

Cover Page

Order ID : Q3688

Project ID : Sharkey Landfill Site FYR Reuse Morris County NJ

Client : WSP USA Inc.

Lab Sample Number

Q3688-01
Q3688-02
Q3688-03
Q3688-04
Q3688-05
Q3688-06
Q3688-07
Q3688-09
Q3688-10
Q3688-11
Q3688-12
Q3688-13
Q3688-14
Q3688-15
Q3688-16
Q3688-17
Q3688-18
Q3688-19
Q3688-20
Q3688-21
Q3688-22
Q3688-23
Q3688-24

Client Sample Number

M-31S
Q3688-01MS
Q3688-01MSD
RBGW-20251119
TBGW-20251119
M-32I
VHBLK001
M-31I
M-32S
RBGW-20251120
M-30S
M-30I
TBGW-20251120
FDGW-20251120
WS-14
M-29
RBGW-20251121
M-28I
WS-1
TBGW-20251121
RBGW-20251124
M-28S
TBGW-20251124

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hard copy data package has been authorized by the laboratory manager or his designee, as verified by the following signature.

Signature : _____

Date: 12/16/2025



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CASE NARRATIVE

WSP USA Inc.

Project Name: Sharkey Landfill Site FYR Reuse Morris County NJ

Project # N/A

Order ID # Q3688

Test Name: VOC-SFAM,SVOCMS Group1,SVOC-SIMGroup1, Mercury,Metals CLP12

A. Number of Samples and Date of Receipt:

7 Water samples were received on 11/19/2025.

7 Water samples were received on 11/20/2025.

6 Water samples were received on 11/21/2025.

3 Water samples were received on 11/24/2025.

B. Parameters

According to the Chain of Custody document, the following analyses were requested: VOC-SFAM,SVOCMS Group1,SVOC-SIMGroup1, Mercury,Metals CLP12. This data package contains results for VOC-SFAM(SFAM_VOC),SVOCMS Group1 (SFAM_SVOC) ,SVOC-SIMGroup1(SFAM_SVOASIM), Mercury,Metals CLP12.

VOC –Low Medium:

C. Analytical Techniques:

The analysis performed on instrument MSVOA_U were done using GC column DB-624UI 20m 0.18mm 1.0 um. Cat#121-1324UIThe analysis of VOC-SFAM was based on method SFAM_VOC.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Surrogate recoveries met the acceptable criteria.

The Internal Standards Areas met the acceptable requirements.

The Retention Times were acceptable for all samples.

The MS {Q3688-02MS} with File ID: VU063768.D recoveries met the requirements for all compounds.

The MSD {Q3688-03MSD} with File ID: VU063769.D recoveries met the acceptable requirements.

The RPD met criteria.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.

The Continuous Calibration met the requirements.



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The Tuning criteria met requirements.

E. Low/Med Water Level Calculation

$$\text{Concentration in ug/L} = \frac{(A_x) (I_s) (DF)}{(A_{is}) (RRF) (V_o)}$$

Where,

A_x = Area of the characteristic ion (EICP) for the compound to be measured.

A_{is} = Area of the characteristic ion (EICP) for the internal standard.

Amount of internal standard added in ng.

RRF = Mean Relative Response Factor from the initial calibration standard.

V_o = Total volume of water purged, in mL.

DF = Dilution Factor.

Semivolatile:

C. Analytical Techniques:

The samples were analyzed on instrument BNA_G using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA. The analysis of SVOCMS Group1 was based on method SFAM_SVOC and extraction was done based on method 3510.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Surrogate recoveries were met for all analysis except for,

M-31S [4-Methylphenol-d8 - 11%],

M-32I [4-Methylphenol-d8 - 23%] and

SLCS723 [1,4-Dioxane-d8 - 128%,]. Failed surrogate is not associated with reporting list so no further corrective action was taken.

The Internal Standards Areas were met for all analysis.

The Retention Times were met for all analysis.

The MS recoveries met the requirements for all compounds.

The MSD recoveries met the requirements for all compounds.

The RPD were met for all analysis.

The Blank Spike met requirements for all compounds.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.



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The Continuous Calibration File ID BG064869.D met the requirements except for 1,4-Dioxane-d8. Failed surrogate in Continuous Calibration is not associated with reporting list, Therefore no further corrective action was taken.

The Tuning criteria met requirements.

E. Concentration of Water Sample:

$$\text{Concentration ug/L} = \frac{(A_x) (I_s) (V_t) (DF) (GPC)}{(A_{is}) (\overline{RRF}) (V_o) (V_i)}$$

Where,

A_x = Area of the characteristic ion for the compound to be measured.

A_{is} = Area of the characteristic ion for the internal standard.

I_s = Amount of internal standard injected in ng.

V_o = Volume of water extracted in mL.

V_i = Volume of extract injected in uL.

V_t = Volume of the concentrated extract in uL

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC = $\frac{V_{in}}{V_{out}}$ = GPC factor (If no GPC is performed, GPC=1)

V_{out} = Volume of extract collected after GPC cleanup.

Semivolatile SIM :

C. Analytical Techniques:

The samples were analyzed on instrument BNA_N using GC Column ZB-SemiVolatiles Guardian which is 30 meters, 0.25 mm ID, 0.5 um df, Catalog # 7HG-G027-17-GGA. The analysis of SVOC-SIMGroup1 was based on method SFAM_SVOASIM and extraction was done based on method 3510.

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Surrogate recoveries were met for all analysis.

The Internal Standards Areas were met for all analysis except for, SLCS742, Failed internal standard is not associated with reporting list. Therefore no further corrective action was taken.

The Retention Times were met for all analysis.

The MS recoveries met the requirements for all compounds.

The MSD recoveries met the requirements for all compounds.

The RPD were met for all analysis.



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The Blank Spike met requirements for all compounds.

The Blank analysis did not indicate the presence of lab contamination.

The Initial Calibration met the requirements.

The Continuous Calibration met the requirements.

The Tuning criteria met requirements.

Sample M-28S was diluted due to high concentration.

The Sample M-29 and M-32I have the concentration of target compound below method detection limits; therefore it is not reported as Hit in Form1.

E. Concentration of Water Sample:

Concentration ug/L = $\frac{(A_x) (I_s) (V_t) (DF) (GPC)}{(A_{is}) (\overline{RRF}) (V_o) (V_i)}$

Where,

A_x = Area of the characteristic ion for the compound to be measured.

A_{is} = Area of the characteristic ion for the internal standard.

I_s = Amount of internal standard injected in ng.

V_o = Volume of water extracted in mL.

V_i = Volume of extract injected in uL.

V_t = Volume of the concentrated extract in uL

RRF = Mean Relative Response Factor determined from the initial calibration standard.

GPC = $\frac{V_{in}}{V_{out}}$ = GPC factor (If no GPC is performed, GPC=1)

V_{out} = Volume of extract collected after GPC cleanup.

Mercury, Metals CLP12 :

C. Analytical Techniques:

Mercury, Metals CLP12 : The analysis of Metals CLP12 was based on method SFAM_AES, digestion based on method 3010 (waters). The analysis of Mercury was based on method SFAM_HG and digestion was based on method 7470A (waters).

D. QA/ QC Samples:

The Holding Times were met for all analysis.

The Blank Spike met requirements for all compounds.

The Blank Spike Duplicate met requirements for all compounds.

The Duplicate analysis met criteria for all compounds.

The MS recoveries met the requirements for all compounds.

The MSD recoveries met the requirements for all compounds.

The Serial Dilution met criteria for all compounds.



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E. Calculation:

Calculation for ICP-AES Water Sample:

$$\text{Concentration or Result } (\mu\text{g/L}) = C \times \frac{V_f}{V_i} \times \text{DF} \times 1000$$

Where,

C = Instrument value in ppm (The average of all replicate exposures)

V_f = Final digestion volume (mL)

V_i = Initial aliquot amount (mL) (Sample amount taken in prep)

DF = Dilution Factor

Example Calculation For Sample M-31S For Chromium:

If C = 0.0006719 ppm

V_f = 50 ml

V_i = 50 ml

DF = 1

$$\begin{aligned} \text{Concentration or Result } (\mu\text{g/L}) &= 0.0006719 \times \frac{50}{50} \times 1 \times 1000 \\ &= 0.6719 \mu\text{g/L} \\ &= 0.67 \mu\text{g/L (Reported Result with Signification)} \end{aligned}$$

Calculation for Hg Water Sample:

$$\text{Concentration or Result } (\mu\text{g/L}) = C \times \text{DF}$$

Where,

C = Instrument response in $\mu\text{g/L}$ from the calibration curve.

DF = Dilution Factor

Example Calculation :

If , C = 0.0278 ppb

DF = 1

$$\begin{aligned} \text{Concentration or Result } (\mu\text{g/L}) &= 0.0278 \times 1 \\ &= 0.0278 \mu\text{g/L} \\ &= 0.028 \mu\text{g/L (Reported Result with Signification)} \end{aligned}$$



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F. Manual Integration Comments:

Please refer to the Manual integration Report included with the Run Logs for information on the manual integrations performed.

I certify that the data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. The laboratory manager or his designee, as verified by the following signature has authorized release of the data contained in this hard copy data package.

Signature_____

DATA REPORTING QUALIFIERS- INORGANIC

For reporting results, the following “ Results Qualifiers” are used:

J	Indicates the reported value was obtained from a reading that was less than the Contract Required Detection Limit (CRDL), but greater than or equal to the Instrument Detection Limit (IDL).
U	Indicates the analyte was analyzed for, but not detected.
ND	Indicates the analyte was analyzed for, but not detected
E	Indicates the reported value is estimated because of the presence of interference
M	Indicates Duplicate injection precision not met.
N	Indicates the spiked sample recovery is not within control limits.
S	Indicates the reported value was determined by the Method of Standard Addition (MSA).
*	Indicates that the duplicate analysis is not within control limits.
+	Indicates the correlation coefficient for the MSA is less than 0.995.
D	Indicates the reported value is from a secondary analysis with a dilution factor. The original analysis exceeded the calibration range.
M	Method qualifiers “P” for ICP instrument “PM” for ICP when Microwave Digestion is used “CV” for Manual Cold Vapor AA “AV” for automated Cold Vapor AA “CA” for MIDI-Distillation Spectrophotometric “AS” for Semi -Automated Spectrophotometric “C” for Manual Spectrophotometric “T” for Titrimetric “NR” for analyte not required to be analyzed
OR	Indicates the analyte’s concentration exceeds the calibrated range of the instrument for that specific analysis.
Q	Indicates the LCS did not meet the control limits requirements
H	Sample Analysis Out Of Hold Time

DATA REPORTING QUALIFIERS- ORGANIC

For reporting results, the following “Results Qualifiers” are used:

Value	If the result is a value greater than or equal to the detection limit, report the value
U	Indicates the compound was analyzed for but was not detected. Report the minimum detection limit for the sample with the U, i.e. “10 U”. This is not necessarily the instrument detection limit attainable for this particular sample based on any concentration or dilution that may have been required.
ND	Indicates the analyte was analyzed for, but not detected
J	Indicates an estimated value. This flag is used: <ol style="list-style-type: none">(1) When estimating a concentration for a tentatively identified compound (library search hits, where a 1:1 response is assumed.)(2) When the mass spectral data indicated the identification, however the result was less than the specified detection limit greater than zero. If the detection limit was 10ug/L and a concentration of 3 ug/L was calculated report as 3 J. This flag is used when similar situation arise on any organic parameter i.e. Pest, PCB and others.
B	Indicates the analyte was found in the blank as well as the sample report as “12 B”.
E	Indicates the analyte ‘s concentration exceeds the calibrated range of the instrument for that specific analysis.
D	This flag identifies all compounds identified in an analysis at a secondary dilution factor.
P	This flag is used for Pesticide/PCB target analyte when there is >25% difference for detected concentrations between the two GC columns. The lower of the two values is reported on Form 1 and flagged with a “P”.
N	This flag indicates presumptive evidence of a compound. This is only used for tentatively identified compounds (TICs), where the identification is based on a mass spectral library search. It applies to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the flag is not used.
A	This flag indicates that a Tentatively Identified Compound is a suspected aldol-condensation product.
Q	Indicates the LCS did not meet the control limits requirements

APPENDIX A

QA REVIEW GENERAL DOCUMENTATION

Project #: Q3688

Completed

For thorough review, the report must have the following:

GENERAL:

Are all original paperwork present (chain of custody, record of communication,airbill, sample management lab chronicle, login page)

✓

Check chain-of-custody for proper relinquish/return of samples

✓

Is the chain of custody signed and complete

✓

Check internal chain-of-custody for proper relinquish/return of samples /sample extracts

✓

Collect information for each project id from server. Were all requirements followed

✓

COVER PAGE:

Do numbers of samples correspond to the number of samples in the Chain of Custody on login page

✓

Do lab numbers and client Ids on cover page agree with the Chain of Custody

✓

CHAIN OF CUSTODY:

Do requested analyses on Chain of Custody agree with form I results

✓

Do requested analyses on Chain of Custody agree with the log-in page

✓

Were the correct method log-in for analysis according to the Analytical Request and Chain of Custody

✓

Were the samples received within hold time

✓

Were any problems found with the samples at arrival recorded in the Sample Management Laboratory Chronicle

✓

ANALYTICAL:

Was method requirement followed?

✓

Was client requirement followed?

✓

Does the case narrative summarize all QC failure?

✓

All runlogs and manual integration are reviewed for requirements

✓

All manual calculations and /or hand notations verified

✓

QA Review Signature: SHREENA PATEL

Date: 12/16/2025