

TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

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TestAmerica Job ID: 660-70525-1

Client Project/Site: City of Hollywood
Revision: 1

For:

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Authorized for release by:

1/12/2016 4:16:14 PM

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The test results in this report meet all 2003 NELAC and 2009 TNI requirements for accredited parameters, exceptions are noted in this report. This report may not be reproduced except in full, and with written approval from the laboratory. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

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Results relate only to the items tested and the sample(s) as received by the laboratory.



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1

2

3

4

5

6

7

8

9

10

11

12

13

14

15



Table of Contents

Cover Page	1
Table of Contents	2
Sample Summary	3
Case Narrative	4
Definitions/Glossary	9
Detection Summary	10
Client Sample Results	11
QC Sample Results	21
Internal Standard Summary	37
QC Association Summary	38
Lab Chronicle	41
Method Summary	43
Certification Summary	44
Chain of Custody	46
Receipt Checklists	47

Sample Summary

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
660-70525-1	MW-LB 9	Water	11/18/15 09:05	11/19/15 09:35
660-70525-2	MW-LB 12	Water	11/18/15 10:26	11/19/15 09:35

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Case Narrative

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Job ID: 660-70525-1

Laboratory: TestAmerica Tampa

Narrative

Job Narrative 660-70525-1

Comments

No additional comments.

Receipt

The samples were received on 11/19/2015 9:35 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperatures of the 2 coolers at receipt time were 0.9° C and 1.1° C.

Laboratory Comments

Due to system limitations Total Endosulfans are not included in this report. The data for this summary analytes has been calculated by hand and entered into the accompanying EDD.

GC/MS VOA

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

GC/MS Semi VOA

Method(s) 8270D: The continuing calibration verification (CCV) associated with batch 400-285370 recovered above the upper control limit for Famphur, Tokuthion, Sulfotepp and Bolstar. The samples associated with this CCV were non-detects for the affected analytes; therefore, the data have been reported.

Method(s) 8270D: The following analyte(s) recovered outside control limits for the LCS/LCSD associated with batch 400-284701: Coumaphos. This is not indicative of a systematic control problem because these were random marginal exceedances. Qualified results have been reported.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

GC Semi VOA

Method(s) FL-PRO: The method blank for batch 400-284918 contained Total Petroleum Hydrocarbons (C8-C40) above the method detection limit. This target analyte concentration was less than the reporting limit (RL); therefore, re-extraction and/or re-analysis of samples was not performed.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Metals

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Subcontract non-Sister

No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Organic Prep

Method(s) 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate (MS/MSD) associated with batch 400-284565.

Method(s) 3520C: Insufficient sample volume was available to perform a matrix spike/matrix spike duplicate/sample duplicate (MS/MSD/DUP) associated with batch 411595.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

PROJECT NARRATIVE

H5K200414

The results reported herein are applicable to the samples submitted for analysis only. If you have any questions about this report, please call (865) 291-3000 to speak with the TestAmerica project manager listed on the cover page.

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The original chain of custody documentation is included with this report.

Sample Receipt

Custody seals were not present.

Quality Control and Data Interpretation

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

The following flags are used to qualify results for chlorinated dioxin and furan results:

J – The reported result is an estimate. The amount reported is below the Minimum Level (ML). The qualitative definition of the ML is “the lowest level at which the analytical system must give a reliable signal and an acceptable calibration point”. The ML was introduced in EPA Methods 1624 and 1625 in 1980 and was promulgated in these methods in 1984 at 40 CFR Part 136, Appendix A. For the purposes of this report, the ML is qualitatively defined as described above, and quantitatively defined as follows:

Minimum Level: The concentration or mass of analyte in the sample that corresponds to the lowest calibration level in the initial calibration. It represents a concentration (in the sample extract) equivalent to that of the lowest calibration standard, after corrections for method-specified sample weights, volumes and cleanup procedures has been employed.

Example: The lowest calibration level for TCDD in the initial calibration is 0.5 pg/uL. A mass of 10 pg of 2,3,7,8-TCDD in the sample would result in a concentration of 0.5 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the lowest calibration standard, the 10 pg mass in the sample components is the ML. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The ML for 2,3,7,8-TCDD becomes 100 pg rather than the default of 10 pg.

E – The reported result is an estimate. The amount reported is above the Upper Calibration Level (UCL) described below. The quantitative definition of the UCL is listed below:

Upper Calibration Level: The concentration or mass of analyte in the sample that corresponds to the highest calibration level in the initial calibration. It is equivalent to the concentration of the highest calibration standard, assuming that all method-specified sample weights, volumes, and cleanup procedures have been employed.

PROJECT NARRATIVE

H5K200414

Example: The maximum calibration level for TCDD in the initial calibration is 200 pg/uL. A mass of 4000 pg of 2,3,7,8-TCDD in the sampling components would result in a concentration of 200 pg/uL in the sample extract (at a final volume of 20 uL). Since the concentration in the sample extract corresponds to the concentration in the highest calibration standard, the 4000 pg mass in the sample components is the UCL. If the sample extract is further diluted, the ML will increase by the dilution factor.

Example: A 1/10 dilution is performed on the sample extract described above. The UCL for 2,3,7,8-TCDD becomes 40,000 pg rather than the default of 4000 pg. In this example, all positive 2,3,7,8-TCDD results above 40,000 pg are flagged with an E.

B – The analyte is present in the associated method blank at a detectable level. For this analysis, there is no method specified reporting level other than the qualitative criterion that peaks must exhibit a signal-to-noise ratio of ≥ 2.5 to 1. Therefore, the presence of any reportable amount of the analyte in the blank will result in a B qualifier on all associated samples.

Q – Estimated maximum possible concentration. This qualifier is used when the result is generated from chromatographic data that does not meet all the qualitative criteria for a positive identification given in the method. These may include one or more of the following:

- Ion abundance ratios must be within specified limits (+/-15% of theoretical ion abundance ratio).
- Retention time criteria (relative to the method-specified isotope labeled retention time standard).
- Co-maximization criterion. The two quantitation ion peaks must reach their maxima within 2 seconds of each other.
- 2,3,7,8-TCDF result is reported from the non-isomer specific Rtx-5 column.
- Polychlorinated dibenzofuran purity. An interference may be present on the indicated polychlorinated dibenzofuran when a polychlorinated diphenyl ether peak is present and maximizes within +/- 3 seconds of the dibenzofuran candidate.

S – Ion suppression evident. The trace indicating the signal from the lock mass of the calibration compound shows a deflection at the retention time of the analyte. This may indicate a temporary suppression of the instrument sensitivity due to a matrix-borne interference.

C – Coeluting Isomer. The isomer is known to coelute with another member of its homologue group, or the peak shape is shouldered, indicating the likelihood of a coeluting isomer.

X – Other. See explanation in narrative.

Laboratory studies supporting risk assessment and Total Maximum Daily Load (TMDL) evaluations, frequently use qualified data reported as low as the Method Detection Limit (MDL), or the Estimated Detection Limit (EDL). Several of EPA's isotope dilution methods employ the EDL.^{1,2,3} The EDL is based on a direct measurement of the signal-to-noise (S/N) ratio acquired during sample analysis. This S/N measurement is used to calculate the concentration in the

PROJECT NARRATIVE H5K200414

sample corresponding to the minimum intensity of the smallest quantifiable peak. The EDL reflects the amount of the particular analyte which would be required to cause a positive result for the particular analysis. Because the S/N obtained covaries with recovery, instrument sensitivity and sample-specific cleanup efficacy, the EDL is a more valid measure of the sensitivity of the entire analytical process for the specific sample than is an MDL run periodically on a reference matrix.

The EDL is typically calculated according to the following equation:

$$\text{Estimated Detection Limit} = \frac{N \times 2.5 \times Q_{is}}{H_{is} \times RRF \times W \times S}$$

Where:

- N = peak to peak noise of quantitation ion signal in the region of the ion chromatogram where the compound of interest is expected to elute
- H_{is} = peak height of quantitation ion for appropriate internal standard
- Q_{is} = ng of internal standard added to sample
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

(The area of the internal standard is sometimes used instead of height, along with an area-to-height conversion factor.)

This method of estimating the detection limit differs from the MDL in that it does not carry the requirement that the sample be statistically distinguished as being from a contaminated population. As results approach the EDL, the risk of false positives and the analytical uncertainty increase significantly. However, a low false positive well below the ML or MDL is often closer to the true value than an assumption that the target analyte is present at the detection or reporting limits. For relatively clean samples, MDL studies may give an elevated estimate of the detection limit. Additionally, on contaminated samples, the MDL may give a falsely low estimate of the detection limit.

$$\text{Analyte Concentration} = \frac{A_s \times Q_{is}}{A_{is} \times RRF \times W \times S}$$

Where:

- A_s = Sum of areas of the target peaks
- Q_{is} = ng of internal standard added to sample
- A_{is} = Sum of areas of the internal standard peaks
- RRF = mean relative response factor of compound obtained during initial calibration
- W = amount of sample extracted (grams or liters)
- S = percent solids (optional, if results are requested to be reported on dry weight basis)

In sample data, peaks must have an intensity of ≥ 2.5 times the height of the background noise in order to be considered. Careful examination of the two equations above reveals that for the

PROJECT NARRATIVE H5K200414

concentration of the smallest peak detectable (per the EDL equation) to exactly equal the smallest peaks that are calculated, requires that the average height to area ratio obtained during the calibration must equal the area to height ratio for every peak obtained near 2.5 times the noise. When the area to height ratio on a peak in a sample is less than the average obtained during calibration, the calculated result will correspond to a peak that would have been less than 2.5 times the noise on the calibration. This is the result of normal variability. Because the source methods for the EDL (SW-846 8290 and 8280A) do not provide for censoring of results by any other magnitude standard than being 2.5 times the noise, the laboratory does not censor at the calculated EDL. Hence, detections may be reported below the estimated detection limits.

Footnotes:

1. Code of Federal Regulations, Part 136, Chapter 1, Appendix 1, October 1994: Method 1613 Tetra- Through Octa-Chlorinated Dioxins and Furans by Isotope Dilution High Resolution Gas Chromatography/High Resolution Mass Spectrometry.
2. U.S. EPA. Test Methods for Evaluating Solid Waste, Volume II, SW-846, Update III, December 1996. Method 8280A: The Analysis of Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/Low Resolution Mass Spectrometry.
3. U.S. EPA. Test Methods for Evaluating Solid Waste, SW-846. Third Edition. March 1995 Method 8290: Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by High Resolution Gas Chromatography/High Resolution Mass Spectrometry.

Definitions/Glossary

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.
U	Indicates that the compound was analyzed for but not detected.

GC/MS Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
J3	Estimated value; value may not be accurate. Spike recovery or RPD outside of criteria.

GC Semi VOA

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

DIOXIN

Qualifier	Qualifier Description
V	Indicates the analyte was detected in both the sample and method blank.
J	Estimated value; value may not be accurate.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Metals

Qualifier	Qualifier Description
U	Indicates that the compound was analyzed for but not detected.
I	The reported value is between the laboratory method detection limit and the laboratory practical quantitation limit.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
α	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains no Free Liquid
DER	Duplicate error ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision level concentration
MDA	Minimum detectable activity
EDL	Estimated Detection Limit
MDC	Minimum detectable concentration
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
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)

Detection Summary

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Lab Sample ID: 660-70525-1

Analyte	Result	Qualifier	ML	EDL	TEF	TEQ	Unit	Dil Fac	D	Method	Prep Type
Total PeCDD	4.70	V J I	48.3	2.44			pg/L	1		8290A	Total
Analyte	Result	Qualifier	ML	EDL	TEF	TEQ	Unit	Dil Fac	D	Method	Prep Type
Barium	2.2	I		5.0		0.61	ug/L	1		6020A	Total Recoverable

Client Sample ID: MW-LB 12

Lab Sample ID: 660-70525-2

Analyte	Result	Qualifier	ML	EDL	TEF	TEQ	Unit	Dil Fac	D	Method	Prep Type
Total PeCDD	27.1	V J I	48.1	2.12			pg/L	1		8290A	Total
OCDD	6.67	J V I	96.2	3.43	0.001	0.0067	pg/L	1		8290A	Total
Total HxCDF	3.17	J I	48.1	1.31			pg/L	1		8290A	Total
Total HpCDF	4.29	J I	48.1	2.83			pg/L	1		8290A	Total
OCDF	14.9	J I	96.2	4.87	0.001	0.015	pg/L	1		8290A	Total
Analyte	Result	Qualifier	ML	EDL	TEF	TEQ	Unit	Dil Fac	D	Method	Prep Type
Barium	52			5.0		0.61	ug/L	1		6020A	Total Recoverable

This Detection Summary does not include radiochemical test results.

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Lab Sample ID: 660-70525-1

Date Collected: 11/18/15 09:05

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	9.9	U	20	9.9	ug/L			11/23/15 15:10	1
Benzene	0.50	U	1.0	0.50	ug/L			11/23/15 15:10	1
Bromobenzene	0.58	U	1.0	0.58	ug/L			11/23/15 15:10	1
Bromoform	0.63	U	1.0	0.63	ug/L			11/23/15 15:10	1
Bromomethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:10	1
2-Butanone (MEK)	8.4	U	10	8.4	ug/L			11/23/15 15:10	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			11/23/15 15:10	1
Carbon tetrachloride	0.43	U	1.0	0.43	ug/L			11/23/15 15:10	1
Chlorobenzene	0.63	U	1.0	0.63	ug/L			11/23/15 15:10	1
Chlorobromomethane	0.58	U	1.0	0.58	ug/L			11/23/15 15:10	1
Chlorodibromomethane	0.31	U	1.0	0.31	ug/L			11/23/15 15:10	1
Chloroethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:10	1
Chloroform	0.90	U	1.0	0.90	ug/L			11/23/15 15:10	1
Chloromethane	1.0	U	4.0	1.0	ug/L			11/23/15 15:10	1
2-Chlorotoluene	0.65	U	1.0	0.65	ug/L			11/23/15 15:10	1
4-Chlorotoluene	0.52	U	1.0	0.52	ug/L			11/23/15 15:10	1
cis-1,2-Dichloroethene	0.65	U	1.0	0.65	ug/L			11/23/15 15:10	1
cis-1,3-Dichloropropene	0.39	U	1.0	0.39	ug/L			11/23/15 15:10	1
1,2-Dibromo-3-Chloropropane	2.5	U	5.0	2.5	ug/L			11/23/15 15:10	1
Dibromomethane	0.46	U	1.0	0.46	ug/L			11/23/15 15:10	1
1,2-Dichlorobenzene	0.49	U	1.0	0.49	ug/L			11/23/15 15:10	1
1,3-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			11/23/15 15:10	1
1,4-Dichlorobenzene	0.60	U	1.0	0.60	ug/L			11/23/15 15:10	1
Dichlorobromomethane	0.44	U	1.0	0.44	ug/L			11/23/15 15:10	1
Dichlorodifluoromethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:10	1
1,1-Dichloroethane	0.52	U	1.0	0.52	ug/L			11/23/15 15:10	1
1,2-Dichloroethane	0.57	U	1.0	0.57	ug/L			11/23/15 15:10	1
1,1-Dichloroethene	0.67	U	1.0	0.67	ug/L			11/23/15 15:10	1
1,2-Dichloropropane	0.52	U	1.0	0.52	ug/L			11/23/15 15:10	1
1,3-Dichloropropane	0.42	U	1.0	0.42	ug/L			11/23/15 15:10	1
2,2-Dichloropropane	0.36	U	1.0	0.36	ug/L			11/23/15 15:10	1
1,1-Dichloropropene	0.65	U	1.0	0.65	ug/L			11/23/15 15:10	1
Ethylbenzene	0.44	U	1.0	0.44	ug/L			11/23/15 15:10	1
Ethylene Dibromide	0.50	U	1.0	0.50	ug/L			11/23/15 15:10	1
Hexachlorobutadiene	0.34	U	1.0	0.34	ug/L			11/23/15 15:10	1
2-Hexanone	4.4	U	10	4.4	ug/L			11/23/15 15:10	1
Isopropylbenzene	0.52	U	1.0	0.52	ug/L			11/23/15 15:10	1
4-Isopropyltoluene	0.69	U	1.0	0.69	ug/L			11/23/15 15:10	1
Methylene Chloride	4.0	U	5.0	4.0	ug/L			11/23/15 15:10	1
4-Methyl-2-pentanone (MIBK)	4.0	U	10	4.0	ug/L			11/23/15 15:10	1
Methyl tert-butyl ether	0.44	U	1.0	0.44	ug/L			11/23/15 15:10	1
m-Xylene & p-Xylene	0.60	U	2.0	0.60	ug/L			11/23/15 15:10	1
n-Butylbenzene	0.67	U	1.0	0.67	ug/L			11/23/15 15:10	1
N-Propylbenzene	0.59	U	1.0	0.59	ug/L			11/23/15 15:10	1
o-Xylene	0.50	U	1.0	0.50	ug/L			11/23/15 15:10	1
sec-Butylbenzene	0.63	U	1.0	0.63	ug/L			11/23/15 15:10	1
Styrene	0.98	U	2.0	0.98	ug/L			11/23/15 15:10	1
tert-Butylbenzene	0.84	U	1.0	0.84	ug/L			11/23/15 15:10	1
1,1,1,2-Tetrachloroethane	0.63	U	1.0	0.63	ug/L			11/23/15 15:10	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Lab Sample ID: 660-70525-1

Date Collected: 11/18/15 09:05

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,1,2,2-Tetrachloroethane	0.17	U	1.0	0.17	ug/L			11/23/15 15:10	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			11/23/15 15:10	1
Toluene	0.51	U	1.0	0.51	ug/L			11/23/15 15:10	1
trans-1,2-Dichloroethene	0.67	U	1.0	0.67	ug/L			11/23/15 15:10	1
trans-1,3-Dichloropropene	0.27	U	1.0	0.27	ug/L			11/23/15 15:10	1
1,2,3-Trichlorobenzene	0.77	U	1.0	0.77	ug/L			11/23/15 15:10	1
1,2,4-Trichlorobenzene	0.58	U	1.0	0.58	ug/L			11/23/15 15:10	1
1,1,1-Trichloroethane	0.47	U	1.0	0.47	ug/L			11/23/15 15:10	1
1,1,2-Trichloroethane	0.47	U	1.0	0.47	ug/L			11/23/15 15:10	1
Trichloroethene	0.61	U	1.0	0.61	ug/L			11/23/15 15:10	1
Trichlorofluoromethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:10	1
1,2,3-Trichloropropane	0.44	U	1.0	0.44	ug/L			11/23/15 15:10	1
1,2,4-Trimethylbenzene	0.86	U	1.0	0.86	ug/L			11/23/15 15:10	1
1,3,5-Trimethylbenzene	0.54	U	1.0	0.54	ug/L			11/23/15 15:10	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			11/23/15 15:10	1
Xylenes, Total	0.50	U	3.0	0.50	ug/L			11/23/15 15:10	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130					11/23/15 15:10	1
Dibromofluoromethane	112		70 - 130					11/23/15 15:10	1
Toluene-d8 (Surr)	114		70 - 130					11/23/15 15:10	1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.021	U	0.20	0.021	ug/L		11/23/15 16:09	11/27/15 10:47	1
Acenaphthylene	0.021	U	0.20	0.021	ug/L		11/23/15 16:09	11/27/15 10:47	1
Anthracene	0.032	U	0.20	0.032	ug/L		11/23/15 16:09	11/27/15 10:47	1
Benzo[a]anthracene	0.037	U	0.20	0.037	ug/L		11/23/15 16:09	11/27/15 10:47	1
Benzo[a]pyrene	0.036	U	0.20	0.036	ug/L		11/23/15 16:09	11/27/15 10:47	1
Benzo[b]fluoranthene	0.034	U	0.20	0.034	ug/L		11/23/15 16:09	11/27/15 10:47	1
Benzo[g,h,i]perylene	0.038	U	0.20	0.038	ug/L		11/23/15 16:09	11/27/15 10:47	1
Benzo[k]fluoranthene	0.058	U	0.20	0.058	ug/L		11/23/15 16:09	11/27/15 10:47	1
Chrysene	0.026	U	0.20	0.026	ug/L		11/23/15 16:09	11/27/15 10:47	1
Dibenz(a,h)anthracene	0.050	U	0.20	0.050	ug/L		11/23/15 16:09	11/27/15 10:47	1
Fluoranthene	0.050	U	0.20	0.050	ug/L		11/23/15 16:09	11/27/15 10:47	1
Fluorene	0.016	U	0.20	0.016	ug/L		11/23/15 16:09	11/27/15 10:47	1
Indeno[1,2,3-cd]pyrene	0.043	U	0.20	0.043	ug/L		11/23/15 16:09	11/27/15 10:47	1
1-Methylnaphthalene	0.024	U	0.20	0.024	ug/L		11/23/15 16:09	11/27/15 10:47	1
2-Methylnaphthalene	0.023	U	0.20	0.023	ug/L		11/23/15 16:09	11/27/15 10:47	1
Naphthalene	0.023	U	0.20	0.023	ug/L		11/23/15 16:09	11/27/15 10:47	1
Phenanthrene	0.033	U	0.20	0.033	ug/L		11/23/15 16:09	11/27/15 10:47	1
Pyrene	0.029	U	0.20	0.029	ug/L		11/23/15 16:09	11/27/15 10:47	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	84		15 - 122				11/23/15 16:09	11/27/15 10:47	1
Nitrobenzene-d5 (Surr)	68		19 - 130				11/23/15 16:09	11/27/15 10:47	1
Terphenyl-d14 (Surr)	86		33 - 138				11/23/15 16:09	11/27/15 10:47	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Lab Sample ID: 660-70525-1

Date Collected: 11/18/15 09:05

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bolstar	0.16	U	1.0	0.16	ug/L		11/24/15 10:30	12/01/15 17:33	1
Chlorpyrifos	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 17:33	1
Coumaphos	0.45	J3 U	1.0	0.45	ug/L		11/24/15 10:30	12/01/15 17:33	1
Demeton, Total	0.53	U	13	0.53	ug/L		11/24/15 10:30	12/01/15 17:33	1
Diazinon	0.38	U	1.0	0.38	ug/L		11/24/15 10:30	12/01/15 17:33	1
Dichlorvos	0.50	U	2.0	0.50	ug/L		11/24/15 10:30	12/01/15 17:33	1
Dimethoate	0.25	U	2.0	0.25	ug/L		11/24/15 10:30	12/01/15 17:33	1
Disulfoton	0.39	U	2.0	0.39	ug/L		11/24/15 10:30	12/01/15 17:33	1
EPN	0.25	U	1.0	0.25	ug/L		11/24/15 10:30	12/01/15 17:33	1
Ethyl Parathion	0.19	U	1.0	0.19	ug/L		11/24/15 10:30	12/01/15 17:33	1
Famphur	0.26	U	2.0	0.26	ug/L		11/24/15 10:30	12/01/15 17:33	1
Fensulfothion	0.31	U	5.0	0.31	ug/L		11/24/15 10:30	12/01/15 17:33	1
Fenthion	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 17:33	1
Guthion	0.49	U	1.0	0.49	ug/L		11/24/15 10:30	12/01/15 17:33	1
Malathion	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 17:33	1
Methyl parathion	0.18	U	1.0	0.18	ug/L		11/24/15 10:30	12/01/15 17:33	1
Mevinphos	0.29	U	1.0	0.29	ug/L		11/24/15 10:30	12/01/15 17:33	1
Mocap	0.31	U	1.0	0.31	ug/L		11/24/15 10:30	12/01/15 17:33	1
Monochrotophos	0.28	U	1.0	0.28	ug/L		11/24/15 10:30	12/01/15 17:33	1
Naled	0.38	U	5.0	0.38	ug/L		11/24/15 10:30	12/01/15 17:33	1
Phorate	0.22	U	1.0	0.22	ug/L		11/24/15 10:30	12/01/15 17:33	1
Ronnel	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 17:33	1
Stirophos	0.24	U	1.0	0.24	ug/L		11/24/15 10:30	12/01/15 17:33	1
Sulfotepp	0.24	U	1.0	0.24	ug/L		11/24/15 10:30	12/01/15 17:33	1
Thionazin	0.21	U	1.0	0.21	ug/L		11/24/15 10:30	12/01/15 17:33	1
Tokuthion	0.22	U	1.0	0.22	ug/L		11/24/15 10:30	12/01/15 17:33	1
Trichloronate	0.18	U	1.0	0.18	ug/L		11/24/15 10:30	12/01/15 17:33	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenylphosphate	125		16 - 164	11/24/15 10:30	12/01/15 17:33	1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.0074	U	0.051	0.0074	ug/L		11/23/15 16:06	11/24/15 18:04	1
alpha-BHC	0.0079	U	0.051	0.0079	ug/L		11/23/15 16:06	11/24/15 18:04	1
alpha-Chlordane	0.010	U	0.051	0.010	ug/L		11/23/15 16:06	11/24/15 18:04	1
beta-BHC	0.012	U	0.051	0.012	ug/L		11/23/15 16:06	11/24/15 18:04	1
Chlordane (technical)	0.11	U	0.51	0.11	ug/L		11/23/15 16:06	11/24/15 18:04	1
4,4'-DDD	0.0078	U	0.051	0.0078	ug/L		11/23/15 16:06	11/24/15 18:04	1
4,4'-DDE	0.0075	U	0.051	0.0075	ug/L		11/23/15 16:06	11/24/15 18:04	1
4,4'-DDT	0.0086	U	0.051	0.0086	ug/L		11/23/15 16:06	11/24/15 18:04	1
delta-BHC	0.013	U	0.051	0.013	ug/L		11/23/15 16:06	11/24/15 18:04	1
Dieldrin	0.0087	U	0.051	0.0087	ug/L		11/23/15 16:06	11/24/15 18:04	1
Endosulfan I	0.0083	U	0.051	0.0083	ug/L		11/23/15 16:06	11/24/15 18:04	1
Endosulfan II	0.0086	U	0.051	0.0086	ug/L		11/23/15 16:06	11/24/15 18:04	1
Endosulfan sulfate	0.0084	U	0.051	0.0084	ug/L		11/23/15 16:06	11/24/15 18:04	1
Endrin	0.0089	U	0.051	0.0089	ug/L		11/23/15 16:06	11/24/15 18:04	1
Endrin aldehyde	0.017	U	0.051	0.017	ug/L		11/23/15 16:06	11/24/15 18:04	1
Endrin ketone	0.0090	U	0.051	0.0090	ug/L		11/23/15 16:06	11/24/15 18:04	1
gamma-BHC (Lindane)	0.0084	U	0.051	0.0084	ug/L		11/23/15 16:06	11/24/15 18:04	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Lab Sample ID: 660-70525-1

Date Collected: 11/18/15 09:05

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
gamma-Chlordane	0.0086	U	0.051	0.0086	ug/L		11/23/15 16:06	11/24/15 18:04	1
Heptachlor	0.0080	U	0.051	0.0080	ug/L		11/23/15 16:06	11/24/15 18:04	1
Heptachlor epoxide	0.0082	U	0.051	0.0082	ug/L		11/23/15 16:06	11/24/15 18:04	1
Methoxychlor	0.0094	U	0.051	0.0094	ug/L		11/23/15 16:06	11/24/15 18:04	1
Toxaphene	0.19	U	5.1	0.19	ug/L		11/23/15 16:06	11/24/15 18:04	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	72		10 - 130				11/23/15 16:06	11/24/15 18:04	1
Tetrachloro-m-xylene	59		39 - 130				11/23/15 16:06	11/24/15 18:04	1

Method: FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	24	U	150	24	ug/L		11/23/15 08:21	11/25/15 16:33	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
n-C39	96		42 - 193				11/23/15 08:21	11/25/15 16:33	1
o-Terphenyl	101		82 - 142				11/23/15 08:21	11/25/15 16:33	1

Method: 8290A - Dioxins/Furans, HRGC/HRMS (8290A)

Analyte	Result	Qualifier	ML	EDL	TEF	TEQ	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.66	5.49	1		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total TCDD	ND		9.66	5.49			pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,7,8-PeCDD	ND		48.3	2.44	0.5		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total PeCDD	4.70	V J I	48.3	2.44			pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,4,7,8-HxCDD	ND		48.3	2.67	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,6,7,8-HxCDD	ND		48.3	2.90	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,7,8,9-HxCDD	ND		48.3	2.59	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total HxCDD	ND		48.3	2.71			pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,4,6,7,8-HpCDD	ND		48.3	2.26	0.01		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total HpCDD	ND		48.3	2.26			pg/L		11/21/15 14:00	12/01/15 05:56	1
OCDD	ND		96.6	4.14	0.001		pg/L		11/21/15 14:00	12/01/15 05:56	1
2,3,7,8-TCDF	ND		9.66	4.02	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total TCDF	ND		9.66	4.02			pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,7,8-PeCDF	ND		48.3	1.77	0.05		pg/L		11/21/15 14:00	12/01/15 05:56	1
2,3,4,7,8-PeCDF	ND		48.3	1.62	0.5		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total PeCDF	ND		48.3	1.69			pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,4,7,8-HxCDF	ND		48.3	1.14	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,6,7,8-HxCDF	ND		48.3	1.08	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
2,3,4,6,7,8-HxCDF	ND		48.3	1.24	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,7,8,9-HxCDF	ND		48.3	1.58	0.1		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total HxCDF	ND		48.3	1.23			pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,4,6,7,8-HpCDF	ND		48.3	1.94	0.01		pg/L		11/21/15 14:00	12/01/15 05:56	1
1,2,3,4,7,8,9-HpCDF	ND		48.3	2.86	0.01		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total HpCDF	ND		48.3	2.32			pg/L		11/21/15 14:00	12/01/15 05:56	1
OCDF	ND		96.6	4.40	0.001		pg/L		11/21/15 14:00	12/01/15 05:56	1
Total TEQ (EPA 1989)						0.00					

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	64		40 - 135	11/21/15 14:00	12/01/15 05:56	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Date Collected: 11/18/15 09:05

Date Received: 11/19/15 09:35

Lab Sample ID: 660-70525-1

Matrix: Water

Method: 8290A - Dioxins/Furans, HRGC/HRMS (8290A) (Continued)

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-1,2,3,7,8-PeCDD	62		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,4,7,8-HxCDD	61		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,6,7,8-HxCDD	65		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,4,6,7,8-HpCDD	58		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-OCDD	44		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-2,3,7,8-TCDF	53		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,7,8-PeCDF	56		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-2,3,4,7,8-PeCDF	55		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,4,7,8-HxCDF	58		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,6,7,8-HxCDF	61		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-2,3,4,6,7,8-HxCDF	57		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,7,8,9-HxCDF	58		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,4,6,7,8-HpCDF	52		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-1,2,3,4,7,8,9-HpCDF	46		40 - 135	11/21/15 14:00	12/01/15 05:56	1
13C-OCDF	43		40 - 135	11/21/15 14:00	12/01/15 05:56	1

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	U	3.0	1.5	ug/L		11/24/15 08:34	11/24/15 19:32	1
Barium	2.2	I	5.0	0.61	ug/L		11/24/15 08:34	11/24/15 19:32	1
Cadmium	0.15	U	0.50	0.15	ug/L		11/24/15 08:34	11/24/15 19:32	1
Chromium	1.6	U	5.0	1.6	ug/L		11/24/15 08:34	11/25/15 13:39	1
Lead	0.98	U	2.5	0.98	ug/L		11/24/15 08:34	11/24/15 19:32	1
Selenium	1.0	U	2.5	1.0	ug/L		11/24/15 08:34	11/24/15 19:32	1
Silver	0.10	U	1.0	0.10	ug/L		11/24/15 08:34	11/24/15 19:32	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		11/24/15 09:10	11/24/15 15:53	1

Client Sample ID: MW-LB 12

Date Collected: 11/18/15 10:26

Date Received: 11/19/15 09:35

Lab Sample ID: 660-70525-2

Matrix: Water

Method: 8260B - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	9.9	U	20	9.9	ug/L			11/23/15 15:27	1
Benzene	0.50	U	1.0	0.50	ug/L			11/23/15 15:27	1
Bromobenzene	0.58	U	1.0	0.58	ug/L			11/23/15 15:27	1
Bromoform	0.63	U	1.0	0.63	ug/L			11/23/15 15:27	1
Bromomethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:27	1
2-Butanone (MEK)	8.4	U	10	8.4	ug/L			11/23/15 15:27	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			11/23/15 15:27	1
Carbon tetrachloride	0.43	U	1.0	0.43	ug/L			11/23/15 15:27	1
Chlorobenzene	0.63	U	1.0	0.63	ug/L			11/23/15 15:27	1
Chlorobromomethane	0.58	U	1.0	0.58	ug/L			11/23/15 15:27	1
Chlorodibromomethane	0.31	U	1.0	0.31	ug/L			11/23/15 15:27	1
Chloroethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:27	1
Chloroform	0.90	U	1.0	0.90	ug/L			11/23/15 15:27	1
Chloromethane	1.0	U	4.0	1.0	ug/L			11/23/15 15:27	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 12

Lab Sample ID: 660-70525-2

Date Collected: 11/18/15 10:26

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
2-Chlorotoluene	0.65	U	1.0	0.65	ug/L			11/23/15 15:27	1
4-Chlorotoluene	0.52	U	1.0	0.52	ug/L			11/23/15 15:27	1
cis-1,2-Dichloroethene	0.65	U	1.0	0.65	ug/L			11/23/15 15:27	1
cis-1,3-Dichloropropene	0.39	U	1.0	0.39	ug/L			11/23/15 15:27	1
1,2-Dibromo-3-Chloropropane	2.5	U	5.0	2.5	ug/L			11/23/15 15:27	1
Dibromomethane	0.46	U	1.0	0.46	ug/L			11/23/15 15:27	1
1,2-Dichlorobenzene	0.49	U	1.0	0.49	ug/L			11/23/15 15:27	1
1,3-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			11/23/15 15:27	1
1,4-Dichlorobenzene	0.60	U	1.0	0.60	ug/L			11/23/15 15:27	1
Dichlorobromomethane	0.44	U	1.0	0.44	ug/L			11/23/15 15:27	1
Dichlorodifluoromethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:27	1
1,1-Dichloroethane	0.52	U	1.0	0.52	ug/L			11/23/15 15:27	1
1,2-Dichloroethane	0.57	U	1.0	0.57	ug/L			11/23/15 15:27	1
1,1-Dichloroethene	0.67	U	1.0	0.67	ug/L			11/23/15 15:27	1
1,2-Dichloropropane	0.52	U	1.0	0.52	ug/L			11/23/15 15:27	1
1,3-Dichloropropane	0.42	U	1.0	0.42	ug/L			11/23/15 15:27	1
2,2-Dichloropropane	0.36	U	1.0	0.36	ug/L			11/23/15 15:27	1
1,1-Dichloropropene	0.65	U	1.0	0.65	ug/L			11/23/15 15:27	1
Ethylbenzene	0.44	U	1.0	0.44	ug/L			11/23/15 15:27	1
Ethylene Dibromide	0.50	U	1.0	0.50	ug/L			11/23/15 15:27	1
Hexachlorobutadiene	0.34	U	1.0	0.34	ug/L			11/23/15 15:27	1
2-Hexanone	4.4	U	10	4.4	ug/L			11/23/15 15:27	1
Isopropylbenzene	0.52	U	1.0	0.52	ug/L			11/23/15 15:27	1
4-Isopropyltoluene	0.69	U	1.0	0.69	ug/L			11/23/15 15:27	1
Methylene Chloride	4.0	U	5.0	4.0	ug/L			11/23/15 15:27	1
4-Methyl-2-pentanone (MIBK)	4.0	U	10	4.0	ug/L			11/23/15 15:27	1
Methyl tert-butyl ether	0.44	U	1.0	0.44	ug/L			11/23/15 15:27	1
m-Xylene & p-Xylene	0.60	U	2.0	0.60	ug/L			11/23/15 15:27	1
n-Butylbenzene	0.67	U	1.0	0.67	ug/L			11/23/15 15:27	1
N-Propylbenzene	0.59	U	1.0	0.59	ug/L			11/23/15 15:27	1
o-Xylene	0.50	U	1.0	0.50	ug/L			11/23/15 15:27	1
sec-Butylbenzene	0.63	U	1.0	0.63	ug/L			11/23/15 15:27	1
Styrene	0.98	U	2.0	0.98	ug/L			11/23/15 15:27	1
tert-Butylbenzene	0.84	U	1.0	0.84	ug/L			11/23/15 15:27	1
1,1,1,2-Tetrachloroethane	0.63	U	1.0	0.63	ug/L			11/23/15 15:27	1
1,1,2,2-Tetrachloroethane	0.17	U	1.0	0.17	ug/L			11/23/15 15:27	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			11/23/15 15:27	1
Toluene	0.51	U	1.0	0.51	ug/L			11/23/15 15:27	1
trans-1,2-Dichloroethene	0.67	U	1.0	0.67	ug/L			11/23/15 15:27	1
trans-1,3-Dichloropropene	0.27	U	1.0	0.27	ug/L			11/23/15 15:27	1
1,2,3-Trichlorobenzene	0.77	U	1.0	0.77	ug/L			11/23/15 15:27	1
1,2,4-Trichlorobenzene	0.58	U	1.0	0.58	ug/L			11/23/15 15:27	1
1,1,1-Trichloroethane	0.47	U	1.0	0.47	ug/L			11/23/15 15:27	1
1,1,2-Trichloroethane	0.47	U	1.0	0.47	ug/L			11/23/15 15:27	1
Trichloroethene	0.61	U	1.0	0.61	ug/L			11/23/15 15:27	1
Trichlorofluoromethane	2.5	U	5.0	2.5	ug/L			11/23/15 15:27	1
1,2,3-Trichloropropane	0.44	U	1.0	0.44	ug/L			11/23/15 15:27	1
1,2,4-Trimethylbenzene	0.86	U	1.0	0.86	ug/L			11/23/15 15:27	1
1,3,5-Trimethylbenzene	0.54	U	1.0	0.54	ug/L			11/23/15 15:27	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 12

Lab Sample ID: 660-70525-2

Date Collected: 11/18/15 10:26

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.71	U	1.0	0.71	ug/L			11/23/15 15:27	1
Xylenes, Total	0.50	U	3.0	0.50	ug/L			11/23/15 15:27	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
4-Bromofluorobenzene	99		70 - 130					11/23/15 15:27	1
Dibromofluoromethane	114		70 - 130					11/23/15 15:27	1
Toluene-d8 (Surr)	117		70 - 130					11/23/15 15:27	1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.021	U	0.20	0.021	ug/L		11/23/15 16:09	11/27/15 11:19	1
Acenaphthylene	0.021	U	0.20	0.021	ug/L		11/23/15 16:09	11/27/15 11:19	1
Anthracene	0.032	U	0.20	0.032	ug/L		11/23/15 16:09	11/27/15 11:19	1
Benzo[a]anthracene	0.037	U	0.20	0.037	ug/L		11/23/15 16:09	11/27/15 11:19	1
Benzo[a]pyrene	0.036	U	0.20	0.036	ug/L		11/23/15 16:09	11/27/15 11:19	1
Benzo[b]fluoranthene	0.034	U	0.20	0.034	ug/L		11/23/15 16:09	11/27/15 11:19	1
Benzo[g,h,i]perylene	0.038	U	0.20	0.038	ug/L		11/23/15 16:09	11/27/15 11:19	1
Benzo[k]fluoranthene	0.058	U	0.20	0.058	ug/L		11/23/15 16:09	11/27/15 11:19	1
Chrysene	0.026	U	0.20	0.026	ug/L		11/23/15 16:09	11/27/15 11:19	1
Dibenz(a,h)anthracene	0.050	U	0.20	0.050	ug/L		11/23/15 16:09	11/27/15 11:19	1
Fluoranthene	0.050	U	0.20	0.050	ug/L		11/23/15 16:09	11/27/15 11:19	1
Fluorene	0.016	U	0.20	0.016	ug/L		11/23/15 16:09	11/27/15 11:19	1
Indeno[1,2,3-cd]pyrene	0.043	U	0.20	0.043	ug/L		11/23/15 16:09	11/27/15 11:19	1
1-Methylnaphthalene	0.024	U	0.20	0.024	ug/L		11/23/15 16:09	11/27/15 11:19	1
2-Methylnaphthalene	0.023	U	0.20	0.023	ug/L		11/23/15 16:09	11/27/15 11:19	1
Naphthalene	0.023	U	0.20	0.023	ug/L		11/23/15 16:09	11/27/15 11:19	1
Phenanthrene	0.033	U	0.20	0.033	ug/L		11/23/15 16:09	11/27/15 11:19	1
Pyrene	0.029	U	0.20	0.029	ug/L		11/23/15 16:09	11/27/15 11:19	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	79		15 - 122				11/23/15 16:09	11/27/15 11:19	1
Nitrobenzene-d5 (Surr)	69		19 - 130				11/23/15 16:09	11/27/15 11:19	1
Terphenyl-d14 (Surr)	85		33 - 138				11/23/15 16:09	11/27/15 11:19	1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bolstar	0.16	U	1.0	0.16	ug/L		11/24/15 10:30	12/01/15 18:14	1
Chlorpyrifos	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 18:14	1
Coumaphos	0.45	J3 U	1.0	0.45	ug/L		11/24/15 10:30	12/01/15 18:14	1
Demeton, Total	0.53	U	13	0.53	ug/L		11/24/15 10:30	12/01/15 18:14	1
Diazinon	0.38	U	1.0	0.38	ug/L		11/24/15 10:30	12/01/15 18:14	1
Dichlorvos	0.50	U	2.0	0.50	ug/L		11/24/15 10:30	12/01/15 18:14	1
Dimethoate	0.25	U	2.0	0.25	ug/L		11/24/15 10:30	12/01/15 18:14	1
Disulfoton	0.39	U	2.0	0.39	ug/L		11/24/15 10:30	12/01/15 18:14	1
EPN	0.25	U	1.0	0.25	ug/L		11/24/15 10:30	12/01/15 18:14	1
Ethyl Parathion	0.19	U	1.0	0.19	ug/L		11/24/15 10:30	12/01/15 18:14	1
Famphur	0.26	U	2.0	0.26	ug/L		11/24/15 10:30	12/01/15 18:14	1
Fensulfothion	0.31	U	5.0	0.31	ug/L		11/24/15 10:30	12/01/15 18:14	1
Fenthion	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 18:14	1
Guthion	0.49	U	1.0	0.49	ug/L		11/24/15 10:30	12/01/15 18:14	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 12

Lab Sample ID: 660-70525-2

Date Collected: 11/18/15 10:26

Matrix: Water

Date Received: 11/19/15 09:35

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Malathion	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 18:14	1
Methyl parathion	0.18	U	1.0	0.18	ug/L		11/24/15 10:30	12/01/15 18:14	1
Mevinphos	0.29	U	1.0	0.29	ug/L		11/24/15 10:30	12/01/15 18:14	1
Mocap	0.31	U	1.0	0.31	ug/L		11/24/15 10:30	12/01/15 18:14	1
Monochrotophos	0.28	U	1.0	0.28	ug/L		11/24/15 10:30	12/01/15 18:14	1
Naled	0.38	U	5.0	0.38	ug/L		11/24/15 10:30	12/01/15 18:14	1
Phorate	0.22	U	1.0	0.22	ug/L		11/24/15 10:30	12/01/15 18:14	1
Ronnel	0.20	U	1.0	0.20	ug/L		11/24/15 10:30	12/01/15 18:14	1
Stirophos	0.24	U	1.0	0.24	ug/L		11/24/15 10:30	12/01/15 18:14	1
Sulfotepp	0.24	U	1.0	0.24	ug/L		11/24/15 10:30	12/01/15 18:14	1
Thionazin	0.21	U	1.0	0.21	ug/L		11/24/15 10:30	12/01/15 18:14	1
Tokuthion	0.22	U	1.0	0.22	ug/L		11/24/15 10:30	12/01/15 18:14	1
Trichloronate	0.18	U	1.0	0.18	ug/L		11/24/15 10:30	12/01/15 18:14	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Triphenylphosphate	109		16 - 164	11/24/15 10:30	12/01/15 18:14	1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Aldrin	0.0074	U	0.051	0.0074	ug/L		11/23/15 16:06	11/24/15 18:19	1
alpha-BHC	0.0079	U	0.051	0.0079	ug/L		11/23/15 16:06	11/24/15 18:19	1
alpha-Chlordane	0.010	U	0.051	0.010	ug/L		11/23/15 16:06	11/24/15 18:19	1
beta-BHC	0.012	U	0.051	0.012	ug/L		11/23/15 16:06	11/24/15 18:19	1
Chlordane (technical)	0.11	U	0.51	0.11	ug/L		11/23/15 16:06	11/24/15 18:19	1
4,4'-DDD	0.0078	U	0.051	0.0078	ug/L		11/23/15 16:06	11/24/15 18:19	1
4,4'-DDE	0.0075	U	0.051	0.0075	ug/L		11/23/15 16:06	11/24/15 18:19	1
4,4'-DDT	0.0086	U	0.051	0.0086	ug/L		11/23/15 16:06	11/24/15 18:19	1
delta-BHC	0.013	U	0.051	0.013	ug/L		11/23/15 16:06	11/24/15 18:19	1
Dieldrin	0.0087	U	0.051	0.0087	ug/L		11/23/15 16:06	11/24/15 18:19	1
Endosulfan I	0.0083	U	0.051	0.0083	ug/L		11/23/15 16:06	11/24/15 18:19	1
Endosulfan II	0.0086	U	0.051	0.0086	ug/L		11/23/15 16:06	11/24/15 18:19	1
Endosulfan sulfate	0.0084	U	0.051	0.0084	ug/L		11/23/15 16:06	11/24/15 18:19	1
Endrin	0.0090	U	0.051	0.0090	ug/L		11/23/15 16:06	11/24/15 18:19	1
Endrin aldehyde	0.017	U	0.051	0.017	ug/L		11/23/15 16:06	11/24/15 18:19	1
Endrin ketone	0.0091	U	0.051	0.0091	ug/L		11/23/15 16:06	11/24/15 18:19	1
gamma-BHC (Lindane)	0.0084	U	0.051	0.0084	ug/L		11/23/15 16:06	11/24/15 18:19	1
gamma-Chlordane	0.0086	U	0.051	0.0086	ug/L		11/23/15 16:06	11/24/15 18:19	1
Heptachlor	0.0080	U	0.051	0.0080	ug/L		11/23/15 16:06	11/24/15 18:19	1
Heptachlor epoxide	0.0082	U	0.051	0.0082	ug/L		11/23/15 16:06	11/24/15 18:19	1
Methoxychlor	0.0095	U	0.051	0.0095	ug/L		11/23/15 16:06	11/24/15 18:19	1
Toxaphene	0.19	U	5.1	0.19	ug/L		11/23/15 16:06	11/24/15 18:19	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
DCB Decachlorobiphenyl	66		10 - 130	11/23/15 16:06	11/24/15 18:19	1
Tetrachloro-m-xylene	53		39 - 130	11/23/15 16:06	11/24/15 18:19	1

Method: FL-PRO - Florida - Petroleum Range Organics (GC)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Total Petroleum Hydrocarbons (C8-C40)	24	U	150	24	ug/L		11/23/15 08:21	11/25/15 16:54	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 12

Lab Sample ID: 660-70525-2

Date Collected: 11/18/15 10:26

Matrix: Water

Date Received: 11/19/15 09:35

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
n-C39	108		42 - 193	11/23/15 08:21	11/25/15 16:54	1
o-Terphenyl	106		82 - 142	11/23/15 08:21	11/25/15 16:54	1

Method: 8290A - Dioxins/Furans, HRGC/HRMS (8290A)

Analyte	Result	Qualifier	ML	EDL	TEF	TEQ	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		9.62	5.42	1		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total TCDD	ND		9.62	5.42			pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,7,8-PeCDD	ND		48.1	2.12	0.5		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total PeCDD	27.1	V J I	48.1	2.12			pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,4,7,8-HxCDD	ND		48.1	2.63	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,6,7,8-HxCDD	ND		48.1	2.64	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,7,8,9-HxCDD	ND		48.1	2.45	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total HxCDD	ND		48.1	2.57			pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,4,6,7,8-HpCDD	ND		48.1	2.38	0.01		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total HpCDD	ND		48.1	2.38			pg/L		11/21/15 14:00	12/01/15 06:56	1
OCDD	6.67	J V I	96.2	3.43	0.001	0.0067	pg/L		11/21/15 14:00	12/01/15 06:56	1
2,3,7,8-TCDF	ND		9.62	3.57	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total TCDF	ND		9.62	3.57			pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,7,8-PeCDF	ND		48.1	1.62	0.05		pg/L		11/21/15 14:00	12/01/15 06:56	1
2,3,4,7,8-PeCDF	ND		48.1	1.44	0.5		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total PeCDF	ND		48.1	1.52			pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,4,7,8-HxCDF	ND		48.1	1.28	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,6,7,8-HxCDF	ND		48.1	1.15	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
2,3,4,6,7,8-HxCDF	ND		48.1	1.25	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,7,8,9-HxCDF	ND		48.1	1.71	0.1		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total HxCDF	3.17	J I	48.1	1.31			pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,4,6,7,8-HpCDF	ND		48.1	2.33	0.01		pg/L		11/21/15 14:00	12/01/15 06:56	1
1,2,3,4,7,8,9-HpCDF	ND		48.1	3.56	0.01		pg/L		11/21/15 14:00	12/01/15 06:56	1
Total HpCDF	4.29	J I	48.1	2.83			pg/L		11/21/15 14:00	12/01/15 06:56	1
OCDF	14.9	J I	96.2	4.87	0.001	0.015	pg/L		11/21/15 14:00	12/01/15 06:56	1
Total TEQ (EPA 1989)						0.022					

Internal Standard	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	72		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,7,8-PeCDD	71		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,4,7,8-HxCDD	62		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,6,7,8-HxCDD	71		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,4,6,7,8-HpCDD	59		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-OCDD	45		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-2,3,7,8-TCDF	64		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,7,8-PeCDF	60		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-2,3,4,7,8-PeCDF	66		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,4,7,8-HxCDF	59		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,6,7,8-HxCDF	64		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-2,3,4,6,7,8-HxCDF	63		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,7,8,9-HxCDF	58		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,4,6,7,8-HpCDF	56		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-1,2,3,4,7,8,9-HpCDF	49		40 - 135	11/21/15 14:00	12/01/15 06:56	1
13C-OCDF	41		40 - 135	11/21/15 14:00	12/01/15 06:56	1

TestAmerica Tampa

Client Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 12

Lab Sample ID: 660-70525-2

Date Collected: 11/18/15 10:26

Matrix: Water

Date Received: 11/19/15 09:35

Method: 6020A - Metals (ICP/MS) - Total Recoverable

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	U	3.0	1.5	ug/L		11/24/15 08:34	11/24/15 19:39	1
Barium	52		5.0	0.61	ug/L		11/24/15 08:34	11/24/15 19:39	1
Cadmium	0.15	U	0.50	0.15	ug/L		11/24/15 08:34	11/24/15 19:39	1
Chromium	1.6	U	5.0	1.6	ug/L		11/24/15 08:34	11/25/15 13:44	1
Lead	0.98	U	2.5	0.98	ug/L		11/24/15 08:34	11/24/15 19:39	1
Selenium	1.0	U	2.5	1.0	ug/L		11/24/15 08:34	11/24/15 19:39	1
Silver	0.10	U	1.0	0.10	ug/L		11/24/15 08:34	11/24/15 19:39	1

Method: 7470A - Mercury (CVAA)

Analyte	Result	Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		11/24/15 09:10	11/24/15 15:56	1

- 1
- 2
- 3
- 4
- 5
- 6
- 7
- 8
- 9
- 10
- 11
- 12
- 13
- 14
- 15

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8260B - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 660-163580/6

Matrix: Water

Analysis Batch: 163580

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acetone	9.9	U	20	9.9	ug/L			11/23/15 10:34	1
Benzene	0.50	U	1.0	0.50	ug/L			11/23/15 10:34	1
Bromobenzene	0.58	U	1.0	0.58	ug/L			11/23/15 10:34	1
Bromoform	0.63	U	1.0	0.63	ug/L			11/23/15 10:34	1
Bromomethane	2.5	U	5.0	2.5	ug/L			11/23/15 10:34	1
2-Butanone (MEK)	8.4	U	10	8.4	ug/L			11/23/15 10:34	1
Carbon disulfide	1.0	U	2.0	1.0	ug/L			11/23/15 10:34	1
Carbon tetrachloride	0.43	U	1.0	0.43	ug/L			11/23/15 10:34	1
Chlorobenzene	0.63	U	1.0	0.63	ug/L			11/23/15 10:34	1
Chlorobromomethane	0.58	U	1.0	0.58	ug/L			11/23/15 10:34	1
Chlorodibromomethane	0.31	U	1.0	0.31	ug/L			11/23/15 10:34	1
Chloroethane	2.5	U	5.0	2.5	ug/L			11/23/15 10:34	1
Chloroform	0.90	U	1.0	0.90	ug/L			11/23/15 10:34	1
Chloromethane	1.0	U	4.0	1.0	ug/L			11/23/15 10:34	1
2-Chlorotoluene	0.65	U	1.0	0.65	ug/L			11/23/15 10:34	1
4-Chlorotoluene	0.52	U	1.0	0.52	ug/L			11/23/15 10:34	1
cis-1,2-Dichloroethene	0.65	U	1.0	0.65	ug/L			11/23/15 10:34	1
cis-1,3-Dichloropropene	0.39	U	1.0	0.39	ug/L			11/23/15 10:34	1
1,2-Dibromo-3-Chloropropane	2.5	U	5.0	2.5	ug/L			11/23/15 10:34	1
Dibromomethane	0.46	U	1.0	0.46	ug/L			11/23/15 10:34	1
1,2-Dichlorobenzene	0.49	U	1.0	0.49	ug/L			11/23/15 10:34	1
1,3-Dichlorobenzene	0.64	U	1.0	0.64	ug/L			11/23/15 10:34	1
1,4-Dichlorobenzene	0.60	U	1.0	0.60	ug/L			11/23/15 10:34	1
Dichlorobromomethane	0.44	U	1.0	0.44	ug/L			11/23/15 10:34	1
Dichlorodifluoromethane	2.5	U	5.0	2.5	ug/L			11/23/15 10:34	1
1,1-Dichloroethane	0.52	U	1.0	0.52	ug/L			11/23/15 10:34	1
1,2-Dichloroethane	0.57	U	1.0	0.57	ug/L			11/23/15 10:34	1
1,1-Dichloroethene	0.67	U	1.0	0.67	ug/L			11/23/15 10:34	1
1,2-Dichloropropane	0.52	U	1.0	0.52	ug/L			11/23/15 10:34	1
1,3-Dichloropropane	0.42	U	1.0	0.42	ug/L			11/23/15 10:34	1
2,2-Dichloropropane	0.36	U	1.0	0.36	ug/L			11/23/15 10:34	1
1,1-Dichloropropene	0.65	U	1.0	0.65	ug/L			11/23/15 10:34	1
Ethylbenzene	0.44	U	1.0	0.44	ug/L			11/23/15 10:34	1
Ethylene Dibromide	0.50	U	1.0	0.50	ug/L			11/23/15 10:34	1
Hexachlorobutadiene	0.34	U	1.0	0.34	ug/L			11/23/15 10:34	1
2-Hexanone	4.4	U	10	4.4	ug/L			11/23/15 10:34	1
Isopropylbenzene	0.52	U	1.0	0.52	ug/L			11/23/15 10:34	1
4-Isopropyltoluene	0.69	U	1.0	0.69	ug/L			11/23/15 10:34	1
Methylene Chloride	4.0	U	5.0	4.0	ug/L			11/23/15 10:34	1
4-Methyl-2-pentanone (MIBK)	4.0	U	10	4.0	ug/L			11/23/15 10:34	1
Methyl tert-butyl ether	0.44	U	1.0	0.44	ug/L			11/23/15 10:34	1
m-Xylene & p-Xylene	0.60	U	2.0	0.60	ug/L			11/23/15 10:34	1
n-Butylbenzene	0.67	U	1.0	0.67	ug/L			11/23/15 10:34	1
N-Propylbenzene	0.59	U	1.0	0.59	ug/L			11/23/15 10:34	1
o-Xylene	0.50	U	1.0	0.50	ug/L			11/23/15 10:34	1
sec-Butylbenzene	0.63	U	1.0	0.63	ug/L			11/23/15 10:34	1
Styrene	0.98	U	2.0	0.98	ug/L			11/23/15 10:34	1
tert-Butylbenzene	0.84	U	1.0	0.84	ug/L			11/23/15 10:34	1

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: MB 660-163580/6
Matrix: Water
Analysis Batch: 163580

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

Analyte	MB	MB	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
1,1,1,2-Tetrachloroethane	0.63	U	1.0	0.63	ug/L			11/23/15 10:34	1
1,1,1,2-Tetrachloroethane	0.17	U	1.0	0.17	ug/L			11/23/15 10:34	1
Tetrachloroethene	0.50	U	1.0	0.50	ug/L			11/23/15 10:34	1
Toluene	0.51	U	1.0	0.51	ug/L			11/23/15 10:34	1
trans-1,2-Dichloroethene	0.67	U	1.0	0.67	ug/L			11/23/15 10:34	1
trans-1,3-Dichloropropene	0.27	U	1.0	0.27	ug/L			11/23/15 10:34	1
1,2,3-Trichlorobenzene	0.77	U	1.0	0.77	ug/L			11/23/15 10:34	1
1,2,4-Trichlorobenzene	0.58	U	1.0	0.58	ug/L			11/23/15 10:34	1
1,1,1-Trichloroethane	0.47	U	1.0	0.47	ug/L			11/23/15 10:34	1
1,1,2-Trichloroethane	0.47	U	1.0	0.47	ug/L			11/23/15 10:34	1
Trichloroethene	0.61	U	1.0	0.61	ug/L			11/23/15 10:34	1
Trichlorofluoromethane	2.5	U	5.0	2.5	ug/L			11/23/15 10:34	1
1,2,3-Trichloropropane	0.44	U	1.0	0.44	ug/L			11/23/15 10:34	1
1,2,4-Trimethylbenzene	0.86	U	1.0	0.86	ug/L			11/23/15 10:34	1
1,3,5-Trimethylbenzene	0.54	U	1.0	0.54	ug/L			11/23/15 10:34	1
Vinyl chloride	0.71	U	1.0	0.71	ug/L			11/23/15 10:34	1
Xylenes, Total	0.50	U	3.0	0.50	ug/L			11/23/15 10:34	1

Surrogate	MB	MB	Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
4-Bromofluorobenzene	99		70 - 130		11/23/15 10:34	1
Dibromofluoromethane	113		70 - 130		11/23/15 10:34	1
Toluene-d8 (Surr)	112		70 - 130		11/23/15 10:34	1

Lab Sample ID: LCS 660-163580/4
Matrix: Water
Analysis Batch: 163580

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	10.0	10.2		ug/L		102	68 - 134
Bromobenzene	10.0	8.93		ug/L		89	70 - 130
Bromoform	10.0	8.72		ug/L		87	65 - 130
Bromomethane	10.0	8.27		ug/L		83	22 - 150
2-Butanone (MEK)	100	96.6		ug/L		97	63 - 140
Carbon disulfide	10.0	9.61		ug/L		96	30 - 150
Carbon tetrachloride	10.0	10.0		ug/L		100	61 - 134
Chlorobenzene	10.0	9.02		ug/L		90	70 - 130
Chlorobromomethane	10.0	9.78		ug/L		98	70 - 130
Chlorodibromomethane	10.0	10.2		ug/L		102	70 - 130
Chloroethane	10.0	12.2		ug/L		122	39 - 150
Chloroform	10.0	10.0		ug/L		100	68 - 130
Chloromethane	10.0	11.9		ug/L		119	35 - 150
2-Chlorotoluene	10.0	9.19		ug/L		92	70 - 130
4-Chlorotoluene	10.0	8.93		ug/L		89	70 - 130
cis-1,2-Dichloroethene	10.0	10.3		ug/L		103	66 - 130
cis-1,3-Dichloropropene	10.0	10.1		ug/L		101	70 - 130
1,2-Dibromo-3-Chloropropane	10.0	8.79		ug/L		88	63 - 130
Dibromomethane	10.0	9.74		ug/L		97	70 - 130

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCS 660-163580/4

Matrix: Water

Analysis Batch: 163580

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
1,2-Dichlorobenzene	10.0	9.17		ug/L		92	70 - 130
1,3-Dichlorobenzene	10.0	8.86		ug/L		89	70 - 130
1,4-Dichlorobenzene	10.0	9.07		ug/L		91	70 - 130
Dichlorobromomethane	10.0	10.5		ug/L		105	70 - 130
Dichlorodifluoromethane	10.0	12.3		ug/L		123	16 - 149
1,1-Dichloroethane	10.0	10.4		ug/L		104	66 - 130
1,2-Dichloroethane	10.0	9.12		ug/L		91	70 - 130
1,1-Dichloroethene	10.0	9.98		ug/L		100	51 - 150
1,2-Dichloropropane	10.0	10.7		ug/L		107	70 - 130
1,3-Dichloropropane	10.0	10.1		ug/L		101	70 - 130
2,2-Dichloropropane	10.0	10.1		ug/L		101	66 - 134
1,1-Dichloropropene	10.0	10.9		ug/L		109	65 - 136
Ethylbenzene	10.0	8.36		ug/L		84	70 - 130
Ethylene Dibromide	10.0	9.97		ug/L		100	66 - 130
Hexachlorobutadiene	10.0	10.2		ug/L		102	62 - 143
2-Hexanone	100	102		ug/L		102	60 - 148
Isopropylbenzene	10.0	9.12		ug/L		91	62 - 130
4-Isopropyltoluene	10.0	8.96		ug/L		90	65 - 134
Methylene Chloride	10.0	9.80		ug/L		98	57 - 130
4-Methyl-2-pentanone (MIBK)	100	96.9		ug/L		97	64 - 137
Methyl tert-butyl ether	10.0	9.08		ug/L		91	67 - 130
n-Butylbenzene	10.0	8.99		ug/L		90	61 - 131
N-Propylbenzene	10.0	8.63		ug/L		86	67 - 130
o-Xylene	10.0	8.85		ug/L		88	69 - 130
sec-Butylbenzene	10.0	9.30		ug/L		93	68 - 133
Styrene	10.0	8.67		ug/L		87	68 - 131
tert-Butylbenzene	10.0	8.85		ug/L		89	64 - 130
1,1,1,2-Tetrachloroethane	10.0	8.57		ug/L		86	70 - 130
1,1,1,2,2-Tetrachloroethane	10.0	8.39		ug/L		84	70 - 130
Tetrachloroethene	10.0	10.8		ug/L		108	50 - 143
Toluene	10.0	10.1		ug/L		101	70 - 131
trans-1,2-Dichloroethene	10.0	10.9		ug/L		109	62 - 139
trans-1,3-Dichloropropene	10.0	10.3		ug/L		103	67 - 130
1,2,3-Trichlorobenzene	10.0	9.22		ug/L		92	58 - 132
1,2,4-Trichlorobenzene	10.0	9.44		ug/L		94	66 - 130
1,1,1-Trichloroethane	10.0	10.5		ug/L		105	63 - 132
1,1,2-Trichloroethane	10.0	10.3		ug/L		103	70 - 130
Trichloroethene	10.0	11.1		ug/L		111	63 - 139
Trichlorofluoromethane	10.0	11.2		ug/L		112	62 - 146
1,2,3-Trichloropropane	10.0	8.70		ug/L		87	66 - 130
1,2,4-Trimethylbenzene	10.0	8.32		ug/L		83	70 - 132
1,3,5-Trimethylbenzene	10.0	8.81		ug/L		88	65 - 134
Vinyl chloride	10.0	11.7		ug/L		117	48 - 147

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
4-Bromofluorobenzene	99		70 - 130
Dibromofluoromethane	110		70 - 130
Toluene-d8 (Surr)	108		70 - 130

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Lab Sample ID: 660-70494-H-1 MS

Matrix: Water

Analysis Batch: 163580

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
Acetone	9.9	U	100	105		ug/L		105	62 - 142
Benzene	0.50	U	10.0	9.18		ug/L		92	68 - 134
Bromobenzene	0.58	U	10.0	8.09		ug/L		81	70 - 130
Bromoform	0.63	U	10.0	9.24		ug/L		92	65 - 130
Bromomethane	2.5	U	10.0	6.34		ug/L		63	22 - 150
2-Butanone (MEK)	8.4	U	100	105		ug/L		105	63 - 140
Carbon disulfide	1.0	U	10.0	8.31		ug/L		83	30 - 150
Carbon tetrachloride	0.43	U	10.0	9.15		ug/L		92	61 - 134
Chlorobenzene	0.63	U	10.0	8.01		ug/L		80	70 - 130
Chlorobromomethane	0.58	U	10.0	10.2		ug/L		102	70 - 130
Chlorodibromomethane	0.31	U	10.0	10.4		ug/L		104	70 - 130
Chloroethane	2.5	U	10.0	8.38		ug/L		84	39 - 150
Chloroform	0.90	U	10.0	8.86		ug/L		89	68 - 130
Chloromethane	1.0	U	10.0	7.79		ug/L		78	35 - 150
2-Chlorotoluene	0.65	U	10.0	8.03		ug/L		80	70 - 130
4-Chlorotoluene	0.52	U	10.0	7.68		ug/L		77	70 - 130
cis-1,2-Dichloroethene	0.65	U	10.0	8.54		ug/L		85	66 - 130
cis-1,3-Dichloropropene	0.39	U	10.0	9.23		ug/L		92	70 - 130
1,2-Dibromo-3-Chloropropane	2.5	U	10.0	10.1		ug/L		101	63 - 130
Dibromomethane	0.46	U	10.0	10.5		ug/L		105	70 - 130
1,2-Dichlorobenzene	0.49	U	10.0	8.35		ug/L		83	70 - 130
1,3-Dichlorobenzene	0.64	U	10.0	7.88		ug/L		79	70 - 130
1,4-Dichlorobenzene	0.60	U	10.0	8.02		ug/L		80	70 - 130
Dichlorobromomethane	0.44	U	10.0	9.85		ug/L		99	70 - 130
Dichlorodifluoromethane	2.5	U	10.0	9.66		ug/L		97	16 - 149
1,1-Dichloroethane	0.52	U	10.0	9.27		ug/L		93	66 - 130
1,2-Dichloroethane	0.57	U	10.0	8.85		ug/L		88	70 - 130
1,1-Dichloroethene	0.67	U	10.0	8.92		ug/L		89	51 - 150
1,2-Dichloropropane	0.52	U	10.0	9.81		ug/L		98	70 - 130
1,3-Dichloropropane	0.42	U	10.0	9.67		ug/L		97	70 - 130
2,2-Dichloropropane	0.36	U	10.0	9.02		ug/L		90	66 - 134
1,1-Dichloropropene	0.65	U	10.0	9.47		ug/L		95	65 - 136
Ethylbenzene	0.44	U	10.0	7.20		ug/L		72	70 - 130
Ethylene Dibromide	0.50	U	10.0	10.0		ug/L		100	66 - 130
Hexachlorobutadiene	0.34	U	10.0	8.31		ug/L		83	62 - 143
2-Hexanone	4.4	U	100	113		ug/L		113	60 - 148
Isopropylbenzene	0.52	U	10.0	7.76		ug/L		78	62 - 130
4-Isopropyltoluene	0.69	U	10.0	7.45		ug/L		75	65 - 134
Methylene Chloride	4.0	U	10.0	8.84		ug/L		88	57 - 130
4-Methyl-2-pentanone (MIBK)	4.0	U	100	113		ug/L		113	64 - 137
Methyl tert-butyl ether	0.44	U	10.0	9.63		ug/L		96	67 - 130
n-Butylbenzene	0.67	U	10.0	7.46		ug/L		75	61 - 131
N-Propylbenzene	0.59	U	10.0	7.19		ug/L		72	67 - 130
o-Xylene	0.50	U	10.0	7.90		ug/L		79	69 - 130
sec-Butylbenzene	0.63	U	10.0	7.92		ug/L		79	68 - 133
Styrene	0.98	U J3	10.0	2.73	J3	ug/L		27	68 - 131
tert-Butylbenzene	0.84	U	10.0	7.65		ug/L		76	64 - 130
1,1,1,2-Tetrachloroethane	0.63	U	10.0	7.66		ug/L		77	70 - 130
1,1,2,2-Tetrachloroethane	0.17	U	10.0	9.16		ug/L		92	70 - 130
Tetrachloroethene	0.50	U	10.0	9.38		ug/L		94	50 - 143

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 660-70494-H-1 MS

Matrix: Water

Analysis Batch: 163580

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample	Sample	Spike	MS	MS	Unit	D	%Rec	%Rec.
	Result	Qualifier		Added	Result				
Toluene	0.51	U	10.0	9.43		ug/L		94	70 - 131
trans-1,2-Dichloroethene	0.67	U	10.0	8.78		ug/L		88	62 - 139
trans-1,3-Dichloropropene	0.27	U	10.0	9.96		ug/L		100	67 - 130
1,2,3-Trichlorobenzene	0.77	U	10.0	7.84		ug/L		78	58 - 132
1,2,4-Trichlorobenzene	0.58	U	10.0	7.77		ug/L		78	66 - 130
1,1,1-Trichloroethane	0.47	U	10.0	9.87		ug/L		99	63 - 132
1,1,2-Trichloroethane	0.47	U	10.0	10.0		ug/L		100	70 - 130
Trichloroethene	0.61	U	10.0	9.25		ug/L		93	63 - 139
Trichlorofluoromethane	2.5	U	10.0	8.48		ug/L		85	62 - 146
1,2,3-Trichloropropane	0.44	U	10.0	8.92		ug/L		89	66 - 130
1,2,4-Trimethylbenzene	0.86	U	10.0	7.52		ug/L		75	70 - 132
1,3,5-Trimethylbenzene	0.54	U	10.0	7.54		ug/L		75	65 - 134
Vinyl chloride	0.71	U	10.0	7.93		ug/L		79	48 - 147
	MS	MS							
Surrogate	%Recovery	Qualifier	Limits						
4-Bromofluorobenzene	96		70 - 130						
Dibromofluoromethane	108		70 - 130						
Toluene-d8 (Surr)	108		70 - 130						

Lab Sample ID: 680-119275-B-1 DU

Matrix: Water

Analysis Batch: 163580

Client Sample ID: Duplicate

Prep Type: Total/NA

Analyte	Sample	Sample	DU		Unit	D	RPD	RPD	Limit
	Result	Qualifier	Result	Qualifier					
Acetone	9.9	U	9.9	U	ug/L		NC	30	
Benzene	0.50	U	0.50	U	ug/L		NC	30	
Bromobenzene	0.58	U	0.58	U	ug/L		NC	30	
Bromoform	0.63	U	0.63	U	ug/L		NC	30	
Bromomethane	2.5	U	2.5	U	ug/L		NC	30	
2-Butanone (MEK)	8.4	U	8.4	U	ug/L		NC	30	
Carbon disulfide	1.0	U	1.0	U	ug/L		NC	30	
Carbon tetrachloride	0.43	U	0.43	U	ug/L		NC	30	
Chlorobenzene	0.63	U	0.63	U	ug/L		NC	30	
Chlorobromomethane	0.58	U	0.58	U	ug/L		NC	30	
Chlorodibromomethane	0.31	U	0.31	U	ug/L		NC	30	
Chloroethane	2.5	U	2.5	U	ug/L		NC	30	
Chloroform	0.90	U	0.90	U	ug/L		NC	30	
Chloromethane	1.0	U	1.0	U	ug/L		NC	30	
2-Chlorotoluene	0.65	U	0.65	U	ug/L		NC	30	
4-Chlorotoluene	0.52	U	0.52	U	ug/L		NC	30	
cis-1,2-Dichloroethene	0.65	U	0.65	U	ug/L		NC	30	
cis-1,3-Dichloropropene	0.39	U	0.39	U	ug/L		NC	30	
1,2-Dibromo-3-Chloropropane	2.5	U	2.5	U	ug/L		NC	30	
Dibromomethane	0.46	U	0.46	U	ug/L		NC	30	
1,2-Dichlorobenzene	0.49	U	0.49	U	ug/L		NC	30	
1,3-Dichlorobenzene	0.64	U	0.64	U	ug/L		NC	30	
1,4-Dichlorobenzene	0.60	U	0.60	U	ug/L		NC	30	
Dichlorobromomethane	0.44	U	0.44	U	ug/L		NC	30	

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8260B - Volatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: 680-119275-B-1 DU

Client Sample ID: Duplicate

Matrix: Water

Prep Type: Total/NA

Analysis Batch: 163580

Analyte	Sample	Sample	DU	DU	Unit	D	RPD	Limit
	Result	Qualifier	Result	Qualifier				
Dichlorodifluoromethane	2.5	U	2.5	U	ug/L		NC	30
1,1-Dichloroethane	0.52	U	0.52	U	ug/L		NC	30
1,2-Dichloroethane	0.57	U	0.57	U	ug/L		NC	30
1,1-Dichloroethene	0.67	U	0.67	U	ug/L		NC	30
1,2-Dichloropropane	0.52	U	0.52	U	ug/L		NC	30
1,3-Dichloropropane	0.42	U	0.42	U	ug/L		NC	30
2,2-Dichloropropane	0.36	U	0.36	U	ug/L		NC	30
1,1-Dichloropropene	0.65	U	0.65	U	ug/L		NC	30
Ethylbenzene	0.44	U	0.44	U	ug/L		NC	30
Ethylene Dibromide	0.50	U	0.50	U	ug/L		NC	30
Hexachlorobutadiene	0.34	U	0.34	U	ug/L		NC	30
2-Hexanone	4.4	U	4.4	U	ug/L		NC	30
Isopropylbenzene	0.52	U	0.52	U	ug/L		NC	30
4-Isopropyltoluene	0.69	U	0.69	U	ug/L		NC	30
Methylene Chloride	4.0	U	4.0	U	ug/L		NC	30
4-Methyl-2-pentanone (MIBK)	4.0	U	4.0	U	ug/L		NC	30
Methyl tert-butyl ether	0.44	U	0.44	U	ug/L		NC	30
m-Xylene & p-Xylene	0.60	U	0.60	U	ug/L		NC	30
n-Butylbenzene	0.67	U	0.67	U	ug/L		NC	30
N-Propylbenzene	0.59	U	0.59	U	ug/L		NC	30
o-Xylene	0.50	U	0.50	U	ug/L		NC	30
sec-Butylbenzene	0.63	U	0.63	U	ug/L		NC	30
Styrene	0.98	U	0.98	U	ug/L		NC	30
tert-Butylbenzene	0.84	U	0.84	U	ug/L		NC	30
1,1,1,2-Tetrachloroethane	0.63	U	0.63	U	ug/L		NC	30
1,1,1,2,2-Tetrachloroethane	0.17	U	0.17	U	ug/L		NC	30
Tetrachloroethene	0.50	U	0.50	U	ug/L		NC	30
Toluene	0.51	U	0.51	U	ug/L		NC	30
trans-1,2-Dichloroethene	0.67	U	0.67	U	ug/L		NC	30
trans-1,3-Dichloropropene	0.27	U	0.27	U	ug/L		NC	30
1,2,3-Trichlorobenzene	0.77	U	0.77	U	ug/L		NC	30
1,2,4-Trichlorobenzene	0.58	U	0.58	U	ug/L		NC	30
1,1,1-Trichloroethane	0.47	U	0.47	U	ug/L		NC	30
1,1,2-Trichloroethane	0.47	U	0.47	U	ug/L		NC	30
Trichloroethene	0.61	U	0.61	U	ug/L		NC	30
Trichlorofluoromethane	2.5	U	2.5	U	ug/L		NC	30
1,2,3-Trichloropropane	0.44	U	0.44	U	ug/L		NC	30
1,2,4-Trimethylbenzene	0.86	U	0.86	U	ug/L		NC	30
1,3,5-Trimethylbenzene	0.54	U	0.54	U	ug/L		NC	30
Vinyl chloride	0.71	U	0.71	U	ug/L		NC	30
Xylenes, Total	0.50	U	0.50	U	ug/L		NC	30

Surrogate	DU %Recovery	DU Qualifier	Limits
4-Bromofluorobenzene	97		70 - 130
Dibromofluoromethane	114		70 - 130
Toluene-d8 (Surr)	114		70 - 130

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS)

Lab Sample ID: LCS 400-284565/2-A

Matrix: Water

Analysis Batch: 284701

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 284565

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Bolstar	10.0	9.96		ug/L		100	36 - 130
Chlorpyrifos	10.0	9.68		ug/L		97	49 - 130
Coumaphos	10.0	5.20	J3	ug/L		52	61 - 139
Diazinon	10.0	9.52		ug/L		95	40 - 137
Dichlorvos	10.0	9.41		ug/L		94	11 - 158
Dimethoate	10.0	8.83		ug/L		88	14 - 130
Disulfoton	10.0	9.90		ug/L		99	42 - 130
EPN	10.0	8.67		ug/L		87	48 - 130
Ethyl Parathion	10.0	9.22		ug/L		92	28 - 155
Famphur	10.0	6.15		ug/L		61	13 - 130
Fensulfothion	10.0	9.82		ug/L		98	31 - 163
Fenthion	10.0	9.49		ug/L		95	41 - 130
Guthion	10.0	4.83		ug/L		48	48 - 162
Malathion	10.0	8.61		ug/L		86	10 - 140
Methyl parathion	10.0	8.49		ug/L		85	38 - 149
Mevinphos	10.0	9.99		ug/L		100	24 - 166
Mocap	10.0	9.52		ug/L		95	42 - 130
Monochrotophos	10.0	9.02		ug/L		90	43 - 130
Naled	10.0	6.94		ug/L		69	10 - 130
Phorate	10.0	9.31		ug/L		93	28 - 130
Ronnel	10.0	8.28		ug/L		83	30 - 130
Stirophos	10.0	8.43		ug/L		84	48 - 130
Sulfotepp	10.0	9.97		ug/L		100	40 - 157
Thionazin	10.1	9.51		ug/L		95	12 - 139
Tokuthion	10.0	9.43		ug/L		94	45 - 130
Trichloronate	10.0	9.46		ug/L		95	16 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Triphenylphosphate	108		16 - 164

Lab Sample ID: LCSD 400-284565/3-A

Matrix: Water

Analysis Batch: 284701

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 284565

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Bolstar	10.0	9.97		ug/L		100	36 - 130	0	40
Chlorpyrifos	10.0	9.57		ug/L		96	49 - 130	1	40
Coumaphos	10.0	5.68	J3	ug/L		57	61 - 139	9	40
Diazinon	10.0	9.33		ug/L		93	40 - 137	2	40
Dichlorvos	10.0	9.15		ug/L		91	11 - 158	3	40
Dimethoate	10.0	8.60		ug/L		86	14 - 130	3	40
Disulfoton	10.0	9.71		ug/L		97	42 - 130	2	66
EPN	10.0	8.84		ug/L		88	48 - 130	2	40
Ethyl Parathion	10.0	9.05		ug/L		90	28 - 155	2	34
Famphur	10.0	6.41		ug/L		64	13 - 130	4	60
Fensulfothion	10.0	9.93		ug/L		99	31 - 163	1	40
Fenthion	10.0	9.23		ug/L		92	41 - 130	3	60
Guthion	10.0	5.08		ug/L		51	48 - 162	5	50

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8270D - Semivolatile Organic Compounds (GC/MS) (Continued)

Lab Sample ID: LCSD 400-284565/3-A
Matrix: Water
Analysis Batch: 284701

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 284565

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Malathion	10.0	8.40		ug/L		84	10 - 140	3	40
Methyl parathion	10.0	8.61		ug/L		86	38 - 149	1	32
Mevinphos	10.0	9.73		ug/L		97	24 - 166	3	40
Mocap	10.0	9.37		ug/L		94	42 - 130	2	40
Monochrotophos	10.0	8.90		ug/L		89	43 - 130	1	50
Naled	10.0	8.24		ug/L		82	10 - 130	17	40
Phorate	10.0	9.10		ug/L		91	28 - 130	2	40
Ronnel	10.0	8.39		ug/L		84	30 - 130	1	35
Stirophos	10.0	8.42		ug/L		84	48 - 130	0	40
Sulfotepp	10.0	10.1		ug/L		101	40 - 157	1	40
Thionazin	10.1	9.27		ug/L		92	12 - 139	3	60
Tokuthion	10.0	9.77		ug/L		98	45 - 130	4	40
Trichloronate	10.0	9.21		ug/L		92	16 - 130	3	40

Surrogate	LCSD %Recovery	LCSD Qualifier	LCSD Limits
Triphenylphosphate	105		16 - 164

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level

Lab Sample ID: MB 400-284644/1-A
Matrix: Water
Analysis Batch: 284714

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284644

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Acenaphthene	0.021	U	0.20	0.021	ug/L		11/23/15 16:09	11/24/15 19:01	1
Acenaphthylene	0.021	U	0.20	0.021	ug/L		11/23/15 16:09	11/24/15 19:01	1
Anthracene	0.032	U	0.20	0.032	ug/L		11/23/15 16:09	11/24/15 19:01	1
Benzo[a]anthracene	0.037	U	0.20	0.037	ug/L		11/23/15 16:09	11/24/15 19:01	1
Benzo[a]pyrene	0.036	U	0.20	0.036	ug/L		11/23/15 16:09	11/24/15 19:01	1
Benzo[b]fluoranthene	0.034	U	0.20	0.034	ug/L		11/23/15 16:09	11/24/15 19:01	1
Benzo[g,h,i]perylene	0.038	U	0.20	0.038	ug/L		11/23/15 16:09	11/24/15 19:01	1
Benzo[k]fluoranthene	0.058	U	0.20	0.058	ug/L		11/23/15 16:09	11/24/15 19:01	1
Chrysene	0.026	U	0.20	0.026	ug/L		11/23/15 16:09	11/24/15 19:01	1
Dibenz(a,h)anthracene	0.050	U	0.20	0.050	ug/L		11/23/15 16:09	11/24/15 19:01	1
Fluoranthene	0.050	U	0.20	0.050	ug/L		11/23/15 16:09	11/24/15 19:01	1
Fluorene	0.016	U	0.20	0.016	ug/L		11/23/15 16:09	11/24/15 19:01	1
Indeno[1,2,3-cd]pyrene	0.043	U	0.20	0.043	ug/L		11/23/15 16:09	11/24/15 19:01	1
1-Methylnaphthalene	0.024	U	0.20	0.024	ug/L		11/23/15 16:09	11/24/15 19:01	1
2-Methylnaphthalene	0.023	U	0.20	0.023	ug/L		11/23/15 16:09	11/24/15 19:01	1
Naphthalene	0.023	U	0.20	0.023	ug/L		11/23/15 16:09	11/24/15 19:01	1
Phenanthrene	0.033	U	0.20	0.033	ug/L		11/23/15 16:09	11/24/15 19:01	1
Pyrene	0.029	U	0.20	0.029	ug/L		11/23/15 16:09	11/24/15 19:01	1

Surrogate	MB %Recovery	MB Qualifier	MB Limits	Prepared	Analyzed	Dil Fac
2-Fluorobiphenyl	81		15 - 122	11/23/15 16:09	11/24/15 19:01	1
Nitrobenzene-d5 (Surr)	88		19 - 130	11/23/15 16:09	11/24/15 19:01	1
Terphenyl-d14 (Surr)	87		33 - 138	11/23/15 16:09	11/24/15 19:01	1

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCS 400-284644/2-A

Matrix: Water

Analysis Batch: 284714

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 284644

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Acenaphthene	20.0	15.7		ug/L		79	41 - 120
Acenaphthylene	20.0	16.5		ug/L		82	44 - 120
Anthracene	20.0	16.5		ug/L		83	49 - 120
Benzo[a]anthracene	20.0	16.0		ug/L		80	61 - 135
Benzo[a]pyrene	20.0	14.5		ug/L		73	52 - 120
Benzo[b]fluoranthene	20.0	17.6		ug/L		88	53 - 134
Benzo[g,h,i]perylene	20.0	14.2		ug/L		71	47 - 133
Benzo[k]fluoranthene	20.0	16.3		ug/L		82	57 - 134
Chrysene	20.0	16.4		ug/L		82	55 - 122
Dibenz(a,h)anthracene	20.0	15.8		ug/L		79	48 - 146
Fluoranthene	20.0	16.5		ug/L		83	54 - 128
Fluorene	20.0	15.9		ug/L		80	45 - 125
Indeno[1,2,3-cd]pyrene	20.0	15.3		ug/L		76	43 - 142
1-Methylnaphthalene	20.0	15.5		ug/L		78	41 - 120
2-Methylnaphthalene	20.0	15.9		ug/L		79	32 - 124
Naphthalene	20.0	15.2		ug/L		76	39 - 125
Phenanthrene	20.0	16.1		ug/L		81	48 - 120
Pyrene	20.0	15.5		ug/L		78	48 - 132

Surrogate	LCS %Recovery	LCS Qualifier	Limits
2-Fluorobiphenyl	81		15 - 122
Nitrobenzene-d5 (Surr)	90		19 - 130
Terphenyl-d14 (Surr)	83		33 - 138

Lab Sample ID: LCSD 400-284644/3-A

Matrix: Water

Analysis Batch: 284862

Client Sample ID: Lab Control Sample Dup

Prep Type: Total/NA

Prep Batch: 284644

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Acenaphthene	20.0	16.9		ug/L		84	41 - 120	7	56
Acenaphthylene	20.0	17.2		ug/L		86	44 - 120	4	56
Anthracene	20.0	17.9		ug/L		89	49 - 120	8	51
Benzo[a]anthracene	20.0	17.4		ug/L		87	61 - 135	9	49
Benzo[a]pyrene	20.0	15.6		ug/L		78	52 - 120	7	50
Benzo[b]fluoranthene	20.0	19.1		ug/L		96	53 - 134	8	54
Benzo[g,h,i]perylene	20.0	15.3		ug/L		76	47 - 133	7	50
Benzo[k]fluoranthene	20.0	17.7		ug/L		88	57 - 134	8	52
Chrysene	20.0	18.0		ug/L		90	55 - 122	10	50
Dibenz(a,h)anthracene	20.0	16.4		ug/L		82	48 - 146	4	50
Fluoranthene	20.0	18.3		ug/L		92	54 - 128	10	52
Fluorene	20.0	16.9		ug/L		85	45 - 125	6	56
Indeno[1,2,3-cd]pyrene	20.0	16.5		ug/L		83	43 - 142	8	51
1-Methylnaphthalene	20.0	16.6		ug/L		83	41 - 120	6	55
2-Methylnaphthalene	20.0	16.6		ug/L		83	32 - 124	4	57
Naphthalene	20.0	16.0		ug/L		80	39 - 125	5	56
Phenanthrene	20.0	17.4		ug/L		87	48 - 120	8	56
Pyrene	20.0	17.2		ug/L		86	48 - 132	10	52

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8270D LL - Semivolatile Organic Compounds by GC/MS - Low Level (Continued)

Lab Sample ID: LCSD 400-284644/3-A
Matrix: Water
Analysis Batch: 284862

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 284644

Surrogate	LCSD LCSD		Limits
	%Recovery	Qualifier	
2-Fluorobiphenyl	83		15 - 122
Nitrobenzene-d5 (Surr)	89		19 - 130
Terphenyl-d14 (Surr)	86		33 - 138

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography

Lab Sample ID: MB 680-411595/3-A
Matrix: Water
Analysis Batch: 411748

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 411595

Analyte	MB MB		PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Aldrin	0.0073	U	0.050	0.0073	ug/L		11/23/15 16:06	11/24/15 16:47	1
alpha-BHC	0.0078	U	0.050	0.0078	ug/L		11/23/15 16:06	11/24/15 16:47	1
alpha-Chlordane	0.010	U	0.050	0.010	ug/L		11/23/15 16:06	11/24/15 16:47	1
beta-BHC	0.012	U	0.050	0.012	ug/L		11/23/15 16:06	11/24/15 16:47	1
Chlordane (technical)	0.11	U	0.50	0.11	ug/L		11/23/15 16:06	11/24/15 16:47	1
4,4'-DDD	0.0077	U	0.050	0.0077	ug/L		11/23/15 16:06	11/24/15 16:47	1
4,4'-DDE	0.0074	U	0.050	0.0074	ug/L		11/23/15 16:06	11/24/15 16:47	1
4,4'-DDT	0.0085	U	0.050	0.0085	ug/L		11/23/15 16:06	11/24/15 16:47	1
delta-BHC	0.013	U	0.050	0.013	ug/L		11/23/15 16:06	11/24/15 16:47	1
Dieldrin	0.0086	U	0.050	0.0086	ug/L		11/23/15 16:06	11/24/15 16:47	1
Endosulfan I	0.0082	U	0.050	0.0082	ug/L		11/23/15 16:06	11/24/15 16:47	1
Endosulfan II	0.0085	U	0.050	0.0085	ug/L		11/23/15 16:06	11/24/15 16:47	1
Endosulfan sulfate	0.0083	U	0.050	0.0083	ug/L		11/23/15 16:06	11/24/15 16:47	1
Endrin	0.0088	U	0.050	0.0088	ug/L		11/23/15 16:06	11/24/15 16:47	1
Endrin aldehyde	0.017	U	0.050	0.017	ug/L		11/23/15 16:06	11/24/15 16:47	1
Endrin ketone	0.0089	U	0.050	0.0089	ug/L		11/23/15 16:06	11/24/15 16:47	1
gamma-BHC (Lindane)	0.0083	U	0.050	0.0083	ug/L		11/23/15 16:06	11/24/15 16:47	1
gamma-Chlordane	0.0085	U	0.050	0.0085	ug/L		11/23/15 16:06	11/24/15 16:47	1
Heptachlor	0.0079	U	0.050	0.0079	ug/L		11/23/15 16:06	11/24/15 16:47	1
Heptachlor epoxide	0.0081	U	0.050	0.0081	ug/L		11/23/15 16:06	11/24/15 16:47	1
Methoxychlor	0.0093	U	0.050	0.0093	ug/L		11/23/15 16:06	11/24/15 16:47	1
Toxaphene	0.19	U	5.0	0.19	ug/L		11/23/15 16:06	11/24/15 16:47	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
DCB Decachlorobiphenyl	84		10 - 130	11/23/15 16:06	11/24/15 16:47	1
Tetrachloro-m-xylene	77		39 - 130	11/23/15 16:06	11/24/15 16:47	1

Lab Sample ID: LCS 680-411595/4-A
Matrix: Water
Analysis Batch: 411748

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 411595

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Aldrin	0.100	0.0825		ug/L		82	48 - 130
alpha-BHC	0.100	0.0747		ug/L		75	45 - 130
alpha-Chlordane	0.100	0.0827		ug/L		83	60 - 130

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8081B/8082A - Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography (Continued)

Lab Sample ID: LCS 680-411595/4-A
Matrix: Water
Analysis Batch: 411748

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 411595

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
beta-BHC	0.100	0.0800		ug/L		80	50 - 130
4,4'-DDD	0.100	0.0700		ug/L		70	52 - 130
4,4'-DDE	0.100	0.0725		ug/L		72	48 - 130
4,4'-DDT	0.100	0.0778		ug/L		78	59 - 130
delta-BHC	0.100	0.0786		ug/L		79	47 - 140
Dieldrin	0.100	0.0783		ug/L		78	55 - 130
Endosulfan I	0.100	0.0759		ug/L		76	27 - 130
Endosulfan II	0.100	0.0794		ug/L		79	39 - 130
Endosulfan sulfate	0.100	0.0828		ug/L		83	57 - 130
Endrin	0.100	0.0886		ug/L		89	62 - 131
Endrin aldehyde	0.100	0.0841		ug/L		84	39 - 177
Endrin ketone	0.100	0.0810		ug/L		81	47 - 130
gamma-BHC (Lindane)	0.100	0.0713		ug/L		71	47 - 130
gamma-Chlordane	0.100	0.0792		ug/L		79	50 - 145
Heptachlor	0.100	0.0764		ug/L		76	49 - 130
Heptachlor epoxide	0.100	0.0779		ug/L		78	54 - 130
Methoxychlor	0.100	0.0886		ug/L		89	53 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
DCB Decachlorobiphenyl	72		10 - 130
Tetrachloro-m-xylene	66		39 - 130

Lab Sample ID: LCSD 680-411595/5-A
Matrix: Water
Analysis Batch: 411748

Client Sample ID: Lab Control Sample Dup
Prep Type: Total/NA
Prep Batch: 411595

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Aldrin	0.100	0.0792		ug/L		79	48 - 130	4	40
alpha-BHC	0.100	0.0746		ug/L		75	45 - 130	0	30
alpha-Chlordane	0.100	0.0838		ug/L		84	60 - 130	1	50
beta-BHC	0.100	0.0797		ug/L		80	50 - 130	0	40
4,4'-DDD	0.100	0.0714		ug/L		71	52 - 130	2	40
4,4'-DDE	0.100	0.0723		ug/L		72	48 - 130	0	30
4,4'-DDT	0.100	0.0812		ug/L		81	59 - 130	4	40
delta-BHC	0.100	0.0756		ug/L		76	47 - 140	4	30
Dieldrin	0.100	0.0820		ug/L		82	55 - 130	5	30
Endosulfan I	0.100	0.0796		ug/L		80	27 - 130	5	30
Endosulfan II	0.100	0.0823		ug/L		82	39 - 130	4	30
Endosulfan sulfate	0.100	0.0900		ug/L		90	57 - 130	8	40
Endrin	0.100	0.0887		ug/L		89	62 - 131	0	30
Endrin aldehyde	0.100	0.0926		ug/L		93	39 - 177	10	40
Endrin ketone	0.100	0.0902		ug/L		90	47 - 130	11	40
gamma-BHC (Lindane)	0.100	0.0717		ug/L		72	47 - 130	1	30
gamma-Chlordane	0.100	0.0803		ug/L		80	50 - 145	1	50
Heptachlor	0.100	0.0763		ug/L		76	49 - 130	0	30
Heptachlor epoxide	0.100	0.0801		ug/L		80	54 - 130	3	40
Methoxychlor	0.100	0.102		ug/L		102	53 - 130	14	40

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Surrogate	LCSD		Limits
	%Recovery	Qualifier	
DCB Decachlorobiphenyl	87		10 - 130
Tetrachloro-m-xylene	65		39 - 130

Method: FL-PRO - Florida - Petroleum Range Organics (GC)

Lab Sample ID: MB 400-284530/1-A
Matrix: Water
Analysis Batch: 284918

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 284530

Analyte	MB MB		PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
	Result	Qualifier							
Total Petroleum Hydrocarbons (C8-C40)	38.5	I	150	24	ug/L		11/23/15 08:21	11/25/15 14:38	1

Surrogate	MB MB		Limits	Prepared	Analyzed	Dil Fac
	%Recovery	Qualifier				
n-C39	107		42 - 193	11/23/15 08:21	11/25/15 14:38	1
o-Terphenyl	109		82 - 142	11/23/15 08:21	11/25/15 14:38	1

Lab Sample ID: LCS 400-284530/2-A
Matrix: Water
Analysis Batch: 284918

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 284530

Analyte	Spike Added	LCS LCS		Unit	D	%Rec	Limits
		Result	Qualifier				
Total Petroleum Hydrocarbons (C8-C40)	3400	3340		ug/L		98	55 - 118

Surrogate	LCS LCS		Limits
	%Recovery	Qualifier	
n-C39	90		42 - 193
o-Terphenyl	112		82 - 142

Lab Sample ID: 680-119196-B-2-A MS
Matrix: Water
Analysis Batch: 284918

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 284530

Analyte	Sample Result	Sample Qualifier	Spike Added	MS MS		Unit	D	%Rec	Limits
				Result	Qualifier				
Total Petroleum Hydrocarbons (C8-C40)	24	U	3400	2650		ug/L		78	41 - 101

Surrogate	MS MS		Limits
	%Recovery	Qualifier	
n-C39	90		42 - 193
o-Terphenyl	96		82 - 142

Lab Sample ID: 680-119196-B-2-B MSD
Matrix: Water
Analysis Batch: 284918

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 284530

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD MSD		Unit	D	%Rec	Limits	RPD	Limit
				Result	Qualifier						
Total Petroleum Hydrocarbons (C8-C40)	24	U	3400	3050		ug/L		90	41 - 101	14	20

Surrogate	MSD MSD		Limits
	%Recovery	Qualifier	
n-C39	89		42 - 193
o-Terphenyl	112		82 - 142

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8290A - Dioxins/Furans, HRGC/HRMS (8290A)

Lab Sample ID: H5K20000030B

Matrix: Water

Analysis Batch: 5324030

Client Sample ID: Method Blank

Prep Type: Total

Prep Batch: 5324030_P

Analyte	Result	MB Qualifier	ML	EDL	TEF	TEQ	Unit	D	Prepared	Analyzed	Dil Fac
2,3,7,8-TCDD	ND		10.0	3.71	1		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total TCDD	ND		10.0	3.71			pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,7,8-PeCDD	ND		50.0	1.83	0.5		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total PeCDD	6.03	J I	50.0	1.83			pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,4,7,8-HxCDD	ND		50.0	2.02	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,6,7,8-HxCDD	ND		50.0	2.04	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,7,8,9-HxCDD	ND		50.0	1.89	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total HxCDD	ND		50.0	1.98			pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,4,6,7,8-HpCDD	ND		50.0	2.48	0.01		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total HpCDD	ND		50.0	2.48			pg/L		11/21/15 14:00	12/01/15 02:54	1
OCDD	7.47	J I	100	2.88	0.001	0.0075	pg/L		11/21/15 14:00	12/01/15 02:54	1
2,3,7,8-TCDF	ND		10.0	3.10	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total TCDF	ND		10.0	3.10			pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,7,8-PeCDF	ND		50.0	1.36	0.05		pg/L		11/21/15 14:00	12/01/15 02:54	1
2,3,4,7,8-PeCDF	ND		50.0	1.27	0.5		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total PeCDF	ND		50.0	1.31			pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,4,7,8-HxCDF	ND		50.0	1.09	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,6,7,8-HxCDF	ND		50.0	1.06	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
2,3,4,6,7,8-HxCDF	ND		50.0	1.19	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,7,8,9-HxCDF	ND		50.0	1.44	0.1		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total HxCDF	ND		50.0	1.18			pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,4,6,7,8-HpCDF	ND		50.0	1.40	0.01		pg/L		11/21/15 14:00	12/01/15 02:54	1
1,2,3,4,7,8,9-HpCDF	ND		50.0	1.75	0.01		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total HpCDF	ND		50.0	1.56			pg/L		11/21/15 14:00	12/01/15 02:54	1
OCDF	ND		100	3.76	0.001		pg/L		11/21/15 14:00	12/01/15 02:54	1
Total TEQ						0.0075					

Internal Standard	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
13C-2,3,7,8-TCDD	70		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,7,8-PeCDD	67		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,4,7,8-HxCDD	68		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,6,7,8-HxCDD	71		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,4,6,7,8-HpCDD	62		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-OCDD	43		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-2,3,7,8-TCDF	60		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,7,8-PeCDF	58		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-2,3,4,7,8-PeCDF	55		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,4,7,8-HxCDF	62		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,6,7,8-HxCDF	63		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-2,3,4,6,7,8-HxCDF	62		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,7,8,9-HxCDF	60		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,4,6,7,8-HpCDF	56		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-1,2,3,4,7,8,9-HpCDF	52		40 - 135	11/21/15 14:00	12/01/15 02:54	1
13C-OCDF	43		40 - 135	11/21/15 14:00	12/01/15 02:54	1

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8290A - Dioxins/Furans, HRGC/HRMS (8290A) (Continued)

Lab Sample ID: H5K20000030C

Matrix: Water

Analysis Batch: 5324030

Client Sample ID: Lab Control Sample

Prep Type: Total

Prep Batch: 5324030_P

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
2,3,7,8-TCDD	200	186		pg/L		93	77 - 127
1,2,3,7,8-PeCDD	1000	917		pg/L		92	78 - 128
1,2,3,4,7,8-HxCDD	1000	930		pg/L		93	73 - 123
1,2,3,6,7,8-HxCDD	1000	896		pg/L		90	72 - 127
1,2,3,7,8,9-HxCDD	1000	1010		pg/L		101	76 - 126
1,2,3,4,6,7,8-HpCDD	1000	910		pg/L		91	73 - 123
OCDD	2000	1700	V	pg/L		85	75 - 125
2,3,7,8-TCDF	200	194		pg/L		97	74 - 124
1,2,3,7,8-PeCDF	1000	851		pg/L		85	74 - 124
2,3,4,7,8-PeCDF	1000	881		pg/L		88	74 - 124
1,2,3,4,7,8-HxCDF	1000	894		pg/L		89	75 - 125
1,2,3,6,7,8-HxCDF	1000	932		pg/L		93	75 - 125
2,3,4,6,7,8-HxCDF	1000	898		pg/L		90	76 - 126
1,2,3,7,8,9-HxCDF	1000	935		pg/L		93	76 - 126
1,2,3,4,6,7,8-HpCDF	1000	882		pg/L		88	71 - 121
1,2,3,4,7,8,9-HpCDF	1000	857		pg/L		86	73 - 123
OCDF	2000	1670		pg/L		84	68 - 132

Internal Standard	LCS %Recovery	LCS Qualifier	Limits
13C-2,3,7,8-TCDD	67		40 - 135
13C-1,2,3,7,8-PeCDD	70		40 - 135
13C-1,2,3,4,7,8-HxCDD	61		40 - 135
13C-1,2,3,6,7,8-HxCDD	65		40 - 135
13C-1,2,3,4,6,7,8-HpCDD	66		40 - 135
13C-OCDD	57		40 - 135
13C-2,3,7,8-TCDF	56		40 - 135
13C-1,2,3,7,8-PeCDF	58		40 - 135
13C-2,3,4,7,8-PeCDF	62		40 - 135
13C-1,2,3,4,7,8-HxCDF	55		40 - 135
13C-1,2,3,6,7,8-HxCDF	57		40 - 135
13C-2,3,4,6,7,8-HxCDF	56		40 - 135
13C-1,2,3,7,8,9-HxCDF	57		40 - 135
13C-1,2,3,4,6,7,8-HpCDF	58		40 - 135
13C-1,2,3,4,7,8,9-HpCDF	55		40 - 135
13C-OCDF	51		40 - 135

Method: 6020A - Metals (ICP/MS)

Lab Sample ID: MB 680-411708/1-A

Matrix: Water

Analysis Batch: 411914

Client Sample ID: Method Blank

Prep Type: Total Recoverable

Prep Batch: 411708

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	1.5	U	3.0	1.5	ug/L		11/24/15 08:34	11/24/15 16:12	1
Barium	0.61	U	5.0	0.61	ug/L		11/24/15 08:34	11/24/15 16:12	1
Cadmium	0.15	U	0.50	0.15	ug/L		11/24/15 08:34	11/24/15 16:12	1
Chromium	1.6	U	5.0	1.6	ug/L		11/24/15 08:34	11/24/15 16:12	1

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 6020A - Metals (ICP/MS) (Continued)

Lab Sample ID: MB 680-411708/1-A
Matrix: Water
Analysis Batch: 411914

Client Sample ID: Method Blank
Prep Type: Total Recoverable
Prep Batch: 411708

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Lead	0.98	U	2.5	0.98	ug/L		11/24/15 08:34	11/24/15 16:12	1
Selenium	1.0	U	2.5	1.0	ug/L		11/24/15 08:34	11/24/15 16:12	1
Silver	0.10	U	1.0	0.10	ug/L		11/24/15 08:34	11/24/15 16:12	1

Lab Sample ID: LCS 680-411708/2-A
Matrix: Water
Analysis Batch: 411914

Client Sample ID: Lab Control Sample
Prep Type: Total Recoverable
Prep Batch: 411708

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Arsenic	100	96.5		ug/L		97	75 - 125
Barium	100	93.5		ug/L		93	75 - 125
Cadmium	50.0	45.5		ug/L		91	75 - 125
Chromium	100	89.3		ug/L		89	75 - 125
Lead	500	486		ug/L		97	75 - 125
Selenium	100	98.0		ug/L		98	75 - 125
Silver	50.0	47.2		ug/L		94	75 - 125

Lab Sample ID: 680-119201-A-3-G MS
Matrix: Water
Analysis Batch: 411914

Client Sample ID: Matrix Spike
Prep Type: Total Recoverable
Prep Batch: 411708

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Arsenic	1.5	U	100	97.7		ug/L		98	75 - 125
Barium	8.9		100	104		ug/L		95	75 - 125
Cadmium	0.15	U	50.0	46.0		ug/L		92	75 - 125
Chromium	1.6	U	100	89.7		ug/L		90	75 - 125
Lead	0.98	U	500	499		ug/L		100	75 - 125
Selenium	1.0	U	100	98.1		ug/L		98	75 - 125
Silver	0.10	U	50.0	48.2		ug/L		96	75 - 125

Lab Sample ID: 680-119201-A-3-H MSD
Matrix: Water
Analysis Batch: 411914

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total Recoverable
Prep Batch: 411708

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	Limit
Arsenic	1.5	U	100	98.2		ug/L		98	75 - 125	1	20
Barium	8.9		100	105		ug/L		96	75 - 125	1	20
Cadmium	0.15	U	50.0	47.3		ug/L		95	75 - 125	3	20
Chromium	1.6	U	100	90.0		ug/L		90	75 - 125	0	20
Lead	0.98	U	500	501		ug/L		100	75 - 125	0	20
Selenium	1.0	U	100	97.0		ug/L		97	75 - 125	1	20
Silver	0.10	U	50.0	48.4		ug/L		97	75 - 125	0	20

TestAmerica Tampa

QC Sample Results

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 680-411717/13-A
Matrix: Water
Analysis Batch: 411905

Client Sample ID: Method Blank
Prep Type: Total/NA
Prep Batch: 411717

Analyte	MB Result	MB Qualifier	PQL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	0.080	U	0.20	0.080	ug/L		11/24/15 09:10	11/24/15 15:47	1

Lab Sample ID: LCS 680-411717/14-A
Matrix: Water
Analysis Batch: 411905

Client Sample ID: Lab Control Sample
Prep Type: Total/NA
Prep Batch: 411717

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	Limits
Mercury	2.50	2.59		ug/L		104	80 - 120

Lab Sample ID: 680-119279-A-1-B MS
Matrix: Water
Analysis Batch: 411905

Client Sample ID: Matrix Spike
Prep Type: Total/NA
Prep Batch: 411717

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	Limits
Mercury	0.080	U	1.00	1.03		ug/L		103	80 - 120

Lab Sample ID: 680-119279-A-1-C MSD
Matrix: Water
Analysis Batch: 411905

Client Sample ID: Matrix Spike Duplicate
Prep Type: Total/NA
Prep Batch: 411717

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	Limits	RPD	RPD Limit
Mercury	0.080	U	1.00	1.03		ug/L		103	80 - 120	0	20

Internal Standards Summary

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method: 8290A - Dioxins/Furans, HRGC/HRMS (8290A)

Matrix: Water

Prep Type: Total

Lab Sample ID	Client Sample ID	Percent Internal Standard Recovery (Acceptance Limits)							
		TCDD (40-135)	,2,3,7,8-P (40-135)	2,3,4,7,8-F (40-135)	2,3,6,7,8-F (40-135)	,3,4,6,7,8- (40-135)	13C-OCDF (40-135)	TCDF (40-135)	,2,3,7,8-P (40-135)
660-70525-1	MW-LB 9	64	62	61	65	58	44	53	56
660-70525-2	MW-LB 12	72	71	62	71	59	45	64	60
H5K200000030B	Method Blank	70	67	68	71	62	43	60	58
H5K200000030C	Lab Control Sample	67	70	61	65	66	57	56	58

Lab Sample ID	Client Sample ID	Percent Internal Standard Recovery (Acceptance Limits)							
		PeCDF2 (40-135)	2,3,4,7,8-F (40-135)	HxCDF2 (40-135)	HxCDF3 (40-135)	HxCDF4 (40-135)	,3,4,6,7,8- (40-135)	,3,4,7,8,9- (40-135)	13C-OCDF (40-135)
660-70525-1	MW-LB 9	55	58	61	57	58	52	46	43
660-70525-2	MW-LB 12	66	59	64	63	58	56	49	41
H5K200000030B	Method Blank	55	62	63	62	60	56	52	43
H5K200000030C	Lab Control Sample	62	55	57	56	57	58	55	51

Internal Standard Legend

- TCDD = 13C-2,3,7,8-TCDD
- 13C-1,2,3,7,8-PeCDD = 13C-1,2,3,7,8-PeCDD
- 13C-1,2,3,4,7,8-HxCDD = 13C-1,2,3,4,7,8-HxCDD
- 13C-1,2,3,6,7,8-HxCDD = 13C-1,2,3,6,7,8-HxCDD
- 13C-1,2,3,4,6,7,8-HpCDD = 13C-1,2,3,4,6,7,8-HpCDD
- 13C-OCDD = 13C-OCDD
- TCDF = 13C-2,3,7,8-TCDF
- 13C-1,2,3,7,8-PeCDF = 13C-1,2,3,7,8-PeCDF
- PeCDF2 = 13C-2,3,4,7,8-PeCDF
- 13C-1,2,3,4,7,8-HxCDF = 13C-1,2,3,4,7,8-HxCDF
- HxCDF2 = 13C-1,2,3,6,7,8-HxCDF
- HxCDF3 = 13C-2,3,4,6,7,8-HxCDF
- HxCDF4 = 13C-1,2,3,7,8,9-HxCDF
- 13C-1,2,3,4,6,7,8-HpCDF = 13C-1,2,3,4,6,7,8-HpCDF
- 13C-1,2,3,4,7,8,9-HpCDF = 13C-1,2,3,4,7,8,9-HpCDF
- 13C-OCDF = 13C-OCDF

QC Association Summary

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

GC/MS VOA

Analysis Batch: 163580

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70494-H-1 MS	Matrix Spike	Total/NA	Water	8260B	
660-70525-1	MW-LB 9	Total/NA	Water	8260B	
660-70525-2	MW-LB 12	Total/NA	Water	8260B	
680-119275-B-1 DU	Duplicate	Total/NA	Water	8260B	
LCS 660-163580/4	Lab Control Sample	Total/NA	Water	8260B	
MB 660-163580/6	Method Blank	Total/NA	Water	8260B	

GC/MS Semi VOA

Prep Batch: 284565

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	3520C	
660-70525-2	MW-LB 12	Total/NA	Water	3520C	
LCS 400-284565/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 400-284565/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	

Prep Batch: 284644

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	3520C	
660-70525-2	MW-LB 12	Total/NA	Water	3520C	
LCS 400-284644/2-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 400-284644/3-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 400-284644/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 284701

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-284565/2-A	Lab Control Sample	Total/NA	Water	8270D	284565
LCSD 400-284565/3-A	Lab Control Sample Dup	Total/NA	Water	8270D	284565

Analysis Batch: 284714

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCS 400-284644/2-A	Lab Control Sample	Total/NA	Water	8270D LL	284644
MB 400-284644/1-A	Method Blank	Total/NA	Water	8270D LL	284644

Analysis Batch: 284862

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
LCSD 400-284644/3-A	Lab Control Sample Dup	Total/NA	Water	8270D LL	284644

Analysis Batch: 285098

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	8270D LL	284644
660-70525-2	MW-LB 12	Total/NA	Water	8270D LL	284644

Analysis Batch: 285370

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	8270D	284565
660-70525-2	MW-LB 12	Total/NA	Water	8270D	284565

TestAmerica Tampa

QC Association Summary

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

GC Semi VOA

Prep Batch: 284530

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	3520C	
660-70525-2	MW-LB 12	Total/NA	Water	3520C	
680-119196-B-2-A MS	Matrix Spike	Total/NA	Water	3520C	
680-119196-B-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	3520C	
LCS 400-284530/2-A	Lab Control Sample	Total/NA	Water	3520C	
MB 400-284530/1-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 284918

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	FL-PRO	284530
660-70525-2	MW-LB 12	Total/NA	Water	FL-PRO	284530
680-119196-B-2-A MS	Matrix Spike	Total/NA	Water	FL-PRO	284530
680-119196-B-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	FL-PRO	284530
LCS 400-284530/2-A	Lab Control Sample	Total/NA	Water	FL-PRO	284530
MB 400-284530/1-A	Method Blank	Total/NA	Water	FL-PRO	284530

Prep Batch: 411595

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	3520C	
660-70525-2	MW-LB 12	Total/NA	Water	3520C	
LCS 680-411595/4-A	Lab Control Sample	Total/NA	Water	3520C	
LCSD 680-411595/5-A	Lab Control Sample Dup	Total/NA	Water	3520C	
MB 680-411595/3-A	Method Blank	Total/NA	Water	3520C	

Analysis Batch: 411748

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	8081B/8082A	411595
660-70525-2	MW-LB 12	Total/NA	Water	8081B/8082A	411595
LCS 680-411595/4-A	Lab Control Sample	Total/NA	Water	8081B/8082A	411595
LCSD 680-411595/5-A	Lab Control Sample Dup	Total/NA	Water	8081B/8082A	411595
MB 680-411595/3-A	Method Blank	Total/NA	Water	8081B/8082A	411595

Specialty Organics

Analysis Batch: 5324030

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total	Water	8290A	
660-70525-2	MW-LB 12	Total	Water	8290A	
H5K200000030B	Method Blank	Total	Water	8290A	
H5K200000030C	Lab Control Sample	Total	Water	8290A	

Prep Batch: 5324030_P

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total	Water	LIQ/LIQ, SEP FUNNEL (PAH,P/P,TPH,D oxin) - Nominal	
660-70525-2	MW-LB 12	Total	Water	LIQ/LIQ, SEP FUNNEL (PAH,P/P,TPH,D oxin) - Nominal	

TestAmerica Tampa

QC Association Summary

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Specialty Organics (Continued)

Prep Batch: 5324030_P (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
H5K20000030B	Method Blank	Total	Water	LIQ/LIQ, SEP FUNNEL (PAH,P/P,TPH,D oxin) - Nominal	
H5K20000030C	Lab Control Sample	Total	Water	LIQ/LIQ, SEP FUNNEL (PAH,P/P,TPH,D oxin) - Nominal	

Metals

Prep Batch: 411708

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total Recoverable	Water	3005A	
660-70525-2	MW-LB 12	Total Recoverable	Water	3005A	
680-119201-A-3-G MS	Matrix Spike	Total Recoverable	Water	3005A	
680-119201-A-3-H MSD	Matrix Spike Duplicate	Total Recoverable	Water	3005A	
LCS 680-411708/2-A	Lab Control Sample	Total Recoverable	Water	3005A	
MB 680-411708/1-A	Method Blank	Total Recoverable	Water	3005A	

Prep Batch: 411717

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	7470A	
660-70525-2	MW-LB 12	Total/NA	Water	7470A	
680-119279-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	
680-119279-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	
LCS 680-411717/14-A	Lab Control Sample	Total/NA	Water	7470A	
MB 680-411717/13-A	Method Blank	Total/NA	Water	7470A	

Analysis Batch: 411905

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total/NA	Water	7470A	411717
660-70525-2	MW-LB 12	Total/NA	Water	7470A	411717
680-119279-A-1-B MS	Matrix Spike	Total/NA	Water	7470A	411717
680-119279-A-1-C MSD	Matrix Spike Duplicate	Total/NA	Water	7470A	411717
LCS 680-411717/14-A	Lab Control Sample	Total/NA	Water	7470A	411717
MB 680-411717/13-A	Method Blank	Total/NA	Water	7470A	411717

Analysis Batch: 411914

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total Recoverable	Water	6020A	411708
660-70525-2	MW-LB 12	Total Recoverable	Water	6020A	411708
680-119201-A-3-G MS	Matrix Spike	Total Recoverable	Water	6020A	411708
680-119201-A-3-H MSD	Matrix Spike Duplicate	Total Recoverable	Water	6020A	411708
LCS 680-411708/2-A	Lab Control Sample	Total Recoverable	Water	6020A	411708
MB 680-411708/1-A	Method Blank	Total Recoverable	Water	6020A	411708

Analysis Batch: 412027

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
660-70525-1	MW-LB 9	Total Recoverable	Water	6020A	411708
660-70525-2	MW-LB 12	Total Recoverable	Water	6020A	411708

TestAmerica Tampa

Lab Chronicle

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Client Sample ID: MW-LB 9

Date Collected: 11/18/15 09:05

Date Received: 11/19/15 09:35

Lab Sample ID: 660-70525-1

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	163580	11/23/15 15:10	JJP	TAL TAM
Total/NA	Prep	3520C			284565	11/24/15 10:30	KH1	TAL PEN
Total/NA	Analysis	8270D		1	285370	12/01/15 17:33	AJR	TAL PEN
Total/NA	Prep	3520C			284644	11/23/15 16:09	KH1	TAL PEN
Total/NA	Analysis	8270D LL		1	285098	11/27/15 10:47	CEP	TAL PEN
Total/NA	Prep	3520C			411595	11/23/15 16:06	RBS	TAL SAV
Total/NA	Analysis	8081B/8082A		1	411748	11/24/15 18:04	JCK	TAL SAV
Total/NA	Prep	3520C			284530	11/23/15 08:21	KH1	TAL PEN
Total/NA	Analysis	FL-PRO		1	284918	11/25/15 16:33	C1M	TAL PEN
Total	Prep	LIQ/LIQ, SEP FUNNE (PAH,P/P,TPH,Dioxin) - Nominal			5324030_P	11/21/15 14:00		TAL KNX
Total	Analysis	8290A		1	5324030	12/01/15 05:56	PMP	TAL KNX
Total Recoverable	Prep	3005A			411708	11/24/15 08:34	CRW	TAL SAV
Total Recoverable	Analysis	6020A		1	411914	11/24/15 19:32	BJB	TAL SAV
Total Recoverable	Prep	3005A			411708	11/24/15 08:34	CRW	TAL SAV
Total Recoverable	Analysis	6020A		1	412027	11/25/15 13:39	BJB	TAL SAV
Total/NA	Prep	7470A			411717	11/24/15 09:10	JKL	TAL SAV
Total/NA	Analysis	7470A		1	411905	11/24/15 15:53	JKL	TAL SAV

Client Sample ID: MW-LB 12

Date Collected: 11/18/15 10:26

Date Received: 11/19/15 09:35

Lab Sample ID: 660-70525-2

Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	163580	11/23/15 15:27	JJP	TAL TAM
Total/NA	Prep	3520C			284565	11/24/15 10:30	KH1	TAL PEN
Total/NA	Analysis	8270D		1	285370	12/01/15 18:14	AJR	TAL PEN
Total/NA	Prep	3520C			284644	11/23/15 16:09	KH1	TAL PEN
Total/NA	Analysis	8270D LL		1	285098	11/27/15 11:19	CEP	TAL PEN
Total/NA	Prep	3520C			411595	11/23/15 16:06	RBS	TAL SAV
Total/NA	Analysis	8081B/8082A		1	411748	11/24/15 18:19	JCK	TAL SAV
Total/NA	Prep	3520C			284530	11/23/15 08:21	KH1	TAL PEN
Total/NA	Analysis	FL-PRO		1	284918	11/25/15 16:54	C1M	TAL PEN
Total	Prep	LIQ/LIQ, SEP FUNNE (PAH,P/P,TPH,Dioxin) - Nominal			5324030_P	11/21/15 14:00		TAL KNX
Total	Analysis	8290A		1	5324030	12/01/15 06:56	PMP	TAL KNX
Total Recoverable	Prep	3005A			411708	11/24/15 08:34	CRW	TAL SAV
Total Recoverable	Analysis	6020A		1	411914	11/24/15 19:39	BJB	TAL SAV
Total Recoverable	Prep	3005A			411708	11/24/15 08:34	CRW	TAL SAV
Total Recoverable	Analysis	6020A		1	412027	11/25/15 13:44	BJB	TAL SAV
Total/NA	Prep	7470A			411717	11/24/15 09:10	JKL	TAL SAV
Total/NA	Analysis	7470A		1	411905	11/24/15 15:56	JKL	TAL SAV

TestAmerica Tampa

Lab Chronicle

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

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Method Summary

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL TAM
8270D	Semivolatile Organic Compounds (GC/MS)	SW846	TAL PEN
8270D LL	Semivolatile Organic Compounds by GC/MS - Low Level	SW846	TAL PEN
8081B/8082A	Organochlorine Pesticides and Polychlorinated Biphenyls by Gas Chromatography	SW846	TAL SAV
FL-PRO	Florida - Petroleum Range Organics (GC)	FL-DEP	TAL PEN
8290A	Dioxins/Furans, HRGC/HRMS (8290A)	SW846	TAL KNX
6020A	Metals (ICP/MS)	SW846	TAL SAV
7470A	Mercury (CVAA)	SW846	TAL SAV

Protocol References:

FL-DEP = State Of Florida Department Of Environmental Protection, Florida Administrative Code.

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

TAL KNX = TestAmerica Knoxville, 5815 Middlebrook Pike, Knoxville, TN 37921, TEL (865)291-3000

TAL PEN = TestAmerica Pensacola, 3355 McLemore Drive, Pensacola, FL 32514, TEL (850)474-1001

TAL SAV = TestAmerica Savannah, 5102 LaRoche Avenue, Savannah, GA 31404, TEL (912)354-7858

TAL TAM = TestAmerica Tampa, 6712 Benjamin Road, Suite 100, Tampa, FL 33634, TEL (813)885-7427

Certification Summary

Client: Langan Engineering & Environmental Svcs
 Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Laboratory: TestAmerica Tampa

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAP	4	E84282	06-30-16

Laboratory: TestAmerica Knoxville

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Arkansas DEQ	State Program	6	88-0688	06-16-16
California	State Program	9	2423	06-30-16
Colorado	State Program	8	N/A	02-28-16
Connecticut	State Program	1	PH-0223	09-30-17
Florida	NELAP	4	E87177	06-30-16
Georgia	State Program	4	906	04-13-17
Hawaii	State Program	9	N/A	04-13-16
Kansas	NELAP	7	E-10349	01-31-16
Kentucky (DW)	State Program	4	90101	12-31-15
L-A-B	DoD ELAP		L2311	02-13-16
Louisiana	NELAP	6	83979	06-30-16
Louisiana (DW)	NELAP	6	LA110001	12-31-15
Maryland	State Program	3	277	03-31-16
Michigan	State Program	5	9933	04-13-17
Nevada	State Program	9	TN00009	07-31-16
New Jersey	NELAP	2	TN001	11-30-15
New York	NELAP	2	10781	03-31-16
North Carolina (DW)	State Program	4	21705	07-31-16
North Carolina (WW/SW)	State Program	4	64	12-31-15
Ohio VAP	State Program	5	CL0059	01-16-17
Oklahoma	State Program	6	9415	08-31-16
Pennsylvania	NELAP	3	68-00576	12-31-15
South Carolina	State Program	4	84001	06-30-16
Tennessee	State Program	4	2014	04-13-17
Texas	NELAP	6	T104704380-15-8	08-31-16
USDA	Federal		P330-13-00260	08-29-16
Utah	NELAP	8	QUAN3	07-31-16
Virginia	NELAP	3	460176	09-14-16
Washington	State Program	10	C593	01-19-16
West Virginia (DW)	State Program	3	9955C	12-31-15
West Virginia DEP	State Program	3	345	04-30-16
Wisconsin	State Program	5	998044300	08-31-16

Laboratory: TestAmerica Pensacola

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Alabama	State Program	4	40150	01-31-16
Arizona	State Program	9	AZ0710	01-11-16
Arkansas DEQ	State Program	6	88-0689	09-01-16
Florida	NELAP	4	E81010	06-30-16
Georgia	State Program	4	N/A	06-30-16
Illinois	NELAP	5	200041	10-09-16
Iowa	State Program	7	367	07-31-16
Kansas	NELAP	7	E-10253	01-31-16 *

* Certification renewal pending - certification considered valid.

Certification Summary

Client: Langan Engineering & Environmental Svcs
Project/Site: City of Hollywood

TestAmerica Job ID: 660-70525-1

Laboratory: TestAmerica Pensacola (Continued)

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

Authority	Program	EPA Region	Certification ID	Expiration Date
Kentucky (UST)	State Program	4	53	06-30-16
Kentucky (WW)	State Program	4	98030	12-31-15 *
Louisiana	NELAP	6	30976	06-30-16
Maryland	State Program	3	233	09-30-16
Massachusetts	State Program	1	M-FL094	06-30-16
Michigan	State Program	5	9912	06-30-16
New Jersey	NELAP	2	FL006	06-30-16
North Carolina (WW/SW)	State Program	4	314	12-31-15 *
Oklahoma	State Program	6	9810	08-31-16
Pennsylvania	NELAP	3	68-00467	01-31-16
Rhode Island	State Program	1	LAO00307	12-30-15 *
South Carolina	State Program	4	96026	06-30-16
Tennessee	State Program	4	TN02907	06-30-16
Texas	NELAP	6	T104704286-15-9	09-30-16
USDA	Federal		P330-13-00193	07-01-16
Virginia	NELAP	3	460166	06-14-16
West Virginia DEP	State Program	3	136	06-30-16

Laboratory: TestAmerica Savannah

The certifications listed below are applicable to this report.

Authority	Program	EPA Region	Certification ID	Expiration Date
Florida	NELAP	4	E87052	06-30-16

* Certification renewal pending - certification considered valid.

TestAmerica Tampa

660325
Ft Lauderdale

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information
 Client Contact: Dan Spector
 Company: Langan Engineering & Environmental Svcs
 Address: 15150 NW 79th Court Suite 200
 City: Miami Lakes
 State, Zip: FL, 33016
 Phone: 786-264-7218 (Tel)
 Email: dspector@langan.com
 Project Name: City of Hollywood - Water
 Site:
 Lab POC: Hayes, Ken
 Email: ken.hayes@testamerica.com

Due Date Requested:
 TAT Requested (days):
 PO #:
 Purchase Order not required

Project #: 66008634
SSON#:
LOC: 660 70525

Sample Identification	Sample Date	Sample Time	Sample Type (Comp, G-grab)	Matrix (Water, Soil, etc.)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	Analysis Requested	Special Instructions/Note
MMW-LBQ	11/18/15	0905	S	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>	8260B - Standard 8260 List (QV) 6020A, 7470A FL_PRO - (MOD) C8-C40 FLPRO SUBCONTRACT - 17 Isomers & Totals 8270D_LL - Low Level PAHs by 8270 8081B_8082A - Routine Pesticides 8141B - Standard 8141B list	See Project Analytical Parameters
MMW-LBR	11/18/15	1026	S	Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		
				Water	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>		

Special Instructions/Note: See Project Analytical Parameters

Total Number of containers:
Preservation Codes:
 A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - HClSO4, F - MeOH, G - Amelco, H - Ascorbic acid, I - Ice, J - DI Water, K - EDTA, L - EDA, M - Hexane, N - None, O - AsnO2, P - H2O2/AS, Q - H2S2O8, R - N2S2O8, S - H2SO4, T - TSP Dodecylsulfate, U - Asatone, V - MCAA, W - pH 4.5, Z - other (specify)

Possible Hazard Identification:
 Non-Hazard, Flammable, Skin Irritant, Poison B, Unknown, Radiological

Deliverable Requested: I, II, III, IV, Other (specify):
Empty Kit Relinquished by:
Relinquished by: Dan Spector
Date/Time: 11/18/15 12:00
Company:
Relinquished by:
Date/Time:
Company:

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

Sample Disposal: Return To Client, Disposal By Lab, Archive For Months
Special Instructions/QC Requirements:

Login Sample Receipt Checklist

Client: Langan Engineering & Environmental Svcs

Job Number: 660-70525-1

Login Number: 70525

List Source: TestAmerica Tampa

List Number: 1

Creator: Betancourt, Jonathan

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
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	
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	
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (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: Langan Engineering & Environmental Svcs

Job Number: 660-70525-1

Login Number: 70525
List Number: 3
Creator: Benforado, Jessica L

List Source: TestAmerica Pensacola
List Creation: 11/20/15 03:05 PM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	N/A	
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	0.5°C, 0.6°C IR-5
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	Received project as a subcontract.
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.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	



Login Sample Receipt Checklist

Client: Langan Engineering & Environmental Svcs

Job Number: 660-70525-1

Login Number: 70525
List Number: 2
Creator: Kirkland, Keyon A

List Source: TestAmerica Savannah
List Creation: 11/20/15 09:33 AM

Question	Answer	Comment
Radioactivity wasn't checked or is \leq background as measured by a survey meter.	N/A	
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	
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 <math><6\text{mm}</math> (1/4").	N/A	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	False	