TestAmerica

THE LEADER IN ENVIRONMENTAL TESTING

ANALYTICAL REPORT

TestAmerica Laboratories, Inc.
TestAmerica Houston
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Houston, TX 77040
Tel: (713)690-4444

TestAmerica Job ID: 600-153595-1
Client Project/Site: Dixie Oil Processors (DOP)
Revision: 1

For:
Brio Site Task Force
11810 South Hill Drive
Houston, Texas 77089

Attn: John Danna

Authorized for release by:
9/18/2017 3:22:04 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.

This report has been electronically signed and authorized by the signatory. Electronic signature is intended to be the legally binding equivalent of a traditionally handwritten signature.

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

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Job ID: 600-153595-1

Laboratory: TestAmerica Houston

Narrative

Job Narrative
600-153595-1

Comments
The report was revised on 09/15/17 to report the results on a dry weight basis.

Receipt
The samples were received on 9/9/2017 10:27 AM; the samples arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 0.4º C.

GC/MS VOA
Method(s) 8260B: The method blank for analytical batch 600-220936 contained Methylene chloride 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.

Method Summary

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Method	Method Description	Protocol	Laboratory
8260B	Volatile Organic Compounds (GC/MS)	SW846	TAL HOU
2540B	Percent Moisture	SM20	TAL HOU

Protocol References:

SM20 = "Standard Methods For The Examination Of Water And Wastewater", 20th Edition."

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

Laboratory References:

TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Sample Summary

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
600-153595-1	DMW-47B	Water	09/08/17 13:25	09/09/17 10:27
600-153595-2	DSED-1	Solid	09/08/17 13:58	09/09/17 10:27
600-153595-3	DSED-2	Solid	09/08/17 13:51	09/09/17 10:27
600-153595-4	DSED-3	Solid	09/08/17 13:45	09/09/17 10:27
600-153595-5	DSED-4C	Solid	09/08/17 12:35	09/09/17 10:27
600-153595-6	Trip Blank	Water	09/08/17 00:00	09/09/17 10:27

Client Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: DMW-47B

Lab Sample ID: 600-153595-1
Date Collected: 09/08/17 13:25
Matrix: Water
Date Received: 09/09/17 10:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.248	U	2.00	0.248	ug/L			09/09/17 20:17	1
1,1-Dichloroethene	0.192	U	1.00	0.192	ug/L			09/09/17 20:17	1
trans-1,2-Dichloroethene	0.192	U	1.00	0.192	ug/L			09/09/17 20:17	1
Methylene Chloride	0.176	U	5.00	0.176	ug/L			09/09/17 20:17	1
cis-1,2-Dichloroethene	0.157	U	1.00	0.157	ug/L			09/09/17 20:17	1
Carbon tetrachloride	0.183	U	1.00	0.183	ug/L			09/09/17 20:17	1
Benzene	0.176	U	1.00	0.176	ug/L			09/09/17 20:17	1
1,2-Dichloroethane	0.116	U	1.00	0.116	ug/L			09/09/17 20:17	1
Trichloroethene	0.138	U	1.00	0.138	ug/L			09/09/17 20:17	1
1,1,1-Trichloroethane	0.209	U	1.00	0.209	ug/L			09/09/17 20:17	1
1,2-Dichloropropane	0.136	U	1.00	0.136	ug/L			09/09/17 20:17	1
Toluene	0.198	U	1.00	0.198	ug/L			09/09/17 20:17	1
1,1,2-Trichloroethane	0.209	U	1.00	0.209	ug/L			09/09/17 20:17	1
Tetrachloroethene	0.333	U	1.00	0.333	ug/L			09/09/17 20:17	1
Chlorobenzene	0.185	U	1.00	0.185	ug/L			09/09/17 20:17	1
Ethylbenzene	0.212	U	1.00	0.212	ug/L			09/09/17 20:17	1
Xylenes, Total	0.366	U	2.00	0.366	ug/L			09/09/17 20:17	1
Styrene	0.175	U	1.00	0.175	ug/L			09/09/17 20:17	1
1,4-Dichlorobenzene	0.176	U	1.00	0.176	ug/L			09/09/17 20:17	1
1,2-Dichlorobenzene	0.153	U	1.00	0.153	ug/L			09/09/17 20:17	1
1,2,4-Trichlorobenzene	0.177	U	1.00	0.177	ug/L			09/09/17 20:17	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*82*		*50 - 134*		*09/09/17 20:17*	*1*
Dibromofluoromethane	*93*		*62 - 130*		*09/09/17 20:17*	*1*
Toluene-d8 (Surr)	*113*		*70 - 130*		*09/09/17 20:17*	*1*
4-Bromofluorobenzene	*100*		*67 - 139*		*09/09/17 20:17*	*1*

Client Sample ID: DSED-1

Lab Sample ID: 600-153595-2
Date Collected: 09/08/17 13:58
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 89.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.701	U	5.57	0.701	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Carbon tetrachloride	1.26	U	5.57	1.26	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Chlorobenzene	1.07	U	5.57	1.07	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,2-Dichloroethane	1.00	U	5.57	1.00	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,1-Dichloroethene	1.36	U	5.57	1.36	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
cis-1,2-Dichloroethene	0.924	U	5.57	0.924	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
trans-1,2-Dichloroethene	1.27	U	5.57	1.27	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,2-Dichloropropane	0.790	U	5.57	0.790	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Ethylbenzene	1.14	U	5.57	1.14	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Methylene Chloride	2.44	U	11.1	2.44	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Styrene	0.790	U	5.57	0.790	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Tetrachloroethene	0.790	U	5.57	0.790	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Toluene	1.54	U	5.57	1.54	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,1,1-Trichloroethane	0.824	U	5.57	0.824	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,1,2-Trichloroethane	0.813	U	44.5	0.813	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Trichloroethene	1.56	U	5.57	1.56	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1

Client Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: DSED-1

Lab Sample ID: 600-153595-2
Date Collected: 09/08/17 13:58
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 89.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	1.00	U	11.1	1.00	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
Xylenes, Total	1.26	U	5.57	1.26	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,2,4-Trichlorobenzene	2.19	U	5.57	2.19	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,2-Dichlorobenzene	0.890	U	5.57	0.890	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1
1,4-Dichlorobenzene	0.735	U	5.57	0.735	ug/Kg	☼	09/09/17 16:35	09/09/17 23:34	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*87*		*61 - 130*	*09/09/17 16:35*	*09/09/17 23:34*	*1*
Dibromofluoromethane	*88*		*68 - 140*	*09/09/17 16:35*	*09/09/17 23:34*	*1*
Toluene-d8 (Surr)	*91*		*50 - 130*	*09/09/17 16:35*	*09/09/17 23:34*	*1*
4-Bromofluorobenzene	*95*		*57 - 140*	*09/09/17 16:35*	*09/09/17 23:34*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.0**		1.0	1.0	%			09/13/17 16:19	1
Percent Solids	**89.0**		1.0	1.0	%			09/13/17 16:19	1

Client Sample ID: DSED-2

Lab Sample ID: 600-153595-3
Date Collected: 09/08/17 13:51
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 95.7

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.692	U	5.49	0.692	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Carbon tetrachloride	1.24	U	5.49	1.24	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Chlorobenzene	1.05	U	5.49	1.05	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,2-Dichloroethane	0.988	U	5.49	0.988	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,1-Dichloroethene	1.34	U	5.49	1.34	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
cis-1,2-Dichloroethene	0.911	U	5.49	0.911	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
trans-1,2-Dichloroethene	1.25	U	5.49	1.25	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,2-Dichloropropane	0.780	U	5.49	0.780	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Ethylbenzene	1.12	U	5.49	1.12	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Methylene Chloride	2.40	U	11.0	2.40	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Styrene	0.780	U	5.49	0.780	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Tetrachloroethene	0.780	U	5.49	0.780	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Toluene	1.52	U	5.49	1.52	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,1,1-Trichloroethane	0.813	U	5.49	0.813	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,1,2-Trichloroethane	0.802	U	43.9	0.802	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Trichloroethene	1.54	U	5.49	1.54	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Vinyl chloride	0.988	U	11.0	0.988	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
Xylenes, Total	1.24	U	5.49	1.24	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,2,4-Trichlorobenzene	2.16	U	5.49	2.16	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,2-Dichlorobenzene	0.878	U	5.49	0.878	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1
1,4-Dichlorobenzene	0.725	U	5.49	0.725	ug/Kg	☼	09/09/17 16:35	09/10/17 21:25	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 130*	*09/09/17 16:35*	*09/10/17 21:25*	*1*
Dibromofluoromethane	*87*		*68 - 140*	*09/09/17 16:35*	*09/10/17 21:25*	*1*
Toluene-d8 (Surr)	*87*		*50 - 130*	*09/09/17 16:35*	*09/10/17 21:25*	*1*
4-Bromofluorobenzene	*103*		*57 - 140*	*09/09/17 16:35*	*09/10/17 21:25*	*1*

Client Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: DSED-2

Lab Sample ID: 600-153595-3
Date Collected: 09/08/17 13:51
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 95.7

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	4.3		1.0	1.0	%			09/13/17 16:19	1
Percent Solids	95.7		1.0	1.0	%			09/13/17 16:19	1

Client Sample ID: DSED-3

Lab Sample ID: 600-153595-4
Date Collected: 09/08/17 13:45
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 92.1

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.714	U	5.67	0.714	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Carbon tetrachloride	1.28	U	5.67	1.28	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Chlorobenzene	1.09	U	5.67	1.09	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,2-Dichloroethane	1.02	U	5.67	1.02	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,1-Dichloroethene	1.38	U	5.67	1.38	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
cis-1,2-Dichloroethene	0.940	U	5.67	0.940	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
trans-1,2-Dichloroethene	1.29	U	5.67	1.29	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,2-Dichloropropane	0.804	U	5.67	0.804	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Ethylbenzene	1.16	U	5.67	1.16	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Methylene Chloride	2.48	U	11.3	2.48	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Styrene	0.804	U	5.67	0.804	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Tetrachloroethene	0.804	U	5.67	0.804	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Toluene	1.56	U	5.67	1.56	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,1,1-Trichloroethane	0.838	U	5.67	0.838	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,1,2-Trichloroethane	0.827	U	45.3	0.827	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Trichloroethene	1.59	U	5.67	1.59	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Vinyl chloride	1.02	U	11.3	1.02	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
Xylenes, Total	1.28	U	5.67	1.28	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,2,4-Trichlorobenzene	2.23	U	5.67	2.23	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,2-Dichlorobenzene	0.906	U	5.67	0.906	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1
1,4-Dichlorobenzene	0.748	U	5.67	0.748	ug/Kg	☼	09/09/17 16:35	09/10/17 21:48	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 130*	*09/09/17 16:35*	*09/10/17 21:48*	*1*
Dibromofluoromethane	*86*		*68 - 140*	*09/09/17 16:35*	*09/10/17 21:48*	*1*
Toluene-d8 (Surr)	*85*		*50 - 130*	*09/09/17 16:35*	*09/10/17 21:48*	*1*
4-Bromofluorobenzene	*105*		*57 - 140*	*09/09/17 16:35*	*09/10/17 21:48*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	7.9		1.0	1.0	%			09/13/17 16:19	1
Percent Solids	92.1		1.0	1.0	%			09/13/17 16:19	1

Client Sample ID: DSED-4C

Lab Sample ID: 600-153595-5
Date Collected: 09/08/17 12:35
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 89.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.718	U	5.70	0.718	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Carbon tetrachloride	1.29	U	5.70	1.29	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1

Client Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: DSED-4C

Lab Sample ID: 600-153595-5
Date Collected: 09/08/17 12:35
Matrix: Solid
Date Received: 09/09/17 10:27
Percent Solids: 89.0

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Chlorobenzene	1.09	U	5.70	1.09	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,2-Dichloroethane	1.03	U	5.70	1.03	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,1-Dichloroethene	1.39	U	5.70	1.39	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
cis-1,2-Dichloroethene	0.946	U	5.70	0.946	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
trans-1,2-Dichloroethene	1.30	U	5.70	1.30	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,2-Dichloropropane	0.809	U	5.70	0.809	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Ethylbenzene	1.16	U	5.70	1.16	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Methylene Chloride	2.50	U	11.4	2.50	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Styrene	0.809	U	5.70	0.809	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Tetrachloroethene	0.809	U	5.70	0.809	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Toluene	1.57	U	5.70	1.57	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,1,1-Trichloroethane	0.844	U	5.70	0.844	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,1,2-Trichloroethane	0.832	U	45.6	0.832	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Trichloroethene	1.60	U	5.70	1.60	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Vinyl chloride	1.03	U	11.4	1.03	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
Xylenes, Total	1.29	U	5.70	1.29	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,2,4-Trichlorobenzene	2.25	U	5.70	2.25	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,2-Dichlorobenzene	0.912	U	5.70	0.912	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1
1,4-Dichlorobenzene	0.752	U	5.70	0.752	ug/Kg	☼	09/09/17 16:35	09/10/17 22:11	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*93*		*61 - 130*	*09/09/17 16:35*	*09/10/17 22:11*	*1*
Dibromofluoromethane	*86*		*68 - 140*	*09/09/17 16:35*	*09/10/17 22:11*	*1*
Toluene-d8 (Surr)	*86*		*50 - 130*	*09/09/17 16:35*	*09/10/17 22:11*	*1*
4-Bromofluorobenzene	*100*		*57 - 140*	*09/09/17 16:35*	*09/10/17 22:11*	*1*

General Chemistry

Analyte	Result	Qualifier	RL	RL	Unit	D	Prepared	Analyzed	Dil Fac
Percent Moisture	**11.0**		1.0	1.0	%			09/13/17 16:19	1
Percent Solids	**89.0**		1.0	1.0	%			09/13/17 16:19	1

Client Sample ID: Trip Blank

Lab Sample ID: 600-153595-6
Date Collected: 09/08/17 00:00
Matrix: Water
Date Received: 09/09/17 10:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.248	U	2.00	0.248	ug/L			09/09/17 15:45	1
1,1-Dichloroethene	0.192	U	1.00	0.192	ug/L			09/09/17 15:45	1
trans-1,2-Dichloroethene	0.192	U	1.00	0.192	ug/L			09/09/17 15:45	1
Methylene Chloride	**0.378**	**J B**	5.00	0.176	ug/L			09/09/17 15:45	1
cis-1,2-Dichloroethene	0.157	U	1.00	0.157	ug/L			09/09/17 15:45	1
Carbon tetrachloride	0.183	U	1.00	0.183	ug/L			09/09/17 15:45	1
Benzene	0.176	U	1.00	0.176	ug/L			09/09/17 15:45	1
1,2-Dichloroethane	0.116	U	1.00	0.116	ug/L			09/09/17 15:45	1
Trichloroethene	0.138	U	1.00	0.138	ug/L			09/09/17 15:45	1
1,1,1-Trichloroethane	0.209	U	1.00	0.209	ug/L			09/09/17 15:45	1
1,2-Dichloropropane	0.136	U	1.00	0.136	ug/L			09/09/17 15:45	1
Toluene	0.198	U	1.00	0.198	ug/L			09/09/17 15:45	1
1,1,2-Trichloroethane	0.209	U	1.00	0.209	ug/L			09/09/17 15:45	1

Client Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: Trip Blank

Lab Sample ID: 600-153595-6

Date Collected: 09/08/17 00:00
Matrix: Water
Date Received: 09/09/17 10:27

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

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	0.333	U	1.00	0.333	ug/L			09/09/17 15:45	1
Chlorobenzene	0.185	U	1.00	0.185	ug/L			09/09/17 15:45	1
Ethylbenzene	0.212	U	1.00	0.212	ug/L			09/09/17 15:45	1
Xylenes, Total	0.366	U	2.00	0.366	ug/L			09/09/17 15:45	1
Styrene	0.175	U	1.00	0.175	ug/L			09/09/17 15:45	1
1,4-Dichlorobenzene	0.176	U	1.00	0.176	ug/L			09/09/17 15:45	1
1,2-Dichlorobenzene	0.153	U	1.00	0.153	ug/L			09/09/17 15:45	1
1,2,4-Trichlorobenzene	0.177	U	1.00	0.177	ug/L			09/09/17 15:45	1

Surrogate	*%Recovery*	*Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*50 - 134*		*09/09/17 15:45*	*1*
Dibromofluoromethane	*88*		*62 - 130*		*09/09/17 15:45*	*1*
Toluene-d8 (Surr)	*113*		*70 - 130*		*09/09/17 15:45*	*1*
4-Bromofluorobenzene	*99*		*67 - 139*		*09/09/17 15:45*	*1*

Definitions/Glossary

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
U	Indicates the analyte was analyzed for but not detected.
B	Compound was found in the blank and sample.
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
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 (Radiochemistry)
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)

Surrogate Summary

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

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

Matrix: Solid **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	DBFM	TOL	BFB
Lab Sample ID	**Client Sample ID**	**(61-130)**	**(68-140)**	**(50-130)**	**(57-140)**
600-153595-2	DSED-1	87	88	91	95
600-153595-3	DSED-2	91	87	87	103
600-153595-4	DSED-3	91	86	85	105
600-153595-5	DSED-4C	93	86	86	100
LCS 600-220935/3	Lab Control Sample	91	93	100	106
LCS 600-220962/3	Lab Control Sample	82	89	102	106
LCSD 600-220935/4	Lab Control Sample Dup	83	86	98	107
LCSD 600-220962/4	Lab Control Sample Dup	81	85	103	108
MB 600-220935/6	Method Blank	101	90	85	96
MB 600-220962/6	Method Blank	97	89	84	95

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene

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

Matrix: Water **Prep Type: Total/NA**

		Percent Surrogate Recovery (Acceptance Limits)			
		12DCE	DBFM	TOL	BFB
Lab Sample ID	**Client Sample ID**	**(50-134)**	**(62-130)**	**(70-130)**	**(67-139)**
600-153595-1	DMW-47B	82	93	113	100
600-153595-6	Trip Blank	80	88	113	99
LCS 600-220936/3	Lab Control Sample	80	102	104	91
LCSD 600-220936/4	Lab Control Sample Dup	87	106	106	91
MB 600-220936/5	Method Blank	80	91	112	97

Surrogate Legend

12DCE = 1,2-Dichloroethane-d4 (Surr)
DBFM = Dibromofluoromethane
TOL = Toluene-d8 (Surr)
BFB = 4-Bromofluorobenzene

QC Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

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

Lab Sample ID: MB 600-220935/6
Matrix: Solid
Analysis Batch: 220935

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.630	U	5.00	0.630	ug/Kg			09/09/17 15:00	1
Carbon tetrachloride	1.13	U	5.00	1.13	ug/Kg			09/09/17 15:00	1
Chlorobenzene	0.960	U	5.00	0.960	ug/Kg			09/09/17 15:00	1
1,2-Dichloroethane	0.900	U	5.00	0.900	ug/Kg			09/09/17 15:00	1
1,1-Dichloroethene	1.22	U	5.00	1.22	ug/Kg			09/09/17 15:00	1
cis-1,2-Dichloroethene	0.830	U	5.00	0.830	ug/Kg			09/09/17 15:00	1
trans-1,2-Dichloroethene	1.14	U	5.00	1.14	ug/Kg			09/09/17 15:00	1
1,2-Dichloropropane	0.710	U	5.00	0.710	ug/Kg			09/09/17 15:00	1
Ethylbenzene	1.02	U	5.00	1.02	ug/Kg			09/09/17 15:00	1
Methylene Chloride	2.19	U	10.0	2.19	ug/Kg			09/09/17 15:00	1
Styrene	0.710	U	5.00	0.710	ug/Kg			09/09/17 15:00	1
Tetrachloroethene	0.710	U	5.00	0.710	ug/Kg			09/09/17 15:00	1
Toluene	1.38	U	5.00	1.38	ug/Kg			09/09/17 15:00	1
1,1,1-Trichloroethane	0.740	U	5.00	0.740	ug/Kg			09/09/17 15:00	1
1,1,2-Trichloroethane	0.730	U	40.0	0.730	ug/Kg			09/09/17 15:00	1
Trichloroethene	1.40	U	5.00	1.40	ug/Kg			09/09/17 15:00	1
Vinyl chloride	0.900	U	10.0	0.900	ug/Kg			09/09/17 15:00	1
Xylenes, Total	1.13	U	5.00	1.13	ug/Kg			09/09/17 15:00	1
1,2,4-Trichlorobenzene	1.97	U	5.00	1.97	ug/Kg			09/09/17 15:00	1
1,2-Dichlorobenzene	0.800	U	5.00	0.800	ug/Kg			09/09/17 15:00	1
1,4-Dichlorobenzene	0.660	U	5.00	0.660	ug/Kg			09/09/17 15:00	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*101*		*61 - 130*		*09/09/17 15:00*	*1*
Dibromofluoromethane	*90*		*68 - 140*		*09/09/17 15:00*	*1*
Toluene-d8 (Surr)	*85*		*50 - 130*		*09/09/17 15:00*	*1*
4-Bromofluorobenzene	*96*		*57 - 140*		*09/09/17 15:00*	*1*

Lab Sample ID: LCS 600-220935/3
Matrix: Solid
Analysis Batch: 220935

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	36.82		ug/Kg		74	70 - 131
Carbon tetrachloride	50.0	37.08		ug/Kg		74	58 - 130
Chlorobenzene	50.0	38.47		ug/Kg		77	63 - 131
1,2-Dichloroethane	50.0	42.87		ug/Kg		86	58 - 137
1,1-Dichloroethene	50.0	40.32		ug/Kg		81	62 - 142
cis-1,2-Dichloroethene	50.0	38.86		ug/Kg		78	70 - 130
trans-1,2-Dichloroethene	50.0	39.81		ug/Kg		80	69 - 130
1,2-Dichloropropane	50.0	38.60		ug/Kg		77	70 - 130
Ethylbenzene	50.0	37.53		ug/Kg		75	66 - 130
Methylene Chloride	50.0	43.41		ug/Kg		87	61 - 150
Styrene	50.0	38.90		ug/Kg		78	65 - 133
Tetrachloroethene	50.0	36.74		ug/Kg		73	43 - 143
Toluene	50.0	36.02		ug/Kg		72	67 - 130
1,1,1-Trichloroethane	50.0	38.90		ug/Kg		78	59 - 130
1,1,2-Trichloroethane	50.0	43.47		ug/Kg		87	67 - 134

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

Lab Sample ID: LCS 600-220935/3
Matrix: Solid
Analysis Batch: 220935

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	38.55		ug/Kg		77	63 - 135
Vinyl chloride	50.0	44.10		ug/Kg		88	40 - 148
Xylenes, Total	100	74.79		ug/Kg		75	63 - 130
1,2,4-Trichlorobenzene	50.0	36.73		ug/Kg		73	53 - 136
1,2-Dichlorobenzene	50.0	38.03		ug/Kg		76	61 - 131
1,4-Dichlorobenzene	50.0	36.22		ug/Kg		72	65 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*91*		*61 - 130*
Dibromofluoromethane	*93*		*68 - 140*
Toluene-d8 (Surr)	*100*		*50 - 130*
4-Bromofluorobenzene	*106*		*57 - 140*

Lab Sample ID: LCSD 600-220935/4
Matrix: Solid
Analysis Batch: 220935

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	42.84		ug/Kg		86	70 - 131	15	30
Carbon tetrachloride	50.0	41.62		ug/Kg		83	58 - 130	12	30
Chlorobenzene	50.0	47.97		ug/Kg		96	63 - 131	22	30
1,2-Dichloroethane	50.0	47.55		ug/Kg		95	58 - 137	10	30
1,1-Dichloroethene	50.0	45.76		ug/Kg		92	62 - 142	13	30
cis-1,2-Dichloroethene	50.0	43.61		ug/Kg		87	70 - 130	12	30
trans-1,2-Dichloroethene	50.0	46.05		ug/Kg		92	69 - 130	15	30
1,2-Dichloropropane	50.0	45.16		ug/Kg		90	70 - 130	16	30
Ethylbenzene	50.0	44.91		ug/Kg		90	66 - 130	18	30
Methylene Chloride	50.0	47.98		ug/Kg		96	61 - 150	10	30
Styrene	50.0	48.59		ug/Kg		97	65 - 133	22	30
Tetrachloroethene	50.0	44.84		ug/Kg		90	43 - 143	20	30
Toluene	50.0	44.93		ug/Kg		90	67 - 130	22	30
1,1,1-Trichloroethane	50.0	44.61		ug/Kg		89	59 - 130	14	30
1,1,2-Trichloroethane	50.0	51.58		ug/Kg		103	67 - 134	17	30
Trichloroethene	50.0	44.13		ug/Kg		88	63 - 135	14	30
Vinyl chloride	50.0	43.67		ug/Kg		87	40 - 148	1	30
Xylenes, Total	100	90.64		ug/Kg		91	63 - 130	19	30
1,2,4-Trichlorobenzene	50.0	42.69		ug/Kg		85	53 - 136	15	30
1,2-Dichlorobenzene	50.0	44.77		ug/Kg		90	61 - 131	16	30
1,4-Dichlorobenzene	50.0	44.56		ug/Kg		89	65 - 131	21	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*83*		*61 - 130*
Dibromofluoromethane	*86*		*68 - 140*
Toluene-d8 (Surr)	*98*		*50 - 130*
4-Bromofluorobenzene	*107*		*57 - 140*

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

Lab Sample ID: MB 600-220936/5
Matrix: Water
Analysis Batch: 220936

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	0.248	U	2.00	0.248	ug/L			09/09/17 14:55	1
1,1-Dichloroethene	0.192	U	1.00	0.192	ug/L			09/09/17 14:55	1
trans-1,2-Dichloroethene	0.192	U	1.00	0.192	ug/L			09/09/17 14:55	1
Methylene Chloride	0.1965	J	5.00	0.176	ug/L			09/09/17 14:55	1
cis-1,2-Dichloroethene	0.157	U	1.00	0.157	ug/L			09/09/17 14:55	1
Carbon tetrachloride	0.183	U	1.00	0.183	ug/L			09/09/17 14:55	1
Benzene	0.176	U	1.00	0.176	ug/L			09/09/17 14:55	1
1,2-Dichloroethane	0.116	U	1.00	0.116	ug/L			09/09/17 14:55	1
Trichloroethene	0.138	U	1.00	0.138	ug/L			09/09/17 14:55	1
1,1,1-Trichloroethane	0.209	U	1.00	0.209	ug/L			09/09/17 14:55	1
1,2-Dichloropropane	0.136	U	1.00	0.136	ug/L			09/09/17 14:55	1
Toluene	0.198	U	1.00	0.198	ug/L			09/09/17 14:55	1
1,1,2-Trichloroethane	0.209	U	1.00	0.209	ug/L			09/09/17 14:55	1
Tetrachloroethene	0.333	U	1.00	0.333	ug/L			09/09/17 14:55	1
Chlorobenzene	0.185	U	1.00	0.185	ug/L			09/09/17 14:55	1
Ethylbenzene	0.212	U	1.00	0.212	ug/L			09/09/17 14:55	1
Xylenes, Total	0.366	U	2.00	0.366	ug/L			09/09/17 14:55	1
Styrene	0.175	U	1.00	0.175	ug/L			09/09/17 14:55	1
1,4-Dichlorobenzene	0.176	U	1.00	0.176	ug/L			09/09/17 14:55	1
1,2-Dichlorobenzene	0.153	U	1.00	0.153	ug/L			09/09/17 14:55	1
1,2,4-Trichlorobenzene	0.177	U	1.00	0.177	ug/L			09/09/17 14:55	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*80*		*50 - 134*		*09/09/17 14:55*	*1*
Dibromofluoromethane	*91*		*62 - 130*		*09/09/17 14:55*	*1*
Toluene-d8 (Surr)	*112*		*70 - 130*		*09/09/17 14:55*	*1*
4-Bromofluorobenzene	*97*		*67 - 139*		*09/09/17 14:55*	*1*

Lab Sample ID: LCS 600-220936/3
Matrix: Water
Analysis Batch: 220936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Vinyl chloride	10.0	9.936		ug/L		99	33 - 150
1,1-Dichloroethene	10.0	10.75		ug/L		107	58 - 148
trans-1,2-Dichloroethene	10.0	10.45		ug/L		104	68 - 131
Methylene Chloride	10.0	9.323		ug/L		93	55 - 147
cis-1,2-Dichloroethene	10.0	10.05		ug/L		100	68 - 130
Carbon tetrachloride	10.0	10.60		ug/L		106	70 - 144
Benzene	10.0	10.67		ug/L		107	70 - 130
1,2-Dichloroethane	10.0	8.022		ug/L		80	67 - 134
Trichloroethene	10.0	10.85		ug/L		108	70 - 130
1,1,1-Trichloroethane	10.0	10.08		ug/L		101	70 - 136
1,2-Dichloropropane	10.0	9.823		ug/L		98	70 - 130
Toluene	10.0	11.34		ug/L		113	70 - 130
1,1,2-Trichloroethane	10.0	9.562		ug/L		96	70 - 130
Tetrachloroethene	10.0	11.98		ug/L		120	47 - 150
Chlorobenzene	10.0	10.80		ug/L		108	69 - 130

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

Lab Sample ID: LCS 600-220936/3
Matrix: Water
Analysis Batch: 220936

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Ethylbenzene	10.0	10.90		ug/L		109	70 - 130
Xylenes, Total	20.0	21.92		ug/L		110	70 - 130
Styrene	10.0	10.26		ug/L		103	70 - 130
1,4-Dichlorobenzene	10.0	11.06		ug/L		111	70 - 130
1,2-Dichlorobenzene	10.0	10.50		ug/L		105	70 - 130
1,2,4-Trichlorobenzene	10.0	10.59		ug/L		106	46 - 150

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*80*		*50 - 134*
Dibromofluoromethane	*102*		*62 - 130*
Toluene-d8 (Surr)	*104*		*70 - 130*
4-Bromofluorobenzene	*91*		*67 - 139*

Lab Sample ID: LCSD 600-220936/4
Matrix: Water
Analysis Batch: 220936

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Vinyl chloride	10.0	9.981		ug/L		100	33 - 150	0	20
1,1-Dichloroethene	10.0	11.27		ug/L		113	58 - 148	5	20
trans-1,2-Dichloroethene	10.0	10.76		ug/L		108	68 - 131	3	20
Methylene Chloride	10.0	9.894		ug/L		99	55 - 147	6	20
cis-1,2-Dichloroethene	10.0	10.56		ug/L		106	68 - 130	5	20
Carbon tetrachloride	10.0	10.75		ug/L		108	70 - 144	1	20
Benzene	10.0	11.07		ug/L		111	70 - 130	4	20
1,2-Dichloroethane	10.0	8.912		ug/L		89	67 - 134	11	20
Trichloroethene	10.0	11.10		ug/L		111	70 - 130	2	20
1,1,1-Trichloroethane	10.0	10.37		ug/L		104	70 - 136	3	20
1,2-Dichloropropane	10.0	10.58		ug/L		106	70 - 130	7	20
Toluene	10.0	11.86		ug/L		119	70 - 130	4	20
1,1,2-Trichloroethane	10.0	10.86		ug/L		109	70 - 130	13	20
Tetrachloroethene	10.0	12.32		ug/L		123	47 - 150	3	20
Chlorobenzene	10.0	11.61		ug/L		116	69 - 130	7	20
Ethylbenzene	10.0	11.61		ug/L		116	70 - 130	6	20
Xylenes, Total	20.0	23.27		ug/L		116	70 - 130	6	20
Styrene	10.0	11.29		ug/L		113	70 - 130	10	20
1,4-Dichlorobenzene	10.0	11.60		ug/L		116	70 - 130	5	20
1,2-Dichlorobenzene	10.0	11.25		ug/L		113	70 - 130	7	20
1,2,4-Trichlorobenzene	10.0	11.83		ug/L		118	46 - 150	11	20

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*87*		*50 - 134*
Dibromofluoromethane	*106*		*62 - 130*
Toluene-d8 (Surr)	*106*		*70 - 130*
4-Bromofluorobenzene	*91*		*67 - 139*

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

Lab Sample ID: MB 600-220962/6
Matrix: Solid
Analysis Batch: 220962

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

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	0.630	U	5.00	0.630	ug/Kg			09/10/17 15:58	1
Carbon tetrachloride	1.13	U	5.00	1.13	ug/Kg			09/10/17 15:58	1
Chlorobenzene	0.960	U	5.00	0.960	ug/Kg			09/10/17 15:58	1
1,2-Dichloroethane	0.900	U	5.00	0.900	ug/Kg			09/10/17 15:58	1
1,1-Dichloroethene	1.22	U	5.00	1.22	ug/Kg			09/10/17 15:58	1
cis-1,2-Dichloroethene	0.830	U	5.00	0.830	ug/Kg			09/10/17 15:58	1
trans-1,2-Dichloroethene	1.14	U	5.00	1.14	ug/Kg			09/10/17 15:58	1
1,2-Dichloropropane	0.710	U	5.00	0.710	ug/Kg			09/10/17 15:58	1
Ethylbenzene	1.02	U	5.00	1.02	ug/Kg			09/10/17 15:58	1
Methylene Chloride	2.19	U	10.0	2.19	ug/Kg			09/10/17 15:58	1
Styrene	0.710	U	5.00	0.710	ug/Kg			09/10/17 15:58	1
Tetrachloroethene	0.710	U	5.00	0.710	ug/Kg			09/10/17 15:58	1
Toluene	1.38	U	5.00	1.38	ug/Kg			09/10/17 15:58	1
1,1,1-Trichloroethane	0.740	U	5.00	0.740	ug/Kg			09/10/17 15:58	1
1,1,2-Trichloroethane	0.730	U	40.0	0.730	ug/Kg			09/10/17 15:58	1
Trichloroethene	1.40	U	5.00	1.40	ug/Kg			09/10/17 15:58	1
Vinyl chloride	0.900	U	10.0	0.900	ug/Kg			09/10/17 15:58	1
Xylenes, Total	1.13	U	5.00	1.13	ug/Kg			09/10/17 15:58	1
1,2,4-Trichlorobenzene	1.97	U	5.00	1.97	ug/Kg			09/10/17 15:58	1
1,2-Dichlorobenzene	0.800	U	5.00	0.800	ug/Kg			09/10/17 15:58	1
1,4-Dichlorobenzene	0.660	U	5.00	0.660	ug/Kg			09/10/17 15:58	1

Surrogate	*MB %Recovery*	*MB Qualifier*	*Limits*	*Prepared*	*Analyzed*	*Dil Fac*
1,2-Dichloroethane-d4 (Surr)	*97*		*61 - 130*		*09/10/17 15:58*	*1*
Dibromofluoromethane	*89*		*68 - 140*		*09/10/17 15:58*	*1*
Toluene-d8 (Surr)	*84*		*50 - 130*		*09/10/17 15:58*	*1*
4-Bromofluorobenzene	*95*		*57 - 140*		*09/10/17 15:58*	*1*

Lab Sample ID: LCS 600-220962/3
Matrix: Solid
Analysis Batch: 220962

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Benzene	50.0	37.37		ug/Kg		75	70 - 131
Carbon tetrachloride	50.0	38.80		ug/Kg		78	58 - 130
Chlorobenzene	50.0	42.21		ug/Kg		84	63 - 131
1,2-Dichloroethane	50.0	41.98		ug/Kg		84	58 - 137
1,1-Dichloroethene	50.0	40.37		ug/Kg		81	62 - 142
cis-1,2-Dichloroethene	50.0	39.16		ug/Kg		78	70 - 130
trans-1,2-Dichloroethene	50.0	41.39		ug/Kg		83	69 - 130
1,2-Dichloropropane	50.0	39.60		ug/Kg		79	70 - 130
Ethylbenzene	50.0	41.42		ug/Kg		83	66 - 130
Methylene Chloride	50.0	44.10		ug/Kg		88	61 - 150
Styrene	50.0	43.16		ug/Kg		86	65 - 133
Tetrachloroethene	50.0	39.94		ug/Kg		80	43 - 143
Toluene	50.0	40.05		ug/Kg		80	67 - 130
1,1,1-Trichloroethane	50.0	42.45		ug/Kg		85	59 - 130
1,1,2-Trichloroethane	50.0	46.84		ug/Kg		94	67 - 134

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

Lab Sample ID: LCS 600-220962/3
Matrix: Solid
Analysis Batch: 220962

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

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Trichloroethene	50.0	37.86		ug/Kg		76	63 - 135
Vinyl chloride	50.0	39.94		ug/Kg		80	40 - 148
Xylenes, Total	100	81.34		ug/Kg		81	63 - 130
1,2,4-Trichlorobenzene	50.0	37.59		ug/Kg		75	53 - 136
1,2-Dichlorobenzene	50.0	39.66		ug/Kg		79	61 - 131
1,4-Dichlorobenzene	50.0	39.29		ug/Kg		79	65 - 131

Surrogate	*LCS %Recovery*	*LCS Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*82*		*61 - 130*
Dibromofluoromethane	*89*		*68 - 140*
Toluene-d8 (Surr)	*102*		*50 - 130*
4-Bromofluorobenzene	*106*		*57 - 140*

Lab Sample ID: LCSD 600-220962/4
Matrix: Solid
Analysis Batch: 220962

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

Analyte	Spike Added	LCSD Result	LCSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Benzene	50.0	46.46		ug/Kg		93	70 - 131	22	30
Carbon tetrachloride	50.0	46.00		ug/Kg		92	58 - 130	17	30
Chlorobenzene	50.0	51.44		ug/Kg		103	63 - 131	20	30
1,2-Dichloroethane	50.0	46.67		ug/Kg		93	58 - 137	11	30
1,1-Dichloroethene	50.0	49.05		ug/Kg		98	62 - 142	19	30
cis-1,2-Dichloroethene	50.0	45.88		ug/Kg		92	70 - 130	16	30
trans-1,2-Dichloroethene	50.0	49.65		ug/Kg		99	69 - 130	18	30
1,2-Dichloropropane	50.0	47.15		ug/Kg		94	70 - 130	17	30
Ethylbenzene	50.0	49.64		ug/Kg		99	66 - 130	18	30
Methylene Chloride	50.0	49.42		ug/Kg		99	61 - 150	11	30
Styrene	50.0	50.90		ug/Kg		102	65 - 133	16	30
Tetrachloroethene	50.0	49.00		ug/Kg		98	43 - 143	20	30
Toluene	50.0	48.28		ug/Kg		97	67 - 130	19	30
1,1,1-Trichloroethane	50.0	49.78		ug/Kg		100	59 - 130	16	30
1,1,2-Trichloroethane	50.0	49.87		ug/Kg		100	67 - 134	6	30
Trichloroethene	50.0	48.36		ug/Kg		97	63 - 135	24	30
Vinyl chloride	50.0	45.37		ug/Kg		91	40 - 148	13	30
Xylenes, Total	100	98.24		ug/Kg		98	63 - 130	19	30
1,2,4-Trichlorobenzene	50.0	44.11		ug/Kg		88	53 - 136	16	30
1,2-Dichlorobenzene	50.0	46.12		ug/Kg		92	61 - 131	15	30
1,4-Dichlorobenzene	50.0	46.14		ug/Kg		92	65 - 131	16	30

Surrogate	*LCSD %Recovery*	*LCSD Qualifier*	*Limits*
1,2-Dichloroethane-d4 (Surr)	*81*		*61 - 130*
Dibromofluoromethane	*85*		*68 - 140*
Toluene-d8 (Surr)	*103*		*50 - 130*
4-Bromofluorobenzene	*108*		*57 - 140*

QC Sample Results

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Method: 2540B - Percent Moisture

Lab Sample ID: 600-153595-4 DU
Matrix: Solid
Analysis Batch: 221266

Client Sample ID: DSED-3
Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier		DU Result	DU Qualifier	Unit	D			RPD	RPD Limit
Percent Moisture	7.9			7.6		%				3	20
Percent Solids	92.1			92.4		%				0.3	20

QC Association Summary

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

GC/MS VOA

Analysis Batch: 220935

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153595-2	DSED-1	Total/NA	Solid	8260B	220941
MB 600-220935/6	Method Blank	Total/NA	Solid	8260B	
LCS 600-220935/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 600-220935/4	Lab Control Sample Dup	Total/NA	Solid	8260B	

Analysis Batch: 220936

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153595-1	DMW-47B	Total/NA	Water	8260B	
600-153595-6	Trip Blank	Total/NA	Water	8260B	
MB 600-220936/5	Method Blank	Total/NA	Water	8260B	
LCS 600-220936/3	Lab Control Sample	Total/NA	Water	8260B	
LCSD 600-220936/4	Lab Control Sample Dup	Total/NA	Water	8260B	

Prep Batch: 220941

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153595-2	DSED-1	Total/NA	Solid	5030B	
600-153595-3	DSED-2	Total/NA	Solid	5030B	
600-153595-4	DSED-3	Total/NA	Solid	5030B	
600-153595-5	DSED-4C	Total/NA	Solid	5030B	

Analysis Batch: 220962

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153595-3	DSED-2	Total/NA	Solid	8260B	220941
600-153595-4	DSED-3	Total/NA	Solid	8260B	220941
600-153595-5	DSED-4C	Total/NA	Solid	8260B	220941
MB 600-220962/6	Method Blank	Total/NA	Solid	8260B	
LCS 600-220962/3	Lab Control Sample	Total/NA	Solid	8260B	
LCSD 600-220962/4	Lab Control Sample Dup	Total/NA	Solid	8260B	

General Chemistry

Analysis Batch: 221266

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
600-153595-2	DSED-1	Total/NA	Solid	2540B	
600-153595-3	DSED-2	Total/NA	Solid	2540B	
600-153595-4	DSED-3	Total/NA	Solid	2540B	
600-153595-5	DSED-4C	Total/NA	Solid	2540B	
600-153595-4 DU	DSED-3	Total/NA	Solid	2540B	

Lab Chronicle

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: DMW-47B — Lab Sample ID: 600-153595-1

Date Collected: 09/08/17 13:25
Date Received: 09/09/17 10:27
Matrix: Water

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	220936	09/09/17 20:17	WS1	TAL HOU

Client Sample ID: DSED-1 — Lab Sample ID: 600-153595-2

Date Collected: 09/08/17 13:58
Date Received: 09/09/17 10:27
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540B		1			221266	09/13/17 16:19	B1K	TAL HOU

Client Sample ID: DSED-1 — Lab Sample ID: 600-153595-2

Date Collected: 09/08/17 13:58
Date Received: 09/09/17 10:27
Matrix: Solid
Percent Solids: 89.0

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			5.05 g	5 mL	220941	09/09/17 16:35	WS1	TAL HOU
Total/NA	Analysis	8260B		1	5 g	5 g	220935	09/09/17 23:34	WS1	TAL HOU

Client Sample ID: DSED-2 — Lab Sample ID: 600-153595-3

Date Collected: 09/08/17 13:51
Date Received: 09/09/17 10:27
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540B		1			221266	09/13/17 16:19	B1K	TAL HOU

Client Sample ID: DSED-2 — Lab Sample ID: 600-153595-3

Date Collected: 09/08/17 13:51
Date Received: 09/09/17 10:27
Matrix: Solid
Percent Solids: 95.7

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.76 g	5 mL	220941	09/09/17 16:35	WS1	TAL HOU
Total/NA	Analysis	8260B		1	5 g	5 g	220962	09/10/17 21:25	WS1	TAL HOU

Client Sample ID: DSED-3 — Lab Sample ID: 600-153595-4

Date Collected: 09/08/17 13:45
Date Received: 09/09/17 10:27
Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540B		1			221266	09/13/17 16:19	B1K	TAL HOU

Lab Chronicle

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Client Sample ID: DSED-3 — Lab Sample ID: 600-153595-4

Date Collected: 09/08/17 13:45 — **Matrix: Solid**
Date Received: 09/09/17 10:27 — **Percent Solids: 92.1**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.79 g	5 mL	220941	09/09/17 16:35	WS1	TAL HOU
Total/NA	Analysis	8260B		1	5 g	5 g	220962	09/10/17 21:48	WS1	TAL HOU

Client Sample ID: DSED-4C — Lab Sample ID: 600-153595-5

Date Collected: 09/08/17 12:35 — **Matrix: Solid**
Date Received: 09/09/17 10:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	2540B		1			221266	09/13/17 16:19	B1K	TAL HOU

Client Sample ID: DSED-4C — Lab Sample ID: 600-153595-5

Date Collected: 09/08/17 12:35 — **Matrix: Solid**
Date Received: 09/09/17 10:27 — **Percent Solids: 89.0**

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Prep	5030B			4.93 g	5 mL	220941	09/09/17 16:35	WS1	TAL HOU
Total/NA	Analysis	8260B		1	5 g	5 g	220962	09/10/17 22:11	WS1	TAL HOU

Client Sample ID: Trip Blank — Lab Sample ID: 600-153595-6

Date Collected: 09/08/17 00:00 — **Matrix: Water**
Date Received: 09/09/17 10:27

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
Total/NA	Analysis	8260B		1	20 mL	20 mL	220936	09/09/17 15:45	WS1	TAL HOU

Laboratory References:
TAL HOU = TestAmerica Houston, 6310 Rothway Street, Houston, TX 77040, TEL (713)690-4444

Accreditation/Certification Summary

Client: Brio Site Task Force
Project/Site: Dixie Oil Processors (DOP)

TestAmerica Job ID: 600-153595-1

Laboratory: TestAmerica Houston

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

Authority	Program	EPA Region	Identification Number	Expiration Date
Arkansas DEQ	State Program	6	17-051-0	08-04-18
Louisiana	NELAP	6	01967	06-30-18
Oklahoma	State Program	6	2017-138	08-31-18
Texas	NELAP	6	T104704223-17-21	10-31-17
USDA	Federal		P330-17-00132	04-20-20

TestAmerica Houston
6310 Rothway Street
Houston, TX 77040
Phone (713) 690-4444 Fax (713) 690-5646

Chain of Custody Record

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Client Information	Sampler: Ted Eubanks & J. Danna	Lab PM: Kudchadkar, Sachin G	Carrier Tracking No(s):	COC No: 600-54919-16097.1
Client Contact: John Danna	Phone: (281) 922-1054	E-Mail: sachin.kudchadkar@testamericainc.com		Page: Page 1 of 1
Company: ~~Brio Site Task Force~~ Dixie Oil Processors (DOP)				Job #:
Address: 11810 South Hill Drive	Due Date Requested:			
City: Houston	TAT Requested (days): 48-hr			
State, Zip: TX, 77089				
Phone: 281-922-1054(Tel) 281-922-1551(Fax)	PO #: Purchase Order not required			
Email: jdanna@briotrust.com	WO #:			
Project Name: ~~BRIO~~ Dixie Oil Processors (DOP)	Project #: 60000243			
Site:	SSOW#:			

Analysis Requested

Preservation Codes:
A - HCL, B - NaOH, C - Zn Acetate, D - Nitric Acid, E - NaHSO4, F - MeOH, G - Amchlor, H - Ascorbic Acid, I - Ice, J - DI Water, K - EDTA, L - EDA
M - Hexane, N - None, O - AsNaO2, P - Na2O4S, Q - Na2SO3, R - Na2S2O3, S - H2SO4, T - TSP Dodecahydrate, U - Acetone, V - MCAA, W - pH 4-5, Z - other (specify)
Other:

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=grab)	Matrix (W=water, S=solid, O=waste/oil, BT=Tissue, A=Air)	Field Filtered Sample (Yes or No)	Perform MS/MSD (Yes or No)	8260B_LL - DW List Water	8260B - DW List (soil)	Total Number of containers	Note:
			Preservation Code:							
DMW-47B	9/8/17	13:25	G	W			✓		3	
DSED-1	↓	13:58	↓	S				✓	1	
DSED-2		13:51		S				✓	1	
DSED-3		13:45		S				✓	1	
DSED-4C		12:35	C	S				✓	1	
Trip Blank	← Lab Prepared		→	W			✓			

600-153595 Chain of Custody

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

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month): ☐ Return To Client ☑ Disposal By Lab ☐ Archive For ____ Months

Deliverable Requested: I, II, III, IV, Other (specify) Level IV CLP-like data package

Special Instructions/QC Requirements: * 48-hr TAT *

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

Relinquished by	Date/Time	Company	Received by	Date/Time	Company
[signature]	9/9/17 1027	DOP	[signature]	9/9/17 1027	TA

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

TestAmerica Houston

Loc: 600
153595

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING

Sample Receipt C

Date/Time Received: _____

JOB NUMBER: _____

CLIENT: BMD '17SEP 9 10:27

UNPACKED BY: _____

CARRIER/DRIVER: Client

Custody Seal Present: ☒ YES ☐ NO

Number of Coolers Received: 1

Cooler ID	Temp Blank	Trip Blank	Observed Temp (°C)	Therm ID	Them CF	Corrected Temp (°C)
GW	Y / N	Y / N	0.7	549	-.3	0.4
~~BW~~	~~Y / N~~	~~Y / N~~	~~0.4~~			~~0.1~~
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				
	Y / N	Y / N				

CF = correction factor

Samples received on ice? ☒ YES ☐ NO

LABORATORY PRESERVATION OF SAMPLES REQUIRED: ☒ NO ☐ YES

Base samples are>pH 12: ☐ YES ☐ NO Acid preserved are<pH 2: ☐ YES ☐ NO

pH paper Lot #_____

VOA headspace acceptable (5-6mm): ☐ YES ☐ NO ☐ NA

	YES	NO
Did samples meet the laboratory's standard conditions of sample acceptability upon receipt?	☒	

COMMENTS:

9-9-17

HS-SA-WI-013 Rev. 3; 07/01/2014

Login Sample Receipt Checklist

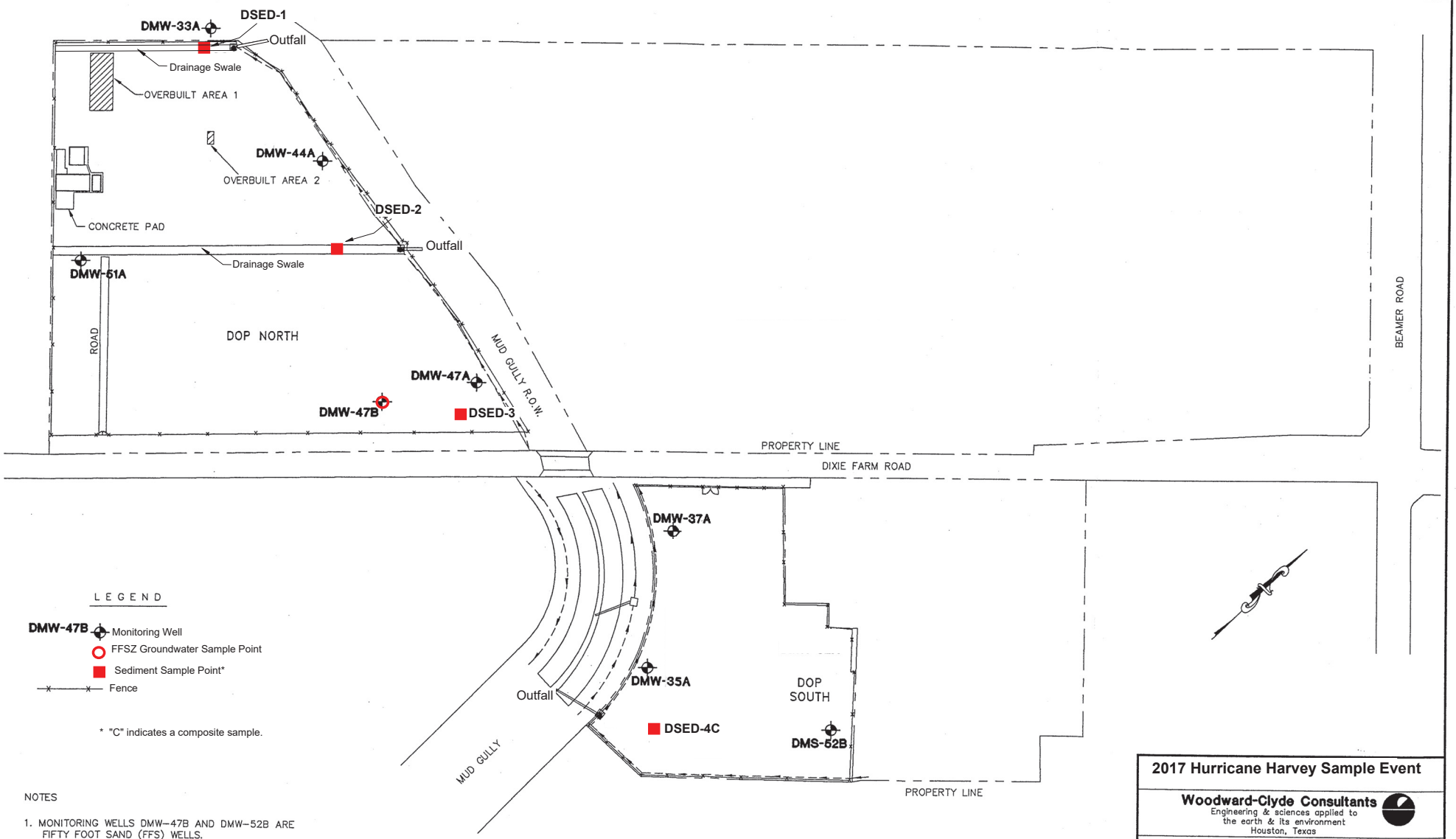
Client: Brio Site Task Force

Job Number: 600-153595-1

Login Number: 153595
List Number: 1
Creator: Crafton, Tommie S

List Source: TestAmerica Houston

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	N/A	Lab does not accept radioactive samples.
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	0.4
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 (excluding tests with immediate HTs)	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 <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	Check done at department level as required.



LEGEND

DMW-47B Monitoring Well

FFSZ Groundwater Sample Point

Sediment Sample Point*

Fence

* "C" indicates a composite sample.

NOTES

1. MONITORING WELLS DMW-47B AND DMW-52B ARE FIFTY FOOT SAND (FFS) WELLS.
2. MONITORING WELLS DMW-35A, DMW-37A, DMW-44A, DMW-47A, DMW-51A AND DMW-52A ARE NUMEROUS SAND CHANNELS ZONE (NSCZ) WELLS.

* Sediment sample locations may be adjusted in order to avoid sampling materials originating from offsite.

2017 Hurricane Harvey Sample Event

Woodward-Clyde Consultants
Engineering & sciences applied to the earth & its environment
Houston, Texas

DIXIE OIL PROCESSORS
HOUSTON, TEXAS

SCALE:	MADE BY: S.J.	DATE: 9/9/96	FILE NO.
NOTED	CHECKED BY:	DATE:	96T138

Rev 9/15/10
JAD

SITE PLAN

FIGURE