



**Off-base Drinking Water Sample Results,  
Level 2 Laboratory Report, Level 4 Laboratory Report,  
Electronic Data Deliverable, Data Validation Report,  
and the Sample Location Figure, SDG 1700394**

*Naval Air Station Whiting Field  
Milton, Florida*

February 2019

April 05, 2017

**Vista Work Order No. 1700394**

Ms. Tiffany Hill  
CH2M Hill  
1100 NE Circle Blvd. Suite 300  
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on March 29, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'NAS Whiting Field, FL'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,



Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

**Vista Work Order No. 1700394**

**Case Narrative**

**Sample Condition on Receipt:**

Seven drinking water samples and seven aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

**Analytical Notes:**

**EPA Method 537**

The drinking water and aqueous samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

**Holding Times**

The samples were extracted and analyzed within the method hold times.

**Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Laboratory Fortified Blank (LFB) and Method Blank (MB) were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The LFB recoveries were within the method acceptance criteria

The surrogate recoveries for all QC and field samples were within the acceptance criteria.

An MD/MSD were performed on sample "WF-RW07-0317".

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# Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1700394-01	WF-RW01-0317		27-Mar-17 11:18	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-02	WF-FB01-0317		27-Mar-17 11:19	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-03	WF-RW02-0317		27-Mar-17 11:45	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-04	WF-FB02-0317		27-Mar-17 11:46	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-05	WF-RW03-0317		27-Mar-17 12:00	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-06	WF-FB03-0317		27-Mar-17 12:01	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-07	WF-RW04-0317		27-Mar-17 14:10	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-08	WF-FB04-0317		27-Mar-17 14:11	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-09	WF-RW05-0317		27-Mar-17 17:39	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-10	WF-FB05-0317		27-Mar-17 17:40	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-11	WF-RW06-0317		27-Mar-17 17:53	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-12	WF-FB06-0317		27-Mar-17 17:54	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-13	WF-RW07-0317	MS/MSD	27-Mar-17 18:20	29-Mar-17 09:21	HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
1700394-14	WF-FB07-0317		27-Mar-17 18:21	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**

Sample ID: Method Blank						EPA Method 537			
Matrix: Drinking Water	QC Batch: B7C0165	Lab Sample: B7C0165-BLK1				Date Analyzed: 04-Apr-17 15:00 Column: BEH C18			
Sample Size: 0.250 L	Date Extracted: 30-Mar-2017 7:50								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.49	10.0	20.0		SUR 13C2-PFHxA	85.4	70 - 130	
PFOA	ND	4.54	10.0	20.0		SUR 13C2-PFDA	95.1	70 - 130	
PFOS	ND	3.05	10.0	20.0					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: OPR**

**EPA Method 537**

Matrix: Drinking Water Sample Size: 0.250 L	QC Batch: B7C0165 Date Extracted: 30-Mar-2017 7:50	Lab Sample: B7C0165-BS1 Date Analyzed: 04-Apr-17 14:48 Column: BEH C18					
Analyte	Amt Found (ng/L)	Spike Amt	%R	Limits	Labeled Standard	%R	LCL-UCL
PFBS	207	200	104	70 - 130	SUR 13C2-PFHxA	89.0	70 - 130
PFOA	245	200	123	70 - 130	SUR 13C2-PFDA	95.9	70 - 130
PFOS	219	200	110	70 - 130			

LCL-UCL - Lower control limit - upper control limit



**Sample ID: WF-RW01-0317****EPA Method 537**

Client Data		Sample Data				Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water			Lab Sample:	1700394-01	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.267 L			QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 11:18					Date Analyzed:	04-Apr-17 15:12 Column: BEH C18			
Location:	WF-RW01									

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	8.75	3.26	9.35	18.7	J	SUR 13C2-PFHxA	79.7	70 - 130	
PFOA	7.50	4.25	9.35	18.7	J	SUR 13C2-PFDA	91.2	70 - 130	
PFOS	3.26	2.85	9.35	18.7	J				

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB01-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-02	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.272 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 11:19				Date Analyzed:	04-Apr-17 15:25 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.21	9.19	18.4		SUR 13C2-PFHxA	80.6	70 - 130	
PFOA	ND	4.17	9.19	18.4		SUR 13C2-PFDA	83.7	70 - 130	
PFOS	ND	2.80	9.19	18.4					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: WF-RW02-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-03	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.289 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 11:45				Date Analyzed:	04-Apr-17 15:37 Column: BEH C18			
Location:	WF-RW02								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.02	8.65	17.3		SUR 13C2-PFHxA	103	70 - 130	
PFJ A	6.53	3.93	8.65	17.3	O	SUR 13C2-PFDA	117	70 - 130	
PFJ S	ND	2.64	8.65	17.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFJ A and PFJ S include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB02-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-04	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.273 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 11:46				Date Analyzed:	04-Apr-17 15:50 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.20	9.16	18.3		SUR 13C2-PFHxA	84.9	70 - 130	
PFOA	ND	4.16	9.16	18.3		SUR 13C2-PFDA	97.9	70 - 130	
PFOS	ND	2.79	9.16	18.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: WF-RW03-0317****EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-05	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.282 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 12:00			Date Analyzed:	04-Apr-17 16:02	Column:	BEH C18		
Location:	WF-RW03								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.10	8.87	17.7		SUR 13C2-PFHxA	91.1	70 - 130	
PFJ A	5.79	4.03	8.87	17.7	O	SUR 13C2-PFDA	71.7	70 - 130	
PFJ S	ND	2.71	8.87	17.7					

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFJ A and PFJ S include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB03-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-06	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.266 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 12:01				Date Analyzed:	04-Apr-17 16:15 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.28	9.39	18.8		SUR 13C2-PFHxA	84.8	70 - 130	
PFOA	ND	4.26	9.39	18.8		SUR 13C2-PFDA	93.9	70 - 130	
PFOS	ND	2.86	9.39	18.8					

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

**Sample ID: WF-RW04-0317****EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-07	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.262 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 14:10			Date Analyzed:	04-Apr-17 16:27	Column:	BEH C18		
Location:	WF-RW04								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	5.05	3.33	9.55	19.1	J	SUR 13C2-PFHxA	82.1	70 - 130	
PFOA	ND	4.34	9.55	19.1		SUR 13C2-PFDA	87.5	70 - 130	
PFOS	ND	2.91	9.55	19.1					

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB04-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	C8 2M 8 ill	Matrix:	DringinWR ater	Lab Sample:	17003o4-0k	Date v ecei9ed:	2o-Mar-2017 o:21		
Prject:	NAS R hitinWField, FL	Sample Size:	0.277 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 14:11				Date Analyzed:	04-Apr-17 16:3o	CulHmn:	BE8 C1k	
Lucatium:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.15	o.02	1k.0		SUv 13C2-PF8 xA	k3.1	70 - 130	
PFOA	ND	4.0o	o.02	1k.0		SUv 13C2-PFDA	o2.o	70 - 130	
PFOS	ND	2.75	o.02	1k.0					

DL - Detectiun limit  
v L - v epurtinWimit

LCL-UCL - Luwer cuntrl limit - Hpper cuntrl limit  
v esHts repurted tu DL.

R hen repurted, PFBS, PF8 xS, PFOA and PFOS inclHle both linear and branched isumer.  
Only the linear isumer is repurted fur all uther analytes.



**Sample ID: WF-RW05-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-09	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.274 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 17:39				Date Analyzed:	04-Apr-17 16:52 Column: BEH C18			
Location:	WF-RW05								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.19	9.13	18.3		SUR 13C2-PFHxA	85.9	70 - 130	
PFOA	ND	4.15	9.13	18.3		SUR 13C2-PFDA	86.5	70 - 130	
PFOS	ND	2.79	9.13	18.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB05-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-10	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.272 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 17:40				Date Analyzed:	04-Apr-17 17:04 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.21	9.20	18.4		SUR 13C2-PFHxA	82.4	70 - 130	
PFOA	ND	4.17	9.20	18.4		SUR 13C2-PFDA	93.6	70 - 130	
PFOS	ND	2.80	9.20	18.4					

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL.

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

**Sample ID: WF-RW06-0317****EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-11	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.259 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 17:53			Date Analyzed:	04-Apr-17 17:16	Column:	BEH C18		
Location:	WF-RW06								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	3.79	3.37	9.66	19.3	J	SUR 13C2-PFHxA	78.1	70 - 130	
PFOA	259	4.38	9.66	19.3		SUR 13C2-PFDA	89.5	70 - 130	
PFOS	4.86	2.95	9.66	19.3	J				

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB06-0317**

**EPA Method 537**

Client Data		Sample Data			Laboratory Data					
Name:	C8 2M 8 ill	Matrix:	DringinWR ater	Lab Sample:	1700304-12	Date v ecei9ed:	20-Mar-2017 0:21			
Prject:	NAS R hitinWField, FL	Sample Size:	0.276 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50			
Date Collected:	27-Mar-2017 17:54				Date Analyzed:	04-Apr-17 17:20	CulHmn:	BE8 C1k		
Lucatium:										
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers	
PFBS	ND	3.16	0.05	1k.1		SUv 13C2-PF8 xA	07.4	70 - 130		
PFOA	ND	4.11	0.05	1k.1		SUv 13C2-PFDA	106	70 - 130		
PFOS	ND	2.76	0.05	1k.1						

DL - Detectiun limit  
v L - v epurtinWimit

LCL-UCL - Luwer cuntrl limit - Hpper cuntrl limit  
v esHts repurted tu DL.  
R hen repurted, PFBS, PF8 xS, PFOA and PFOS inclHle both linear and branched isumers.  
Only the linear isumer is repurted fur all uther analytes.

**Sample ID: WF-RW07-0317****EPA Method 537**

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-13	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.270 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 18:20			Date Analyzed:	04-Apr-17 17:41	Column:	BEH C18		
Location:	WF-RW07								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	13.2	3.24	9.27	18.5	J	SUR 13C2-PFHxA	95.7	70 - 130	
PFOA	19.4	4.21	9.27	18.5		SUR 13C2-PFDA	98.7	70 - 130	
PFOS	12.9	2.83	9.27	18.5	J				

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

**Matrix Spike Results**

**EPA Method 537**

Source Client ID: WF-RW07-0317	QC Batch: B7C0165	Lab Sample: B7C0165-MS1/B7C0165-MSD1
Source LabNumber: 1700394-13	Date Extracted: 30-Mar-2017 7:50	Date Analyzed: 04-Apr-17 18:06 Column: BEH C18
Matrix: Drinking Water		04-Apr-17 18:18 Column: BEH C18
Sample Size: 0.261/0.276 L		

Analyte	Spike-MS (ng/L)	MS %R	MS Qual.	Spike-MSD (ng/L)	MSD %R	MSD RPD	MSD Qual.	%R Limit	%RPD Limit	Labeled Standard	MS %R	MS Qualifiers	MSD %R	MS Qual.
PFBS	192	97.2		181	111	13.3		70 - 130	30	SUR 13C2-PFHxA	81.0		95.3	
PFOA	192	105		181	122	15.0		70 - 130	30	SUR 13C2-PFDA	80.0		93.0	
PFOS	192	103		181	107	3.81		70 - 130	30					

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers. Only the linear isomer is reported for all other analytes.

**Sample ID: WF-FB07-0317****EPA Method 537**

Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-14	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.273 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 18:21				Date Analyzed:	04-Apr-17 17:54 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.20	9.16	18.3		SUR 13C2-PFHxA	86.7	70 - 130	
PFOA	ND	4.16	9.16	18.3		SUR 13C2-PFDA	91.6	70 - 130	
PFOS	ND	2.79	9.16	18.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

## DATA QUALIFIERS & ABBREVIATIONS

<b>B</b>	<b>This compound was also detected in the method blank.</b>
<b>D</b>	<b>Dilution</b>
<b>E</b>	<b>The associated compound concentration exceeded the calibration range of the instrument.</b>
<b>H</b>	<b>Recovery and/or RPD was outside laboratory acceptance limits.</b>
<b>I</b>	<b>Chemical Interference</b>
<b>J</b>	<b>The amount detected is below the Reporting Limit/LOQ.</b>
<b>M</b>	<b>Estimated Maximum Possible Concentration. (CA Region 2 projects only)</b>
<b>*</b>	<b>See Cover Letter</b>
<b>Conc.</b>	<b>Concentration</b>
<b>NA</b>	<b>Not applicable</b>
<b>ND</b>	<b>Not Detected</b>
<b>TEQ</b>	<b>Toxic Equivalency</b>

Unless otherwise noted, solid sample results are reported in dry weight. Tissue samples are reported in wet weight.



## CERTIFICATIONS

Accrediting Authority	Certificate Number
California Department of Health – ELAP	2892
DoD ELAP - A2LA Accredited - ISO/IEC 17025:2005	3091.01
Florida Department of Health	E87777
Hawaii Department of Health	N/A
Louisiana Department of Environmental Quality	01977
Maine Department of Health	2014022
Nevada Division of Environmental Protection	CA004132015-1
New Jersey Department of Environmental Protection	CA003
New York Department of Health	11411
Oregon Laboratory Accreditation Program	4042-004
Pennsylvania Department of Environmental Protection	012
South Carolina Department of Health	87002001
Texas Commission on Environmental Quality	T104704189-15-6
Virginia Department of General Services	7923
Washington Department of Ecology	C584
Wisconsin Department of Natural Resources	998036160

*Current certificates and lists of licensed parameters are located in the Quality Assurance office and are available upon request*

## NELAP Accredited Test Methods

MATRIX: Air	
Description of Test	Method
Determination of Polychlorinated p-Dioxins & Polychlorinated Dibenzofurans	EPA 23

MATRIX: Biological Tissue	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Drinking Water	
Description of Test	Method
2,3,7,8-Tetrachlorodibenzo- p-dioxin (2,3,7,8-TCDD) GC/HRMS	EPA 1613
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537

MATRIX: Non-Potable Water	
Description of Test	Method
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613B
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Pesticides in Water, Soil, Sediment, Biosolids, and Tissue by HRGC/HRMS	EPA 1699
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Dioxin by GC/HRMS	EPA 613
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A

MATRIX: Solids	
Description of Test	Method
Tetra-Octa Chlorinated Dioxins and Furans by Isotope Dilution GC/HRMS	EPA 1613
Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope	EPA 1613B

Dilution GC/HRMS	
Brominated Diphenyl Ethers by HRGC/HRMS	EPA 1614A
Chlorinated Biphenyl Congeners in Water, Soil, Sediment, and Tissue by GC/HRMS	EPA 1668A/C
Perfluorinated Alkyl Acids in Drinking Water by SPE and LC/MS/MS	EPA 537
Polychlorinated Dibenzo-p-Dioxins and Polychlorinated Dibenzofurans by GC/HRMS	EPA 8280A/B
Polychlorinated Dibenzodioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) by GC/HRMS	EPA 8290/8290A







# CHAIN OF CUSTODY

**For Laboratory Use Only**  
 Laboratory Project ID: 1700394 Temp: -0.5 °C  
 Storage ID: WR-2 Storage Secured: Yes  No

Project ID: NAS Whiting Field, FL P.O.#: 100067106051 Sampler: John Towns  
 (name)

TAT Standard:  21 days  
 (check one): Rush (surcharge may apply)  
 14 days  7 days Specify: \_\_\_\_\_  
 Ph# 757-831-1113 Fax# \_\_\_\_\_

Invoice to: Name Katie Tippin Company CH2M Address \_\_\_\_\_ City \_\_\_\_\_ State \_\_\_\_\_  
 Relinquished by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_ Received by (printed name and signature) \_\_\_\_\_ Date \_\_\_\_\_ Time \_\_\_\_\_

Relinquished by (printed name and signature) John Towns Date \_\_\_\_\_ Time \_\_\_\_\_ Received by (printed name and signature) Sydney Roughton Date 3/29/17 Time 0926

SHIP TO: Vista Analytical Laboratory  
 1104 Windfield Way  
 El Dorado Hills, CA 95762  
 (916) 673-1520 \* Fax (916) 673-0106  
 Method of Shipment: Fed Ex  
 Tracking No.: \_\_\_\_\_  
 ATTN: Martha Maier

Add Analysis(es) Requested			Container(s)		EPA 1613 EPA 8290 EPA 8280 EPA 1668 EPA 1614 CARB429												
Quantity	Type	Matrix	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	TOTALS	COPLANAR PCB's	209 CONGENERS	PBDE	PAH	WHO-29	Mod. EPA 537

Sample ID	Date	Time	Location/Sample Description	Quantity	Type	Matrix	2378-TCDD	2378-TCDD/TCDF	PCDD/PCDF	2378-TCDD	2378-TCDD/TCDF	TOTALS	COPLANAR PCB's	209 CONGENERS	PBDE	PAH	WHO-29	Mod. EPA 537	Comments
WF-RW06-0317	3/27/17	1753	WF-RW06	2	O	DW												X	
WF-FB06-0317	3/27/17	1754	N/A	2	O	AQ												X	
WF-RW07-0317	3/27/17	1820	WF-RW07	2	O	DW												X	
WF-RW07-0317-MS	3/27/17	1820	WF-RW07	2	O	DW												X	
WF-RW07-0317-SD	3/27/17	1820	WF-RW07	2	O	DW												X	
WF-FB07-0317	3/27/17	1821	N/A	2	O	AQ												X	

Special Instructions/Comments: \_\_\_\_\_  
 \_\_\_\_\_  
 \_\_\_\_\_

SEND DOCUMENTATION AND RESULTS TO:

Name: Katie Tippin  
 Company: CH2M  
 Address: \_\_\_\_\_  
 City: \_\_\_\_\_ State: \_\_\_\_\_ Zip: \_\_\_\_\_  
 Phone: 757-831-1113 Fax: \_\_\_\_\_  
 Email: Katie.tippin@ch2m.com

### SAMPLE LOG-IN CHECKLIST



Vista Project #: 1700394 TAT 7

Samples Arrival:	Date/Time <u>3/29/17 0921</u>	Initials: <u>SR</u>	Location: <u>WR-2</u>			
			Shelf/Rack: <u>N/A</u>			
Logged In:	Date/Time <u>03/29/17 1000</u>	Initials: <u>CPB</u>	Location: <u>WR-2</u>			
			Shelf/Rack: <u>F5</u>			
Delivered By:	<input checked="" type="radio"/> FedEx	<input type="radio"/> UPS	<input type="radio"/> On Trac	<input type="radio"/> DHL	<input type="radio"/> Hand Delivered	<input type="radio"/> Other
Preservation:	<input checked="" type="radio"/> Ice	<input type="radio"/> Blue Ice	<input type="radio"/> Dry Ice	<input type="radio"/> None		
Temp °C: <u>0.2</u> (uncorrected)	Time: <u>0925</u>	Probe used: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>		Thermometer ID: <u>DT-3 IR-1</u>		
Temp °C: <u>-0.5</u> (corrected)						

	YES	NO	NA		
Adequate Sample Volume Received?	✓				
Holding Time Acceptable?	✓				
Shipping Container(s) Intact?	✓				
Shipping Custody Seals Intact?	✓				
Shipping Documentation Present?	✓				
Airbill	✓				
Trk # <u>7860 0435 7523</u>	✓				
Sample Container Intact?	✓				
Sample Custody Seals Intact?			✓		
Chain of Custody / Sample Documentation Present?	✓				
COC Anomaly/Sample Acceptance Form completed?		✓			
If Chlorinated or Drinking Water Samples, Acceptable Preservation?	✓				
Preservation Documented:	Na <sub>2</sub> S <sub>2</sub> O <sub>3</sub>	<input checked="" type="radio"/> Trizma	<input checked="" type="radio"/> Yes	<input type="radio"/> No	<input type="radio"/> NA
Shipping Container	<input checked="" type="radio"/> Vista	<input type="radio"/> Client	<input type="radio"/> Retain	<input type="radio"/> Return	<input type="radio"/> Dispose

Comments:



April 05, 2017

**Vista Work Order No. 1700394**

Ms. Tiffany Hill  
CH2M Hill  
1100 NE Circle Blvd. Suite 300  
Corvallis, OR 97330

Dear Ms. Hill,

Enclosed are the results for the sample set received at Vista Analytical Laboratory on March 29, 2017. This sample set was analyzed on a rush turn-around time, under your Project Name 'NAS Whiting Field, FL'.

Vista Analytical Laboratory is committed to serving you effectively. If you require additional information, please contact me at 916-673-1520 or by email at [mmaier@vista-analytical.com](mailto:mmaier@vista-analytical.com).

Thank you for choosing Vista as part of your analytical support team.

Sincerely,



Martha Maier  
Laboratory Director



*Vista Analytical Laboratory certifies that the report herein meets all the requirements set forth by NELAP for those applicable test methods. Results relate only to the samples as received by the laboratory. This report should not be reproduced except in full without the written approval of Vista.*

**Vista Work Order No. 1700394**

**Case Narrative**

**Sample Condition on Receipt:**

Seven drinking water samples and seven aqueous samples were received in good condition and within the method temperature requirements. The samples were received and stored securely in accordance with Vista standard operating procedures and EPA methodology.

**Analytical Notes:**

**EPA Method 537**

The drinking water and aqueous samples were extracted and analyzed for PFBS, PFOA and PFOS using EPA Method 537.

**Holding Times**

The samples were extracted and analyzed within the method hold times.

**Quality Control**

The Initial Calibration and Continuing Calibration Verifications met the method acceptance criteria.

A Laboratory Fortified Blank (LFB) and Method Blank (MB) were extracted and analyzed with the preparation batch. No analytes were detected in the Method Blank above 1/2 the LOQ. The LFB recoveries were within the method acceptance criteria

The surrogate recoveries for all QC and field samples were within the acceptance criteria.

An MD/MSD were performed on sample "WF-RW07-0317".



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# Sample Inventory Report

Vista Sample ID	Client Sample ID		Sampled	Received	Components/Containers
1700394-01	WF-RW01-0317		27-Mar-17 11:18	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-02	WF-FB01-0317		27-Mar-17 11:19	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-03	WF-RW02-0317		27-Mar-17 11:45	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-04	WF-FB02-0317		27-Mar-17 11:46	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-05	WF-RW03-0317		27-Mar-17 12:00	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-06	WF-FB03-0317		27-Mar-17 12:01	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-07	WF-RW04-0317		27-Mar-17 14:10	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-08	WF-FB04-0317		27-Mar-17 14:11	29-Mar-17 09:21	HDPE Bottle, 250 mL
1700394-09	WF-RW05-0317		27-Mar-17 17:39	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-10	WF-FB05-0317		27-Mar-17 17:40	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-11	WF-RW06-0317		27-Mar-17 17:53	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-12	WF-FB06-0317		27-Mar-17 17:54	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL
1700394-13	WF-RW07-0317	MS/MSD	27-Mar-17 18:20	29-Mar-17 09:21	HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
		MS/MSD			HDPE Bottle, 250 mL
1700394-14	WF-FB07-0317		27-Mar-17 18:21	29-Mar-17 09:21	HDPE Bottle, 250 mL HDPE Bottle, 250 mL

## **ANALYTICAL RESULTS**



Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	CH2M_Code	Analysis_Group	Analytical_Method	PRC_Code	Lab_Code	Lab_Name	Leachate_Method	Sample_Basis	Extraction_Method	Result_Type	Lab_QC_Type	Sample_Medium	QC_Level	DateTime_Collected	Date_Received	Leachate_Date
N6247016D9000	0008		WHITING_FIELD_NAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Blank	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BLK	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	BS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MS	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	03/30/2017 07:50	03/30/2017	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup	NONS	SVOA	537	ORG	VISTA	VISTA ANALYTICAL LABORATORY, INC.	NONE	WET	METHOD	000	MSD	W	4	03/30/2017 07:50	03/30/2017	



Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	Leachate_Time	Extraction_Date	Extraction_Time	Analysis_Date	Analysis_Time	Lab_Sample_ID	Dilution	Run_Number	Percent_Moisture	Percent_Lipid	Chem_Name	Analyte_ID	Analyte_Value	Original_Analyte_Value	Result_Units	Lab_Qualifier
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		20170330	07:50:00	20170404	15:00:00	B7C0165-BLK1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		10.0	NG_L	U
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		20170330	07:50:00	20170404	15:00:00	B7C0165-BLK1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		10.0	NG_L	U
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		20170330	07:50:00	20170404	15:00:00	B7C0165-BLK1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		10.0	NG_L	U
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		20170330	07:50:00	20170404	15:00:00	B7C0165-BLK1	1	-999			13C2-PFHxA	13C2-PFHxA		85.4	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		20170330	07:50:00	20170404	15:00:00	B7C0165-BLK1	1	-999			13C2-PFDA	13C2-PFDA		95.1	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		20170330	07:50:00	20170404	14:48:00	B7C0165-BS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		207	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		20170330	07:50:00	20170404	14:48:00	B7C0165-BS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		245	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		20170330	07:50:00	20170404	14:48:00	B7C0165-BS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		219	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		20170330	07:50:00	20170404	14:48:00	B7C0165-BS1	1	-999			13C2-PFHxA	13C2-PFHxA		89.0	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		20170330	07:50:00	20170404	14:48:00	B7C0165-BS1	1	-999			13C2-PFDA	13C2-PFDA		95.9	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		20170330	07:50:00	20170404	18:06:00	B7C0165-MS1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		200	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		20170330	07:50:00	20170404	18:06:00	B7C0165-MS1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		222	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		20170330	07:50:00	20170404	18:06:00	B7C0165-MS1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		210	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		20170330	07:50:00	20170404	18:06:00	B7C0165-MS1	1	-999			13C2-PFHxA	13C2-PFHxA		81.0	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		20170330	07:50:00	20170404	18:06:00	B7C0165-MS1	1	-999			13C2-PFDA	13C2-PFDA		80.0	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		20170330	07:50:00	20170404	18:18:00	B7C0165-MSD1	1	-999			Perfluorobutanesulfonic acid (PFBS)	375-73-5		214	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		20170330	07:50:00	20170404	18:18:00	B7C0165-MSD1	1	-999			Perfluorooctanoic acid (PFOA)	335-67-1		240	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		20170330	07:50:00	20170404	18:18:00	B7C0165-MSD1	1	-999			Perfluorooctane Sulfonate (PFOS)	1763-23-1		207	NG_L	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		20170330	07:50:00	20170404	18:18:00	B7C0165-MSD1	1	-999			13C2-PFHxA	13C2-PFHxA		95.3	PCT_REC	
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		20170330	07:50:00	20170404	18:18:00	B7C0165-MSD1	1	-999			13C2-PFDA	13C2-PFDA		93.0	PCT_REC	

Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	Validator_Qualifier	GC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	QSM_Version	DL	LOD	LOQ	SDG	Analysis_Batch	Validator_Name	Val_Date
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW01-0317	PR		TRG									5.0	3.26	9.35	18.7	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW01-0317	PR		TRG									5.0	4.25	9.35	18.7	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW01-0317	PR		TRG									5.0	2.85	9.35	18.7	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW01-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW01-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB01-0317	PR		TRG									5.0	3.21	9.19	18.4	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB01-0317	PR		TRG									5.0	4.17	9.19	18.4	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB01-0317	PR		TRG									5.0	2.80	9.19	18.4	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB01-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB01-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW02-0317	PR		TRG									5.0	3.02	8.65	17.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW02-0317	PR		TRG									5.0	3.93	8.65	17.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW02-0317	PR		TRG									5.0	2.64	8.65	17.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW02-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW02-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB02-0317	PR		TRG									5.0	3.20	9.16	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB02-0317	PR		TRG									5.0	4.16	9.16	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB02-0317	PR		TRG									5.0	2.79	9.16	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB02-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB02-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW03-0317	PR		TRG									5.0	3.10	8.87	17.7	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW03-0317	PR		TRG									5.0	4.03	8.87	17.7	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW03-0317	PR		TRG									5.0	2.71	8.87	17.7	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW03-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW03-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB03-0317	PR		TRG									5.0	3.28	9.39	18.8	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB03-0317	PR		TRG									5.0	4.26	9.39	18.8	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB03-0317	PR		TRG									5.0	2.86	9.39	18.8	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB03-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB03-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW04-0317	PR		TRG									5.0	3.33	9.55	19.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW04-0317	PR		TRG									5.0	4.34	9.55	19.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW04-0317	PR		TRG									5.0	2.91	9.55	19.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW04-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW04-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB04-0317	PR		TRG									5.0	3.15	9.02	18.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB04-0317	PR		TRG									5.0	4.09	9.02	18.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB04-0317	PR		TRG									5.0	2.75	9.02	18.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB04-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB04-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW05-0317	PR		TRG									5.0	3.19	9.13	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW05-0317	PR		TRG									5.0	4.15	9.13	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW05-0317	PR		TRG									5.0	2.79	9.13	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW05-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW05-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB05-0317	PR		TRG									5.0	3.21	9.20	18.4	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB05-0317	PR		TRG									5.0	4.17	9.20	18.4	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB05-0317	PR				SLSA	130	70					5.0	2.80	9.20	18.4	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB05-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW06-0317	PR		TRG									5.0	3.37	9.66	19.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW06-0317	PR		TRG									5.0	4.38	9.66	19.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW06-0317	PR		TRG									5.0	2.95	9.66	19.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW06-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB06-0317	PR		TRG									5.0	3.16	9.05	18.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB06-0317	PR		TRG									5.0	4.11	9.05	18.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB06-0317	PR		TRG									5.0	2.76	9.05	18.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB06-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB06-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW07-0317	PR		TRG									5.0	3.24	9.27	18.5	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW07-0317	PR		TRG									5.0	4.21	9.27	18.5	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW07-0317	PR		TRG									5.0	2.83	9.27	18.5	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW07-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-RW07-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB07-0317	PR		TRG									5.0	3.20	9.16	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB07-0317	PR		TRG									5.0	4.16	9.16	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB07-0317	PR				SLSA	130	70					5.0	2.79	9.16	18.3	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB07-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	WF-FB07-0317	PR				SLSA	130	70					5.0				1700394	S7D0002		



Contract_ID	DO_CTO_Number	Phase	Installation_ID	Sample_Name	Validator_Qualifier	GC_Column_Type	Analysis_Result_Type	Result_Narrative	QC_Control_Limit_Code	QC_Accuracy_Upper	QC_Accuracy_Lower	Control_Limit_Date	QC_Narrative	MDL	Detection_Limit	QSM_Version	DL	LOD	LOQ	SDG	Analysis_Batch	Validator_Name	Val_Date
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		PR	TRG									5.0	3.49	10.0	20.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		PR	TRG									5.0	4.54	10.0	20.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		PR	TRG									5.0	3.05	10.0	20.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		PR	SUR		SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Blank		PR	SUR		SLSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		PR	TRG		LSA	130	70					5.0	3.49	10.0	20.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		PR	TRG		LSA	130	70					5.0	4.54	10.0	20.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		PR	TRG		LSA	130	70					5.0	3.05	10.0	20.0	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		PR	SUR		LSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	LCS		PR	SUR		LSA	130	70					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		PR	TRG		LSA	130	70					5.0	3.34	9.58	19.2	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		PR	TRG		LSA	130	70					5.0	4.35	9.58	19.2	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		PR	TRG		LSA	130	70					5.0	2.92	9.58	19.2	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		PR	SUR		LSA	130	130					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike		PR	SUR		LSA	130	130					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		PR	TRG		LSA	130	70					5.0	3.16	9.07	18.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		PR	TRG		LSA	130	70					5.0	4.12	9.07	18.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		PR	TRG		LSA	130	70					5.0	2.76	9.07	18.1	1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		PR	SUR		LSA	130	130					5.0				1700394	S7D0002		
N6247016D9000	0008		WHITING_FIELD_NAS	Matrix Spike Dup		PR	SUR		LSA	130	130					5.0				1700394	S7D0002		

**DATA VALIDATION SUMMARY REPORT  
NAS WHITING FIELD, FLORIDA**

Client: CH2M HILL, Inc., Corvallis, Oregon  
 SDG: 1700394  
 Laboratory: Vista Analytical Laboratory, El Dorado Hills, California  
 Site: NAS Whiting Field, Florida, CTO-0008  
 Date: May 2, 2017

PFCs			
EDS ID	Client Sample ID	Laboratory Sample ID	Matrix
1	WF-RW01-0317	1700394-01	Water
2	WF-FB01-0317	1700394-02	Water
3	WF-RW02-0317	1700394-03	Water
4	WF-FB02-0317	1700394-04	Water
5	WF-RW03-0317	1700394-05	Water
6	WF-FB03-0317	1700394-06	Water
7	WF-RW04-0317	1700394-07	Water
8	WF-FB04-0317	1700394-08	Water
9	WF-RW05-0317	1700394-09	Water
10	WF-FB05-0317	1700394-10	Water
11	WF-RW06-0317	1700394-11	Water
12	WF-FB06-0317	1700394-12	Water
13	WF-RW07-0317	1700394-13	Water
13MS	WF-RW07-0317MS	1700394-13MS	Water
13MSD	WF-RW07-0317MSD	1700394-13MSD	Water
14	WF-FB07-0317	1700394-14	Water

A full data validation was performed on the analytical data for seven water samples and seven aqueous field blank samples collected on March 27, 2017 by CH2M HILL at the NAS Whiting Field site in Florida. The samples were analyzed under the EPA Method “Determination of Selected Perfluorinated Alkyl Acids in Drinking Water by Solid Phase Extraction and Liquid Chromatography/Tandem Mass Spectrometry (LC/MS/MS)”.

Specific method references are as follows:

Analysis  
PFCs

Method References  
USEPA Method 537 Modified

The data have been validated according to the protocols and quality control (QC) requirements of the analytical method, and the U.S. Department of Defense (DoD) Quality Systems Manual (QSM), Version 5.0 (July 2013) and the USEPA National Functional Guidelines for Organic Data Review as follows:

- The USEPA “Contract Laboratories Program National Functional Guidelines for Superfund Organic Methods Data Review,” August 2014;
- and the reviewer's professional judgment.

The following data quality indicators were reviewed for this report:

### ***Organics***

- Date Completeness, Case Narrative & Custody Documentation
- Holding times
- Initial and continuing calibration summaries
- Method blank and field QC blank contamination
- Surrogate recovery (%R)
- Matrix Spike/Matrix Spike Duplicate (MS/MSD) recoveries
- Ongoing Precision and Recovery (OPR)
- Target Compound Identification
- Compound Quantitation
- Field Duplicate sample precision

A full (Level IV) data validation was performed with this review including a recalculation of 10% of the detected results in the samples.

### **Data Usability Assessment**

There were no rejections of data.

Overall the data is acceptable for the intended purposes. There were no qualifications.

### **Perfluorinated Compounds (PFCs)**

#### **Data Completeness, Case Narrative & Custody Documentation**

- The case narrative and chain-of-custody documentation were included in the data package as required. All criteria were met.

#### **Holding Times**

- All samples were extracted within 14 days for water samples and analyzed within 28 days.

#### **Initial Calibration**

- All percent difference (%D) and/or correlation coefficients criteria were met.

### Continuing Calibration

- All percent difference (%D) and RRF criteria were met.

### Method Blank

- The method blanks were free of contamination.

### Field QC Blank

- The field blank samples were free of contamination.

Blank ID	Compound	Conc. ng/L	Qualifier	Affected Samples
WF-FB01-0317	None - ND	-	-	-
WF-FB02-0317	None - ND	-	-	-
WF-FB03-0317	None - ND	-	-	-
WF-FB04-0317	None - ND	-	-	-
WF-FB05-0317	None - ND	-	-	-
WF-FB06-0317	None - ND	-	-	-
WF-FB07-0317	None - ND	-	-	-

### Surrogate Spike Recoveries

- All samples exhibited acceptable surrogate %R values.

### Matrix Spike/Matrix Spike Duplicate (MS/MSD) Recoveries

- The MS/MSD samples exhibited acceptable %R and RPD values.

### Ongoing Precision and Recovery (OPR)

- The OPR samples exhibited acceptable percent recoveries (%R) values.

### Target Compound Identification

- All mass spectra and quantitation criteria were met.

### Compound Quantitation

- All criteria were met.

**Field Duplicate Sample Precision**

- Field duplicate samples were not collected.

Please contact the undersigned at (757) 564-0090 if you have any questions or need further information.

Signed: Nancy Weaver  
Nancy Weaver  
Senior Chemist

Dated: 5/3/17

Data Qualifier	Definition
U	The analyte was analyzed for, but was not detected above the level of the reported sample quantitation limit.
J	The analyte is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
NJ	The analysis has been "tentatively identified" or "presumptively" as present and the associated numerical value is the estimated concentration in the samples.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data are unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the samples.



Sample ID: WF-RW01-0317

EPA Method 537

Client Data

Name: CH2M Hill  
Project: NAS Whiting Field, FL  
Date Collected: 27-Mar-2017 11:18  
Location: WF-RW01

Sample Data

Matrix: Drinking Water  
Sample Size: 0.267 L

Laboratory Data

Lab Sample: 1700394-01 Date Received: 29-Mar-2017 9:21  
QC Batch: B7C0165 Date Extracted: 30-Mar-2017 7:50  
Date Analyzed: 04-Apr-17 15:12 Column: BEH C18

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	8.75	3.26	9.35	18.7	J	SUR 13C2-PFHxA	79.7	70 - 130	
PFOA	7.50	4.25	9.35	18.7	J	SUR 13C2-PFDA	91.2	70 - 130	
PFOS	3.26	2.85	9.35	18.7	J				

DL - Detection limit  
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
Results reported to DL  
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
Only the linear isomer is reported for all other analytes

*mw 512/17*



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<b>Sample ID: WF-FB01-0317</b>						<b>EPA Method 537</b>			
<b>Client Data</b>			<b>Sample Data</b>			<b>Laboratory Data</b>			
Name: CH2M Hill			Matrix: Drinking Water			Lab Sample: 1700394-02		Date Received: 29-Mar-2017 9:21	
Project: NAS Whiting Field, FL			Sample Size: 0.272 L			QC Batch: B7C0165		Date Extracted: 30-Mar-2017 7:50	
Date Collected: 27-Mar-2017 11:19						Date Analyzed: 04-Apr-17 15:25 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.21	9.19	18.4		SUR 13C2-PFHxA	80.6	70 - 130	
PFOA	ND	4.17	9.19	18.4		SUR 13C2-PFDA	83.7	70 - 130	
PFOS	ND	2.80	9.19	18.4					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes.

new 5/2/17

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Sample ID: WF-RW02-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-03	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.289 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 11:45			Date Analyzed:	04-Apr-17 15:37 Column: BEH C18				
Location:	WF-RW02								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.02	8.65	17.3		SUR 13C2-PFHxA	103	70 - 130	
PFOA	6.53	3.93	8.65	17.3	J	SUR 13C2-PFDA	117	70 - 130	
PFOS	ND	2.64	8.65	17.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

nw 5/2/17

Sample ID: WF-FB02-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-04	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.273 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 11:46			Date Analyzed:	04-Apr-17 15:50 Column: BEH C18				
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.20	9.16	18.3		SUR 13C2-PFHxA	84.9	70 - 130	
PFOA	ND	4.16	9.16	18.3		SUR 13C2-PFDA	97.9	70 - 130	
PFOS	ND	2.79	9.16	18.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes.

nw 5/2/17

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Sample ID: WF-RW03-0317						EPA Method 537			
Client Data		Sample Data			Laboratory Data				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-05	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.282 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 12:00	Date Analyzed: 04-Apr-17 16:02 Column: BEH C18							
Location:	WF-RW03								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.10	8.87	17.7		SUR 13C2-PFHxA	91.1	70 - 130	
PFOA	5.79	4.03	8.87	17.7	J	SUR 13C2-PFDA	71.7	70 - 130	
PFOS	ND	2.71	8.87	17.7					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

NW 5/2/17

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<b>Sample ID: WF-FB03-0317</b>						<b>EPA Method 537</b>			
<b>Client Data</b>		<b>Sample Data</b>			<b>Laboratory Data</b>				
Name: CH2M Hill		Matrix: Drinking Water			Lab Sample: 1700394-06		Date Received: 29-Mar-2017 9:21		
Project: NAS Whiting Field, FL		Sample Size: 0.266 L			QC Batch: B7C0165		Date Extracted: 30-Mar-2017 7:50		
Date Collected: 27-Mar-2017 12:01					Date Analyzed: 04-Apr-17 16:15 Column: BEH C18				
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.28	9.39	18.8		SUR 13C2-PFHxA	84.8	70 - 130	
PFOA	ND	4.26	9.39	18.8		SUR 13C2-PFDA	93.9	70 - 130	
PFOS	ND	2.86	9.39	18.8					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.  
 Only the linear isomer is reported for all other analytes.

new size 7

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Sample ID: WF-RW04-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-07	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.262 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 14:10			Date Analyzed:	04-Apr-17 16:27 Column: BEH C18				
Location:	WF-RW04								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	5.05	3.33	9.55	19.1	J	SUR 13C2-PFHxA	82.1	70 - 130	
PFOA	ND	4.34	9.55	19.1		SUR 13C2-PFDA	87.5	70 - 130	
PFOS	ND	2.91	9.55	19.1					

DL - Detection limit

RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit

Results reported to DL

When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers.

Only the linear isomer is reported for all other analytes.

WS1217

<b>Sample ID: WF-FB04-0317</b>						<b>EPA Method 537</b>			
<b>Client Data</b>		<b>Sample Data</b>			<b>Laboratory Data</b>				
Name:	CH2M Hill	Matrix:	Drinking Water		Lab Sample:	1700394-08	Date Received:	29-Mar-2017 9:21	
Project:	NAS Whiting Field, FL	Sample Size:	0.277 L		QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50	
Date Collected:	27-Mar-2017 14:11				Date Analyzed:	04-Apr-17 16:39 Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.15	9.02	18.0		SUR 13C2-PFHxA	83.1	70 - 130	
PFOA	ND	4.09	9.02	18.0		SUR 13C2-PFDA	92.9	70 - 130	
PFOS	ND	2.75	9.02	18.0					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes.

new 5/2/17

Sample ID: WF-RW05-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-09	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.274 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 17:39			Date Analyzed:	04-Apr-17 16:52 Column: BEH C18				
Location:	WF-RW05								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.19	9.13	18.3		SUR 13C2-PFHxA	85.9	70 - 130	
PFOA	ND	4.15	9.13	18.3		SUR 13C2-PFDA	86.5	70 - 130	
PFOS	ND	2.79	9.13	18.3					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

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Sample ID: WF-FB05-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name: CH2M Hill		Matrix: Drinking Water		Lab Sample: 1700394-10		Date Received: 29-Mar-2017 9:21			
Project: NAS Whiting Field, FL		Sample Size: 0.272 L		QC Batch: B7C0165		Date Extracted: 30-Mar-2017 7:50			
Date Collected: 27-Mar-2017 17:40				Date Analyzed: 04-Apr-17 17:04		Column: BEH C18			
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.21	9.20	18.4		SUR 13C2-PFHxA	82.4	70 - 130	
PFOA	ND	4.17	9.20	18.4		SUR 13C2-PFDA	93.6	70 - 130	
PFOS	ND	2.80	9.20	18.4					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes.

new 5/2/17

Sample ID: WF-RW06-0317

EPA Method 537

Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-11	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.259 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 17:53			Date Analyzed:	04-Apr-17 17:16 Column: BEH C18				
Location:	WF-RW06								

Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	3.79	3.37	9.66	19.3	J	SUR 13C2-PFHxA	78.1	70 - 130	
PFOA	259	4.38	9.66	19.3		SUR 13C2-PFDA	89.5	70 - 130	
PFOS	4.86	2.95	9.66	19.3	J				

DL - Detection limit  
RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
Results reported to DL.  
When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
Only the linear isomer is reported for all other analytes.

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Sample ID: WF-FB06-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-12	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.276 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 17:54			Date Analyzed:	04-Apr-17 17:29 Column: BEH C18				
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.16	9.05	18.1		SUR 13C2-PFHxA	97.4	70 - 130	
PFOA	ND	4.11	9.05	18.1		SUR 13C2-PFDA	106	70 - 130	
PFOS	ND	2.76	9.05	18.1					

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes.

NW 5/2/17

Sample ID: WF-RW07-0317						EPA Method 537			
Client Data		Sample Data		Laboratory Data					
Name:	CH2M Hill	Matrix:	Drinking Water	Lab Sample:	1700394-13	Date Received:	29-Mar-2017 9:21		
Project:	NAS Whiting Field, FL	Sample Size:	0.270 L	QC Batch:	B7C0165	Date Extracted:	30-Mar-2017 7:50		
Date Collected:	27-Mar-2017 18:20			Date Analyzed:	04-Apr-17 17:41 Column: BEH C18				
Location:	WF-RW07								
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	13.2	3.24	9.27	18.5	J	SUR 13C2-PFHxA	95.7	70 - 130	
PFOA	19.4	4.21	9.27	18.5		SUR 13C2-PFDA	98.7	70 - 130	
PFOS	12.9	2.83	9.27	18.5	J				

DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

MW 5/2/17

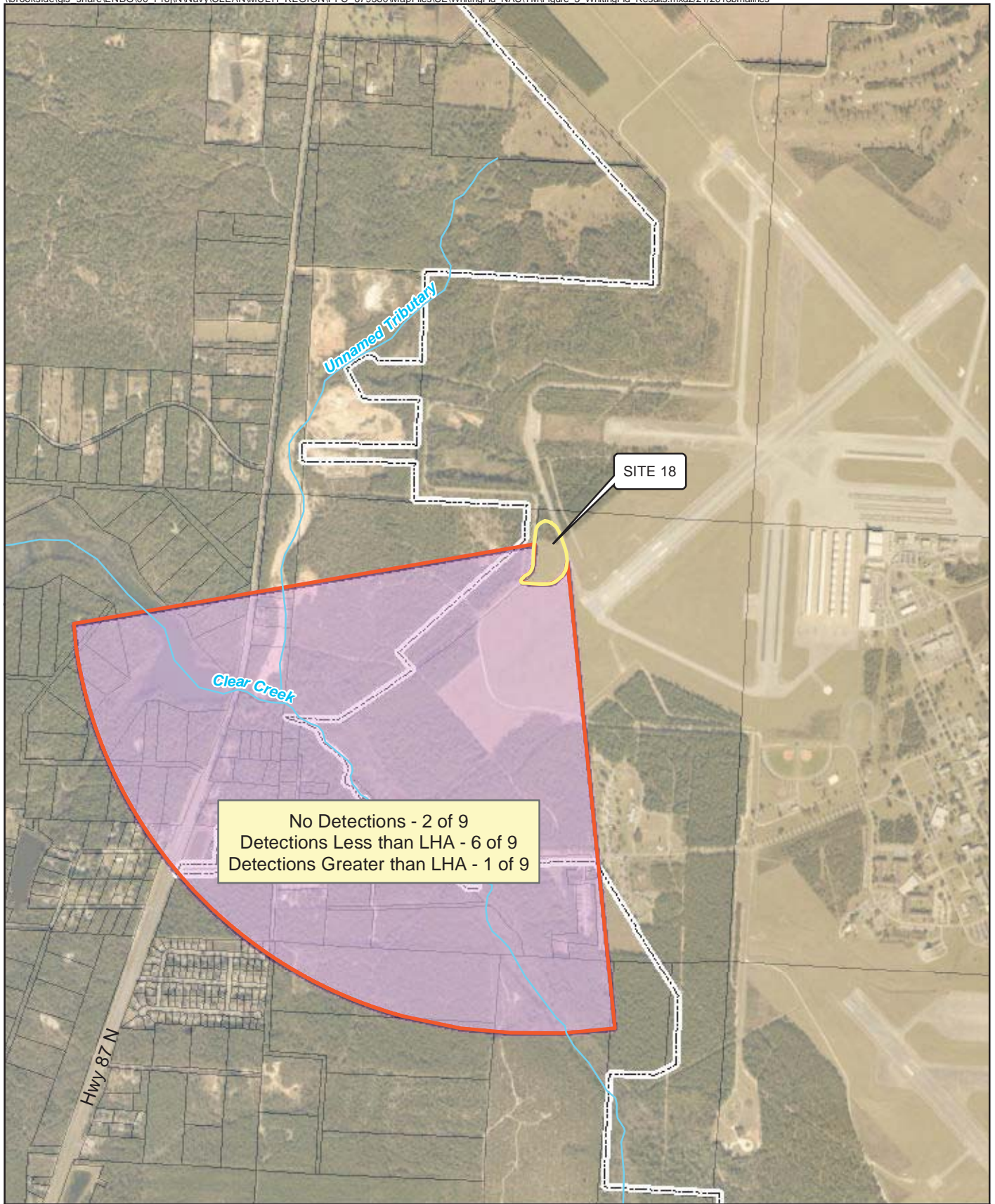
14

<b>Sample ID: WF-FB07-0317</b>					<b>EPA Method 537</b>				
<b>Client Data</b>			<b>Sample Data</b>		<b>Laboratory Data</b>				
Name: CH2M Hill			Matrix: Drinking Water		Lab Sample: 1700394-14		Date Received: 29-Mar-2017 9:21		
Project: NAS Whiting Field, FL			Sample Size: 0.273 L		QC Batch: B7C0165		Date Extracted: 30-Mar-2017 7:50		
Date Collected: 27-Mar-2017 18:21					Date Analyzed: 04-Apr-17 17:54 Column: BEH C18				
Location:									
Analyte	Conc. (ng/L)	DL	LOD	LOQ	Qualifiers	Labeled Standard	%R	LCL-UCL	Qualifiers
PFBS	ND	3.20	9.16	18.3		SUR 13C2-PFHxA	86.7	70 - 130	
PFOA	ND	4.16	9.16	18.3		SUR 13C2-PFDA	91.6	70 - 130	
PFOS	ND	2.79	9.16	18.3					







DL - Detection limit  
 RL - Reporting limit

LCL-UCL - Lower control limit - upper control limit  
 Results reported to DL.  
 When reported, PFBS, PFHxS, PFOA and PFOS include both linear and branched isomers  
 Only the linear isomer is reported for all other analytes

nws/2/17



**Legend**

-  Creek
-  Site Boundary (suspected source)
-  Sampling Area
-  Site 18 - 1-mile zone
-  Parcel
-  Base Boundary

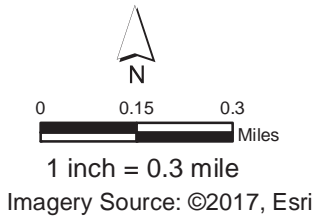


Figure 3  
Drinking Water Results  
Site 18  
Naval Air Station Whiting Field  
Milton, Florida