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NASJRB WILLOW GROVE
5090.3a

VALIDATED DATA PACKAGE, FA21796, NAS WILLOW GROVE PA
1/28/2015
RESOLUTION CONSULTANTS



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Data Validation Report

Project: NAS JRB Willow Grove, PA

Laboratory: Accutest Laboratories

Job Numbers: FA21796

Analyses/Method: PFOS and PFOA by Liquid Chromatography/Mass Spectrometry/Mass Spectrometry (LC/MS/MS)/ EPA Method 537 modified

Validation Level: Limited

Resolution Consultants 60276503.SI.RP
 Project Number: _____

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File Name: Willow Grove FA21796_PFOA and PFOS

SUMMARY

The samples listed below were collected by Resolution Consultants from the NAS JRB Willow Grove, PA site on January 28, 2015.

SDG	Sample ID	Matrix/Sample Type
FA21796	HWSA Well 17	Groundwater
	HWSA Well 21	Groundwater
	HWSA Well 10	Groundwater

Data validation activities were conducted with reference to:

- Accutest Laboratories SOP: Analysis of Perfluorinated Alkyl Acids by LC/MS/MS; MS 014.1, Rev. Date: 05/14
- USEPA Contract Laboratory Program National Functional Guidelines for Chlorinated Dioxin/Furan Data review (USEPA, September 2011);
- USEPA Contract Laboratory Program National Functional Guidelines for Superfund Organic Methods Data Review (June 2008);
- Quality Systems Manual (QSM) for Environmental Laboratories, Version 4.2 (DoD, October 2010); and
- the project-specific Sampling and Analysis Plan.

In the absence of method-specific information, laboratory quality control (QC) limits, project-specific requirements and/or professional judgment were used as appropriate.

REVIEW ELEMENTS

The data were evaluated based on the following review elements (where applicable to the method):

- ✓ Data completeness (chain-of-custody (COC)/sample integrity)
- ✓ Holding times/sample preservation
- ✓ Initial calibration/initial and continuing calibration verification
- ✓ Laboratory method blanks/equipment blanks
- ✗ Surrogate recoveries
- ✓ Matrix spike (MS) and/or matrix spike duplicate (MSD) results
- ✓ Laboratory control sample (LCS) results
- ✓ Field duplicate results
- ✓ Internal standard results
- ✓ Sample results/reporting issues

The symbol (✓) indicates that no validation qualifiers were applied based on this parameter. NA indicates that the parameter was not included as part of this data set or was not applicable to this validation and therefore not reviewed. The symbol (✗) indicates that a QC nonconformance resulted in the qualification of data. Any QC nonconformance that resulted in the qualification of data is discussed below. In addition, nonconformances or other issues that were noted during validation, but did not result in qualification of data, may be discussed for informational purposes only.

The data appear valid as reported and may be used for decision making purposes. Select data points were qualified as estimated due to nonconformances of certain QC criteria (see discussion below). Qualified sample results are presented in Table 1.

RESULTS

Data Completeness/Sample Integrity

The data package was reviewed and found to meet acceptance criteria for completeness:

- The COCs were reviewed for completeness of information relevant to the samples and requested analyses, and for signatures indicating transfer of sample custody.
- The laboratory sample login sheet(s) were reviewed for issues potentially affecting sample integrity, including the condition of sample containers upon receipt at the laboratory.
- Completeness of analyses was verified by comparing the reported results to the COC requests.

Holding Times/Sample Preservation

Sample preservation and preparation/analysis holding times were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Initial Calibration/Initial and Continuing Calibration Verification

Calibration data were reviewed for conformance with the QC acceptance criteria to ensure that:

- the initial calibration (ICAL) percent relative standard deviation (%RSD) or correlation coefficient (r)/coefficient of determination (r^2) method acceptance criteria were met;
- the initial calibration verification standard (ICV) percent recovery acceptance criteria were met; and

- the continuing calibration verification standard (CCV) frequency and method percent recovery criteria were met.

The QC acceptance criteria were met.

Laboratory Method Blanks/Equipment Blanks

Laboratory method blanks and equipment rinsate blanks are evaluated as to whether there are contaminants detected above the detection limit (DL). Target compounds were not detected in the laboratory method blank associated with the samples in this data set. An equipment blank was not submitted with this data set.

Surrogate Recoveries

The surrogate recoveries (%Rs) were reviewed for conformance with the QC acceptance criteria.

Nonconformances requiring qualification are summarized in Attachment A in Table A-1. Data qualification with respect to surrogate recovery nonconformances was as follows:

Actions: (Based on NFG 2008)

Criteria	Action	
	Detected Compounds	Nondetected Compounds
%R > UL	J	No qualification
$10\% \leq \%R < LL^*$	J	UJ
%R < 10%*	J	R
* NFG 2008 does not list a minimum limit. Based on Resolution Consultants professional judgment, a minimum limit of 10% was used.		

Qualified sample results are shown in Table 1.

MS/MSD Results

The MS/MSD %Rs and relative percent differences (RPDs) were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

LCS Results

The LCS %Rs were reviewed for conformance. All QC acceptance criteria were met.

Field Duplicate Results

Field duplicate samples were not submitted with this data set. No data validation actions were taken on this basis.

Internal Standard Results

The internal standard (IS) results were reviewed for conformance with the QC acceptance criteria. All QC acceptance criteria were met.

Sample Results/Reporting Issues

If applicable, compounds detected at concentrations less than the limit of quantitation (LOQ) but greater than the detection limit (DL) were qualified by the laboratory as estimated (J). This "J" qualifier was retained during data validation.

QUALIFICATION ACTIONS

Sample results qualified as a result of validation actions are summarized in Table 1. All actions are described above.

ATTACHMENTS

Attachment A: Nonconformance Summary Tables

Attachment B: Qualifier Codes and Explanations

Attachment C: Reason Codes and Explanations

Table 1 - Data Validation Summary of Qualified Data

Sample ID	Matrix	Compound	Result	LOD	LOQ	Units	Validation Qualifiers	Validation Reason
HWSA WELL 21	WG	PERFLUOROOCETANESULFONIC ACID (PFOS)	0.0171	0.016	0.020	UG/L	J	s
HWSA WELL 21	WG	PERFLUOROOCETANOIC ACID (PFOA)	0.0174	0.032	0.040	UG/L	J	s

Attachment A**Nonconformance Summary Tables****Table A-1 – Surrogate Recovery**

Sample ID	Surrogate	% Recovery	Lower Limit	Upper Limit
HSWA Well 21	13C2-PFDA	134	70	130

Attachment B
Qualifier Codes and Explanations

Qualifier	Explanation
J	The analyte was positively identified; the associated numerical value is the approximate concentration of the analyte in the sample.
UJ	The analyte was not detected above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual quantitation limit necessary to accurately and precisely measure the analyte in the sample.
U	The analyte was analyzed for, but was not detected above the reported sample quantitation limit.
R	The sample results are rejected due to serious deficiencies in the ability to analyze the sample and meet quality control criteria. The presence or absence of the analyte cannot be verified.

Attachment C

Reason Codes and Explanations

Reason Code	Explanation
be	Equipment blank contamination
bf	Field blank contamination
bl	Laboratory blank contamination
c	Calibration issue
d	Reporting limit raised due to chromatographic interference
fd	Field duplicate RPDs
h	Holding times
i	Internal standard areas
k	Estimated Maximum Possible Concentration (EMPC)
l	LCS or OPR recoveries
lc	Labeled compound recovery
ld	Laboratory duplicate RPDs
lp	Laboratory control sample/laboratory control sample duplicate RPDs
m	Matrix spike recovery
md	Matrix spike/matrix spike duplicate RPDs
nb	Negative laboratory blank contamination
p	Chemical preservation issue
r	Dual column RPD
q	Quantitation issue
s	Surrogate recovery
su	Ion suppression
t	Temperature preservation issue
x	Percent solids
y	Serial dilution results
z	ICS results