The results set forth herein are provided by SGS North America Inc.

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Automated Report

Technical Report for

Hydro-Environmental Technology, Inc.

8060.00 (RL) Indigo-Desoto Parish, LA

SGS Job Number: LA47639

Sampling Date: 09/11/18

Report to:

Hydro-Environmental Technology
P.O. BOX 60295
Lafayette, LA 70596
labdata@hetinc.us

ATTN: Stewart L Stover, Jr.

Total number of pages in report: 95

Test results contained within this data package meet the requirements of the National Environmental Laboratory Accreditation Program and/or state specific certification programs as applicable.

Ron Benjamin
Lab Director

Client Service contact: Ralph Frye 337-237-4775

Certifications: LDEQ(2048), LDHH(LA150012), AR(14-045-04), AZ(AZ0805), FL(E87657), IL(200082), KY(#31), NC(487), SC(73004001), NJ(LA007), TX(T104704186-15-7), WV(257)

Hydro-Environmental Technologies, Inc.
ATTN: Stewart L. Stover
P. O. Box 60295
Lafayette, LA 70596

RE: SGS Job #L47639
8060.00 Indigo-Desoto Parish, LA

The final report for SGS job number above has been edited to reflect changes to your data package. These edits have been incorporated into the revised report which is attached.

At the request of the client, the reporting limits have been adjusted to meet the standard method/or insrument reporting limits.

Our apologies for any inconvenience the above issue may have caused you. Please contact me at 337-237-4775 if I may be of further assistance in this matter, or if you have any further questions regarding this data report.

Sincerely,

Ralph Frye
Environment, Health and Safety
Project Manager
SGS North America Inc.-Scott

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SGS North America Inc.

Sample Summary

Hydro-Environmental Technology, Inc.

8060.00 (RL) Indigo-Desoto Parish, LA

Job No: LA47639

Sample Number	Collected Date	Time	By	Received	Matrix Code	Type	Client Sample ID
LA47639-1	09/11/18	11:50	KC/WP	09/12/18	AQ	Water	BAGLEY RIG SUPPLY WELL
LA47639-1F	09/11/18	11:50	KC/WP	09/12/18	AQ	Water Filtered	BAGLEY RIG SUPPLY WELL
LA47639-2	09/11/18	14:55	KC/WP	09/12/18	AQ	Water	ROM RIG SUPPLY WELL
LA47639-2F	09/11/18	14:55	KC/WP	09/12/18	AQ	Water Filtered	ROM RIG SUPPLY WELL
LA47639-3	09/11/18	16:00	KC/WP	09/12/18	AQ	Water	DERBONNE RELIEF WELL
LA47639-3F	09/11/18	16:00	KC/WP	09/12/18	AQ	Water Filtered	DERBONNE RELIEF WELL
LA47639-4	09/11/18	11:05	KC/WP	09/12/18	AQ	Field Blank Water	FIELD BLANK
LA47639-5	09/11/18	06:45	KC/WP	09/12/18	AQ	Trip Blank Water	TRIP BLANK

Sample Results

Report of Analysis

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2I038660.D	1	09/14/18 14:55	AR	n/a	n/a	V2I1790
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		84-124%
2037-26-5	Toluene-D8	99%		83-115%
460-00-4	4-Bromofluorobenzene	94%		89-111%

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N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0024723.D	1	09/17/18 14:26	PC	09/16/18 07:00	OP12269	EA638
Run #2							

	Initial Volume	Final Volume
Run #1	113 ml	1.0 ml
Run #2		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	0.0044	mg/l	
120-83-2	2,4-Dichlorophenol	ND	0.0044	mg/l	
105-67-9	2,4-Dimethylphenol	ND	0.0044	mg/l	
51-28-5	2,4-Dinitrophenol	ND	0.018	mg/l	
100-02-7	4-Nitrophenol	ND	0.022	mg/l	
87-86-5	Pentachlorophenol	ND	0.00088	mg/l	
108-95-2	Phenol	ND	0.0044	mg/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	0.0044	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	0.0044	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	0.0044	mg/l	
83-32-9	Acenaphthene	ND	0.00018	mg/l	
208-96-8	Acenaphthylene	ND	0.00018	mg/l	
62-53-3	Aniline	ND	0.0044	mg/l	
120-12-7	Anthracene	ND	0.00018	mg/l	
56-55-3	Benzo(a)anthracene	ND	0.00018	mg/l	
50-32-8	Benzo(a)pyrene	ND	0.00018	mg/l	
205-99-2	Benzo(b)fluoranthene	ND	0.00018	mg/l	
207-08-9	Benzo(k)fluoranthene	ND	0.00018	mg/l	
92-52-4	1,1'-Biphenyl	ND	0.0088	mg/l	
85-68-7	Butyl Benzyl Phthalate	ND	0.0044	mg/l	
106-47-8	4-Chloroaniline	ND	0.0044	mg/l	
111-44-4	bis(2-Chloroethyl)ether	ND	0.0044	mg/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	0.0044	mg/l	
91-58-7	2-Chloronaphthalene	ND	0.0044	mg/l	
218-01-9	Chrysene	ND	0.00018	mg/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.00018	mg/l	
132-64-9	Dibenzofuran	ND	0.0044	mg/l	
91-94-1	3,3'-Dichlorobenzidine [a]	ND	0.0088	mg/l	
84-66-2	Diethyl Phthalate	ND	0.0044	mg/l	
131-11-3	Dimethyl Phthalate	ND	0.0044	mg/l	
117-84-0	Di-n-octyl Phthalate	ND	0.0044	mg/l	
99-65-0	1,3-Dinitrobenzene	ND	0.0044	mg/l	

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SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
121-14-2	2,4-Dinitrotoluene	ND	0.0044	mg/l	
606-20-2	2,6-Dinitrotoluene	ND	0.0044	mg/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.0044	mg/l	
206-44-0	Fluoranthene	ND	0.00018	mg/l	
86-73-7	Fluorene	ND	0.00018	mg/l	
118-74-1	Hexachlorobenzene	ND	0.00088	mg/l	
87-68-3	Hexachlorobutadiene	ND	0.00044	mg/l	
77-47-4	Hexachlorocyclopentadiene	ND	0.0088	mg/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.00018	mg/l	
78-59-1	Isophorone	ND	0.0044	mg/l	
91-57-6	2-Methylnaphthalene	ND	0.00018	mg/l	
91-20-3	Naphthalene	ND	0.00018	mg/l	
88-74-4	2-Nitroaniline	ND	0.0044	mg/l	
99-09-2	3-Nitroaniline	ND	0.0044	mg/l	
100-01-6	4-Nitroaniline	ND	0.0044	mg/l	
98-95-3	Nitrobenzene	ND	0.00088	mg/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.0044	mg/l	
86-30-6	N-Nitrosodiphenylamine	ND	0.0044	mg/l	
85-01-8	Phenanthrene	ND	0.00018	mg/l	
129-00-0	Pyrene	ND	0.00018	mg/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	0.00088	mg/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0044	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	61%		23-85%
4165-62-2	Phenol-d5	47%		10-69%
118-79-6	2,4,6-Tribromophenol	93%		48-138%
4165-60-0	Nitrobenzene-d5	78%		51-128%
321-60-8	2-Fluorobiphenyl	73%		55-122%
1718-51-0	Terphenyl-d14	88%		43-138%

(a) Associated CCV outside of control limits low.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC380020.D	1	09/14/18 23:52	MB	n/a	n/a	GLC1825
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	96%		70-130%
615-59-8	2,5-Dibromotoluene	99%		70-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LK113195.D	1	09/14/18 04:27	DF	09/13/18 15:00	OP12251	GLK726
Run #2							

	Initial Volume	Final Volume
Run #1	34.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.000020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
348-51-6	1-Chloro-2-fluorobenzene	88%		55-149%
348-51-6	1-Chloro-2-fluorobenzene	93%		55-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	MADEP EPH REV 1.1 SW846 3511	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0050929.D	1	09/24/18 22:21	JT	09/20/18 08:00	OP12311	GLB1613
Run #2	Y0050929.D	1	09/24/18 22:22	JT	09/20/18 08:00	OP12311	GLB1614

	Initial Volume	Final Volume
Run #1	54.7 ml	4.0 ml
Run #2	54.7 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND [a]	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		73%	40-140%
84-15-1	o-Terphenyl	78%		40-140%
321-60-8	2-Fluorobiphenyl	88%		40-140%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	1.43	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0475	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	2.17	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	09/14/18	09/14/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	1.19	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	138	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.151	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13369
(2) Instrument QC Batch: MA13375
(3) Prep QC Batch: MP12723
(4) Prep QC Batch: MP12724

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate [a]	75.0	5.0	mg/l	1	09/14/18 17:00	ATX	SM18 2320B
Alkalinity, Carbonate [a]	< 5.0	5.0	mg/l	1	09/14/18 17:00	ATX	SM18 2320B
Alkalinity, Total as CaCO3 [a]	75.0	5.0	mg/l	1	09/14/18 17:00	ATX	SM 2320B-2011
Bromide [a]	< 0.50	0.50	mg/l	1	09/17/18 15:27	ATX	SW846 9056A
Chloride [a]	15.1	0.50	mg/l	1	09/17/18 15:27	ATX	SW846 9056A
Silica, Dissolved [a]	9.8	0.70	mg/l	10	09/15/18	ATX	SM4500SIO2 C-2011
Solids, Total Dissolved [a]	338	10	mg/l	1	09/14/18	ATX	SM 2540C-2011
Specific Conductivity [b]	572	1.0	umhos/cm	1	09/17/18 18:00	ATX	EPA 120.1
Sulfate [a]	1.4	0.50	mg/l	1	09/17/18 15:27	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.
(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	BAGLEY RIG SUPPLY WELL		
Lab Sample ID:	LA47639-1F	**Date Sampled:**	09/11/18
Matrix:	AQ - Water Filtered	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0403	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	8.54	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	09/14/18	09/14/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	1.03	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	149	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.156	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13369
(2) Instrument QC Batch: MA13375
(3) Prep QC Batch: MP12723
(4) Prep QC Batch: MP12724

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2I038662.D	1	09/14/18 15:23	AR	n/a	n/a	V2I1790
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		84-124%
2037-26-5	Toluene-D8	99%		83-115%
460-00-4	4-Bromofluorobenzene	95%		89-111%

ND = Not detected
RL = Reporting Limit
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J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0024724.D	1	09/17/18 14:50	PC	09/16/18 07:00	OP12269	EA638
Run #2							

	Initial Volume	Final Volume
Run #1	113 ml	1.0 ml
Run #2		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	0.0044	mg/l	
120-83-2	2,4-Dichlorophenol	ND	0.0044	mg/l	
105-67-9	2,4-Dimethylphenol	ND	0.0044	mg/l	
51-28-5	2,4-Dinitrophenol	ND	0.018	mg/l	
100-02-7	4-Nitrophenol	ND	0.022	mg/l	
87-86-5	Pentachlorophenol	ND	0.00088	mg/l	
108-95-2	Phenol	ND	0.0044	mg/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	0.0044	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	0.0044	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	0.0044	mg/l	
83-32-9	Acenaphthene	ND	0.00018	mg/l	
208-96-8	Acenaphthylene	ND	0.00018	mg/l	
62-53-3	Aniline	ND	0.0044	mg/l	
120-12-7	Anthracene	ND	0.00018	mg/l	
56-55-3	Benzo(a)anthracene	ND	0.00018	mg/l	
50-32-8	Benzo(a)pyrene	ND	0.00018	mg/l	
205-99-2	Benzo(b)fluoranthene	ND	0.00018	mg/l	
207-08-9	Benzo(k)fluoranthene	ND	0.00018	mg/l	
92-52-4	1,1'-Biphenyl	ND	0.0088	mg/l	
85-68-7	Butyl Benzyl Phthalate	ND	0.0044	mg/l	
106-47-8	4-Chloroaniline	ND	0.0044	mg/l	
111-44-4	bis(2-Chloroethyl)ether	ND	0.0044	mg/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	0.0044	mg/l	
91-58-7	2-Chloronaphthalene	ND	0.0044	mg/l	
218-01-9	Chrysene	ND	0.00018	mg/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.00018	mg/l	
132-64-9	Dibenzofuran	ND	0.0044	mg/l	
91-94-1	3,3'-Dichlorobenzidine [a]	ND	0.0088	mg/l	
84-66-2	Diethyl Phthalate	ND	0.0044	mg/l	
131-11-3	Dimethyl Phthalate	ND	0.0044	mg/l	
117-84-0	Di-n-octyl Phthalate	ND	0.0044	mg/l	
99-65-0	1,3-Dinitrobenzene	ND	0.0044	mg/l	

ND = Not detected
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E = Indicates value exceeds calibration range
J = Indicates an estimated value
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N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
121-14-2	2,4-Dinitrotoluene	ND	0.0044	mg/l	
606-20-2	2,6-Dinitrotoluene	ND	0.0044	mg/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.0044	mg/l	
206-44-0	Fluoranthene	ND	0.00018	mg/l	
86-73-7	Fluorene	ND	0.00018	mg/l	
118-74-1	Hexachlorobenzene	ND	0.00088	mg/l	
87-68-3	Hexachlorobutadiene	ND	0.00044	mg/l	
77-47-4	Hexachlorocyclopentadiene	ND	0.0088	mg/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.00018	mg/l	
78-59-1	Isophorone	ND	0.0044	mg/l	
91-57-6	2-Methylnaphthalene	ND	0.00018	mg/l	
91-20-3	Naphthalene	ND	0.00018	mg/l	
88-74-4	2-Nitroaniline	ND	0.0044	mg/l	
99-09-2	3-Nitroaniline	ND	0.0044	mg/l	
100-01-6	4-Nitroaniline	ND	0.0044	mg/l	
98-95-3	Nitrobenzene	ND	0.00088	mg/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.0044	mg/l	
86-30-6	N-Nitrosodiphenylamine	ND	0.0044	mg/l	
85-01-8	Phenanthrene	ND	0.00018	mg/l	
129-00-0	Pyrene	ND	0.00018	mg/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	0.00088	mg/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0044	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	60%		23-85%
4165-62-2	Phenol-d5	45%		10-69%
118-79-6	2,4,6-Tribromophenol	92%		48-138%
4165-60-0	Nitrobenzene-d5	79%		51-128%
321-60-8	2-Fluorobiphenyl	75%		55-122%
1718-51-0	Terphenyl-d14	87%		43-138%

(a) Associated CCV outside of control limits low.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC380021.D	1	09/15/18 00:36	MB	n/a	n/a	GLC1825
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	98%		70-130%
615-59-8	2,5-Dibromotoluene	103%		70-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LK113196.D	1	09/14/18 04:44	DF	09/13/18 15:00	OP12251	GLK726
Run #2							

	Initial Volume	Final Volume
Run #1	34.9 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.000020	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
348-51-6	1-Chloro-2-fluorobenzene	93%		55-149%
348-51-6	1-Chloro-2-fluorobenzene	99%		55-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	MADEP EPH REV 1.1 SW846 3511	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0050930.D	1	09/24/18 22:44	JT	09/20/18 08:00	OP12311	GLB1613
Run #2	Y0050930.D	1	09/24/18 22:45	JT	09/20/18 08:00	OP12311	GLB1614

	Initial Volume	Final Volume
Run #1	53.7 ml	4.0 ml
Run #2	53.7 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	ND [a]	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		70%	40-140%
84-15-1	o-Terphenyl	79%		40-140%
321-60-8	2-Fluorobiphenyl	86%		40-140%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0152	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	09/14/18	09/14/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	210	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.0412	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13369
(2) Instrument QC Batch: MA13375
(3) Prep QC Batch: MP12723
(4) Prep QC Batch: MP12724

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate [a]	296	5.0	mg/l	1	09/14/18 17:00	ATX	SM18 2320B
Alkalinity, Carbonate [a]	13.9	5.0	mg/l	1	09/14/18 17:00	ATX	SM18 2320B
Alkalinity, Total as CaCO3 [a]	310	5.0	mg/l	1	09/14/18 17:00	ATX	SM 2320B-2011
Bromide [a]	0.54	0.50	mg/l	1	09/17/18 15:44	ATX	SW846 9056A
Chloride [a]	41.5	2.5	mg/l	5	09/17/18 19:07	ATX	SW846 9056A
Silica, Dissolved [a]	7.8	0.35	mg/l	5	09/15/18	ATX	SM4500SIO2 C-2011
Solids, Total Dissolved [a]	486	10	mg/l	1	09/14/18	ATX	SM 2540C-2011
Specific Conductivity [b]	844	1.0	umhos/cm	1	09/17/18 18:00	ATX	EPA 120.1
Sulfate [a]	< 0.50	0.50	mg/l	1	09/17/18 15:44	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.
(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	ROM RIG SUPPLY WELL		
Lab Sample ID:	LA47639-2F	**Date Sampled:**	09/11/18
Matrix:	AQ - Water Filtered	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0106	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	09/14/18	09/14/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	212	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.0402	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13369
(2) Instrument QC Batch: MA13375
(3) Prep QC Batch: MP12723
(4) Prep QC Batch: MP12724

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2I038664.D	1	09/14/18 15:51	AR	n/a	n/a	V2I1790
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	99%		84-124%
2037-26-5	Toluene-D8	99%		83-115%
460-00-4	4-Bromofluorobenzene	94%		89-111%

ND = Not detected
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B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	A0024725.D	1	09/17/18 15:15	PC	09/16/18 07:00	OP12269	EA638
Run #2							

	Initial Volume	Final Volume
Run #1	113 ml	1.0 ml
Run #2		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	0.0044	mg/l	
120-83-2	2,4-Dichlorophenol	ND	0.0044	mg/l	
105-67-9	2,4-Dimethylphenol	ND	0.0044	mg/l	
51-28-5	2,4-Dinitrophenol	ND	0.018	mg/l	
100-02-7	4-Nitrophenol	ND	0.022	mg/l	
87-86-5	Pentachlorophenol	ND	0.00088	mg/l	
108-95-2	Phenol	ND	0.0044	mg/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	0.0044	mg/l	
95-95-4	2,4,5-Trichlorophenol	ND	0.0044	mg/l	
88-06-2	2,4,6-Trichlorophenol	ND	0.0044	mg/l	
83-32-9	Acenaphthene	ND	0.00018	mg/l	
208-96-8	Acenaphthylene	ND	0.00018	mg/l	
62-53-3	Aniline	ND	0.0044	mg/l	
120-12-7	Anthracene	ND	0.00018	mg/l	
56-55-3	Benzo(a)anthracene	ND	0.00018	mg/l	
50-32-8	Benzo(a)pyrene	ND	0.00018	mg/l	
205-99-2	Benzo(b)fluoranthene	ND	0.00018	mg/l	
207-08-9	Benzo(k)fluoranthene	ND	0.00018	mg/l	
92-52-4	1,1'-Biphenyl	ND	0.0088	mg/l	
85-68-7	Butyl Benzyl Phthalate	ND	0.0044	mg/l	
106-47-8	4-Chloroaniline	ND	0.0044	mg/l	
111-44-4	bis(2-Chloroethyl)ether	ND	0.0044	mg/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	0.0044	mg/l	
91-58-7	2-Chloronaphthalene	ND	0.0044	mg/l	
218-01-9	Chrysene	ND	0.00018	mg/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.00018	mg/l	
132-64-9	Dibenzofuran	ND	0.0044	mg/l	
91-94-1	3,3'-Dichlorobenzidine [a]	ND	0.0088	mg/l	
84-66-2	Diethyl Phthalate	ND	0.0044	mg/l	
131-11-3	Dimethyl Phthalate	ND	0.0044	mg/l	
117-84-0	Di-n-octyl Phthalate	ND	0.0044	mg/l	
99-65-0	1,3-Dinitrobenzene	ND	0.0044	mg/l	

ND = Not detected
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J = Indicates an estimated value
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N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8270D SW846 3510C	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

ABN RECAP LIST

CAS No.	Compound	Result	RL	Units	Q
121-14-2	2,4-Dinitrotoluene	ND	0.0044	mg/l	
606-20-2	2,6-Dinitrotoluene	ND	0.0044	mg/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	0.0044	mg/l	
206-44-0	Fluoranthene	ND	0.00018	mg/l	
86-73-7	Fluorene	ND	0.00018	mg/l	
118-74-1	Hexachlorobenzene	ND	0.00088	mg/l	
87-68-3	Hexachlorobutadiene	ND	0.00044	mg/l	
77-47-4	Hexachlorocyclopentadiene	ND	0.0088	mg/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.00018	mg/l	
78-59-1	Isophorone	ND	0.0044	mg/l	
91-57-6	2-Methylnaphthalene	ND	0.00018	mg/l	
91-20-3	Naphthalene	ND	0.00018	mg/l	
88-74-4	2-Nitroaniline	ND	0.0044	mg/l	
99-09-2	3-Nitroaniline	ND	0.0044	mg/l	
100-01-6	4-Nitroaniline	ND	0.0044	mg/l	
98-95-3	Nitrobenzene	ND	0.00088	mg/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	0.0044	mg/l	
86-30-6	N-Nitrosodiphenylamine	ND	0.0044	mg/l	
85-01-8	Phenanthrene	ND	0.00018	mg/l	
129-00-0	Pyrene	ND	0.00018	mg/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	0.00088	mg/l	
120-82-1	1,2,4-Trichlorobenzene	ND	0.0044	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
367-12-4	2-Fluorophenol	59%		23-85%
4165-62-2	Phenol-d5	45%		10-69%
118-79-6	2,4,6-Tribromophenol	88%		48-138%
4165-60-0	Nitrobenzene-d5	77%		51-128%
321-60-8	2-Fluorobiphenyl	73%		55-122%
1718-51-0	Terphenyl-d14	86%		43-138%

(a) Associated CCV outside of control limits low.

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC380022.D	1	09/15/18 01:20	MB	n/a	n/a	GLC1825
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	95%		70-130%
615-59-8	2,5-Dibromotoluene	98%		70-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	SW846 8011 SW846 8011	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LK113197.D	1	09/14/18 05:01	DF	09/13/18 15:00	OP12251	GLK726
Run #2							

	Initial Volume	Final Volume
Run #1	36.0 ml	2.0 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.000019	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
348-51-6	1-Chloro-2-fluorobenzene	96%		55-149%
348-51-6	1-Chloro-2-fluorobenzene	101%		55-149%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
Method:	MADEP EPH REV 1.1 SW846 3511	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	X0050931.D	1	09/24/18 23:07	JT	09/20/18 08:00	OP12311	GLB1613
Run #2	Y0050931.D	1	09/24/18 23:08	JT	09/20/18 08:00	OP12311	GLB1614

	Initial Volume	Final Volume
Run #1	53.4 ml	4.0 ml
Run #2	53.4 ml	4.0 ml

Louisiana EPH Ranges

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C12-C16 (Unadj.)	ND [a]	0.14	mg/l	
	Aliphatics > C16-C35 (Unadj.)	0.435 [a]	0.14	mg/l	
	Aromatics > C10-C12 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C12-C16 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C16-C21 (Unadj.)	ND	0.14	mg/l	
	Aromatics > C21-C35 (Unadj.)	ND	0.14	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
3386-33-2	1-Chlorooctadecane		74%	40-140%
84-15-1	o-Terphenyl	80%		40-140%
321-60-8	2-Fluorobiphenyl	89%		40-140%

(a) Result is from Run# 2

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

Total Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	2.67	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0455	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	09/14/18	09/14/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	1.00	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	233	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.0547	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13369
(2) Instrument QC Batch: MA13375
(3) Prep QC Batch: MP12723
(4) Prep QC Batch: MP12724

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3	**Date Sampled:**	09/11/18
Matrix:	AQ - Water	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Alkalinity, Bicarbonate [a]	326	5.0	mg/l	1	09/14/18 17:00	ATX	SM18 2320B
Alkalinity, Carbonate [a]	14.0	5.0	mg/l	1	09/14/18 17:00	ATX	SM18 2320B
Alkalinity, Total as CaCO3 [a]	340	5.0	mg/l	1	09/14/18 17:00	ATX	SM 2320B-2011
Bromide [a]	< 0.50	0.50	mg/l	1	09/17/18 16:34	ATX	SW846 9056A
Chloride [a]	30.8	1.0	mg/l	2	09/17/18 19:57	ATX	SW846 9056A
Silica, Dissolved [a]	8.4	0.35	mg/l	5	09/15/18	ATX	SM4500SIO2 C-2011
Solids, Total Dissolved [a]	526	10	mg/l	1	09/14/18	ATX	SM 2540C-2011
Specific Conductivity [b]	895	1.0	umhos/cm	1	09/17/18 18:00	ATX	EPA 120.1
Sulfate [a]	0.87	0.50	mg/l	1	09/17/18 16:34	ATX	SW846 9056A

(a) Analysis performed at SGS Houston, TX.
(b) Conductivity results corrected to 25 degrees Celsius. Analysis performed at SGS Houston, TX.

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	DERBONNE RELIEF WELL		
Lab Sample ID:	LA47639-3F	**Date Sampled:**	09/11/18
Matrix:	AQ - Water Filtered	**Date Received:**	09/12/18
		Percent Solids:	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

Dissolved Metals Analysis

Analyte	Result	RL	Units	DF	Prep	Analyzed	By	Method	Prep Method
Aluminum	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Arsenic	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Barium	0.0317	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Cadmium	< 0.0050	0.0050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Calcium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Chromium	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Iron	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Lead	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Magnesium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Manganese	< 0.020	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Mercury	< 0.00020	0.00020	mg/l	1	09/14/18	09/14/18	SA	SW846 7470A [2]	SW846 7470A [4]
Potassium	< 1.0	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Selenium	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Silver	< 0.010	0.010	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Sodium	261	1.0	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Strontium	0.0510	0.020	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]
Zinc	< 0.050	0.050	mg/l	10	09/13/18	09/14/18	RT	SW846 6020A [1]	SW846 3010A [3]

(1) Instrument QC Batch: MA13369
(2) Instrument QC Batch: MA13375
(3) Prep QC Batch: MP12723
(4) Prep QC Batch: MP12724

RL = Reporting Limit

SGS North America Inc.

Report of Analysis

Client Sample ID:	FIELD BLANK		
Lab Sample ID:	LA47639-4	**Date Sampled:**	09/11/18
Matrix:	AQ - Field Blank Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2I038654.D	1	09/14/18 13:31	AR	n/a	n/a	V2I1790
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	ND	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	FIELD BLANK		
Lab Sample ID:	LA47639-4	**Date Sampled:**	09/11/18
Matrix:	AQ - Field Blank Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	98%		84-124%
2037-26-5	Toluene-D8	99%		83-115%
460-00-4	4-Bromofluorobenzene	94%		89-111%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	FIELD BLANK		
Lab Sample ID:	LA47639-4	**Date Sampled:**	09/11/18
Matrix:	AQ - Field Blank Water	**Date Received:**	09/12/18
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC380023.D	1	09/15/18 02:03	MB	n/a	n/a	GLC1825
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	98%		70-130%
615-59-8	2,5-Dibromotoluene	101%		70-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	LA47639-5	**Date Sampled:**	09/11/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	2I038652.D	1	09/14/18 13:03	AR	n/a	n/a	V2I1790
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	ND	0.050	mg/l	
71-43-2	Benzene	ND	0.0050	mg/l	
75-27-4	Bromodichloromethane	ND	0.0010	mg/l	
75-25-2	Bromoform	ND	0.0010	mg/l	
75-15-0	Carbon Disulfide	ND	0.0010	mg/l	
56-23-5	Carbon Tetrachloride	ND	0.0010	mg/l	
108-90-7	Chlorobenzene	ND	0.0010	mg/l	
75-00-3	Chloroethane	ND	0.0010	mg/l	
67-66-3	Chloroform	ND	0.0010	mg/l	
124-48-1	Dibromochloromethane	ND	0.0010	mg/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.0010	mg/l	
541-73-1	m-Dichlorobenzene	ND	0.0010	mg/l	
95-50-1	o-Dichlorobenzene	ND	0.0010	mg/l	
106-46-7	p-Dichlorobenzene	ND	0.0010	mg/l	
75-34-3	1,1-Dichloroethane	ND	0.0010	mg/l	
107-06-2	1,2-Dichloroethane	ND	0.0010	mg/l	
75-35-4	1,1-Dichloroethylene	ND	0.0010	mg/l	
156-59-2	cis-1,2-Dichloroethylene	ND	0.0010	mg/l	
156-60-5	trans-1,2-Dichloroethylene	ND	0.0010	mg/l	
540-59-0	1,2-Dichloroethene (total)	ND	0.0010	mg/l	
78-87-5	1,2-Dichloropropane	ND	0.0010	mg/l	
10061-01-5	cis-1,3-Dichloropropene	ND	0.0010	mg/l	
10061-02-6	trans-1,3-Dichloropropene	ND	0.0010	mg/l	
542-75-6	1,3-Dichloropropene (total)	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0050	mg/l	
67-72-1	Hexachloroethane	ND	0.0010	mg/l	
78-83-1	Isobutyl Alcohol	ND	0.10	mg/l	
74-83-9	Methyl Bromide	ND	0.0010	mg/l	
74-87-3	Methyl Chloride	ND	0.0010	mg/l	
75-09-2	Methylene Chloride	0.0019	0.0010	mg/l	
78-93-3	Methyl Ethyl Ketone	ND	0.013	mg/l	
108-10-1	4-Methyl-2-pentanone	ND	0.013	mg/l	

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	LA47639-5	**Date Sampled:**	09/11/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/12/18
Method:	SW846 8260B	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

VOA RECAP List

CAS No.	Compound	Result	RL	Units	Q
1634-04-4	Methyl Tert Butyl Ether	ND	0.0050	mg/l	
100-42-5	Styrene	ND	0.0010	mg/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	0.0010	mg/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.00050	mg/l	
127-18-4	Tetrachloroethylene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0050	mg/l	
71-55-6	1,1,1-Trichloroethane	ND	0.0010	mg/l	
79-00-5	1,1,2-Trichloroethane	ND	0.0010	mg/l	
79-01-6	Trichloroethylene	ND	0.0010	mg/l	
75-69-4	Trichlorofluoromethane	ND	0.0010	mg/l	
75-01-4	Vinyl Chloride	ND	0.0010	mg/l	
	m,p-Xylene	ND	0.0050	mg/l	
95-47-6	o-Xylene	ND	0.0050	mg/l	
1330-20-7	Xylene (total)	ND	0.0050	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
17060-07-0	1,2-Dichloroethane-D4	93%		84-124%
2037-26-5	Toluene-D8	99%		83-115%
460-00-4	4-Bromofluorobenzene	95%		89-111%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

SGS North America Inc.

Report of Analysis

Client Sample ID:	TRIP BLANK		
Lab Sample ID:	LA47639-5	**Date Sampled:**	09/11/18
Matrix:	AQ - Trip Blank Water	**Date Received:**	09/12/18
Method:	MADEP VPH REV 1.1	**Percent Solids:**	n/a
Project:	8060.00 (RL) Indigo-Desoto Parish, LA		

	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LC380017.D	1	09/14/18 21:41	MB	n/a	n/a	GLC1825
Run #2							

	Purge Volume
Run #1	5.0 ml
Run #2	

Volatile Petroleum Hydrocarbons (VPH)

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	0.15	mg/l	
	Aliphatics > C8-C10 (Unadj.)	ND	0.15	mg/l	
	Aromatics > C8-C10 (Unadj.)	ND	0.15	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
615-59-8	2,5-Dibromotoluene	97%		70-130%
615-59-8	2,5-Dibromotoluene	106%		70-130%

ND = Not detected
RL = Reporting Limit
E = Indicates value exceeds calibration range
J = Indicates an estimated value
B = Indicates analyte found in associated method blank
N = Indicates presumptive evidence of a compound

Misc. Forms

Custody Documents and Other Forms

Includes the following where applicable:

- Chain of Custody

HYDRO-ENVIRONMENTAL TECHNOLOGY, INC.
Environmental Consultants
P.O. Box 60295
Lafayette, LA 70596-0295
Phone (337) 261-1963 FAX (337) 261-1953

LA47639

SAMPLE CHAIN-OF-CUSTODY RECORD

Laboratory:	SGS Lafayette		
Project Name:	Indigo	*Collected By:*	KC/WP
Project Number:	8060.00	*Company:*	Hydro-Environmental Technology, Inc.
Project Location:	DeSoto Parish, Louisiana	*Date:*	9/11/2018

	Sample I.D.	Type	Date/Time Sampled		Containers	Analysis Requested/Method	Comments	
1	Bagley Rig Supply Well	AQ	9/11/2018	11:50	(8) 40mL Glass HCl (3) 60mL Amber Glass HCl (2) 4oz Amber Glass (1) 500mL Plastic (2) 250mL Plastic HNO3	VOC 8260, SVOC 8270, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total Metals*, Dissolved Metals*	4°C Field filtered: Dissolved metals	16
2	ROM Rig Supply Well	AQ	9/11/2018	14:55	(8) 40mL Glass HCl (3) 60mL Amber Glass HCl (2) 4oz Amber Glass (1) 500mL Plastic (2) 250mL Plastic HNO3	VOC 8260, SVOC 8270, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total Metals*, Dissolved Metals*	4°C Field filtered: Dissolved metals	16
3	Derbonne Relief Well	AQ	9/11/2018	16:00	(8) 40mL Glass HCl (3) 60mL Amber Glass HCl (2) 4oz Amber Glass (1) 500mL Plastic (2) 250mL Plastic HNO3	VOC 8260, SVOC 8270, VPH, EPH, Chlorides, TDS, Specific Conductance, Cations*, Anions*, Total Metals*, Dissolved Metals*	4°C Field filtered: Dissolved metals	16
4	Field Blank	AQ	9/11/2018	11:05	(6) 40mL Glass HCl	VOC 8260, VPH	4°C	6
5	Trip Blank	AQ	9/11/2018	6:45	(6) 40mL Glass HCl	VOC 8260, VPH	4°C	6

*Metals: arsenic, barium, cadmium, chromium, lead, mercury, selenium, silver, strontium, zinc
*Cations: aluminum, calcium, iron, magnesium, manganese, potassium, sodium
*Anions: bromide, sulfate, carbonate alkalinity, bicarbonate alkalinity

Relinquished By: Mindy A Bright	Relinquished By: Derek L. Brainard
Date/Time: 09-12-2018 / 1530	Date/Time: 09/12/2018 1530
Relinquished By: Derek L. Brainard	Relinquished By:
Date/Time: 9/12/2018 1545	Date/Time: 09/12/18 1545
Analysis Due: Verbal:	Written:

(SON rush already (24 hour) MS-4 (W) MS-9 (11BY), RTC-3 (1B)), (a), (3W2) Red, (3W7) Red

LA47639: Chain of Custody
Page 1 of 2

SGS Sample Receipt Summary

Job Number: LA47639 **Client:** HYDRO **Project:** INDIGO

Date / Time Received: 9/12/2018 3:45:00 PM **Delivery Method:** Client **Airbill #'s:**

Cooler Temps (Initial/Adjusted): #1: (2.4/2.4);

Cooler Security	Y	N		Y	N
1. Custody Seals Present:	☑	☐	3. COC Present:	☑	☐
2. Custody Seals Intact:	☑	☐	4. Smpl Dates/Time OK	☑	☐

Cooler Temperature	Y	N
1. Temp criteria achieved:	☑	☐
2. Thermometer ID:	DV441;	
3. Cooler media:	Ice (direct contact)	
4. No. Coolers:	1	

Quality Control _Preservation	Y	N	N/A
1. Trip Blank present / cooler:	☑	☐	☐
2. Trip Blank listed on COC:	☑	☐	☐
3. Samples preserved properly:	☑	☐	
4. VOCs headspace free:	☑	☐	☐

Sample Integrity - Documentation	Y	N
1. Sample labels present on bottles:	☑	☐
2. Container labeling complete:	☑	☐
3. Sample container label / COC agree:	☑	☐

Sample Integrity - Condition	Y	N
1. Sample recvd within HT:	☑	☐
2. All containers accounted for:	☑	☐
3. Condition of sample:	Intact	

Sample Integrity - Instructions	Y	N	N/A
1. Analysis requested is clear:	☑	☐	
2. Bottles received for unspecified tests	☐	☑	
3. Sufficient volume recvd for analysis:	☑	☐	
4. Compositing instructions clear:	☐	☐	☑
5. Filtering instructions clear:	☐	☐	☑

Comments

MS Volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2I1790-MB2	2I038646.D	1	09/14/18	AR	n/a	n/a	V2I1790

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	Result	RL	Units	Q
67-64-1	Acetone	1.4	50	ug/l	J
71-43-2	Benzene	ND	1.0	ug/l	
75-27-4	Bromodichloromethane	ND	1.0	ug/l	
75-25-2	Bromoform	ND	1.0	ug/l	
75-15-0	Carbon Disulfide	ND	1.0	ug/l	
56-23-5	Carbon Tetrachloride	ND	1.0	ug/l	
108-90-7	Chlorobenzene	ND	1.0	ug/l	
75-00-3	Chloroethane	ND	1.0	ug/l	
67-66-3	Chloroform	ND	1.0	ug/l	
124-48-1	Dibromochloromethane	ND	1.0	ug/l	
96-12-8	1,2-Dibromo-3-chloropropane	ND	1.0	ug/l	
541-73-1	m-Dichlorobenzene	ND	1.0	ug/l	
95-50-1	o-Dichlorobenzene	ND	1.0	ug/l	
106-46-7	p-Dichlorobenzene	ND	1.0	ug/l	
75-34-3	1,1-Dichloroethane	ND	1.0	ug/l	
107-06-2	1,2-Dichloroethane	ND	1.0	ug/l	
75-35-4	1,1-Dichloroethylene	ND	1.0	ug/l	
156-59-2	cis-1,2-Dichloroethylene	ND	1.0	ug/l	
156-60-5	trans-1,2-Dichloroethylene	ND	1.0	ug/l	
540-59-0	1,2-Dichloroethene (total)	ND	1.0	ug/l	
78-87-5	1,2-Dichloropropane	ND	1.0	ug/l	
10061-01-5	cis-1,3-Dichloropropene	ND	1.0	ug/l	
10061-02-6	trans-1,3-Dichloropropene	ND	1.0	ug/l	
542-75-6	1,3-Dichloropropene (total)	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
67-72-1	Hexachloroethane	ND	1.0	ug/l	
78-83-1	Isobutyl Alcohol	ND	100	ug/l	
74-83-9	Methyl Bromide	0.78	1.0	ug/l	J
74-87-3	Methyl Chloride	ND	1.0	ug/l	
75-09-2	Methylene Chloride	ND	1.0	ug/l	
78-93-3	Methyl Ethyl Ketone	ND	13	ug/l	
108-10-1	4-Methyl-2-pentanone	ND	13	ug/l	
1634-04-4	Methyl Tert Butyl Ether	ND	1.0	ug/l	
100-42-5	Styrene	ND	1.0	ug/l	
630-20-6	1,1,1,2-Tetrachloroethane	ND	1.0	ug/l	
79-34-5	1,1,2,2-Tetrachloroethane	ND	0.50	ug/l	

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2I1790-MB2	2I038646.D	1	09/14/18	AR	n/a	n/a	V2I1790

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	Result	RL	Units	Q
127-18-4	Tetrachloroethylene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
71-55-6	1,1,1-Trichloroethane	ND	1.0	ug/l	
79-00-5	1,1,2-Trichloroethane	ND	1.0	ug/l	
79-01-6	Trichloroethylene	ND	1.0	ug/l	
75-69-4	Trichlorofluoromethane	ND	1.0	ug/l	
75-01-4	Vinyl Chloride	ND	1.0	ug/l	
	m,p-Xylene	ND	2.0	ug/l	
95-47-6	o-Xylene	ND	1.0	ug/l	
1330-20-7	Xylene (total)	ND	2.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
17060-07-0	1,2-Dichloroethane-D4	95%	84-124%
2037-26-5	Toluene-D8	98%	83-115%
460-00-4	4-Bromofluorobenzene	95%	89-111%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2I1790-BS1	2I038648.D	1	09/14/18	AR	n/a	n/a	V2I1790
V2I1790-BSD1	2I038650.D	1	09/14/18	AR	n/a	n/a	V2I1790

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	50	44.0	88	47.7	95	8	38-178/30
71-43-2	Benzene	20	20.4	102	19.9	100	2	82-119/30
75-27-4	Bromodichloromethane	20	19.6	98	19.2	96	2	79-120/30
75-25-2	Bromoform	20	16.0	80	16.4	82	2	68-128/30
75-15-0	Carbon Disulfide	20	20.3	102	20.5	103	1	64-133/30
56-23-5	Carbon Tetrachloride	20	19.1	96	19.2	96	1	69-132/30
108-90-7	Chlorobenzene	20	20.4	102	20.1	101	1	85-120/30
75-00-3	Chloroethane	20	18.9	95	18.2	91	4	33-170/30
67-66-3	Chloroform	20	20.0	100	19.5	98	3	80-122/30
124-48-1	Dibromochloromethane	20	17.8	89	18.2	91	2	73-125/30
96-12-8	1,2-Dibromo-3-chloropropane	20	15.4	77	16.0	80	4	67-131/30
541-73-1	m-Dichlorobenzene	20	19.8	99	19.5	98	2	84-121/30
95-50-1	o-Dichlorobenzene	20	19.7	99	19.1	96	3	83-120/30
106-46-7	p-Dichlorobenzene	20	19.6	98	19.3	97	2	83-122/30
75-34-3	1,1-Dichloroethane	20	18.7	94	18.7	94	0	78-124/30
107-06-2	1,2-Dichloroethane	20	18.4	92	18.1	91	2	74-127/30
75-35-4	1,1-Dichloroethylene	20	20.2	101	19.9	100	1	70-134/30
156-59-2	cis-1,2-Dichloroethylene	20	20.7	104	21.1	106	2	78-122/30
156-60-5	trans-1,2-Dichloroethylene	20	19.6	98	20.1	101	3	75-127/30
540-59-0	1,2-Dichloroethene (total)	40	40.3	101	41.2	103	2	78-123/30
78-87-5	1,2-Dichloropropane	20	20.8	104	20.3	102	2	82-120/30
10061-01-5	cis-1,3-Dichloropropene	20	20.0	100	20.2	101	1	79-122/30
10061-02-6	trans-1,3-Dichloropropene	20	19.6	98	19.2	96	2	78-124/30
542-75-6	1,3-Dichloropropene (total)	40	39.6	99	39.5	99	0	50-150/30 [a]
100-41-4	Ethylbenzene	20	20.3	102	20.2	101	0	84-117/30
67-72-1	Hexachloroethane	20	15.8	79	16.0	80	1	53-141/30
78-83-1	Isobutyl Alcohol	200	156	78	165	83	6	20-175/30
74-83-9	Methyl Bromide	20	17.6	88	18.3	92	4	37-198/30
74-87-3	Methyl Chloride	20	20.1	101	20.1	101	0	50-136/30
75-09-2	Methylene Chloride	20	21.3	107	21.2	106	0	71-130/30
78-93-3	Methyl Ethyl Ketone	50	43.4	87	45.8	92	5	59-149/30
108-10-1	4-Methyl-2-pentanone	50	46.3	93	49.1	98	6	74-131/30
1634-04-4	Methyl Tert Butyl Ether	20	18.5	93	18.8	94	2	70-126/30
100-42-5	Styrene	20	21.2	106	21.3	107	0	79-128/30
630-20-6	1,1,1,2-Tetrachloroethane	20	19.9	100	20.0	100	1	84-120/30
79-34-5	1,1,2,2-Tetrachloroethane	20	18.5	93	19.1	96	3	77-126/30

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
V2I1790-BS1	2I038648.D	1	09/14/18	AR	n/a	n/a	V2I1790
V2I1790-BSD1	2I038650.D	1	09/14/18	AR	n/a	n/a	V2I1790

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
127-18-4	Tetrachloroethylene	20	20.6	103	20.1	101	2	75-133/30
108-88-3	Toluene	20	19.7	99	19.5	98	1	80-121/30
71-55-6	1,1,1-Trichloroethane	20	19.7	99	19.8	99	1	74-126/30
79-00-5	1,1,2-Trichloroethane	20	19.4	97	19.6	98	1	80-123/30
79-01-6	Trichloroethylene	20	19.7	99	19.5	98	1	62-125/30
75-69-4	Trichlorofluoromethane	20	19.2	96	18.6	93	3	62-148/30
75-01-4	Vinyl Chloride	20	18.7	94	18.7	94	0	67-130/30
	m,p-Xylene	40	40.7	102	40.9	102	0	82-121/30
95-47-6	o-Xylene	20	20.1	101	20.3	102	1	84-119/30
1330-20-7	Xylene (total)	60	60.8	101	61.2	102	1	81-122/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
17060-07-0	1,2-Dichloroethane-D4	93%	95%	84-124%
2037-26-5	Toluene-D8	100%	100%	83-115%
460-00-4	4-Bromofluorobenzene	97%	99%	89-111%

(a) Advisory control limits.

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA47639-3MS	2I038666.D	5	09/14/18	AR	n/a	n/a	V2I1790
LA47639-3MSD	2I038668.D	5	09/14/18	AR	n/a	n/a	V2I1790
LA47639-3	2I038664.D	1	09/14/18	AR	n/a	n/a	V2I1790

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	LA47639-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
67-64-1	Acetone	1.8		250	166	66	250	178	70	7	39-164/27
71-43-2	Benzene	ND		100	102	102	100	101	101	1	31-161/15
75-27-4	Bromodichloromethane	ND		100	98.8	99	100	96.3	96	3	64-122/36
75-25-2	Bromoform	ND		100	81.4	81	100	78.7	79	3	43-125/37
75-15-0	Carbon Disulfide	ND		100	103	103	100	103	103	0	38-138/36
56-23-5	Carbon Tetrachloride	ND		100	99.6	100	100	94.1	94	6	53-133/36
108-90-7	Chlorobenzene	ND		100	101	101	100	102	102	1	74-122/34
75-00-3	Chloroethane	ND		100	93.1	93	100	94.6	95	2	14-181/43
67-66-3	Chloroform	ND		100	98.8	99	100	97.0	97	2	65-130/24
124-48-1	Dibromochloromethane	ND		100	91.1	91	100	89.3	89	2	57-121/36
96-12-8	1,2-Dibromo-3-chloropropane	ND		100	75.2	75	100	82.0	82	9	46-135/25
541-73-1	m-Dichlorobenzene	ND		100	95.4	95	100	98.4	98	3	70-120/35
95-50-1	o-Dichlorobenzene	ND		100	92.2	92	100	95.6	96	4	72-120/35
106-46-7	p-Dichlorobenzene	ND		100	94.5	95	100	97.0	97	3	68-120/35
75-34-3	1,1-Dichloroethane	ND		100	96.2	96	100	96.2	96	0	56-138/32
107-06-2	1,2-Dichloroethane	ND		100	94.6	95	100	92.2	92	3	51-141/39
75-35-4	1,1-Dichloroethylene	ND		100	103	103	100	105	105	2	48-139/37
156-59-2	cis-1,2-Dichloroethylene	ND		100	105	105	100	104	104	1	56-133/15
156-60-5	trans-1,2-Dichloroethylene	ND		100	100	100	100	101	101	1	59-128/37
540-59-0	1,2-Dichloroethene (total)	ND		200	206	103	200	205	103	0	54-134/30
78-87-5	1,2-Dichloropropane	ND		100	103	103	100	102	102	1	68-124/32
10061-01-5	cis-1,3-Dichloropropene	ND		100	96.1	96	100	97.6	98	2	62-120/35
10061-02-6	trans-1,3-Dichloropropene	ND		100	95.9	96	100	93.8	94	2	64-119/36
542-75-6	1,3-Dichloropropene (total)	ND		200	192	96	200	191	96	1	50-150/30 [a]
100-41-4	Ethylbenzene	ND		100	101	101	100	102	102	1	47-146/30
67-72-1	Hexachloroethane	ND		100	87.0	87	100	81.3	81	7	32-128/39
78-83-1	Isobutyl Alcohol	ND		1000	753	75	1000	823	82	9	33-142/54
74-83-9	Methyl Bromide	ND		100	85.2	85	100	94.9	95	11	1-150/64
74-87-3	Methyl Chloride	ND		100	98.8	99	100	100	100	1	16-146/29
75-09-2	Methylene Chloride	ND		100	107	107	100	109	109	2	55-134/36
78-93-3	Methyl Ethyl Ketone	ND		250	194	78	250	208	83	7	54-142/39
108-10-1	4-Methyl-2-pentanone	ND		250	224	90	250	239	96	6	60-140/40
1634-04-4	Methyl Tert Butyl Ether	ND		100	91.3	91	100	95.2	95	4	52-146/32
100-42-5	Styrene	ND		100	106	106	100	106	106	0	67-128/35
630-20-6	1,1,1,2-Tetrachloroethane	ND		100	100	100	100	98.9	99	1	67-121/35
79-34-5	1,1,2,2-Tetrachloroethane	ND		100	92.6	93	100	97.3	97	5	64-133/38

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA47639-3MS	2I038666.D	5	09/14/18	AR	n/a	n/a	V2I1790
LA47639-3MSD	2I038668.D	5	09/14/18	AR	n/a	n/a	V2I1790
LA47639-3	2I038664.D	1	09/14/18	AR	n/a	n/a	V2I1790

The QC reported here applies to the following samples: **Method:** SW846 8260B

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	LA47639-3 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
127-18-4	Tetrachloroethylene	ND		100	99.7	100	100	100	100	0	58-135/37
108-88-3	Toluene	0.80		100	100	99	100	99.1	98	1	36-155/17
71-55-6	1,1,1-Trichloroethane	ND		100	101	101	100	98.8	99	2	63-128/36
79-00-5	1,1,2-Trichloroethane	ND		100	96.0	96	100	95.1	95	1	61-138/17
79-01-6	Trichloroethylene	ND		100	102	102	100	100	100	2	57-131/36
75-69-4	Trichlorofluoromethane	ND		100	96.5	97	100	94.7	95	2	31-156/36
75-01-4	Vinyl Chloride	ND		100	93.6	94	100	96.6	97	3	22-155/49
	m,p-Xylene	ND		200	205	103	200	204	102	0	35-159/31
95-47-6	o-Xylene	ND		100	98.5	99	100	101	101	3	50-144/35
1330-20-7	Xylene (total)	ND		300	303	101	300	305	102	1	41-154/29

CAS No.	Surrogate Recoveries	MS	MSD	LA47639-3	Limits
17060-07-0	1,2-Dichloroethane-D4	96%	94%	99%	84-124%
2037-26-5	Toluene-D8	99%	100%	99%	83-115%
460-00-4	4-Bromofluorobenzene	99%	97%	94%	89-111%

(a) Advisory control limits.

* = Outside of Control Limits.

MS Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12269-MB	A0024717.D	1	09/17/18	PC	09/16/18	OP12269	EA638

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Result	RL	Units	Q
95-57-8	2-Chlorophenol	ND	5.0	ug/l	
120-83-2	2,4-Dichlorophenol	ND	5.0	ug/l	
105-67-9	2,4-Dimethylphenol	ND	5.0	ug/l	
51-28-5	2,4-Dinitrophenol	ND	20	ug/l	
100-02-7	4-Nitrophenol	ND	25	ug/l	
87-86-5	Pentachlorophenol	ND	10	ug/l	
108-95-2	Phenol	ND	5.0	ug/l	
58-90-2	2,3,4,6-Tetrachlorophenol	ND	5.0	ug/l	
95-95-4	2,4,5-Trichlorophenol	ND	5.0	ug/l	
88-06-2	2,4,6-Trichlorophenol	ND	5.0	ug/l	
83-32-9	Acenaphthene	ND	0.20	ug/l	
208-96-8	Acenaphthylene	ND	0.20	ug/l	
62-53-3	Aniline	ND	5.0	ug/l	
120-12-7	Anthracene	ND	0.20	ug/l	
56-55-3	Benzo(a)anthracene	ND	0.20	ug/l	
50-32-8	Benzo(a)pyrene	ND	0.20	ug/l	
205-99-2	Benzo(b)fluoranthene	ND	0.20	ug/l	
207-08-9	Benzo(k)fluoranthene	ND	0.20	ug/l	
92-52-4	1,1'-Biphenyl	ND	10	ug/l	
85-68-7	Butyl Benzyl Phthalate	ND	5.0	ug/l	
106-47-8	4-Chloroaniline	ND	5.0	ug/l	
111-44-4	bis(2-Chloroethyl)ether	ND	5.0	ug/l	
108-60-1	2,2'-Oxybis(1-chloropropane)	ND	5.0	ug/l	
91-58-7	2-Chloronaphthalene	ND	5.0	ug/l	
218-01-9	Chrysene	ND	0.20	ug/l	
53-70-3	Dibenzo(a,h)anthracene	ND	0.20	ug/l	
132-64-9	Dibenzofuran	ND	5.0	ug/l	
91-94-1	3,3'-Dichlorobenzidine	ND	10	ug/l	
84-66-2	Diethyl Phthalate	ND	5.0	ug/l	
131-11-3	Dimethyl Phthalate	ND	5.0	ug/l	
117-84-0	Di-n-octyl Phthalate	ND	5.0	ug/l	
99-65-0	1,3-Dinitrobenzene	ND	5.0	ug/l	
121-14-2	2,4-Dinitrotoluene	ND	5.0	ug/l	
606-20-2	2,6-Dinitrotoluene	ND	5.0	ug/l	
117-81-7	bis(2-Ethylhexyl)phthalate	ND	5.0	ug/l	
206-44-0	Fluoranthene	ND	0.20	ug/l	

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12269-MB	A0024717.D	1	09/17/18	PC	09/16/18	OP12269	EA638

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Result	RL	Units	Q
86-73-7	Fluorene	ND	0.20	ug/l	
118-74-1	Hexachlorobenzene	ND	5.0	ug/l	
87-68-3	Hexachlorobutadiene	ND	5.0	ug/l	
77-47-4	Hexachlorocyclopentadiene	ND	10	ug/l	
193-39-5	Indeno(1,2,3-cd)pyrene	ND	0.20	ug/l	
78-59-1	Isophorone	ND	5.0	ug/l	
91-57-6	2-Methylnaphthalene	ND	0.20	ug/l	
91-20-3	Naphthalene	ND	0.20	ug/l	
88-74-4	2-Nitroaniline	ND	5.0	ug/l	
99-09-2	3-Nitroaniline	ND	5.0	ug/l	
100-01-6	4-Nitroaniline	ND	5.0	ug/l	
98-95-3	Nitrobenzene	ND	5.0	ug/l	
621-64-7	N-Nitroso-di-n-propylamine	ND	5.0	ug/l	
86-30-6	N-Nitrosodiphenylamine	ND	5.0	ug/l	
85-01-8	Phenanthrene	ND	0.20	ug/l	
129-00-0	Pyrene	ND	0.20	ug/l	
95-94-3	1,2,4,5-Tetrachlorobenzene	ND	5.0	ug/l	
120-82-1	1,2,4-Trichlorobenzene	ND	5.0	ug/l	

CAS No.	Surrogate Recoveries		Limits
367-12-4	2-Fluorophenol	68%	23-85%
4165-62-2	Phenol-d5	52%	10-69%
118-79-6	2,4,6-Tribromophenol	93%	48-138%
4165-60-0	Nitrobenzene-d5	85%	51-128%
321-60-8	2-Fluorobiphenyl	82%	55-122%
1718-51-0	Terphenyl-d14	96%	43-138%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12269-BS	A0024718.D	1	09/17/18	PC	09/16/18	OP12269	EA638
OP12269-BSD	A0024719.D	1	09/17/18	PC	09/16/18	OP12269	EA638

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
95-57-8	2-Chlorophenol	5	3.9	78	3.9	78	0	63-104/19
120-83-2	2,4-Dichlorophenol	5	4.3	86	4.4	88	2	68-112/19
105-67-9	2,4-Dimethylphenol	5	4.1	82	4.3	86	5	64-110/20
51-28-5	2,4-Dinitrophenol	25	25.1	100	25.4	102	1	51-121/30
100-02-7	4-Nitrophenol	25	13.2	53	13.6	54	3	20-68/23
87-86-5	Pentachlorophenol	25	23.7	95	23.7	95	0	52-120/29
108-95-2	Phenol	5	2.5	50	2.4	48	4	18-67/20
58-90-2	2,3,4,6-Tetrachlorophenol	5	4.7	94	4.8	96	2	67-121/21
95-95-4	2,4,5-Trichlorophenol	5	4.8	96	4.9	98	2	67-119/21
88-06-2	2,4,6-Trichlorophenol	5	4.3	86	4.4	88	2	67-120/21
83-32-9	Acenaphthene	5	3.9	78	4.0	80	3	67-114/28
208-96-8	Acenaphthylene	5	4.0	80	4.2	84	5	67-119/26
62-53-3	Aniline	5	3.6	72	3.8	76	5	40-114/40
120-12-7	Anthracene	5	4.3	86	4.3	86	0	68-121/24
56-55-3	Benzo(a)anthracene	5	4.3	86	4.3	86	0	69-113/20
50-32-8	Benzo(a)pyrene	5	4.6	92	4.6	92	0	71-124/22
205-99-2	Benzo(b)fluoranthene	5	4.8	96	4.7	94	2	72-120/22
207-08-9	Benzo(k)fluoranthene	5	4.2	84	4.1	82	2	71-124/21
92-52-4	1,1'-Biphenyl	5	3.8	76	4.0	80	5	65-122/29
85-68-7	Butyl Benzyl Phthalate	5	4.9	98	4.9	98	0	73-123/21
106-47-8	4-Chloroaniline	5	4.2	84	4.1	82	2	58-113/51
111-44-4	bis(2-Chloroethyl)ether	5	4.1	82	4.2	84	2	50-118/28
108-60-1	2,2'-Oxybis(1-chloropropane)	5	4.0	80	4.1	82	2	43-138/21
91-58-7	2-Chloronaphthalene	5	3.8	76	3.8	76	0	64-114/30
218-01-9	Chrysene	5	4.3	86	4.4	88	2	70-115/20
53-70-3	Dibenzo(a,h)anthracene	5	4.7	94	4.8	96	2	70-124/21
132-64-9	Dibenzofuran	5	3.9	78	4.0	80	3	67-117/27
91-94-1	3,3'-Dichlorobenzidine	5	8.0	160*	8.5	170*	6	69-122/38
84-66-2	Diethyl Phthalate	5	4.5	90	4.6	92	2	71-123/21
131-11-3	Dimethyl Phthalate	5	4.4	88	4.5	90	2	69-119/20
117-84-0	Di-n-octyl Phthalate	5	5.1	102	5.1	102	0	66-121/22
99-65-0	1,3-Dinitrobenzene	25	24.1	96	24.6	98	2	71-122/21
121-14-2	2,4-Dinitrotoluene	5	4.7	94	4.7	94	0	73-122/21
606-20-2	2,6-Dinitrotoluene	5	4.5	90	4.7	94	4	72-121/21
117-81-7	bis(2-Ethylhexyl)phthalate	5	4.8	96	4.7	94	2	68-126/21
206-44-0	Fluoranthene	5	4.5	90	4.6	92	2	73-120/21

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12269-BS	A0024718.D	1	09/17/18	PC	09/16/18	OP12269	EA638
OP12269-BSD	A0024719.D	1	09/17/18	PC	09/16/18	OP12269	EA638

The QC reported here applies to the following samples: **Method:** SW846 8270D

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
86-73-7	Fluorene	5	4.0	80	4.1	82	2	69-118/25
118-74-1	Hexachlorobenzene	5	4.0	80	4.1	82	2	67-117/23
87-68-3	Hexachlorobutadiene	5	3.0	60	2.8	56	7	42-120/35
77-47-4	Hexachlorocyclopentadiene	5	2.9	58	2.7	54	7	35-123/48
193-39-5	Indeno(1,2,3-cd)pyrene	5	4.7	94	4.7	94	0	70-123/21
78-59-1	Isophorone	5	4.2	84	4.4	88	5	70-119/19
91-57-6	2-Methylnaphthalene	5	3.8	76	3.8	76	0	65-113/27
91-20-3	Naphthalene	5	3.8	76	3.8	76	0	63-114/23
88-74-4	2-Nitroaniline	25	25.1	100	25.8	103	3	68-125/21
99-09-2	3-Nitroaniline	25	23.7	95	23.6	94	0	69-117/23
100-01-6	4-Nitroaniline	25	25.8	103	25.7	103	0	67-122/19
98-95-3	Nitrobenzene	5	4.1	82	4.1	82	0	69-116/21
621-64-7	N-Nitroso-di-n-propylamine	5	4.2	84	4.4	88	5	67-120/20
86-30-6	N-Nitrosodiphenylamine	5	4.3	86	4.4	88	2	67-119/25
85-01-8	Phenanthrene	5	4.1	82	4.2	84	2	70-117/23
129-00-0	Pyrene	5	4.4	88	4.4	88	0	70-119/21
95-94-3	1,2,4,5-Tetrachlorobenzene	5	3.4	68	3.3	66	3	55-117/35
120-82-1	1,2,4-Trichlorobenzene	5	3.5	70	3.4	68	3	56-111/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
367-12-4	2-Fluorophenol	66%	64%	23-85%
4165-62-2	Phenol-d5	53%	51%	10-69%
118-79-6	2,4,6-Tribromophenol	101%	100%	48-138%
4165-60-0	Nitrobenzene-d5	83%	80%	51-128%
321-60-8	2-Fluorobiphenyl	77%	78%	55-122%
1718-51-0	Terphenyl-d14	90%	89%	43-138%

* = Outside of Control Limits.

GC Volatiles

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QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC1825-MB1	LC380008.D	1	09/14/18	MB	n/a	n/a	GLC1825

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics C6-C8 (Unadj.)	ND	30	ug/l	
	Aliphatics > C8-C10 (Unadj.)	ND	50	ug/l	
	Aromatics > C8-C10 (Unadj.)	ND	50	ug/l	

CAS No.	Surrogate Recoveries		Limits
615-59-8	2,5-Dibromotoluene	92% [a]	70-130%
615-59-8	2,5-Dibromotoluene	95% [b]	70-130%

(a) Recovery from Aliphatics fraction.
(b) Recovery from Aromatics fraction.

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12251-MB	LK113192.D	1	09/14/18	DF	09/13/18	OP12251	GLK726

The QC reported here applies to the following samples: **Method:** SW846 8011

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Result	RL	Units	Q
96-12-8	1,2-Dibromo-3-chloropropane	ND	0.020	ug/l	

CAS No.	Surrogate Recoveries		Limits
348-51-6	1-Chloro-2-fluorobenzene	91%	55-149%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLC1825-BS1	LC380006.D	1	09/14/18	MB	n/a	n/a	GLC1825
GLC1825-BSD1	LC380007.D	1	09/14/18	MB	n/a	n/a	GLC1825

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	150	150	100	138	92	8	70-130/30
	Aliphatics > C8-C10 (Unadj.)	250	253	101	245	98	3	70-130/30
	Aromatics > C8-C10 (Unadj.)	250	267	107	261	104	2	70-130/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
615-59-8	2,5-Dibromotoluene	101% [a]	99% [a]	70-130%
615-59-8	2,5-Dibromotoluene	105% [b]	103% [b]	70-130%

(a) Recovery from Aliphatics fraction.
(b) Recovery from Aromatics fraction.

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12251-BS	LK113193.D	1	09/14/18	DF	09/13/18	OP12251	GLK726
OP12251-BSD	LK113194.D	1	09/14/18	DF	09/13/18	OP12251	GLK726

The QC reported here applies to the following samples: **Method:** SW846 8011

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
96-12-8	1,2-Dibromo-3-chloropropane	0.251	0.31	123	0.31	123	0	60-148/18

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
348-51-6	1-Chloro-2-fluorobenzene	99%	95%	55-149%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA47611-1MS	LC380012.D	100	09/14/18	MB	n/a	n/a	GLC1825
LA47611-1MSD	LC380013.D	100	09/14/18	MB	n/a	n/a	GLC1825
LA47611-1 [a]	LC380011.D	20	09/14/18	MB	n/a	n/a	GLC1825

The QC reported here applies to the following samples: **Method:** MADEP VPH REV 1.1

LA47639-1, LA47639-2, LA47639-3, LA47639-4, LA47639-5

CAS No.	Compound	LA47611-1 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics C6-C8 (Unadj.)	705		15000	15200	97	15000	14500	92	5	70-130/50
	Aliphatics > C8-C10 (Unadj.)	2940		25000	27100	97	25000	26800	95	1	70-130/50
	Aromatics > C8-C10 (Unadj.)	5610		25000	31900	105	25000	32500	108	2	70-130/50

CAS No.	Surrogate Recoveries	MS	MSD	LA47611-1	Limits
615-59-8	2,5-Dibromotoluene	105% [b]	104% [b]	100% [b]	70-130%
615-59-8	2,5-Dibromotoluene	111% [c]	108% [c]	107% [c]	70-130%

(a) Sample used for QC purposes only.
(b) Recovery from Aliphatics fraction.
(c) Recovery from Aromatics fraction.

* = Outside of Control Limits.

GC/LC Semi-volatiles

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Blank Spike Summaries
- Matrix Spike and Duplicate Summaries

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12311-MB	X0050903.D	1	09/24/18	JT	09/20/18	OP12311	GLB1613

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Result	RL	Units	Q
	Aromatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aromatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aromatics > C16-C21 (Unadj.)	118	140	ug/l	J
	Aromatics > C21-C35 (Unadj.)	101	140	ug/l	J

CAS No.	Surrogate Recoveries		Limits
84-15-1	o-Terphenyl	87%	40-140%
321-60-8	2-Fluorobiphenyl	82%	40-140%

Method Blank Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12311-MB	Y0050903.D	1	09/24/18	JT	09/20/18	OP12311	GLB1614

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Result	RL	Units	Q
	Aliphatics > C10-C12 (Unadj.)	ND	140	ug/l	
	Aliphatics > C12-C16 (Unadj.)	ND	140	ug/l	
	Aliphatics > C16-C35 (Unadj.)	ND	140	ug/l	

CAS No.	Surrogate Recoveries		Limits
3386-33-2	1-Chlorooctadecane	92%	40-140%

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12311-BS	X0050906.D	1	09/24/18	JT	09/20/18	OP12311	GLB1613
OP12311-BSD	X0050907.D	1	09/24/18	JT	09/20/18	OP12311	GLB1613

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aromatics > C10-C12 (Unadj.)	466	353	76	336	73	5	40-140/30
	Aromatics > C12-C16 (Unadj.)	1400	1060	76	1020	74	4	40-140/30
	Aromatics > C16-C21 (Unadj.)	2330	1910	82	1860	81	3	40-140/30
	Aromatics > C21-C35 (Unadj.)	3730	3550	95	3470	94	2	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	76%	77%	40-140%
321-60-8	2-Fluorobiphenyl	74%	76%	40-140%

* = Outside of Control Limits.

Blank Spike/Blank Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12311-BS	Y0050906.D	1	09/24/18	JT	09/20/18	OP12311	GLB1614
OP12311-BSD	Y0050907.D	1	09/24/18	JT	09/20/18	OP12311	GLB1614

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.)	466	338	72	303	66	11	40-140/30
	Aliphatics > C12-C16 (Unadj.)	933	683	73	611	66	11	40-140/30
	Aliphatics > C16-C35 (Unadj.)	4200	2810	67	2480	60	12	40-140/30

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
3386-33-2	1-Chlorooctadecane	71%	66%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12311-MS	X0050916.D	1	09/24/18	JT	09/20/18	OP12311	GLB1613
OP12311-MSD	X0050917.D	1	09/24/18	JT	09/20/18	OP12311	GLB1613
LA47638-8	X0050911.D	1	09/24/18	JT	09/20/18	OP12311	GLB1613

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	LA47638-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aromatics >C10-C12 (Unadj.)	ND		469	332	71	473	325	69	2	40-140/50
	Aromatics >C12-C16 (Unadj.)	85.2		1410	1030	67	1420	1150	75	11	40-140/50
	Aromatics >C16-C21 (Unadj.)	115		2350	1790	71	2360	1680	66	6	40-140/50
	Aromatics >C21-C35 (Unadj.)	84.4		3750	3300	86	3780	3100	80	6	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	LA47638-8	Limits
84-15-1	o-Terphenyl	73%	66%	76%	40-140%
321-60-8	2-Fluorobiphenyl	75%	71%	82%	40-140%

* = Outside of Control Limits.

Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA47639
Account: HETILAL Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP12311-MS	Y0050916.D	1	09/24/18	JT	09/20/18	OP12311	GLB1614
OP12311-MSD	Y0050917.D	1	09/24/18	JT	09/20/18	OP12311	GLB1614
LA47638-8	Y0050911.D	1	09/24/18	JT	09/20/18	OP12311	GLB1614

The QC reported here applies to the following samples: **Method:** MADEP EPH REV 1.1

LA47639-1, LA47639-2, LA47639-3

CAS No.	Compound	LA47638-8 ug/l	Q	Spike ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
	Aliphatics > C10-C12 (Unadj.)	ND		454	326	72	455	340	75	4	40-140/50
	Aliphatics > C12-C16 (Unadj.)	ND		907	598	66	909	621	68	4	40-140/50
	Aliphatics > C16-C35 (Unadj.)	ND		4080	2460	60	4090	2560	63	4	40-140/50

CAS No.	Surrogate Recoveries	MS	MSD	LA47638-8	Limits
3386-33-2	1-Chlorooctadecane	65%	67%	74%	40-140%

* = Outside of Control Limits.

Metals Analysis

QC Data Summaries

Includes the following where applicable:

- Method Blank Summaries
- Matrix Spike and Duplicate Summaries
- Blank Spike and Lab Control Sample Summaries
- Serial Dilution Summaries

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	6.9	9.3	4.6	<100
Antimony	1.0	.043	.34		
Arsenic	1.0	.062	.26	-0.25	<1.0
Barium	1.0	.033	.46	0.052	<1.0
Beryllium	1.0	.0077	.28		
Boron	20	1.3	2.9		
Cadmium	0.50	.011	.12	-0.0081	<0.50
Calcium	100	5.7	20	-27	<100
Cerium	1.0	.0041	.16		
Chromium	1.0	.11	.15	-0.20	<1.0
Cobalt	1.0	.012	.14		
Copper	1.0	.91	.74		
Iron	100	48	16	-38	<100
Lanthanum	1.0	.0038	.41		
Lithium	2.0	.1	.61		
Lead	1.0	.0081	.13	-0.21	<1.0
Magnesium	100	1.6	11	6.5	<100
Manganese	2.0	.48	.53	-0.046	<2.0
Molybdenum	1.0	.048	.89		
Nickel	1.0	.037	.2		
Potassium	100	3.4	7.6	-13	<100
Selenium	5.0	.38	3.1	-1.1	<5.0
Silver	1.0	.0047	.13	-0.14	<1.0
Silicon	500	6.6	130		
Sodium	100	24	9.9	-7.9	<100
Strontium	2.0	.12	.27	-0.027	<2.0
Thallium	1.0	.021	.86		
Tin	2.0	.034	.19		
Titanium	1.0	.15	.77		
Uranium	1.0	.0048	.17		
Vanadium	1.0	.027	.1		
Zinc	5.0	1.5	1.1	0.41	<5.0

Associated samples MP12723: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	RL	IDL	MDL	MB raw	final

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 09/13/18

Metal	LA47636-1 Original	MS	Spikelot MPICPMS6	% Rec	QC Limits
Aluminum	1120	5710	5100	90.0	75-125
Antimony					
Arsenic	0.0	95.7	100	95.7	75-125
Barium	97.1	172	100	74.9N(a)	75-125
Beryllium					
Boron					
Cadmium	0.0	92.5	100	92.5	75-125
Calcium	39100	35500	5000	-72.0(b)	75-125
Cerium					
Chromium	1.6	99.2	100	97.6	75-125
Cobalt					
Copper					
Iron	1340	6030	5000	93.8	75-125
Lanthanum					
Lithium					
Lead	1.1	99.3	100	98.2	75-125
Magnesium	1500	5880	5000	87.6	75-125
Manganese	154	218	100	64.0N(a)	75-125
Molybdenum					
Nickel					
Potassium	2660	7050	5000	87.8	75-125
Selenium	0.0	461	500	92.2	75-125
Silver	0.0	95.7	100	95.7	75-125
Silicon					
Sodium	9760	12500	5000	54.8N(a)	75-125
Strontium	271	310	100	39.0N(a)	75-125
Thallium					
Tin					
Titanium					
Uranium					
Vanadium					
Zinc	42.4	133	100	90.6	75-125

Associated samples MP12723: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	LA47636-1 Original MS	Spikelot MPICPMS6 % Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike recovery indicates possible matrix interference or sample non-homogeneity.
(b) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	LA47636-1 Original	MSD	Spikelot MPICPMS6	% Rec	MSD RPD	QC Limit
Aluminum	1120	5750	5100	90.8	0.7	20
Antimony						
Arsenic	0.0	101	100	101.0	5.4	20
Barium	97.1	178	100	80.9	3.4	20
Beryllium						
Boron						
Cadmium	0.0	94.6	100	94.6	2.2	20
Calcium	39100	37000	5000	-42.0(a)	4.1	20
Cerium						
Chromium	1.6	100	100	98.4	0.8	20
Cobalt						
Copper						
Iron	1340	6010	5000	93.4	0.3	20
Lanthanum						
Lithium						
Lead	1.1	103	100	101.9	3.7	20
Magnesium	1500	5830	5000	86.6	0.9	20
Manganese	154	221	100	67.0N(b)	1.4	20
Molybdenum						
Nickel						
Potassium	2660	7140	5000	89.6	1.3	20
Selenium	0.0	462	500	92.4	0.2	20
Silver	0.0	97.3	100	97.3	1.7	20
Silicon						
Sodium	9760	12600	5000	56.8N(b)	0.8	20
Strontium	271	318	100	47.0N(b)	2.5	20
Thallium						
Tin						
Titanium						
Uranium						
Vanadium						
Zinc	42.4	136	100	93.6	2.2	20

Associated samples MP12723: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	LA47636-1 Original MSD	Spikelot MPICPMS6 % Rec	MSD RPD	QC Limit

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested
(a) Spike amount low relative to the sample amount. Refer to lab control or spike blank for recovery information.
(b) Spike recovery indicates possible matrix interference or sample non-homogeneity.

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 09/13/18

Metal	BSP Result	Spikelot MPICPMS6	% Rec	QC Limits
Aluminum	4930	5100	96.7	80-120
Antimony				
Arsenic	99.5	100	99.5	80-120
Barium	101	100	101.0	80-120
Beryllium				
Boron				
Cadmium	95.0	100	95.0	80-120
Calcium	5000	5000	100.0	80-120
Cerium				
Chromium	95.8	100	95.8	80-120
Cobalt				
Copper				
Iron	4830	5000	96.6	80-120
Lanthanum				
Lithium				
Lead	98.3	100	98.3	80-120
Magnesium	4680	5000	93.6	80-120
Manganese	95.8	100	95.8	80-120
Molybdenum				
Nickel				
Potassium	5000	5000	100.0	80-120
Selenium	494	500	98.8	80-120
Silver	98.6	100	98.6	80-120
Silicon				
Sodium	4930	5000	98.6	80-120
Strontium	95.7	100	95.7	80-120
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	104	100	104.0	80-120

Associated samples MP12723: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	BSP Result	Spikelot MPICPMS6 % Rec	QC Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

Metal	LA47636-1 Original	SDL 5:25	%DIF	QC Limits
Aluminum	1120	915	18.6 (a)	0-10
Antimony				
Arsenic	0.00	0.00	NC	0-10
Barium	97.1	75.3	22.5*(b)	0-10
Beryllium				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium	39100	30000	23.4*(b)	0-10
Cerium				
Chromium	1.63	0.00	100.0(a)	0-10
Cobalt				
Copper				
Iron	1340	0.00	100.0(a)	0-10
Lanthanum				
Lithium				
Lead	1.14	0.00	100.0(a)	0-10
Magnesium	1500	1250	16.5*(b)	0-10
Manganese	154	111	27.9*(b)	0-10
Molybdenum				
Nickel				
Potassium	2660	1690	36.6*(b)	0-10
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Silicon				
Sodium	9760	6950	28.8*(b)	0-10
Strontium	271	202	25.2*(b)	0-10
Thallium				
Tin				
Titanium				
Uranium				
Vanadium				
Zinc	42.4	0.00	100.0(a)	0-10

Associated samples MP12723: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723 Methods: SW846 6020A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/13/18

	LA47636-1	QC
Metal	Original SDL 5:25 %DIF	Limits

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested
(a) Percent difference acceptable due to low initial sample concentration (< 50 times IDL).
(b) Serial dilution indicates possible matrix interference.

POST DIGESTATE SPIKE SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12723
Matrix Type: AQUEOUS

Methods: SW846 6020A
Units: ug/l

Prep Date: 09/13/18

Metal	Sample ml	Final ml	LA47636-1 Raw	Corr.**	PS ug/l	Spike ml	Spike ug/ml	Spike ug/l	% Rec	QC Limits
Antimony										
Barium	0.4	10	97.11	3.8844	113	0.1	10	100	109.1	75-125
Beryllium										
Boron										
Cerium										
Cobalt										
Copper										
Lanthanum										
Lithium										
Manganese	0.4	10	153.5	6.14	107.7	0.1	10	100	101.6	75-125
Molybdenum										
Nickel										
Silicon										
Sodium	0.4	10	9760	390.4	5650	0.025	2000	5000	105.2	75-125
Strontium	0.4	10	270.5	10.82	112.3	0.1	10	100	101.5	75-125
Thallium										
Tin										
Titanium										
Uranium										
Vanadium										

Associated samples MP12723: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(**) Corr. sample result = Raw * (sample volume / final volume)
(anr) Analyte not requested

BLANK RESULTS SUMMARY
Part 2 - Method Blanks

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12724 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/14/18

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.06	.081	-0.0057	<0.20

Associated samples MP12724: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12724 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/14/18

Metal	LA47639-2 Original	MS	Spikelot HGSPIKE1	% Rec	QC Limits
Mercury	0.0	4.9	5	98.0	75-125

Associated samples MP12724: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12724 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/14/18

Metal	LA47639-2 Original	MSD	Spikelot HGSPIKE1	% Rec	MSD RPD	QC Limit
Mercury	0.0	4.9	5	98.0	0.0	20

Associated samples MP12724: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits
(anr) Analyte not requested

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12724
Matrix Type: AQUEOUS

Methods: SW846 7470A
Units: ug/l

Prep Date: 09/14/18

Metal	BSP Result	Spikelot HGSPIKE1	% Rec	QC Limits
Mercury	4.9	5	98.0	80-120

Associated samples MP12724: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA47639
Account: HETILAL - Hydro-Environmental Technology, Inc.
Project: 8060.00 (RL) Indigo-Desoto Parish, LA

QC Batch ID: MP12724 Methods: SW846 7470A
Matrix Type: AQUEOUS Units: ug/l

Prep Date: 09/14/18

Metal	LA47639-2 Original	SDL 1:5	%DIF	QC Limits
Mercury	0.00	0.00	NC	0-

Associated samples MP12724: LA47639-1, LA47639-2, LA47639-3, LA47639-1F, LA47639-2F, LA47639-3F

Results < IDL are shown as zero for calculation purposes
(*) Outside of QC limits
(anr) Analyte not requested

Misc. Forms

Custody Documents and Other Forms

(SGS Houston, TX)

Includes the following where applicable:

- Chain of Custody

CHAIN OF CUSTODY

SGS

500 Ambassador Caffery Parkway, Scott, LA 70583
Phone: 800-304-5227 Fax: 337-237-7838

FED-EX Tracking #: | Bottle Order Control #:
SGS Quote #: | SGS Job #: LA47639

Client / Reporting Information

Company Name: SGS North America Inc.
Street Address: 500 Ambassador Caffery Parkway
City: Scott State: LA Zip: 70583
Project Contact: ralph.frye@sgs.com E-mail:
Phone #: 800-304-5227 Fax #:
Sampler(s) Name(s): KC/WP Phone:

Project Information

Project Name: 8060.00 Indigo-Desoto Parish, LA
Street:
City: State:
Project #:
Client Purchase Order #:
Project Manager:

Billing Information (if different from Report to)

Company Name:
Street Address:
City: State: Zip:
Attention:

Requested Analysis (see TEST CODE sheet)

Matrix Codes

DW - Drinking Water
GW - Ground Water
WW - Water
SW - Surface Water
SO - Soil
SL- Sludge
SED-Sediment
OI - Oil
LIQ - Other Liquid
AIR - Air
SOL - Other Solid
WP - Wipe
FB-Field Blank
EB-Equipment Blank
RB- Rinse Blank
TB-Trip Blank

SGS Sample #	Field ID / Point of Collection	MEOH/DI Vial #	Collection Date	Collection Time	Sampled by	Matrix	# of bottles	Number of preserved Bottles: HCl	NaOH	HNO3	H2SO4	NONE	DI Water	MEOH	ENCORE	BROIC9056,CHLIC9056,SCON,SIL,SO4IC9056,TDS,XCARBICALK	LAB USE ONLY
1	BAGLEY RIG SUPPLY WELL		9/11/18	11:50:00 AM	KC/WP	AQ										X	
2	ROM RIG SUPPLY WELL		9/11/18	2:55:00 PM	KC/WP	AQ										X	
3	DERBONNE RELIEF WELL		9/11/18	4:00:00 PM	KC/WP	AQ										X	

Turnaround Time (Business days)

Approved By (SGS PM): / Date:

- [ ] Std. 10 Business Days
- [ ] 5 Day RUSH
- [ ] 3 Day EMERGENCY
- [ ] 2 Day EMERGENCY
- [ ] 1 Day EMERGENCY
- [X] other Due 9/24/2018

Emergency & Rush T/A data available VIA Lablink

Data Deliverable Information

- [ ] Commercial "A" (Level 1)
- [ ] Commercial "B" (Level 2)
- [ ] FULLT1 (Level 3+4)
- [ ] REDT1 (Level 3+4)
- [ ] Commercial "C" X COMMB
  - Commercial "A" = Results Only
  - Commercial "B" = Results + QC Summary
- [ ] TRRP
- [ ] EDD Format
- [ ] Other

Comments / Special Instructions

Sample Custody must be documented below each time samples change possession, including courier delivery.

	Relinquished by Sampler:	Date Time:	Received By:	Relinquished By:	Date Time:	Received By:
1		9/13/18				
2					9/13/18 1715	
3		9.13.18 2310	9-13-18 2310			
4						
5				Custody Seal #	Intact / Not intact	Preserved where applicable: / On Ice: / Cooler Temp.

Cooler 2

Date / Time: 9/13/2018 9:26:43 AM
CSR: ralphf
Job #: LA47639
Client Project: 8060.00 Indigo-Desoto Parish, LA
Deliverable: COMMB
TAT: Due 9/24/2018

Sub Lab: SGS North America Inc. - TX
Address: 10165 Harwin Drive
City: Houston
State: TX Zip: 77036
Contact: Sample Management
Phone: (713) 692-9151

SGS Sample #	Client Sample Description	Analysis	Location	Sampled By	Date Sampled	Time Sampled	Aliquot
LA47639-1	BAGLEY RIG SUPPLY WELL	BROIC9056 ,CHLIC9056 ,SCON ,SIL ,SO4IC9056 ,TDS ,XCARBICALK	3W2 ,3W2F ,OL ,RTC-3 1B-1 ,WS-41 VW ,WS-9 11B-4	KC/WP	9/11/2018	11:50:00 AM	
LA47639-2	ROM RIG SUPPLY WELL	BROIC9056 ,CHLIC9056 ,SCON ,SIL ,SO4IC9056 ,TDS ,XCARBICALK	3W2 ,3W2F ,OL ,RTC-3 1B-1 ,WS-41 VW ,WS-9 11B-4	KC/WP	9/11/2018	2:55:00 PM	
LA47639-3	DERBONNE RELIEF WELL	BROIC9056 ,CHLIC9056 ,SCON ,SIL ,SO4IC9056 ,TDS ,XCARBICALK	3W2 ,3W2F ,OL ,RTC-3 1B-1 ,WS-41 VW ,WS-9 11B-4	KC/WP	9/11/2018	4:00:00 PM	

Comments:

Sample Management Receipt: _____ Date: 2310 9/13/18

3 5200 J (NO)

9.1

SGS Sample Receipt Summary

Job Number: LA47639 **Client:** SGS **Project:** 8060 INDIGO

Date / Time Received: **Delivery Method:** **Airbill #'s:**

No. Coolers: 1 **Therm ID:** IR-5; **Temp Adjustment Factor:** 0;

Cooler Temps (Initial/Adjusted): #1: (5.1/5.1);

Cooler Security	Y	or	N		Y	or	N
1. Custody Seals Present:	☑		☐	3. COC Present:	☑		☐
2. Custody Seals Intact:	☑		☐	4. Smpl Dates/Time OK	☑		☐

Cooler Temperature	Y	or	N
1. Temp criteria achieved:	☑		☐
2. Cooler temp verification:			
3. Cooler media:	Ice (Bag)		

Quality Control Preservation	Y	or	N	N/A	WTB	STB
1. Trip Blank present / cooler:	☐		☐	☑	☐	☐
2. Trip Blank listed on COC:	☐		☐	☑		
3. Samples preserved properly:	☑		☐			
4. VOCs headspace free:	☐		☐	☑		

Sample Integrity - Documentation	Y	or	N
1. Sample labels present on bottles:	☑		☐
2. Container labeling complete:	☑		☐
3. Sample container label / COC agree:	☑		☐

Sample Integrity - Condition	Y	or	N
1. Sample recvd within HT:	☑		☐
2. All containers accounted for:	☑		☐
3. Condition of sample:	Intact		

Sample Integrity - Instructions	Y	or	N	N/A
1. Analysis requested is clear:	☑		☐	
2. Bottles received for unspecified tests	☐		☑	
3. Sufficient volume recvd for analysis:	☑		☐	
4. Compositing instructions clear:	☐		☐	☑
5. Filtering instructions clear:	☐		☐	☑

Comments

Sample Receipt Log

Job #: LA47639 **Date / Time Received:** 9/13/2018 11:10:00 PM **Initials:** DS

Client: SGS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	LA47639-1	500ml	1	M3A	N/P	Note #2 - Preservative check not applicable.	IR-5	5.1	0	5.1
1	LA47639-2	500ml	1	M3A	N/P	Note #2 - Preservative check not applicable.	IR-5	5.1	0	5.1
1	LA47639-3	500ml	1	M3A	N/P	Note #2 - Preservative check not applicable.	IR-5	5.1	0	5.1

General Chemistry

QC Data Summaries

(SGS Houston, TX)

Includes the following where applicable:

- Method Blank and Blank Spike Summaries
- Duplicate Summaries
- Matrix Spike Summaries

METHOD BLANK AND SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA47639
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Alkalinity, Bicarbonate	GN92829	5.0	2.0	mg/l				
Alkalinity, Carbonate	GN92830	5.0	0.0	mg/l				
Alkalinity, Total as CaCO3	GN92828	5.0	0.0	mg/l	100	101	101.0	90-100%
Bromide	GP49503/GN92778	0.50	0.0	mg/l	10	9.72	97.2	90-110%
Chloride	GP49503/GN92778	0.50	0.0	mg/l	10	9.06	90.6	90-110%
Silica, Dissolved	GN92737	0.070	0.0	mg/l	1.07	1.0	93.5	80-120%
Solids, Total Dissolved	GN92718	10	0.0	mg/l	500	485	97.0	88-110%
Specific Conductivity	GN92791	1.0	<1.0	umhos/cm				
Sulfate	GP49503/GN92778	0.50	0.0	mg/l	10	9.68	96.8	90-110%

Associated Samples:
Batch GN92718: LA47639-1, LA47639-2, LA47639-3
Batch GN92737: LA47639-1, LA47639-2, LA47639-3
Batch GN92791: LA47639-1, LA47639-2, LA47639-3
Batch GN92828: LA47639-1, LA47639-2, LA47639-3
Batch GN92829: LA47639-1, LA47639-2, LA47639-3
Batch GN92830: LA47639-1, LA47639-2, LA47639-3
Batch GP49503: LA47639-1, LA47639-2, LA47639-3
(*) Outside of QC limits

DUPLICATE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA47639
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Alkalinity, Total as CaCO3	GN92828	LA47525-3	mg/l	490	490	0.0	0-10%
Bromide	GP49503/GN92778	LA47639-1	mg/l	0.0	0.0	0.0	0-19%
Chloride	GP49503/GN92778	LA47639-1	mg/l	15.1	15.2	0.7	0-13%
Silica, Dissolved	GN92737	LA47398-10	mg/l	0.0	0.0	0.0	0-20%
Solids, Total Dissolved	GN92718	LA47618-1	mg/l	423	419	1.0	0-5%
Specific Conductivity	GN92791	TD27218-1	umhos/cm	2780	2780	0.0	0-10%
Sulfate	GP49503/GN92778	LA47639-1	mg/l	1.4	1.4	0.0	0-20%

Associated Samples:
Batch GN92718: LA47639-1, LA47639-2, LA47639-3
Batch GN92737: LA47639-1, LA47639-2, LA47639-3
Batch GN92791: LA47639-1, LA47639-2, LA47639-3
Batch GN92828: LA47639-1, LA47639-2, LA47639-3
Batch GP49503: LA47639-1, LA47639-2, LA47639-3
(*) Outside of QC limits

MATRIX SPIKE RESULTS SUMMARY
GENERAL CHEMISTRY

Login Number: LA47639
Account: ALLA - SGS Scott, LA
Project: HETILAL: 8060.00 Indigo-Desoto Parish, LA

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Alkalinity, Total as CaCO3	GN92828	LA47525-3	mg/l	490	25	151	100.0	75-117%
Bromide	GP49503/GN92778	LA47639-1	mg/l	0.0	10	10.1	101.0	80-120%
Chloride	GP49503/GN92778	LA47639-1	mg/l	15.1	10	26.0	109.0	80-120%
Silica, Dissolved	GN92737	LA47398-10	mg/l	0.0	1.07	0.92	86.0	75-125%
Sulfate	GP49503/GN92778	LA47639-1	mg/l	1.4	10	11.1	97.0	80-120%

Associated Samples:
Batch GN92737: LA47639-1, LA47639-2, LA47639-3
Batch GN92828: LA47639-1, LA47639-2, LA47639-3
Batch GP49503: LA47639-1, LA47639-2, LA47639-3
(*) Outside of QC limits
(N) Matrix Spike Rec. outside of QC limits