	80-120
Ra-228	5.07	0.43	0.402	1.00		AC	4.11	0.16	123	83-117	60-140
Sr-90	18.2	1.6	0.803	2.00		SR	18.4	0.74	99	86-114	80-120
U Total	60.5	7.0	0.234	1.00		U_T	62.5	2.5	97	88-112	80-120
Cobalt-60	376	44	20.6	10.0		GAM	402	16	94	87-113	80-120
Cs-137	483	35	19.2	20.0		GAM	484	19	100	89-111	80-120

QC-LCS #82923

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LCS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

8627-005

OUTFALL 019(440-28539-1)

DUPLICATE

SDG 8627 | Client Test America, Inc.

Contact Joseph Verville | Contract 44002624

DUPLICATE	ORIGINAL	
Lab sample id S211019-05	Lab sample id S211019-01	Client sample id OUTFALL 019(440-28539-1)
Dept sample id 8627-005	Dept sample id 8627-001	Location/Matrix SSFL WATER
	Received 11/06/12	Collected/Volume 11/02/12 10:00 10 L
		Chain of custody id 440-14116.1

ANALYTE	DUPLICATE pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST	ORIGINAL pCi/L	2σ ERR (COUNT)	MDA pCi/L	QUALI-FIERS	RPD %	3σ TOT	DER σ
GrossAlpha	1.19	1.1	1.73	3.00	U	80A	0.938	1.1	1.73	U	-		0.3
Gross Beta	2.27	1.4	2.15	4.00	J	80B	2.24	1.3	2.01	J	1	129	0
Tritium	-34.7	100	177	500	U	H	35.7	100	173	U	-		1.0
Ra-226	0.353	0.39	0.641	1.00	U	RA	0.211	0.46	0.797	U	-		0.5
Sr-90	0.072	0.45	0.894	2.00	U	SR	-0.050	0.32	0.779	U	-		0.4
U Total	0.613	0.069	0.023	1.00	J	U_T	0.591	0.066	0.023	J	4	24	0.5
K-40	10.2	31	27.5	25.0	U	GAM	-4.98	17	36.2	U	-		0.9
Cs-137	-0.516	0.92	1.68	20.0	U	GAM	0.120	0.77	1.30	U	-		1.1

QC-DUP#1 82925

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-DUP
Version 3.06
Report date 11/29/12

DUPLICATES
Page 1
SUMMARY DATA SECTION
Page 10

EBERLINE ANALYTICAL

SDG 8627

8627-001 OUTFALL 019(440-28539-1)

DATA SHEET

SDG	8627	Client	Test America, Inc.
Contact	Joseph Verville	Contract	44002624
Lab sample id	S211019-01	Client sample id	OUTFALL 019(440-28539-1)
Dept sample id	8627-001	Location/Matrix	SSFL WATER
Received	11/06/12	Collected/Volume	11/02/12 10:00 10 L
		Chain of custody id	440-14116.1

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GrossAlpha	12587461	0.938	1.1	1.73	3.00	U	80A
Gross Beta	12587472	2.24	1.3	2.01	4.00	J	80B
Tritium	10028178	35.7	100	173	500	U	H
Ra-226	13982633	0.211	0.46	0.797	1.00	U	RA
Ra-228	15262201	0.229	0.17	0.414	1.00	U	AC
Sr-90	10098972	-0.050	0.32	0.779	2.00	U	SR
U Total		0.591	0.066	0.023	1.00	J	U_T
K-40	13966002	-4.98	17	36.2	25.0	U	GAM
Cs-137	10045973	0.120	0.77	1.30	20.0	U	GAM

DATA SHEETS
Page 1
SUMMARY DATA SECTION
Page 11

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/29/12

EBERLINE ANALYTICAL

SDG 8627

8627-002 TRIP-BLANK (440-28539-2)

DATA SHEET

SDG	8627	Client	Test America, Inc.
Contact	Joseph Verville	Contract	44002624
Lab sample id	S211019-02	Client sample id	TRIP-BLANK (440-28539-2)
Dept sample id	8627-002	Location/Matrix	SSFL WATER
Received	11/06/12	Collected/Volume	11/02/12 14:00 10 L
		Chain of custody id	440-14116.1

ANALYTE	CAS NO	RESULT pCi/L	2σ ERR (COUNT)	MDA pCi/L	RDL pCi/L	QUALI-FIERS	TEST
GrossAlpha	12587461	-0.108	0.12	0.283	3.00	U	80A
Gross Beta	12587472	-0.392	0.55	0.932	4.00	U	80B
Ra-226	13982633	0.024	0.33	0.594	1.00	U	RA
Ra-228	15262201	-0.017	0.21	0.394	1.00	U	AC
Sr-90	10098972	0.442	0.47	0.915	2.00	U	SR
U Total		-0.003	0.010	0.023	1.00	U	U_T
K-40	13966002	-0.520	11	29.7	25.0	U	GAM
Cs-137	10045973	-0.700	0.78	1.20	20.0	U	GAM

Lab id	EAS
Protocol	TA
Version	Ver 1.0
Form	DVD-DS
Version	3.06
Report date	11/29/12

EBERLINE ANALYTICAL

SDG 8627

LAB METHOD SUMMARY

RADIUM-228 IN WATER

BETA COUNTING

Test AC Matrix WATER
SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Ra-228
Preparation batch 7726-125					
S211019-01			8627-001	OUTFALL 019(440-28539-1)	U
S211019-02			8627-002	TRIP-BLANK (440-28539-2)	U
S211019-03			8627-003	Lab Control Sample	ok
S211019-04			8627-004	Method Blank	U
Nominal values and limits from method				RDLs (pCi/L)	1.00

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 10.4 %	Reference Lab Notebook 7726-125												
S211019-01			OUTFALL 019(440-28539-1)	0.414	1.80			87		150			24	11/26/12	11/26	GRB-221
S211019-02			TRIP-BLANK (440-28539-2)	0.394	1.80			88		150			24	11/26/12	11/26	GRB-222
S211019-03			Lab Control Sample	0.402	1.80			88		150				11/26/12	11/26	GRB-223
S211019-04			Method Blank	0.434	1.80			88		150				11/26/12	11/26	GRB-224
Nominal values and limits from method				1.00	1.80			30-105		50			180			

PROCEDURES REFERENCE 904.0
DWP-894 Sequential Separation of Actinium-228 and Radium-226 in Drinking Water (>1 Liter Aliquot), rev 5

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 0.411 ± 0.035
YIELD 88 ± 1

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

LAB METHOD SUMMARY

STRONTIUM-90 IN WATER

BETA COUNTING

Test SR Matrix WATER
SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Sr-90	
Preparation batch 7726-125						
S211019-01			8627-001	OUTFALL 019(440-28539-1)	U	
S211019-02			8627-002	TRIP-BLANK (440-28539-2)	U	
S211019-03			8627-003	Lab Control Sample	ok	
S211019-04			8627-004	Method Blank	U	
S211019-05			8627-005	Duplicate (S211019-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	2.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 10.4 %	Reference Lab Notebook 7726-125												
S211019-01			OUTFALL 019(440-28539-1)	0.779	0.500			88		50			24	11/26/12	11/26	GRB-221
S211019-02			TRIP-BLANK (440-28539-2)	0.915	0.500			71		50			24	11/26/12	11/26	GRB-222
S211019-03			Lab Control Sample	0.803	0.500			84		50				11/26/12	11/26	GRB-223
S211019-04			Method Blank	0.895	0.500			82		100				11/26/12	11/26	GRB-231
S211019-05			Duplicate (S211019-01)	0.894	0.500			79		100			24	11/26/12	11/26	GRB-232
Nominal values and limits from method				2.00	0.500			30-105		50			180			

PROCEDURES REFERENCE 905.0
CP-380 Strontium in Water Samples, rev 5

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.857 ± 0.123
YIELD 81 ± 13

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

Test 80A Matrix WATER
SDG 8627
Contact Joseph Verville

LAB METHOD SUMMARY

GROSS ALPHA IN WATER
GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	GrossAlpha	
Preparation batch 7726-125						
S211019-01	80		8627-001	OUTFALL 019(440-28539-1)	U	
S211019-02	80		8627-002	TRIP-BLANK (440-28539-2)	U	
S211019-03	80		8627-003	Lab Control Sample	ok	
S211019-04	80		8627-004	Method Blank	U	
S211019-05	80		8627-005	Duplicate (S211019-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	3.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 20.6 %	Reference Lab Notebook 7726-125												
S211019-01	80		OUTFALL 019(440-28539-1)	1.73	0.140			93		400			24	11/20/12	11/26	GRB-101
S211019-02	80		TRIP-BLANK (440-28539-2)	0.283	0.300			0		400			19	11/20/12	11/21	GRB-103
S211019-03	80		Lab Control Sample	0.529	0.300			60		400				11/20/12	11/21	GRB-104
S211019-04	80		Method Blank	0.600	0.300			61		400				11/20/12	11/21	GRB-105
S211019-05	80		Duplicate (S211019-01)	1.73	0.140			93		400			24	11/20/12	11/26	GRB-103
Nominal values and limits from method				3.00	0.300			0-250		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.974 ± 1.40
RESIDUE 61 ± 76

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

Test 80B Matrix WATER
SDG 8627
Contact Joseph Verville

LAB METHOD SUMMARY

GROSS BETA IN WATER
GAS PROPORTIONAL COUNTING

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Gross Beta	
Preparation batch 7726-125						
S211019-01	80		8627-001	OUTFALL 019(440-28539-1)	2.24	J
S211019-02	80		8627-002	TRIP-BLANK (440-28539-2)	U	
S211019-03	80		8627-003	Lab Control Sample	ok	
S211019-04	80		8627-004	Method Blank	U	
S211019-05	80		8627-005	Duplicate (S211019-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	4.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	RESID mg	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 11.0 %	Reference Lab Notebook 7726-125												
S211019-01	80		OUTFALL 019(440-28539-1)	2.01	0.140			93		400			24	11/20/12	11/26	GRB-101
S211019-02	80		TRIP-BLANK (440-28539-2)	0.932	0.300			0		400			19	11/20/12	11/21	GRB-103
S211019-03	80		Lab Control Sample	0.806	0.300			60		400				11/20/12	11/21	GRB-104
S211019-04	80		Method Blank	0.939	0.300			61		400				11/20/12	11/21	GRB-105
S211019-05	80		Duplicate (S211019-01)	2.15	0.140			93		400			24	11/20/12	11/26	GRB-103
Nominal values and limits from method				4.00	0.300			0-250		100			180			

PROCEDURES REFERENCE 900.0
DWP-121 Gross Alpha and Gross Beta in Drinking Water, rev 10

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 1.37 ± 1.31
RESIDUE 61 ± 76

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

Test GAM Matrix WATER
SDG 8627
Contact Joseph Verville

LAB METHOD SUMMARY

GAMMA EMITTERS IN WATER

GAMMA SPECTROSCOPY

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Cobalt-60	Cs-137	
Preparation batch 7726-125							
S211019-01			8627-001	OUTFALL 019(440-28539-1)		U	
S211019-02			8627-002	TRIP-BLANK (440-28539-2)		U	
S211019-03			8627-003	Lab Control Sample	ok	ok	
S211019-04			8627-004	Method Blank		U	
S211019-05			8627-005	Duplicate (S211019-01)		-	U
Nominal values and limits from method				RDLs (pCi/L)	10.0	20.0	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 7.0 %	Reference Lab Notebook 7726-125												
S211019-01			OUTFALL 019(440-28539-1)		2.00					400			12	11/13/12	11/14	MB,G2,0
S211019-02			TRIP-BLANK (440-28539-2)		2.00					400			12	11/13/12	11/14	MB,G3,0
S211019-03			Lab Control Sample		0.500					400				11/13/12	11/14	MB,G4,0
S211019-04			Method Blank		0.500					400				11/13/12	11/14	MB,G5,0
S211019-05			Duplicate (S211019-01)		2.00					400			13	11/13/12	11/15	MB,G8,0
Nominal values and limits from method				6.00	0.500					400			180			

PROCEDURES REFERENCE 901.1
DWP-100 Preparation of Drinking Water Samples for Gamma Spectroscopy, rev 5

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

LAB METHOD SUMMARY

URANIUM, TOTAL

KINETIC PHOSPHORIMETRY

Test U T Matrix WATER
SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	U Total	
Preparation batch 7726-125						
S211019-01			8627-001	OUTFALL 019(440-28539-1)	0.591	J
S211019-02			8627-002	TRIP-BLANK (440-28539-2)	U	
S211019-03			8627-003	Lab Control Sample	ok	
S211019-04			8627-004	Method Blank	U	
S211019-05			8627-005	Duplicate (S211019-01)	ok	J
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7726-125			2σ prep error		Reference Lab Notebook 7726-125											
S211019-01			OUTFALL 019(440-28539-1)	0.023	0.0200								12	11/14/12	11/14	KPA-001
S211019-02			TRIP-BLANK (440-28539-2)	0.023	0.0200								12	11/14/12	11/14	KPA-001
S211019-03			Lab Control Sample	0.234	0.0200									11/14/12	11/14	KPA-001
S211019-04			Method Blank	0.023	0.0200									11/14/12	11/14	KPA-001
S211019-05			Duplicate (S211019-01)	0.023	0.0200								12	11/14/12	11/14	KPA-001
Nominal values and limits from method				1.00	0.0200								180			

PROCEDURES REFERENCE 5174

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.065 ± 0.189
YIELD _____ ± _____

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

LAB METHOD SUMMARY

TRITIUM IN WATER

LIQUID SCINTILLATION COUNTING

Test H Matrix WATER
SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF-FIX	PLANCHET	CLIENT SAMPLE ID	Tritium
Preparation batch 7726-125					
S211019-01			8627-001	OUTFALL 019(440-28539-1)	U
S211019-03			8627-003	Lab Control Sample	ok
S211019-04			8627-004	Method Blank	U
S211019-05			8627-005	Duplicate (S211019-01)	- U
Nominal values and limits from method				RDLs (pCi/L)	500

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF-FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU-TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL-YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 10.0 %	Reference Lab Notebook 7726-125												
S211019-01			OUTFALL 019(440-28539-1)	173	0.0100			100		150			20	11/21/12	11/22	LSC-006
S211019-03			Lab Control Sample	181	0.100			10		150				11/21/12	11/22	LSC-006
S211019-04			Method Blank	170	0.100			10		150				11/21/12	11/22	LSC-006
S211019-05			Duplicate (S211019-01)	177	0.0100			100		150			20	11/21/12	11/22	LSC-006
Nominal values and limits from method				500	0.0100					100			180			

PROCEDURES REFERENCE 906.0
DWP-212 Tritium in Drinking Water by Distillation, rev 8

AVERAGES ± 2 SD FOR 4 SAMPLES
MDA 175 ± 9.57
YIELD 55 ± 104

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

EBERLINE ANALYTICAL

SDG 8627

LAB METHOD SUMMARY

RADIUM-226 IN WATER

RADON COUNTING

Test RA Matrix WATER
SDG 8627
Contact Joseph Verville

Client Test America, Inc.
Contract 44002624

RESULTS

LAB SAMPLE ID	RAW TEST	SUF- FIX	PLANCHET	CLIENT SAMPLE ID	Ra-226	
Preparation batch 7726-125						
S211019-01			8627-001	OUTFALL 019(440-28539-1)	U	
S211019-02			8627-002	TRIP-BLANK (440-28539-2)	U	
S211019-03			8627-003	Lab Control Sample	ok	
S211019-04			8627-004	Method Blank	U	
S211019-05			8627-005	Duplicate (S211019-01)	-	U
Nominal values and limits from method				RDLs (pCi/L)	1.00	

METHOD PERFORMANCE

LAB SAMPLE ID	RAW TEST	SUF- FIX	CLIENT SAMPLE ID	MDA pCi/L	ALIQ L	PREP FAC	DILU- TION	YIELD %	EFF %	COUNT min	FWHM keV	DRIFT KeV	DAYS HELD	PREPARED	ANAL- YZED	DETECTOR
Preparation batch 7726-125			2σ prep error 16.4 %	Reference Lab Notebook 7726-125												
S211019-01			OUTFALL 019(440-28539-1)	0.797	0.100			100		126			24	11/26/12	11/26	RN-011
S211019-02			TRIP-BLANK (440-28539-2)	0.594	0.100			100		126			24	11/26/12	11/26	RN-012
S211019-03			Lab Control Sample	0.571	0.100			100		126				11/26/12	11/26	RN-014
S211019-04			Method Blank	0.711	0.100			100		126				11/26/12	11/26	RN-013
S211019-05			Duplicate (S211019-01)	0.641	0.100			100		126			24	11/26/12	11/26	RN-015
Nominal values and limits from method				1.00	0.100					50			180			

PROCEDURES REFERENCE 903.1
DWP-881A Ra-226 Screening in Drinking Water, rev 6

AVERAGES ± 2 SD FOR 5 SAMPLES
MDA 0.663 ± 0.184
YIELD 100 ± 0

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-LMS
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

SAMPLE SUMMARY

The Sample and QC Summary Reports show all samples, including QC samples, reported in one Sample Delivery Group (SDG).

The Sample Summary Report fully identifies client samples and gives the corresponding lab sample identification. The QC Summary Report shows at the sample level how the lab organized the samples into batches and generated QC samples. The Preparation Batch and Method Summary Reports show this at the analysis level.

The following notes apply to these reports:

* LAB SAMPLE ID is the lab's primary identification for a sample.

* DEPARTMENT SAMPLE ID is an alternate lab id, for example one assigned by a radiochemistry department in a lab.

* CLIENT SAMPLE ID is the client's primary identification for a sample. It includes any sample preparation done by the client that is necessary to identify the sample.

* QC BATCH is a lab assigned code that groups samples to be processed and QCed together. These samples should have similar matrices.

  QC BATCH is not necessarily the same as SDG, which reflects samples received and reported together.

* All Lab Control Samples, Method Blanks, Duplicates and Matrix Spikes are shown that QC any of the samples. Due to possible reanalyses, not all results for all these QC samples may be relevant to the SDG. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

PREPARATION BATCH SUMMARY

The Preparation Batch Summary Report shows all preparation batches in one Sample Delivery Group (SDG) with information necessary to check the completeness and consistency of the SDG.

The following notes apply to this report:

* The preparation batches are shown in the same order as the Method Summary Reports are printed.

* Only analyses of planchets relevant to the SDG are included.

* Each preparation batch should have at least one Method Blank and LCS in it to validate client sample results.

* The QUALIFIERS shown are all qualifiers other than U, J, B, L and H that occur on any analysis in the preparation batch. The Method Summary Report has these qualifiers on a per sample basis.

  These qualifiers should be reviewed as follows:

  X Some data has been manually entered or modified. Transcription errors are possible.

  P One or more results are 'preliminary'. The data is not ready for final reporting.

  2 There were two or more results for one analyte on one planchet imported at one time. The results in DVD may not be the same as on the raw data sheets.

  Other lab defined qualifiers may occur. In general, these should be addressed in the SDG narrative.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

WORK SUMMARY

The Work Summary Report shows all samples, including QC samples, and all relevant analyses in one Sample Delivery Group (SDG). This report is often useful as supporting documentation for an invoice.

The following notes apply to this report:

* TEST is a code for the method used to measure associated analytes. Results and related information for each analyte are on the Data Sheet Report. In special cases, a test code used in the summary data section is not the same as in associated raw data. In this case, both codes are shown on the Work Summary.

* SUFFIX is the lab's code to distinguish multiple analyses (recounts, reworks, reanalyses) of a fraction of the sample. The suffix indicates which result is being reported. An empty suffix normally identifies the first attempt to analyze the sample.

* The LAB SAMPLE ID, TEST and SUFFIX uniquely identify all supporting data for a result. The Method Summary Report for each TEST has method performance data, such as yield, for each lab sample id and suffix and procedures used in the method.

* PLANCHET is an alternate lab identifier for work done for one test. It, combined with the TEST and SUFFIX, may be the best link to raw data.

* For QC samples, only analyses that directly QC some regular sample are shown. The Lab Control Sample, Method Blank, Duplicate, Matrix Spike and Method Summary Reports detail these relationships.

* The SAS (Special Analytical Services) Number is a client or lab assigned code that reflects special processing for samples, such as rapid turn around. Counts of tests done are lists by SAS number since it is likely to affect prices.

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

DATA SHEET

The Data Sheet Report shows all results and primary supporting information for one client sample or Method Blank. This report corresponds to both the CLP Inorganics and Organics Data Sheet.

The following notes apply to this report:

* TEST is a code for the method used to measure an analyte. If the TEST is empty, no data is available; the analyte was not analyzed for.

* The LAB SAMPLE ID and TEST uniquely identify work within the Summary Data Section of a Data Package. The Work Summary and Method Summary Reports further identify raw data that underlies this work.

  The Method Summary Report for each TEST has method performance data, such as yield, for each Lab Sample ID and a list of procedures used in the method.

* ERRORs can be labeled TOTAL or COUNT. TOTAL implies a preparation (non-counting method) error has been added, as square root of sum of squares, to the counting error denoted by COUNT. The preparation errors, which may vary by preparation batch, are shown on the Method Summary Report.

* A RESULT can be 'N.R.' (Not Reported). This means the lab did this work but chooses not to report it now, possibly because it was reported at another time.

* When reporting a Method Blank, a RESULT can be 'N.A.' (Not Applicable). This means there is no reported client sample work in the same preparation batch as the Blank's result. This is likely to occur when the Method Blank is associated with reanalyses of selected work for a few samples in the SDG.

The following qualifiers are defined by the DVD system:

U The RESULT is less than the MDA (Minimum Detectable Activity). If the MDA is blank, the ERROR is used as the limit.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DATA SHEET

J The RESULT is less than the RDL (Required Detection Limit) and no U qualifier is assigned.

B A Method Blank associated with this sample had a result without a U flag and, after correcting for possibly different aliquots, that result is greater than or equal to the MDA for this sample.

Normally, B is not assigned if U is. When method blank subtraction is shown on this report, B flags are assigned based on the unsubtracted values while U's are assigned based on the subtracted ones. Both flags can be assigned in this case.

For each sample result, all Method Blank results in the same preparation batch are compared. The Method Summary Report documents this and other QC relationships.

L Some Lab Control Sample that QC's this sample had a low recovery. The lab can disable assignment of this qualifier.

H Similar to 'L' except the recovery was high.

P The RESULT is 'preliminary'.

X Some data necessary to compute the RESULT, ERROR or MDA was manually entered or modified.

2 There were two or more results available for this analyte. The reported result may not be the same as in the raw data.

Other qualifiers are lab defined. Definitions should be in the SDG narrative.

The following values are underlined to indicate possible problems:

* An MDA is underlined if it is bigger than its RDL.

* An ERROR is underlined if the 1.645 sigma counting error is bigger than both the MDA and the RESULT, implying that the MDA

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DATA SHEET

may not be a good estimate of the 'real' minimum detectable activity.

* A negative RESULT is underlined if it is less than the negative of its 2 sigma counting ERROR.

* When reporting a Method Blank, a RESULT is underlined if greater than its MDA. If the MDA is blank, the 2 sigma counting error is used in the comparison.

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

LAB CONTROL SAMPLE

The Lab Control Sample Report shows all results, recoveries and primary supporting information for one Lab Control Sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. Refer to its Report Guide for details.

* An amount ADDED is the lab's value for the actual amount spiked into this sample with its ERROR an estimate of the error of this amount.

  An amount added is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The error of RESULT, including that introduced by rounding the result prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

* The recovery is underlined if it is outside either of these ranges.

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

DUPLICATE

The Duplicate Report shows all results, differences and primary supporting information for one Duplicate and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Duplicate and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Duplicate has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* The RPD (Relative Percent Difference) is the absolute value of the difference of the RESULTs divided by their average expressed as a percent.

  If both RESULTs are less than their MDAs, no RPD is computed and a '-' is printed.

  For an analyte, if the lab did work for both samples but has data for only one, the MDA from the sample with data is used as the other's result in the RPD.

* The first, computed limit is the sum, as square root of sum of squares, of the errors of the results divided by the average result as a percent, hence the relative error of the difference rather than the error of the relative difference. The errors include those introduced by rounding the RESULTs prior to printing.

  If this limit is labeled TOT, it includes the preparation error in the RESULTs. If labeled CNT, it does not.

  This value reported for this limit is at most 999.

* The second limit for the RPD is the larger of:

  1. A fixed percentage specified in the protocol.

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

DUPLICATE

2. A protocol factor (typically 2) times the average MDA as a percent of the average result. This limit applies when the results are close to the MDAs.

* The RPD is underlined if it is greater than either limit.

* If specified by the lab, the second limit column is replaced by the Difference Error Ratio (DER), which is the absolute value of the difference of the results divided by the quadratic sum of their one sigma errors, the same errors as used in the first limit.

  Except for differences due to rounding, the DER is the same as the RPD divided by the first RPD limit with the limit scaled to 1 sigma.

* The DER is underlined if it is greater than the sigma factor, typically 2 or 3, shown in the header for the first RPD limit.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

MATRIX SPIKE

The Matrix Spike Report shows all results, recoveries and primary supporting information for one Matrix Spike and associated Original sample.

The following notes apply to this report:

* All fields in common with the Data Sheet Report have similar usage. This applies both to the Spiked and Original sample data. Refer to the Data Sheet Report Guide for details.

  If the Spike has data for a TEST and the lab did not do this test to the Original, the Original's RESULTs are underlined.

* An amount ADDED is the lab's value for the actual amount spiked into the Spike sample with its ERROR an estimate of the error of this amount.

  An amount is underlined if its ratio to the corresponding RDL is outside protocol specified limits.

* REC (Recovery) is the Spike RESULT minus the Original RESULT divided by ADDED expressed as a percent.

* The first, computed limits for the recovery reflect:

  1. The errors of the two RESULTs, including those introduced by rounding them prior to printing.

     If the limits are labeled (TOTAL), they include preparation error in the result. If labeled (COUNT), they do not.

  2. The error of ADDED.

  3. A lab specified, per analyte bias. The bias changes the center of the computed limits.

* The second limits are protocol defined upper and lower QC limits for the recovery.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

MATRIX SPIKE

These limits are left blank if the Original RESULT is more than a protocol defined factor (typically 4) times ADDED. This is a way of accounting for that when the spike is small compared to the amount in the original sample, the recovery is unreliable.

* The recovery is underlined (out of spec) if it is outside either of these ranges.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

SDG 8627
Contact Joseph Verville

REPORT GUIDE

Client Test America, Inc.
Contract 44002624

METHOD SUMMARY

The Method Summary Report has two tables. One shows up to five results measured using one method. The other has performance data for the method. There is one report for each TEST, as used on the Data Sheet Report.

The following notes apply to this report:

* Each table is subdivided into sections, one for each preparation batch. A preparation batch is a group of aliquots prepared at roughly the same time in one work area of the lab using the same method.

  There should be Lab Control Sample and Method Blank results in each preparation batch since this close correspondence makes the QC meaningful. Depending on lab policy, Duplicates need not occur in each batch since they QC sample dependencies such as matrix effects.

* The RAW TEST column shows the test code used in the raw data to identify a particular analysis if it is different than the test code in the header of the report. This occurs in special cases due to method specific details about how the lab labels work.

  The Lab Sample or Planchet ID combined with the (Raw) Test Code and Suffix uniquely identify the raw data for each analysis.

* If a result is less than both its MDA and RDL, it is replaced by just 'U' on this report. If it is greater than or equal to the RDL but less than the MDA, the result is shown with a 'U' flag.

  The J and X flags are as on the data sheet.

* Non-U results for Method Blanks are underlined to indicate possible contamination of other samples in the preparation batch. The Method Blank Report has supporting data.

* Lab Control Sample and Matrix Spike results are shown as: ok, No data, LOW or HIGH, with the last two underlined. 'No data' means no amount ADDED was specified. 'LOW' and 'HIGH'

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

METHOD SUMMARY

correspond to when the recovery is underlined on the Lab Control Sample or Matrix Spike Report. See these reports for supporting data.

* Duplicate sample results are shown as: ok, No data, or OUT, with the last two underlined. 'No data' means there was no original sample data found for this duplicate. 'OUT' corresponds to when the RPD is underlined on the Duplicate Report. See this report for supporting data.

* If the MDA column is labeled 'MAX MDA', there was more than one result measured by the reported method and the MDA shown is the largest MDA. If not all these results have the same RDL, the MAX MDA reflects only those results with RDL equal to the smallest one.

  MDAs are underlined if greater than the printed RDL.

* Aliquots are underlined if less than the nominal value specified for the method.

* Prepareation factors are underlined if greater than the nominal value specified for the method.

* Dilution factors are underlined if greater than the nominal value specified for the method.

* Residues are underlined if outside the range specified for the method. Residues are not printed if yields are.

* Yields, which may be gravimetric, radiometric or some type of recovery depending on the method, are underlined if outside the range specified for the method.

* Efficiencies are underlined if outside the range specified for the method. Efficiencies are detector and geometry dependent so this test is only approximate.

* Count times are underlined if less than the nominal value

METHOD SUMMARY

specified for the method.

* Resolutions (as FWHM; Full Width at Half Max) are underlined if greater than the method specified limit.

* Tracer drifts are underlined if their absolute values are greater than the method specified limit. Tracer drifts are not printed if percent moistures are.

* Days Held are underlined if greater than the holding time specified in the protocol.

* Analysis dates are underlined if before their planchet's preparation date or, if a limit is specified, too far after it.

For some methods, ratios as percentages and error estimates for them are computed for pairs of results. A ratio column header like '1÷3' means the ratio of the first result column and the third result column.

Ratios are not computed for Lab Control Sample, Method Blank or Matrix Spike results since their matrices are not necessarily similar to client samples'.

The error estimate for a ratio of results from one planchet reflects only counting errors since other errors should be correlated. For a ratio involving different planchets, if QC limits are computed based on total errors, the error for the ratio allows for the preparation errors for the planchets.

The ratio is underlined (out of spec) if the absolute value of its difference from the nominal value is greater than its error estimate. If no nominal value is specified, this test is not done.

For Gross Alpha or Gross Beta results, there may be a column showing the sum of other Alpha or Beta emitters. This sum includes all relevant results in the DVD database, whether reported or not. Results in the sum are weighted by a particles/decay value specified by the lab for each relevant analyte. Results less than their MDA are not included.

SDG 8627
Contact Joseph Verville

GUIDE, cont.

Client Test America, Inc.
Contract 44002624

METHOD SUMMARY

No sums are computed for Lab Control, Method Blank or Matrix Spike samples since their various planchets may not be physically related.

If a ratio of total isotopic to Gross Alpha or Beta is shown, the error for the ratio reflects both the error in the Gross result and the sum, as square root of sum of squares, of the errors in the isotopic results.

For total elemental uranium or thorium results, there may be a column showing the total weight computed from associated isotopic results. Ignoring results less than their MDAs, this is a weighted sum of the isotopic results. The weights depend on the molecular weight and half-life of each isotope so as to convert activities (decays) to weight (atoms).

If a ratio of total computed to measured elemental uranium or thorium is shown, the error for the ratio reflects the errors in all the measurements.

Lab id EAS
Protocol TA
Version Ver 1.0
Form DVD-RG
Version 3.06
Report date 11/29/12

TestAmerica Irvine
17461 Derian Ave Suite 100
Irvine, CA 92614-5817
Phone (949) 261-1022 Fax (949) 260-3297

Chain of Custody Record

8627
82-11-019

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information (Sub Contract Lab)	Sampler:	Lab PM: Bousselaire, Jonathan	Carrier Tracking No(s):	COC No: 440-14116.1
Client Contact: Shipping/Receiving	Phone:	E-Mail: jonathan.bousselaire@testamericainc.com		Page: Page 1 of 1
Company: Eberline Services		Analysis Requested		Job #: 440-28539-1
Address: 2030 Wright Avenue, ,	Due Date Requested: 11/16/2012			Preservation Codes:
City: Richmond	TAT Requested (days):			A - HCL M - Hexane B - NaOH N - None C - Zn Acetate O - AsNaO2 D - Nitric Acid P - Na2O4S E - NaHSO4 Q - Na2SO3 F - MeOH R - Na2S2SO3 G - Amchlor S - H2SO4 H - Ascorbic Acid T - TSP Dodecahydrate I - Ice U - Acetone J - DI Water V - MCAA K - EDTA W - ph 4-5 L - EDA Z - other (specify)
State, Zip: CA, 94804				
Phone:	PO #:			Other:
Email:	WO #:			
Project Name: Monthly Outfall 019	Project #: 44002624			
Site: Boeing SSFL	SSOW#:			

Sample Identification - Client ID (Lab ID)	Sample Date	Sample Time	Sample Type (C=comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	SUBCONTRACT/ Gross Alpha	SUBCONTRACT/ Gross Beta	SUBCONTRACT/ Radium Combined	SUBCONTRACT/ Strontium 90	SUBCONTRACT/ Tritium	SUBCONTRACT/ Uranium, Combined	SUBCONTRACT/ Gamma Spec K-40 CS-137	Total Number of Containers	Special Instructions/Note:
			Preservation Code:												
Outfall 019 (440-28539-1)	11/2/12	10:00 Pacific		Water			X	X	X	X	X	X	X	2	
Trip Blank (440-28539-2)	11/2/12	14:00 Pacific		Water			X 1	X 2	X	X 3		X 4	X 5	1	1,2,3,4,5 Added per JB 11/8/12 JV 11/8

Possible Hazard Identification
Unconfirmed
Deliverable Requested: I, II, III, IV, Other (specify)

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)
☐ *Return To Client* ☐ *Disposal By Lab* ☐ *Archive For* _____ *Months*
Special Instructions/QC Requirements:

Empty Kit Relinquished by:	Date:	Time:	Method of Shipment:

	Date/Time:	Company		Date/Time:	Company
Relinquished by: Jim Bandi	11/5/12 17:00	TAL	Received by: FedEx	11/5/12 17:00	
Relinquished by: FED EX	Date/Time:	Company	Received by: [illegible]	Date/Time: 11/06/12 0930	Company EBERLINE
Relinquished by:	Date/Time:	Company	Received by:	Date/Time:	Company

Custody Seals Intact: Δ Yes Δ No
Custody Seal No.: 692202
Cooler Temperature(s) °C and Other Remarks: MELTED ICE

12/11/2012

EBERLINE

RICHMOND, CA LABORATORY

SAMPLE RECEIPT CHECKLIST

Client: TEST AMERICA City IRVINE State CA

Date/Time received 11/06/12 0930 CoC No. 440-14116.1

Container I.D. No. ICE CHEST Requested TAT (Days) 10 P.O. Received Yes [ ] No [ ]

INSPECTION

1. Custody seals on shipping container intact? Yes [X] No [ ] N/A [ ]
2. Custody seals on shipping container dated & signed? Yes [X] No [ ] N/A [ ]
3. Custody seals on sample containers intact? Yes [ ] No [ ] N/A [X]
4. Custody seals on sample containers dated & signed? Yes [ ] No [ ] N/A [X]
5. Packing material is: Wet [ ] Dry [X]
6. Number of samples in shipping container: 2 Sample Matrix W
7. Number of containers per sample: _____ (Or see CoC X)
8. Samples are in correct container Yes [X] No [ ]
9. Paperwork agrees with samples? Yes [X] No [ ]
10. Samples have: Tape [ ] Hazard labels [ ] Rad labels [ ] Appropriate sample labels [X]
11. Samples are: In good condition [X] Leaking [ ] Broken Container [ ] Missing [ ]
12. Samples are: Preserved [X] Not preserved [X] pH LT/N/A Preservative HNO3
13. Describe any anomalies:

14. Was P.M. notified of any anomalies? Yes [ ] No [ ] Date _____
15. Inspected by _____ Date: 11/06/12 Time: 1130

Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	Wipe	Customer Sample No.	Beta/Gamma cpm	Ion Chamber mR/hr	wipe
for samples	<50						

Ion Chamber Ser. No. _____ Calibration date _____

Alpha Meter Ser. No. _____ Calibration date _____

Beta/Gamma Meter Ser. No. 10048 Calibration date 06 DEC 11

Form SCP-02, 07-30-07

"over 55 years of quality nuclear services"

CHAIN OF CUSTODY FORM

440-28429

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Monthly Outfall 019** **GRAB**
Project Manager: Bronwyn Kelly Sampler: Adam Goldenberg	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	VOCs (624)	Oil & Grease (1664-HEM)	Settleable Solids											Field readings: (Log in and include in report Temp and pH) Temp °F = 15.30 pH = 6.88 DO = 3.20 Time of readings = 0830 **Comments**
							ANALYSIS REQUIRED													
Outfall 019	W	VOAs	5	11-1-2012 0830	HCl	1A, 1B, 1C, 1D, 1E	X													
Outfall 019	W	1L Amber	2		HCl	2A, 2B		X												
Outfall 019	W	1L Poly	1		None	3			X											
Trip Blanks	W	VOAs	3		HCl	4A, 4B, 4C	X													

These Samples are the Grab Portion of Outfall 019 for this storm event. Composite samples will follow and are to be added to this work order.

Relinquished By	Date/Time:	Received By	Date/Time:
	11-1-2012 1240		11-1-12 12:40
Relinquished By	Date/Time:	Received By	Date/Time:
	11-1-12 17:40	Tim Sockolov	11/1/12 1740
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ____
48 Hour: ____ 5 Day: ____ Normal: ____

Sample Integrity: (Check) ✓
Intact: ____ On Ice: ____

Data Requirements: (Check) ✓
No Level IV: __ All Level IV: ___ NPDES Level IV: ____

3.5°C

CHAIN OF CUSTODY FORM

440-2853

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Monthly Outfall 019** **COMPOSITE Time Weighted**
Project Manager: Bronwyn Kelly Sampler: RICK BANAGA	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Recoverable Metals: Cu, Pb, Hg, Cd, Se, Zn	TCDD (and all congeners)	BOD_5 (20 degrees C)	Surfactants (MBAS)	Cl^-, SO_4, NO_3+NO_2-N, Perchlorate	Nitrate-N, Nitrite-N	Turbidity, TDS, TSS	Ammonia-N (350.2)	Alpha BHC (608)	2,4,6 TCP, 2,4 Dinitrotoluene, Bis(2-ethylhexyl)phthalate, NDMA, PCP (SVOCs 625)					Comments
Outfall 019	W	1L Poly	1	11-2-2012 10:00	HNO_3	5A	X														
Outfall 019 Dup	W	1L Poly	1		HNO_3	5B	X														
Outfall 019	W	1L Amber	2		None	6A, 6B		X													
Outfall 019	W	1L Poly	1		None	7			X												
Outfall 019	W	500 mL Poly	2		None	8A, 8B				X											
Outfall 019	W	500 mL Poly	2		None	9A, 9B					X										
Outfall 019	W	500 mL Poly	1		None	10						X									
Outfall 019	W	500 mL Poly	2		None	11A, 11B							X								
Outfall 019	W	500 mL Poly	1		H_2SO_4	12								X							
Outfall 019	W	1L Amber	2		None	13A, 13B									X						
Outfall 019	W	1L Amber	2	11-2-2012 10:00	None	14A, 14B										X					

ANALYSIS REQUIRED

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 019 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
	11-2-2012 13:35		11-2-12 13:35
Relinquished By	Date/Time:	Received By	Date/Time:
	17:10		11/2/12 1710
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: _____ 72 Hour: _____ 10 Day: _____
48 Hour: _____ 5 Day: _____ Normal: X

Sample Integrity: (Check)
Intact: _____ On Ice: X

Data Requirements: (Check)
No Level IV: ____ All Level IV: _____ NPDES Level IV: X

5.5°C

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Ave, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES **Monthly Outfall 019** **COMPOSITE Time Weighted**
Project Manager: Bronwyn Kelly Sampler: Rick Bañagan	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Total Dissolved Metals: Cu, Pb, Hg, Cd, Se, Zn	Total Organic Carbon	Gross Alpha(900.0), Gross Beta(900.0), Tritium (H-3) (906.0), Sr-90 (905.0), Total Combined Radium 226 (903.0 or 903.1) & Radium 228 (904.0), Uranium (908.0), K-40, CS-137 (901.0 or 901.1)	Chronic Toxicity	Cyanide	Comments
Outfall 019	W	1L Poly	1	11-2-2012 10:00	None	15	X					Filter w/in 24hrs of receipt at lab
Outfall 019	W	250 mL Glass	1	↓	HCl	16		X				
Outfall 019	W	2.5 Gal Cube	1	11-2-2012 10:00	None	17A			X			Unfiltered and unpreserved analysis
		500 mL Amber	1		None	17B						
~~Outfall 019~~	~~W~~	~~1 Gal Cube~~	~~1~~		~~None~~	~~18~~				X		**Only test on 1st and 2nd rain events of the year**
Outfall 019	W	500 mL Poly	1	11-2-2012 10:00	NaOH	19					X	

COC Page 2 of 3 and Page 3 of 3 are the composite samples for Outfall 019 for this storm event.

These must be added to the same work order for COC Page 1 of 3 for Outfall 019 for the same event.

Relinquished By	Date/Time:	Received By	Date/Time:
[signature]	11-2-2012 13:35	[signature]	11-2-12 13:35
Relinquished By	Date/Time:	Received By	Date/Time:
[signature]	11-2-12 17:10	[signature]	11/2/12 1710
Relinquished By	Date/Time:	Received By	Date/Time:

Turn-around time: (Check)
24 Hour: ____ 72 Hour: ____ 10 Day: ____
48 Hour: ____ 5 Day: ____ Normal: X

Sample Integrity: (Check)
Intact: ____ On Ice: X

Data Requirements: (Check)
No Level IV: _ All Level IV: __ NPDES Level IV: X

5.5°C

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-28429-1

Login Number: 28429

List Source: TestAmerica Irvine

List Number: 1

Creator: Freitag, Kevin R

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Adam Goldenberg
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-28429-1

Login Number: 28539
List Number: 1
Creator: Perez, Angel

List Source: TestAmerica Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Rick Banaga
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-28429-1

Login Number: 28539
List Number: 1
Creator: Nelson, Kym D

List Source: TestAmerica West Sacramento
List Creation: 11/08/12 03:20 PM

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.2
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	N/A	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

APPENDIX F

Section 7

Arroyo Simi-Frontier Park – November 17 & 18, 2012

MEC^X Data Validation Report

DATA VALIDATION REPORT

Boeing SSFL NPDES

SAMPLE DELIVERY GROUP: 440-30117-1

Prepared by

MEC^X, LP
12269 East Vassar Drive
Aurora, CO 80014

I. INTRODUCTION

Task Order Title:	Boeing SSFL NPDES
Contract Task Order:	1261.100D.00
Sample Delivery Group:	440-30117-1
Project Manager:	B. Kelly
Matrix:	Water
QC Level:	IV
No. of Samples:	1
No. of Reanalyses/Dilutions:	0
Laboratory:	TestAmerica-Irvine

Table 1. Sample Identification

Client ID	Laboratory ID	Sub-Laboratory ID	Matrix	Collected	Method
Arroyo Simi-FP	440-30117-1	N/A	Water	11/17/2012 1:20:00 PM	SM 2340B

II. Sample Management

No anomalies were observed regarding sample management. The samples in this SDG were received at the laboratory within the temperature limits of 4°C ±2°C. According to the case narrative for this SDG, the samples were received intact, on ice, and properly preserved, if applicable. The COCs were appropriately signed and dated by field and/or laboratory personnel. Custody seals were intact. If necessary, the client ID was added to the sample result summary by the reviewer.

Data Qualifier Reference Table

Qualifier	Organics	Inorganics
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit. The associated value is the quantitation limit or the estimated detection limit for dioxins or PCB congeners.	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit. The associated value is the sample detection limit or the quantitation limit for perchlorate only.
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.	The associated value is an estimated quantity.
N	The analysis indicates the presence of an analyte for which there is presumptive evidence to make a "tentative identification."	Not applicable.
NJ	The analysis indicates the presence of an analyte that has been "tentatively identified" and the associated numerical value represents its approximate concentration.	Not applicable.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.	The material was analyzed for, but was not detected. The associated value is an estimate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Qualification Code Reference Table

Qualifier	Organics	Inorganics
H	Holding times were exceeded.	Holding times were exceeded.
S	Surrogate recovery was outside QC limits.	The sequence or number of standards used for the calibration was incorrect
C	Calibration %RSD or %D was noncompliant.	Correlation coefficient is <0.995.
R	Calibration RRF was <0.05.	%R for calibration is not within control limits.
B	Presumed contamination as indicated by the preparation (method) blank results.	Presumed contamination as indicated by the preparation (method) or calibration blank results.
L	Laboratory Blank Spike/Blank Spike Duplicate %R was not within control limits.	Laboratory Control Sample %R was not within control limits.
Q	MS/MSD recovery was poor or RPD high.	MS recovery was poor.
E	Not applicable.	Duplicates showed poor agreement.
I	Internal standard performance was unsatisfactory.	ICP ICS results were unsatisfactory.
A	Not applicable.	ICP Serial Dilution %D were not within control limits.
M	Tuning (BFB or DFTPP) was noncompliant.	Not applicable.
T	Presumed contamination as indicated by the trip blank results.	Not applicable.
+	False positive – reported compound was not present.	Not applicable.
-	False negative – compound was present but not reported.	Not applicable.
F	Presumed contamination as indicated by the FB or ER results.	Presumed contamination as indicated by the FB or ER results.
$	Reported result or other information was incorrect.	Reported result or other information was incorrect.
?	TIC identity or reported retention time has been changed.	Not applicable.

Qualification Code Reference Table Cont.

D	The analysis with this flag should not be used because another more technically sound analysis is available.	The analysis with this flag should not be used because another more technically sound analysis is available.
P	Instrument performance for pesticides was poor.	Post Digestion Spike recovery was not within control limits.
DNQ	The reported result is above the method detection limit but is less than the reporting limit.	The reported result is above the method detection limit but is less than the reporting limit.
*II, *III	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.	Unusual problems found with the data that have been described in Section II, "Sample Management," or Section III, "Method Analyses." The number following the asterisk (*) will indicate the report section where a description of the problem can be found.

III. Method Analyses

A. EPA METHOD SM2340B—Hardness

Reviewed By: P. Meeks
Date Reviewed:

The sample listed in Table 1 for these analyses was validated based on the guidelines outlined in the *MEC^X Data Validation Procedure for Metals (DVP-5, Rev. 0 and DVP-21, Rev. 0), EPA Methods 200.7, SM2340B*, and the *National Functional Guidelines for Inorganic Data Review* (7/02).

- Holding Times: The analytical holding time, six months for ICP metals, was met.
- Calibration: Calibration criteria were met. All initial and continuing calibration recoveries were within 90-110%. CRDL recoveries were within the control limits of 70-130%.
- Blanks: The method blank and CCBs had no applicable detects.
- Interference Check Samples: Recoveries were within the method-established control limits.
- Blank Spikes and Laboratory Control Samples: Recoveries were within method-established QC limits.
- Laboratory Duplicates: No laboratory duplicate analysis was performed on the sample in this SDG.
- Matrix Spike/Matrix Spike Duplicate: MS/MSD analyses were performed on the sample in this SDG. Results for calcium were not assessed as the native concentration was greater than 4× the spiked amount. The magnesium recoveries and RPD were within the method-established control limits.
- Serial Dilution: No serial dilution analyses were performed on the sample in this SDG.
- Sample Result Verification: Calculations were verified and the sample results reported on the sample result summary were verified against the raw data. No transcription errors or calculation errors were noted. When the sample results were qualified and the reviewer was able to clearly determine bias, detected results were qualified as either “J+” or “J-“; otherwise, bias was not indicated in the qualification. Any detects between the method detection limit and the reporting limit were qualified as estimated, “J,” and coded with “DNQ,” in order to comply with the NPDES permit. Reported nondetects are valid to the MDL.
- Field QC Samples: Field QC samples were evaluated, and if necessary, qualified based on method blanks and other laboratory QC results affecting the usability of the field QC

data. Any remaining detects were used to evaluate the associated site samples. Following are findings associated with field QC samples:

- Field Blanks and Equipment Rinsates: This SDG had no identified field blank or equipment rinsate samples.

- Field Duplicates: There were no field duplicate samples identified for this SDG.

Validated Sample Result Forms 440-30117-1

Analysis Method SM 2340B

Sample Name Arroyo Simi-FP **Matrix Type:** Water **Validation Level:** IV

Lab Sample Name: 440-30117-1 **Sample Date:** 11/17/2012 1:20:00 PM

Analyte	CAS No	Result Value	RL	MDL	Result Units	Lab Qualifier	Validation Qualifier	Validation Notes
Hardness, as CaCO3	STL00009	90	0.33	0.17	mg/L			

APPENDIX F

Section 8

Arroyo Simi-Frontier Park – November 17 & 18, 2012

Test America Analytical Laboratory Reports

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

TestAmerica Job ID: 440-30117-1
Client Project/Site: Quarterly Arroyo Simi-Frontier Park

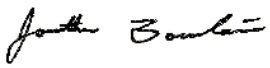
For:
MWH Americas Inc
618 Michillinda Avenue, Suite 200
Arcadia, California 91007

Attn: Bronwyn Kelly

Authorized for release by:
12/17/2012 4:17:27 PM

Jonathan Bousselaire
Project Manager I
jonathan.bousselaire@testamericainc.com

I certify under penalty of perjury that the information contained in this report and all attachments was produced in accordance with the indicated methods and laboratory standard operating procedures, except as noted, and are complete and accurate to the best of my knowledge and belief. Subcontract laboratory reports that are attached have been evaluated for completeness and quality control acceptability.



Jonathan Bousselaire
Project Manager I
12/17/2012 4:17:27 PM

Table of Contents

Cover Page 1
Table of Contents 3
Sample Summary 4
Case Narrative 5
Client Sample Results 6
Chronicle 7
QC Sample Results 8
QC Association 11
Definitions 12
Certification Summary 13
Chain of Custody 14
Receipt Checklists 15

Sample Summary

Client: MWH Americas Inc
Project/Site: Quarterly Arroyro Simi-Frontier Park

TestAmerica Job ID: 440-30117-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
440-30117-1	Arroyo Simi-FP	Water	11/17/12 13:20	11/17/12 18:05

Job ID: 440-30117-1

Laboratory: TestAmerica Irvine

Narrative

Job Narrative
440-30117-1

Comments
No additional comments.

Receipt
The sample was received on 11/17/2012 6:05 PM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 2.6º C.

GC/MS Semi VOA
No analytical or quality issues were noted.

GC Semi VOA
Method(s) 608: The continuing calibration verification (CCV) for 1016 associated with batch 68394 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 608: Insufficient sample volume was available to perform batch matrix spike/matrix spike duplicate (MS/MSD) associated with batch 67934. The laboratory control sample (LCS) was performed in duplicate to provide precision data for this batch.

Method(s) 608: The following sample(s) required a copper clean-up to reduce matrix interferences caused by sulfur: (LCSD 440-67934/5-A), (MB 440-67934/1-A).

Method(s) 608: The continuing calibration verification (CCV) for DDD associated with batch 68374 recovered above the upper control limit. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

No other analytical or quality issues were noted.

Metals
No analytical or quality issues were noted.

Organic Prep
Method(s) 525.2: A deviation from the Standard Operating Procedure (SOP) occurred. Details are as follows: Due to heavy particulates in the following sample, the 525.2 extraction was completed using (3) C18 filter disks:Arroyo Simi-FP (440-30117-1). This preventative measure was taken in order to avoid clogging and channeling during the extraction process.

Batch 67780

No other analytical or quality issues were noted.

Client Sample ID: Arroyo Simi-FP
Date Collected: 11/17/12 13:20
Date Received: 11/17/12 18:05

Lab Sample ID: 440-30117-1
Matrix: Water

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		0.97	0.077	ug/L		11/18/12 16:06	11/28/12 13:27	1
Diazinon	ND		0.24	0.039	ug/L		11/18/12 16:06	11/28/12 13:27	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Dimethyl-2-nitrobenzene	*106*		*70 - 130*	*11/18/12 16:06*	*11/28/12 13:27*	*1*
Perylene-d12	*85*		*70 - 130*	*11/18/12 16:06*	*11/28/12 13:27*	*1*
Triphenylphosphate	*122*		*70 - 130*	*11/18/12 16:06*	*11/28/12 13:27*	*1*

Method: 608 - Organochlorine Pesticides in Water

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.095	0.076	ug/L		11/19/12 13:08	11/20/12 23:10	1
Dieldrin	ND		0.0048	0.0019	ug/L		11/19/12 13:08	11/20/12 23:10	1
Toxaphene	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 23:10	1
4,4'-DDD	ND		0.0048	0.0038	ug/L		11/19/12 13:08	11/20/12 23:10	1
4,4'-DDE	ND		0.0048	0.0029	ug/L		11/19/12 13:08	11/20/12 23:10	1
4,4'-DDT	ND		0.0095	0.0038	ug/L		11/19/12 13:08	11/20/12 23:10	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
Tetrachloro-m-xylene	*61*		*35 - 115*	*11/19/12 13:08*	*11/20/12 23:10*	*1*

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1
Aroclor 1221	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1
Aroclor 1232	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1
Aroclor 1242	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1
Aroclor 1248	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1
Aroclor 1254	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1
Aroclor 1260	ND		0.48	0.24	ug/L		11/19/12 13:08	11/20/12 20:14	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
DCB Decachlorobiphenyl (Surr)	*62*		*45 - 120*	*11/19/12 13:08*	*11/20/12 20:14*	*1*

Method: SM 2340B - Total Hardness (as CaCO3) by calculation

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Hardness, as CaCO3	**90**		0.33	0.17	mg/L			11/19/12 12:13	1

Lab Chronicle

Client: MWH Americas Inc
Project/Site: Quarterly Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-30117-1

Client Sample ID: Arroyo Simi-FP
Date Collected: 11/17/12 13:20
Date Received: 11/17/12 18:05

Lab Sample ID: 440-30117-1
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	525.2			1035 mL	1 mL	67780	11/18/12 16:06	LA	TAL IRV
Total/NA	Analysis	525.2		1			69792	11/28/12 13:27	MF	TAL IRV
Total/NA	Prep	608			1050 mL	2 mL	67934	11/19/12 13:08	AB	TAL IRV
Total/NA	Analysis	608		1			68374	11/20/12 23:10	JM	TAL IRV
Total/NA	Analysis	608		1			68394	11/20/12 20:14	JM	TAL IRV
Total/NA	Analysis	SM 2340B		1			67919	11/19/12 12:13	FR	TAL IRV

Laboratory References:

TAL IRV = TestAmerica Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Method: 525.2 - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: MB 440-67780/1-A
Matrix: Water
Analysis Batch: 69792

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 67780

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorpyrifos	ND		1.0	0.080	ug/L		11/18/12 16:06	11/28/12 12:05	1
Diazinon	ND		0.25	0.040	ug/L		11/18/12 16:06	11/28/12 12:05	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,3-Dimethyl-2-nitrobenzene	*105*		*70 - 130*	*11/18/12 16:06*	*11/28/12 12:05*	*1*
Perylene-d12	*85*		*70 - 130*	*11/18/12 16:06*	*11/28/12 12:05*	*1*
Triphenylphosphate	*123*		*70 - 130*	*11/18/12 16:06*	*11/28/12 12:05*	*1*

Lab Sample ID: LCS 440-67780/2-A
Matrix: Water
Analysis Batch: 69792

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 67780

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Chlorpyrifos			5.00	5.82		ug/L		116	70 - 130		
Diazinon			5.00	5.04		ug/L		101	70 - 130		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,3-Dimethyl-2-nitrobenzene	*97*		*70 - 130*
Perylene-d12	*99*		*70 - 130*
Triphenylphosphate	*109*		*70 - 130*

Lab Sample ID: LCSD 440-67780/3-A
Matrix: Water
Analysis Batch: 69792

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 67780

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Chlorpyrifos			5.00	6.39		ug/L		128	70 - 130	9	30
Diazinon			5.00	5.81		ug/L		116	70 - 130	14	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,3-Dimethyl-2-nitrobenzene	*100*		*70 - 130*
Perylene-d12	*97*		*70 - 130*
Triphenylphosphate	*123*		*70 - 130*

Method: 608 - Organochlorine Pesticides in Water

Lab Sample ID: MB 440-67934/1-A
Matrix: Water
Analysis Batch: 68375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 67934

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlordane (technical)	ND		0.10	0.080	ug/L		11/19/12 13:08	11/20/12 17:28	1
Dieldrin	ND		0.0050	0.0020	ug/L		11/19/12 13:08	11/20/12 17:28	1
Toxaphene	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 17:28	1
4,4'-DDD	ND		0.0050	0.0040	ug/L		11/19/12 13:08	11/20/12 17:28	1
4,4'-DDT	ND		0.010	0.0040	ug/L		11/19/12 13:08	11/20/12 17:28	1

Method: 608 - Organochlorine Pesticides in Water (Continued)

Lab Sample ID: MB 440-67934/1-A
Matrix: Water
Analysis Batch: 68375

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 67934

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Tetrachloro-m-xylene	81		35 - 115	11/19/12 13:08	11/20/12 17:28	1

Lab Sample ID: LCS 440-67934/2-A
Matrix: Water
Analysis Batch: 68375

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 67934

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Dieldrin	0.500	0.490		ug/L		98	55 - 115
4,4'-DDD	0.500	0.524		ug/L		105	55 - 120
4,4'-DDT	0.500	0.500		ug/L		100	55 - 120

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Tetrachloro-m-xylene	81		35 - 115

Lab Sample ID: LCSD 440-67934/3-A
Matrix: Water
Analysis Batch: 68375

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 67934

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Dieldrin	0.500	0.492		ug/L		98	55 - 115	0	30
4,4'-DDD	0.500	0.527		ug/L		105	55 - 120	1	30
4,4'-DDT	0.500	0.503		ug/L		101	55 - 120	1	30

Surrogate	LCSD %Recovery	LCSD Qualifier	Limits
Tetrachloro-m-xylene	80		35 - 115

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC)

Lab Sample ID: MB 440-67934/1-A
Matrix: Water
Analysis Batch: 68394

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 67934

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aroclor 1016	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1
Aroclor 1221	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1
Aroclor 1232	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1
Aroclor 1242	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1
Aroclor 1248	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1
Aroclor 1254	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1
Aroclor 1260	ND		0.50	0.25	ug/L		11/19/12 13:08	11/20/12 16:18	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl (Surr)	56		45 - 120	11/19/12 13:08	11/20/12 16:18	1

Method: 608 - Polychlorinated Biphenyls (PCBs) (GC) (Continued)

Lab Sample ID: LCS 440-67934/4-A
Matrix: Water
Analysis Batch: 68394

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 67934

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Aroclor 1016			4.00	3.46		ug/L		86	50 - 115		
Aroclor 1260			4.00	2.92		ug/L		73	60 - 120		

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*57*		*45 - 120*

Lab Sample ID: LCSD 440-67934/5-A
Matrix: Water
Analysis Batch: 68394

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 67934

Analyte			Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Aroclor 1016			4.00	3.53		ug/L		88	50 - 115	2	30
Aroclor 1260			4.00	3.03		ug/L		76	60 - 120	4	25

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
DCB Decachlorobiphenyl (Surr)	*58*		*45 - 120*

QC Association Summary

Client: MWH Americas Inc
Project/Site: Quarterly Arroyo Simi-Frontier Park

TestAmerica Job ID: 440-30117-1

GC/MS Semi VOA

Prep Batch: 67780

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-30117-1	Arroyo Simi-FP	Total/NA	Water	525.2	
LCS 440-67780/2-A	Lab Control Sample	Total/NA	Water	525.2	
LCSD 440-67780/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	
MB 440-67780/1-A	Method Blank	Total/NA	Water	525.2	

Analysis Batch: 69792

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-30117-1	Arroyo Simi-FP	Total/NA	Water	525.2	67780
LCS 440-67780/2-A	Lab Control Sample	Total/NA	Water	525.2	67780
LCSD 440-67780/3-A	Lab Control Sample Dup	Total/NA	Water	525.2	67780
MB 440-67780/1-A	Method Blank	Total/NA	Water	525.2	67780

GC Semi VOA

Prep Batch: 67934

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-30117-1	Arroyo Simi-FP	Total/NA	Water	608	
LCS 440-67934/2-A	Lab Control Sample	Total/NA	Water	608	
LCS 440-67934/4-A	Lab Control Sample	Total/NA	Water	608	
LCSD 440-67934/3-A	Lab Control Sample Dup	Total/NA	Water	608	
LCSD 440-67934/5-A	Lab Control Sample Dup	Total/NA	Water	608	
MB 440-67934/1-A	Method Blank	Total/NA	Water	608	

Analysis Batch: 68374

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-30117-1	Arroyo Simi-FP	Total/NA	Water	608	67934

Analysis Batch: 68375

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 440-67934/2-A	Lab Control Sample	Total/NA	Water	608	67934
LCSD 440-67934/3-A	Lab Control Sample Dup	Total/NA	Water	608	67934
MB 440-67934/1-A	Method Blank	Total/NA	Water	608	67934

Analysis Batch: 68394

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-30117-1	Arroyo Simi-FP	Total/NA	Water	608	67934
LCS 440-67934/4-A	Lab Control Sample	Total/NA	Water	608	67934
LCSD 440-67934/5-A	Lab Control Sample Dup	Total/NA	Water	608	67934
MB 440-67934/1-A	Method Blank	Total/NA	Water	608	67934

Metals

Analysis Batch: 67919

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-30117-1	Arroyo Simi-FP	Total/NA	Water	SM 2340B	

Client: MWH Americas Inc
Project/Site: Quarterly Arroyro Simi-Frontier Park

TestAmerica Job ID: 440-30117-1

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
DL, RA, RE, IN	Indicates a Dilution, Reanalysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
EDL	Estimated Detection Limit
EPA	United States Environmental Protection Agency
MDA	Minimum detectable activity
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
ND	Not detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative error ratio
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Certification Summary

Client: MWH Americas Inc
Project/Site: Quarterly Arroyro Simi-Frontier Park

TestAmerica Job ID: 440-30117-1

Laboratory: TestAmerica Irvine

All certifications held by this laboratory are listed. Not all certifications are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Alaska	State Program	10	CA01531	06-30-13
Arizona	State Program	9	AZ0671	10-13-13
California	LA Cty Sanitation Districts	9	10256	01-31-13
California	NELAC	9	1108CA	01-31-13
California	State Program	9	2706	06-30-14
Guam	State Program	9	Cert. No. 12.002r	01-23-13
Hawaii	State Program	9	N/A	01-31-13
Nevada	State Program	9	CA015312007A	07-31-13
New Mexico	State Program	6	N/A	01-31-13
Northern Mariana Islands	State Program	9	MP0002	01-31-13
Oregon	NELAC	10	4005	09-12-13
USDA	Federal		P330-09-00080	06-06-14
USEPA UCMR	Federal	1	CA01531	01-31-13

440-30117

Test America Version 7/19/2010

CHAIN OF CUSTODY FORM

Client Name/Address:	Project:
MWH-Arcadia 618 Michillinda Avenue, Suite 200 Arcadia, CA 91007 Test America Contact: Debby Wilson	Boeing-SSFL NPDES Quarterly Arroyo Simi-Frontier Park
Project Manager: Bronwyn Kelly Sampler: Rick Baxter	Phone Number: (626) 568-6691 Fax Number: (626) 568-6515

Sample Description	Sample Matrix	Container Type	# of Cont.	Sampling Date/Time	Preservative	Bottle #	Hardness as $CaCO_3$	PCBs (608)	Chlorpyrifos, Diazinon (525.2)	Chlordane, Dieldrin, Toxaphene (608), 4,4-DDD, 4,4-DDE, 4,4-DDT	Comments
Arroyo Simi-FP	W	1L Poly	1	11-17-2012 13:20	HNO_3	1	X				
Arroyo Simi-FP	W	1L Amber	2		None	2A, 2B		X			
Arroyo Simi-FP	W	1L Amber	2		HCl	3A, 3B			X		Extract within 36-Hours of sampling
Arroyo Simi-FP	W	1L Amber	2	11-17-2012 13:20	None	4A, 4B				X	

Field readings:
Temp = 59 °F
pH = 7.6
Water Velocity (Ft/second) = 3 FT 30 SEC
Time of readings = 13:20

Relinquished By	Date/Time	Received By	Date/Time
	11-17-2012 14:15		11-17-12 14:15
	11-17-12 18:05		
		11/17/12 18:05	

Turn around Time: (check)
24 Hours _____ 5 Days _____
48 Hours _____ 10 Days _____
72 Hours _____ Normal X

Sample Integrity: (check)
Intact _____ On Ice: X

Data Requirements: (check)
No Level IV ____ All Level IV X

NPDES Level IV ____

2.Qc

Login Sample Receipt Checklist

Client: MWH Americas Inc

Job Number: 440-30117-1

Login Number: 30117

List Source: TestAmerica Irvine

List Number: 1

Creator: Perez, Angel

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	N/A	
Sample custody seals, if present, are intact.	N/A	
The cooler or samples do not appear to have been compromised or tampered with.	N/A	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	Rick B.
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time.	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	N/A	
Residual Chlorine Checked.	N/A	