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*Automated Report*

## Technical Report for

**Approach Environmental, LLC**

**Comstock (Derrick Rig Supply)**

**SGS Job Number: LA46412**

**Sampling Date: 08/02/18**

### Report to:

**Approach Environmental, LLC  
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Shreveport, LA 71107  
marksm@approachenv.com**

**ATTN: Mark S. Moore**

**Total number of pages in report: 63**



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*  
**Ron Benjamin**  
**Lab Director**

**Client Service contact: Amy Jackson 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)

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Test results relate only to samples analyzed.

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### Sample Summary

**Approach Environmental, LLC**

**Job No: LA46412**

**Comstock (Derrick Rig Supply)**

Sample Number	Collected		Matrix			Client Sample ID
	Date	Time By	Received	Code	Type	
LA46412-1	08/02/18	13:40 DD	08/03/18	AQ	Water	DERRICK RIG SUPPLY



## Summary of Hits

Job Number: LA46412  
Account: Approach Environmental, LLC  
Project: Comstock (Derrick Rig Supply)  
Collected: 08/02/18

Lab Sample ID	Client Sample ID	Result/ Qual	RL	MDL	Units	Method
---------------	------------------	-----------------	----	-----	-------	--------

LA46412-1      DERRICK RIG SUPPLY

Methane <sup>a</sup>	5.56	0.00055			mg/l	RSK-175
Barium	0.0122	0.010			mg/l	SW846 6010C
Sodium	224	0.50			mg/l	SW846 6010C
Sulfur <sup>a</sup>	0.0950	0.050			mg/l	SW846 6010D
Chloride <sup>b</sup>	46.2	2.5			mg/l	SW846 9056A
Solids, Total Dissolved <sup>b</sup>	543	10			mg/l	SM 2540C-2011

(a) Analysis performed at SGS Dayton, NJ.

(b) Analysis performed at SGS Houston, TX.

## Sample Results

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## Report of Analysis

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## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> DERRICK RIG SUPPLY	<b>Date Sampled:</b> 08/02/18
<b>Lab Sample ID:</b> LA46412-1	<b>Date Received:</b> 08/03/18
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015C	
<b>Project:</b> Comstock (Derrick Rig Supply)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LA307378.D	1	08/06/18 21:28	MB	n/a	n/a	GLA1973
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	0.10	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
460-00-4	4-Bromofluorobenzene	103%		89-126%	
540-36-3	1,4-Difluorobenzene	102%		70-135%	

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

## Report of Analysis

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3

<b>Client Sample ID:</b> DERRICK RIG SUPPLY	<b>Date Sampled:</b> 08/02/18
<b>Lab Sample ID:</b> LA46412-1	<b>Date Received:</b> 08/03/18
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8021B	
<b>Project:</b> Comstock (Derrick Rig Supply)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	LO026529.D	1	08/06/18 15:35	SV	n/a	n/a	GLO617
Run #2							

Run #	Purge Volume
Run #1	5.0 ml
Run #2	

### Purgeable Aromatics

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	0.0010	mg/l	
108-88-3	Toluene	ND	0.0010	mg/l	
100-41-4	Ethylbenzene	ND	0.0010	mg/l	
1330-20-7	Xylenes (total)	ND	0.0030	mg/l	

CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits
540-36-3	1,4-Difluorobenzene	90%		51-157%
460-00-4	4-Bromofluorobenzene	94%		63-153%

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

## Report of Analysis

<b>Client Sample ID:</b> DERRICK RIG SUPPLY	
<b>Lab Sample ID:</b> LA46412-1	<b>Date Sampled:</b> 08/02/18
<b>Matrix:</b> AQ - Water	<b>Date Received:</b> 08/03/18
<b>Method:</b> RSK-175	<b>Percent Solids:</b> n/a
<b>Project:</b> Comstock (Derrick Rig Supply)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1 <sup>a</sup>	AA67087.D	5	08/10/18 16:51	ANJ	n/a	n/a	N:GAA1497
Run #2							

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	5.56	0.00055	mg/l	

(a) Analysis performed at SGS Dayton, NJ.

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



## Report of Analysis

3.1  
3

<b>Client Sample ID:</b> DERRICK RIG SUPPLY	<b>Date Sampled:</b> 08/02/18
<b>Lab Sample ID:</b> LA46412-1	<b>Date Received:</b> 08/03/18
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Method:</b> SW846 8015C SW846 3511	
<b>Project:</b> Comstock (Derrick Rig Supply)	

Run #	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
Run #1	GLH019627.D	1	08/09/18 06:23	JT	08/07/18 13:00	OP11932	GLH425
Run #2							

Run #	Initial Volume	Final Volume
Run #1	52.6 ml	1.5 ml
Run #2		

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	ND	0.14	mg/l	
	TPH-ORO (C28-C35)	ND	0.14	mg/l	
CAS No.	Surrogate Recoveries	Run# 1	Run# 2	Limits	
84-15-1	o-Terphenyl	91%		41-148%	

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

## Report of Analysis

<b>Client Sample ID:</b> DERRICK RIG SUPPLY <b>Lab Sample ID:</b> LA46412-1 <b>Matrix:</b> AQ - Water <b>Project:</b> Comstock (Derrick Rig Supply)	<b>Date Sampled:</b> 08/02/18 <b>Date Received:</b> 08/03/18 <b>Percent Solids:</b> n/a
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**Total Metals Analysis**

Analyte	Result	RL	Units	DF	Prep	Analyzed By	Method	Prep Method
Arsenic	< 0.010	0.010	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Barium	0.0122	0.010	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Cadmium	< 0.0050	0.0050	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Chromium	< 0.010	0.010	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Lead	< 0.010	0.010	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Mercury	< 0.00020	0.00020	mg/l	1	08/07/18	08/08/18 SA	SW846 7470A <sup>2</sup>	SW846 7470A <sup>5</sup>
Selenium	< 0.010	0.010	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Silver	< 0.010	0.010	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Sodium	224	0.50	mg/l	1	08/06/18	08/07/18 BB	SW846 6010C <sup>1</sup>	SW846 3010A <sup>4</sup>
Sulfur <sup>a</sup>	0.0950	0.050	mg/l	1	08/07/18	08/09/18 ANJ	SW846 6010D <sup>3</sup>	SW846 3010A <sup>6</sup>

- (1) Instrument QC Batch: MA12941
- (2) Instrument QC Batch: MA12948
- (3) Instrument QC Batch: N:MA45041
- (4) Prep QC Batch: MP12318
- (5) Prep QC Batch: MP12333
- (6) Prep QC Batch: N:MP8480

(a) Analysis performed at SGS Dayton, NJ.

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RL = Reporting Limit

## Report of Analysis

<b>Client Sample ID:</b> DERRICK RIG SUPPLY	<b>Date Sampled:</b> 08/02/18
<b>Lab Sample ID:</b> LA46412-1	<b>Date Received:</b> 08/03/18
<b>Matrix:</b> AQ - Water	<b>Percent Solids:</b> n/a
<b>Project:</b> Comstock (Derrick Rig Supply)	

### General Chemistry

Analyte	Result	RL	Units	DF	Analyzed	By	Method
Chloride <sup>a</sup>	46.2	2.5	mg/l	5	08/06/18 10:46	ATX	SW846 9056A
Solids, Total Dissolved <sup>a</sup>	543	10	mg/l	1	08/06/18	ATX	SM 2540C-2011

(a) Analysis performed at SGS Houston, TX.

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RL = Reporting Limit

**Misc. Forms**

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**Custody Documents and Other Forms**

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**Includes the following where applicable:**

- Chain of Custody



ACCUTEST

CHAIN OF CUSTODY

SGS Accutest - Scott
500 Ambassador Caffery Parkway, Scott, LA 70553
TEL: 337.237.4775 FAX: 337.237.7838
www.accutest.com

FED-EX Tracking #
Bottle Order Control #
SGS Accutest Quote #
SGS Accutest Job # LA 46412

Client / Reporting Information: Approach Environmental
Project Information: Comstock (Derrick Rig Supply)
Requested Analysis: BTEX, TPH-8015, Chlorides, Dissolved Methane, Sodium, TDS, Rck. Metals, Sulphur
Collection Table: 1 sample, 8/2/18, 1340, DID, 6, 18, 4, 3
Data Deliverable Information: Standard, Commercial "A", TRRP, EDD Format, State Forms, Other
Comments: YR-28 VW BPS-6 AI OL, BSV-5 OL 3W2
Chain of Custody: Relinquished by: [Signature], Date Time: 8/3/18 0911, Received By: Walter Newman, Date Time: 8/3/18

4.1
4



## SGS Sample Receipt Summary

Job Number: LA46412

Client: APPROACH ENV.

Project: DERRICK RIG SUPPLY

Date / Time Received: 8/3/2018 2:45:00 PM

Delivery Method: Accutest Courier

Airbill #s: \_\_\_\_\_

Cooler Temps (Initial/Adjusted): #1: (3.6/3.6); DV441

**Cooler Security**

- |                           |                          |           |                                     |                       |                                     |           |                          |
|---------------------------|--------------------------|-----------|-------------------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
|                           | <u>Y</u>                 | <u>or</u> | <u>N</u>                            |                       | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Custody Seals Present: | <input type="checkbox"/> |           | <input checked="" type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input type="checkbox"/> |           | <input checked="" type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |

**Cooler Temperature**

- |                            |                                     |           |                          |
|----------------------------|-------------------------------------|-----------|--------------------------|
|                            | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Temp criteria achieved: | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. Thermometer ID:         | <u>DV441;</u>                       |           |                          |
| 3. Cooler media:           | <u>Ice (direct contact)</u>         |           |                          |
| 4. No. Coolers:            | <u>1</u>                            |           |                          |

**Quality Control Preservation**

- |                                 |                                     |           |                                     |                          |
|---------------------------------|-------------------------------------|-----------|-------------------------------------|--------------------------|
|                                 | <u>Y</u>                            | <u>or</u> | <u>N</u>                            | <u>N/A</u>               |
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            |           | <input checked="" type="checkbox"/> | <input type="checkbox"/> |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            |                          |
| 4. VOCs headspace free:         | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            | <input type="checkbox"/> |

**Sample Integrity - Documentation**

- |  |                                     |           |                          |
|--|-------------------------------------|-----------|--------------------------|
|  | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |

**Sample Integrity - Condition**

- |                                  |                                     |           |                          |
|----------------------------------|-------------------------------------|-----------|--------------------------|
|                                  | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 3. Condition of sample:          | <u>Intact</u>                       |           |                          |

**Sample Integrity - Instructions**

- |   |                                     |           |                                     |                                     |
|---|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
|   | <u>Y</u>                            | <u>or</u> | <u>N</u>                            | <u>N/A</u>                          |
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            |           | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            |           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            |           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Comments

LA46412: Chain of Custody

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4.1  
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## GC Volatiles

### QC Data Summaries

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**Includes the following where applicable:**

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

# Method Blank Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLA1973-MB1	LA307326.D	1	08/06/18	MB	n/a	n/a	GLA1973

The QC reported here applies to the following samples:

Method: SW846 8015C

LA46412-1

CAS No.	Compound	Result	RL	Units	Q
	TPH-GRO (C6-C10)	ND	0.10	mg/l	

CAS No.	Surrogate Recoveries	Limits	
460-00-4	4-Bromofluorobenzene	101%	89-126%
540-36-3	1,4-Difluorobenzene	101%	70-135%



# Method Blank Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLO617-MB2	LO026522.D	1	08/06/18	SV	n/a	n/a	GLO617

The QC reported here applies to the following samples:

Method: SW846 8021B

LA46412-1

CAS No.	Compound	Result	RL	Units	Q
71-43-2	Benzene	ND	1.0	ug/l	
100-41-4	Ethylbenzene	ND	1.0	ug/l	
108-88-3	Toluene	ND	1.0	ug/l	
1330-20-7	Xylenes (total)	ND	3.0	ug/l	

CAS No.	Surrogate Recoveries	Results	Limits
540-36-3	1,4-Difluorobenzene	99%	51-157%
460-00-4	4-Bromofluorobenzene	95%	63-153%

5.1.2  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLA1973-BS1	LA307316.D	1	08/06/18	MB	n/a	n/a	GLA1973
GLA1973-BSD1	LA307318.D	1	08/06/18	MB	n/a	n/a	GLA1973

The QC reported here applies to the following samples:

Method: SW846 8015C

LA46412-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	1	1.05	105	1.05	105	0	77-118/7

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
460-00-4	4-Bromofluorobenzene	99%	99%	89-126%
540-36-3	1,4-Difluorobenzene	105%	104%	70-135%

\* = Outside of Control Limits.

5.2.1  
5

# Blank Spike/Blank Spike Duplicate Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GLO617-BS1	LO026517.D	1	08/06/18	SV	n/a	n/a	GLO617
GLO617-BSD1	LO026518.D	1	08/06/18	SV	n/a	n/a	GLO617

The QC reported here applies to the following samples:

Method: SW846 8021B

LA46412-1

CAS No.	Compound	Spike ug/l	BSP ug/l	BSP %	BSD ug/l	BSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	50	50.6	101	48.1	96	5	80-121/8
100-41-4	Ethylbenzene	50	49.1	98	48.5	97	1	80-121/8
108-88-3	Toluene	50	49.0	98	48.8	98	0	85-118/8
1330-20-7	Xylenes (total)	150	145	97	144	96	1	84-116/8

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
540-36-3	1,4-Difluorobenzene	93%	94%	51-157%
460-00-4	4-Bromofluorobenzene	95%	96%	63-153%

\* = Outside of Control Limits.

5.2.2  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA46387-3MS	LA307350.D	20	08/06/18	MB	n/a	n/a	GLA1973
LA46387-3MSD	LA307352.D	20	08/06/18	MB	n/a	n/a	GLA1973
LA46387-3	LA307338.D	1	08/06/18	MB	n/a	n/a	GLA1973

The QC reported here applies to the following samples:

Method: SW846 8015C

LA46412-1

CAS No.	Compound	LA46387-3 mg/l	Spike Q	MS mg/l	MS %	Spike mg/l	MSD mg/l	MSD %	RPD	Limits Rec/RPD
	TPH-GRO (C6-C10)	0.0670	20	19.8	99	20	20.7	103	4	77-118/7

CAS No.	Surrogate Recoveries	MS	MSD	LA46387-3	Limits
460-00-4	4-Bromofluorobenzene	95%	95%	101%	89-126%
540-36-3	1,4-Difluorobenzene	101%	101%	99%	70-135%

\* = Outside of Control Limits.

5.3.1  
5

# Matrix Spike/Matrix Spike Duplicate Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
LA46393-1MS	LO026530.D	5	08/06/18	SV	n/a	n/a	GLO617
LA46393-1MSD	LO026531.D	5	08/06/18	SV	n/a	n/a	GLO617
LA46393-1	LO026527.D	1	08/06/18	SV	n/a	n/a	GLO617

The QC reported here applies to the following samples:

Method: SW846 8021B

LA46412-1

CAS No.	Compound	LA46393-1 ug/l	Spike Q ug/l	MS ug/l	MS %	Spike ug/l	MSD ug/l	MSD %	RPD	Limits Rec/RPD
71-43-2	Benzene	ND	250	231	92	250	235	94	2	80-121/8
100-41-4	Ethylbenzene	1.0	250	226	90	250	237	94	5	80-121/8
108-88-3	Toluene	1.3	250	229	91	250	234	93	2	85-118/8
1330-20-7	Xylenes (total)	17.0	750	680	88	750	716	93	5	84-116/8

CAS No.	Surrogate Recoveries	MS	MSD	LA46393-1	Limits
540-36-3	1,4-Difluorobenzene	90%	90%	95%	51-157%
460-00-4	4-Bromofluorobenzene	100%	109%	103%	63-153%

\* = Outside of Control Limits.

5.3.2  
5

## 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: LA46412  
Account: APPRLAS Approach Environmental, LLC  
Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11932-MB	GLH019613.D	1	08/09/18	JT	08/07/18	OP11932	GLH425

The QC reported here applies to the following samples:

Method: SW846 8015C

LA46412-1

CAS No.	Compound	Result	RL	Units	Q
	TPH-DRO (C10-C28)	0.0264	0.072	mg/l	J
	TPH-ORO (C28-C35)	ND	0.072	mg/l	

CAS No.	Surrogate Recoveries	Limits
84-15-1	o-Terphenyl	100% 41-148%

# Blank Spike/Blank Spike Duplicate Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11932-BS1	GLH019614.D 1		08/09/18	JT	08/07/18	OP11932	GLH425
OP11932-BSD1	GLH019615.D 1		08/09/18	JT	08/07/18	OP11932	GLH425

The QC reported here applies to the following samples:

Method: SW846 8015C

LA46412-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH-DRO (C10-C28)	5.65	5.02	89	5.42	95	8	53-135/29

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	93%	106%	41-148%

\* = Outside of Control Limits.



# Blank Spike/Blank Spike Duplicate Summary

Job Number: LA46412  
 Account: APPRLAS Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
OP11932-BS2	GLH019616.D 1		08/09/18	JT	08/07/18	OP11932	GLH425
OP11932-BSD2	GLH019617.D 1		08/09/18	JT	08/07/18	OP11932	GLH425

The QC reported here applies to the following samples:

Method: SW846 8015C

LA46412-1

CAS No.	Compound	Spike mg/l	BSP mg/l	BSP %	BSD mg/l	BSD %	RPD	Limits Rec/RPD
	TPH-ORO (C28-C35)	2.27	2.09	92	2.05	89	2	30-130/35

CAS No.	Surrogate Recoveries	BSP	BSD	Limits
84-15-1	o-Terphenyl	119%	102%	41-148%

\* = 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: LA46412  
Account: APPRLAS - Approach Environmental, LLC  
Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12318  
Matrix Type: AQUEOUS

Methods: SW846 6010C  
Units: ug/l

Prep Date: 08/06/18

Metal	RL	IDL	MDL	MB raw	final
Aluminum	100	9.5	56		
Antimony	6.0	1.4	3		
Arsenic	10	3.4	3.6	4.4	<10
Barium	10	.22	4	-0.010	<10
Beryllium	4.0	.04	.3		
Boron	100	.63	30		
Cadmium	5.0	.21	.4	0.060	<5.0
Calcium	100	5.6	92		
Chromium	10	.29	2	0.090	<10
Cobalt	10	.22	1.7		
Copper	10	.5	3.8		
Iron	100	3.5	17		
Lead	10	1	3.1	0.28	<10
Lithium	10	3.1	8		
Magnesium	100	30	90		
Manganese	10	.23	1.2		
Molybdenum	10	.18	1		
Nickel	10	.44	5		
Potassium	500	41	220		
Selenium	10	1.9	4.5	-2.0	<10
Silver	10	.5	2.8	-0.27	<10
Sodium	500	12	170	0.13	<500
Strontium	10	.12	3.2		
Thallium	10	3.9	5.1		
Tin	10	.56	2.4		
Titanium	10	.3	2.4		
Vanadium	10	.26	2.4		
Zinc	20	.19	3.7		

Associated samples MP12318: LA46412-1

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

7.1.1  
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
 Account: APPRLAS - Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12318  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 08/06/18

Metal	LA46413-1 Original MS		SpikeLot ICPSPK1% Rec		QC Limits
Aluminum					
Antimony					
Arsenic	4.2	1080	1000	107.6	75-125
Barium	46.4	1040	1000	99.4	75-125
Beryllium					
Boron					
Cadmium	0.0	1090	1000	109.0	75-125
Calcium					
Chromium	0.46	1010	1000	101.0	75-125
Cobalt					
Copper	anr				
Iron					
Lead	1.3	1020	1000	101.9	75-125
Lithium					
Magnesium					
Manganese					
Molybdenum					
Nickel					
Potassium					
Selenium	0.0	1080	1000	108.0	75-125
Silver	0.0	1040	1000	104.0	75-125
Sodium	221000	225000	10000	40.0 (a)	75-125
Strontium					
Thallium					
Tin					
Titanium					
Vanadium					
Zinc	anr				

Associated samples MP12318: LA46412-1

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.

7.1.2  
7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
 Account: APPRLAS - Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12318  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 08/06/18

Metal	LA46413-1 Original MSD		SpikeLot ICPSPK1% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic	4.2	1070	1000	106.6	0.9	20
Barium	46.4	1060	1000	101.4	1.9	20
Beryllium						
Boron						
Cadmium	0.0	1090	1000	109.0	0.0	20
Calcium						
Chromium	0.46	1010	1000	101.0	0.0	20
Cobalt						
Copper	anr					
Iron						
Lead	1.3	1010	1000	100.9	1.0	20
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Potassium						
Selenium	0.0	1070	1000	107.0	0.9	20
Silver	0.0	1040	1000	104.0	0.0	20
Sodium	221000	232000	10000	110.0	3.1	20
Strontium						
Thallium						
Tin						
Titanium						
Vanadium						
Zinc	anr					

Associated samples MP12318: LA46412-1

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

7.1.2  
7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA46412  
 Account: APPRLAS - Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12318  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 08/06/18

Metal	BSP Result	Spikelot ICP SPIKE1% Rec	QC Limits
Aluminum			
Antimony			
Arsenic	1030	1000	103.0 80-120
Barium	1000	1000	100.0 80-120
Beryllium			
Boron			
Cadmium	1050	1000	105.0 80-120
Calcium			
Chromium	1010	1000	101.0 80-120
Cobalt			
Copper	anr		
Iron			
Lead	1060	1000	106.0 80-120
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Potassium			
Selenium	1040	1000	104.0 80-120
Silver	1020	1000	102.0 80-120
Sodium	10400	10000	104.0 80-120
Strontium			
Thallium			
Tin			
Titanium			
Vanadium			
Zinc	anr		

Associated samples MP12318: LA46412-1

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

7.1.3  
7

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA46412  
 Account: APPRLAS - Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12318  
 Matrix Type: AQUEOUS

Methods: SW846 6010C  
 Units: ug/l

Prep Date: 08/06/18

Metal	LA46413-1 Original	SDL 1:5	%DIF	QC Limits
Aluminum				
Antimony				
Arsenic	4.16	23.7	468.5 (a)	0-10
Barium	46.4	42.7	8.0	0-10
Beryllium				
Boron				
Cadmium	0.00	0.00	NC	0-10
Calcium				
Chromium	0.460	0.00	100.0 (a)	0-10
Cobalt				
Copper	anr			
Iron				
Lead	1.29	0.00	100.0 (a)	0-10
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Potassium				
Selenium	0.00	0.00	NC	0-10
Silver	0.00	0.00	NC	0-10
Sodium	221000	205000	7.3	0-10
Strontium				
Thallium				
Tin				
Titanium				
Vanadium				
Zinc	anr			

Associated samples MP12318: LA46412-1

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).

7.1.4  
7

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: LA46412  
Account: APPRLAS - Approach Environmental, LLC  
Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12333  
Matrix Type: AQUEOUS

Methods: SW846 7470A  
Units: ug/l

Prep Date: 08/07/18

Metal	RL	IDL	MDL	MB raw	final
Mercury	0.20	.032	.081	-0.082	<0.20

Associated samples MP12333: LA46412-1

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

7.2.1

7



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
Account: APPRLAS - Approach Environmental, LLC  
Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12333  
Matrix Type: AQUEOUS

Methods: SW846 7470A  
Units: ug/l

Prep Date: 08/07/18

Metal	LA46387-3F Original MS	SpikeLot HGSPIKE1	% Rec	QC Limits
-------	---------------------------	----------------------	-------	--------------

Mercury	0.039	3.9	5	77.2	75-125
---------	-------	-----	---	------	--------

Associated samples MP12333: LA46412-1

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

7.2.2

7

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
 Account: APPRLAS - Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12333  
 Matrix Type: AQUEOUS

Methods: SW846 7470A  
 Units: ug/l

Prep Date: 08/07/18

Metal	LA46387-3F Original MSD	SpikeLot HGSPIKE1	% Rec	MSD RPD	QC Limit
Mercury	0.039	3.8	5	75.2	2.6 20

Associated samples MP12333: LA46412-1

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

7.2.2

7

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA46412  
 Account: APPRLAS - Approach Environmental, LLC  
 Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12333  
 Matrix Type: AQUEOUS

Methods: SW846 7470A  
 Units: ug/l

Prep Date: 08/07/18

Metal	BSP Result	Spikelot HGSPIKE1	% Rec	QC Limits
Mercury	4.6	5	92.0	80-120

Associated samples MP12333: LA46412-1

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

7.2.3  
7

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA46412  
Account: APPRLAS - Approach Environmental, LLC  
Project: Comstock (Derrick Rig Supply)

QC Batch ID: MP12333  
Matrix Type: AQUEOUS

Methods: SW846 7470A  
Units: ug/l

Prep Date: 08/07/18

Metal	LA46387-3F	QC
	Original SDL 1:5	%DIF Limits

Mercury 0.0387 0.227 486.0(a) 0-

Associated samples MP12333: LA46412-1

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).

**Misc. Forms**

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**Custody Documents and Other Forms**

(SGS Dayton, NJ)

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**Includes the following where applicable:**

- Chain of Custody





WV

# CHAIN OF CUSTODY

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

FED. Tracking # <b>6449 SASO 3523</b>		Bottle Order Control #	
SGS Quote #		SGS Job # <b>LA46412</b>	
<b>Client / Reporting Information</b>		<b>Project Information</b>	
Company Name: <b>SGS North America Inc.</b>		Project Name: <b>Comstock (Derrick Rig Supply)</b>	
Street Address: <b>500 Ambassador Caffery Parkway</b>		Street:	
City State Zip: <b>Scott LA 70583</b>		Billing Information (if different from Report to)	
Project Contact E-mail: <b>amy.jackson2@sgs.com</b>		Company Name:	
Phone # Fax #: <b>800-304-5227</b>		Street Address:	
Sampler(s) Name(s) Phone: <b>DD</b>		Project #:	
		City State Zip:	
		Client Purchase Order #:	
		Attention:	
		Collection	
		Number of preserved Bottles	
SGS Sample #	Field ID / Point of Collection	MECHDI Val #	Date
1	DERRICK RIG SUPPLY		8/2/18
			Time
			1:40:00 PM
			Sampled by
			DD
			Matrix
			AQ
			# of bottles
			HCl
			NH <sub>4</sub> OH
			HNO <sub>3</sub>
			H <sub>2</sub> SO <sub>4</sub>
			NONE
			In Water
			MEOH
			ENCORE
			SLIP
			X
Turnaround Time ( Business days)		Data Deliverable Information	
<input type="checkbox"/> Std. 10 Business Days <input type="checkbox"/> 5 Day RUSH <input type="checkbox"/> 3 Day EMERGENCY <input type="checkbox"/> 2 Day EMERGENCY <input type="checkbox"/> 1 Day EMERGENCY <input checked="" type="checkbox"/> other Due <b>8/10/2018</b> <small>Emergency &amp; Rush T/A data available VIA Lablink</small>		<input type="checkbox"/> Commercial "A" (Level 1) <input type="checkbox"/> TRRP <input type="checkbox"/> Commercial "B" (Level 2) <input type="checkbox"/> EDD Format <input type="checkbox"/> FULLT1 (Level 3+4) <input type="checkbox"/> Other <input type="checkbox"/> REDT1 (Level 3+4) <input type="checkbox"/> Commercial "C"                    X            COMMB <small>Commercial "A" = Results Only Commercial "B" = Results + QC Summary</small>	
Approved By (SGS PM): / Date:		Comments / Special Instructions	
		INITIAL ASSESSMENT <i>Goetz</i> LABEL VERIFICATION _____	
Sample Custody must be documented below each time samples change possession, including courier delivery.			
Relinquished by Sampler:	Date Time:	Received By:	Date Time:
1 <i>[Signature]</i>	080318	1 <i>[Signature]</i>	8/1/18 10:00
Relinquished by Sampler:	Date Time:	Received By:	Date Time:
3		3	
Relinquished by Sampler:	Date Time:	Received By:	Date Time:
5		5	
Custody Seal #		Preserved where applicable	
		On Ice    Cooler Temp.	
		239	

LA

LA46412: Chain of Custody  
Page 1 of 2  
SGS Dayton, NJ

8.1  
8



## SGS Sample Receipt Summary

Job Number: LA46412

Client: \_\_\_\_\_

Project: \_\_\_\_\_

Date / Time Received: 8/4/2018 10:00:00 AM

Delivery Method: \_\_\_\_\_

Airbill #'s: \_\_\_\_\_

Cooler Temps (Raw Measured) °C: Cooler 1: (2.2);

Cooler Temps (Corrected) °C: Cooler 1: (2.1);

**Cooler Security**

- |                           |                                     |           |                          |                       |                                     |           |                          |
|---------------------------|-------------------------------------|-----------|--------------------------|-----------------------|-------------------------------------|-----------|--------------------------|
|                           | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |                       | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Custody Seals Present: | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> | 3. COC Present:       | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. Custody Seals Intact:  | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> | 4. Smpl Dates/Time OK | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |

**Cooler Temperature**

- |                              |                                     |           |                          |
|------------------------------|-------------------------------------|-----------|--------------------------|
|                              | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Temp criteria achieved:   | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. Cooler temp verification: | IR Gun                              |           |                          |
| 3. Cooler media:             | Ice (Bag)                           |           |                          |
| 4. No. Coolers:              | 1                                   |           |                          |

**Quality Control Preservation**

- |                                 |                                     |           |                                     |                                     |
|---------------------------------|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
|                                 | <u>Y</u>                            | <u>or</u> | <u>N</u>                            | <u>N/A</u>                          |
| 1. Trip Blank present / cooler: | <input type="checkbox"/>            |           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 2. Trip Blank listed on COC:    | <input type="checkbox"/>            |           | <input checked="" type="checkbox"/> | <input type="checkbox"/>            |
| 3. Samples preserved properly:  | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            |                                     |
| 4. VOCs headspace free:         | <input type="checkbox"/>            |           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

**Sample Integrity - Documentation**

- |  |                                     |           |                          |
|--|-------------------------------------|-----------|--------------------------|
|  | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Sample labels present on bottles:   | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. Container labeling complete:        | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 3. Sample container label / COC agree: | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |

**Sample Integrity - Condition**

- |                                  |                                     |           |                          |
|----------------------------------|-------------------------------------|-----------|--------------------------|
|                                  | <u>Y</u>                            | <u>or</u> | <u>N</u>                 |
| 1. Sample recvd within HT:       | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 2. All containers accounted for: | <input checked="" type="checkbox"/> |           | <input type="checkbox"/> |
| 3. Condition of sample:          | Intact                              |           |                          |

**Sample Integrity - Instructions**

- |   |                                     |           |                                     |                                     |
|---|-------------------------------------|-----------|-------------------------------------|-------------------------------------|
|   | <u>Y</u>                            | <u>or</u> | <u>N</u>                            | <u>N/A</u>                          |
| 1. Analysis requested is clear:           | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            |                                     |
| 2. Bottles received for unspecified tests | <input type="checkbox"/>            |           | <input checked="" type="checkbox"/> |                                     |
| 3. Sufficient volume recvd for analysis:  | <input checked="" type="checkbox"/> |           | <input type="checkbox"/>            |                                     |
| 4. Compositing instructions clear:        | <input type="checkbox"/>            |           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |
| 5. Filtering instructions clear:          | <input type="checkbox"/>            |           | <input type="checkbox"/>            | <input checked="" type="checkbox"/> |

Test Strip Lot #s:      pH 1-12: 216017      pH 12+: 208717      Other: (Specify) \_\_\_\_\_

Comments

SM089-03  
Rev. Date 12/7/17

LA46412: Chain of Custody

Page 2 of 2

## GC Volatiles

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### QC Data Summaries

(SGS Dayton, NJ)

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**Includes the following where applicable:**

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



# Method Blank Summary

Job Number: LA46412  
Account: ALLA SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA1497-MB	AA67062.D	1	08/10/18	PC	n/a	n/a	GAA1497

The QC reported here applies to the following samples:

Method: RSK-175

LA46412-1

CAS No.	Compound	Result	RL	Units	Q
74-82-8	Methane	ND	0.11	ug/l	

9.1.1  
9

# Laboratory Control Sample Summary

Job Number: LA46412  
Account: ALLA SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
GAA1497-LCS	AA67060.D	1	08/10/18	PC	n/a	n/a	GAA1497

The QC reported here applies to the following samples:

Method: RSK-175

LA46412-1

CAS No.	Compound	Spike ug/l	LCS ug/l	LCS %	Limits
74-82-8	Methane	11	12.2	111	59-134

9.2.1  
9

\* = Outside of Control Limits.

# Duplicate Summary

Job Number: LA46412  
 Account: ALLA SGS Scott, LA  
 Project: APPRLAS: Comstock (Derrick Rig Supply)

Sample	File ID	DF	Analyzed	By	Prep Date	Prep Batch	Analytical Batch
JC70908-2DUP	AA67093.D	5	08/10/18	PC	n/a	n/a	GAA1497
JC70908-2	AA67092.D	5	08/10/18	PC	n/a	n/a	GAA1497

The QC reported here applies to the following samples:

Method: RSK-175

LA46412-1

CAS No.	Compound	JC70908-2 ug/l	DUP Q ug/l	Q RPD	Limits
74-82-8	Methane	380	353	7	20

9.3.1  
9

\* = Outside of Control Limits.

## Metals Analysis

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### QC Data Summaries

(SGS Dayton, NJ)

---

**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: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
Matrix Type: AQUEOUS

Methods: SW846 6010D  
Units: ug/l

Prep Date: 08/07/18

Metal	RL	IDL	MDL	MB raw	final
Aluminum	200	8.8	46		
Antimony	6.0	1	4.7		
Arsenic	3.0	1.2	2.8		
Barium	200	.2	13		
Beryllium	1.0	.1	.5		
Bismuth	20	1.2	4		
Boron	100	1.8	63		
Cadmium	3.0	.1	1		
Calcium	5000	3.2	99		
Chromium	10	.3	2		
Cobalt	50	.3	2.6		
Copper	10	1.3	5.9		
Iron	100	1.9	32		
Lead	3.0	1.2	1.8		
Lithium	50	.8	7.3		
Magnesium	5000	16	140		
Manganese	15	.1	1.4		
Molybdenum	20	.4	3.6		
Nickel	10	.3	1.7		
Phosphorus	50	1.5	18		
Potassium	10000	46	200		
Selenium	10	2	4.9		
Silicon	200	1.7	100		
Silver	10	.4	1.9		
Sodium	10000	9.8	570		
Strontium	10	.1	1		
Sulfur	50	3.7	45	1.3	<50
Thallium	10	2.4	1.8		
Tin	10	.9	3.7		
Titanium	10	.1	2.5		
Tungsten	50	2.1	40		
Vanadium	50	.2	1.8		
Zinc	20	.1	6.9		

10.1.1  
10

BLANK RESULTS SUMMARY  
Part 2 - Method Blanks

Login Number: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
Matrix Type: AQUEOUS

Methods: SW846 6010D  
Units: ug/l

Prep Date: 08/07/18

Metal	RL	IDL	MDL	MB raw	final
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Zirconium 10 .2 4.1

Associated samples MP8480: LA46412-1

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

10.1.1  
10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
 Account: ALLA - SGS Scott, LA  
 Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
 Matrix Type: AQUEOUS

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 08/07/18

Metal	LA46412-1 Original MS	SpikeLot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Strontium				
Sulfur	95.0	2320	2000	111.3 75-125
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				
Zirconium				

10.1.2  
10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
Matrix Type: AQUEOUS

Methods: SW846 6010D  
Units: ug/l

Prep Date: 08/07/18

Metal	LA46412-1 Original MS	SpikeLot MPSPK2	% Rec	QC Limits
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Associated samples MP8480: LA46412-1

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

10.1.2  
10



MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
 Account: ALLA - SGS Scott, LA  
 Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
 Matrix Type: AQUEOUS

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 08/07/18

Metal	LA46412-1 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit	
Aluminum						
Antimony						
Arsenic						
Barium						
Beryllium						
Bismuth						
Boron						
Cadmium						
Calcium						
Chromium						
Cobalt						
Copper						
Iron						
Lead						
Lithium						
Magnesium						
Manganese						
Molybdenum						
Nickel						
Phosphorus						
Potassium						
Selenium						
Silicon						
Silver						
Strontium						
Sulfur	95.0	2350	2000	112.8	1.3	20
Thallium						
Tin						
Titanium						
Tungsten						
Vanadium						
Zinc						
Zirconium						

10.1.2  
10

MATRIX SPIKE AND DUPLICATE RESULTS SUMMARY

Login Number: LA46412  
 Account: ALLA - SGS Scott, LA  
 Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
 Matrix Type: AQUEOUS

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 08/07/18

Metal	LA46412-1 Original MSD	SpikeLot MPSPK2	% Rec	MSD RPD	QC Limit
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Associated samples MP8480: LA46412-1

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

10.1.2 10

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA46412  
 Account: ALLA - SGS Scott, LA  
 Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
 Matrix Type: AQUEOUS

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 08/07/18

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
Aluminum				
Antimony				
Arsenic				
Barium				
Beryllium				
Bismuth				
Boron				
Cadmium				
Calcium				
Chromium				
Cobalt				
Copper				
Iron				
Lead				
Lithium				
Magnesium				
Manganese				
Molybdenum				
Nickel				
Phosphorus				
Potassium				
Selenium				
Silicon				
Silver				
Sodium				
Strontium				
Sulfur	2150	2000	107.5	80-120
Thallium				
Tin				
Titanium				
Tungsten				
Vanadium				
Zinc				

10.1.3  
10

SPIKE BLANK AND LAB CONTROL SAMPLE SUMMARY

Login Number: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
Matrix Type: AQUEOUS

Methods: SW846 6010D  
Units: ug/l

Prep Date: 08/07/18

Metal	BSP Result	Spikelot MPSPK2	% Rec	QC Limits
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Zirconium

Associated samples MP8480: LA46412-1

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

10.1.3  
10

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA46412  
 Account: ALLA - SGS Scott, LA  
 Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
 Matrix Type: AQUEOUS

Methods: SW846 6010D  
 Units: ug/l

Prep Date: 08/07/18

Metal	LA46412-1 Original SDL 1:5	%DIF	QC Limits
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Aluminum			
Antimony			
Arsenic			
Barium			
Beryllium			
Bismuth			
Boron			
Cadmium			
Calcium			
Chromium			
Cobalt			
Copper			
Iron			
Lead			
Lithium			
Magnesium			
Manganese			
Molybdenum			
Nickel			
Phosphorus			
Potassium			
Selenium			
Silicon			
Silver			
Sodium			
Strontium			
Sulfur	95.0	87.1	8.3 0-10
Thallium			
Tin			
Titanium			
Tungsten			
Vanadium			
Zinc			

10.1.4  
10

SERIAL DILUTION RESULTS SUMMARY

Login Number: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

QC Batch ID: MP8480  
Matrix Type: AQUEOUS

Methods: SW846 6010D  
Units: ug/l

Prep Date: 08/07/18

	LA46412-1		QC
Metal	Original SDL 1:5	%DIF	Limits

Zirconium

Associated samples MP8480: LA46412-1

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

10.1.4  
10

**Misc. Forms**

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**Custody Documents and Other Forms**

(SGS Houston, TX)

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**Includes the following where applicable:**

- Chain of Custody









# SGS Sample Receipt Summary

**Job Number:** LA46412      **Client:** SGS      **Project:** COMSTOCK  
**Date / Time Received:** \_\_\_\_\_ **Delivery Method:** \_\_\_\_\_ **Airbill #'s:** \_\_\_\_\_  
**No. Coolers:** 1      **Therm ID:** IR-4;      **Temp Adjustment Factor:** 0;  
**Cooler Temps (Initial/Adjusted):** #1: (3/3);

<b>Cooler Security</b>	<u>Y or N</u>		<u>Y or N</u>
1. Custody Seals Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>	3. COC Present:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Custody Seals Intact:	<input checked="" type="checkbox"/> <input type="checkbox"/>	4. Smpl Dates/Time OK	<input checked="" type="checkbox"/> <input type="checkbox"/>
<b>Cooler Temperature</b>	<u>Y or N</u>		
1. Temp criteria achieved:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
2. Cooler temp verification:	_____		
3. Cooler media:	Ice (Bag)		
<b>Quality Control Preservation</b>	<u>Y or N</u>	<u>N/A</u>	<u>WTB STB</u>
1. Trip Blank present / cooler:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/> <input type="checkbox"/>
2. Trip Blank listed on COC:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>	
3. Samples preserved properly:	<input checked="" type="checkbox"/> <input type="checkbox"/>		
4. VOCs headspace free:	<input type="checkbox"/> <input type="checkbox"/>	<input checked="" type="checkbox"/>	

<b>Sample Integrity - Documentation</b>	<u>Y or N</u>
1. Sample labels present on bottles:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Container labeling complete:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Sample container label / COC agree:	<input checked="" type="checkbox"/> <input type="checkbox"/>
<b>Sample Integrity - Condition</b>	<u>Y or N</u>
1. Sample recvd within HT:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. All containers accounted for:	<input checked="" type="checkbox"/> <input type="checkbox"/>
3. Condition of sample:	Intact
<b>Sample Integrity - Instructions</b>	<u>Y or N</u> <u>N/A</u>
1. Analysis requested is clear:	<input checked="" type="checkbox"/> <input type="checkbox"/>
2. Bottles received for unspecified tests	<input type="checkbox"/> <input checked="" type="checkbox"/>
3. Sufficient volume recvd for analysis:	<input checked="" type="checkbox"/> <input type="checkbox"/>
4. Compositing instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>
5. Filtering instructions clear:	<input type="checkbox"/> <input type="checkbox"/> <input checked="" type="checkbox"/>

Comments

  
  
  
  
  
  
  
  
  
  


# Sample Receipt Log

**Job #:** LA46412                      **Date / Time Received:** 8/3/2018 10:45:00 PM                      **Initials:** DS  
**Client:** SGS

Cooler #	Sample ID:	Vol	Bot #	Location	Pres	pH	Therm ID	Initial Temp	Therm CF	Corrected Temp
1	LA46412-1	1000ml	1	M3E	N/P	Note #2 - Preservative check not applicable.	IR-4	3	0	3
1	LA46412-1	40ml	2	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3	0	3
1	LA46412-1	40ml	3	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3	0	3
1	LA46412-1	40ml	4	VR	HCL	Note #1 - Preservative to be checked by analyst at the instrument.	IR-4	3	0	3

11.1  
11

**LA46412: Chain of Custody**  
**Page 4 of 4**

## General Chemistry

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### QC Data Summaries

(SGS Houston, TX)

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#### 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: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

Analyte	Batch ID	RL	MB Result	Units	Spike Amount	BSP Result	BSP %Recov	QC Limits
Bromide	GP48903/GN91800	0.50	0.0	mg/l	10	9.60	96.0	90-110%
Chloride	GP48903/GN91800	0.50	0.0	mg/l	10	9.33	93.3	90-110%
Fluoride	GP48903/GN91800	0.50	0.0	mg/l	10	9.44	94.4	90-110%
Nitrogen, Nitrate	GP48903/GN91800	0.50	0.0	mg/l	10	9.25	92.5	90-110%
Nitrogen, Nitrite	GP48903/GN91800	0.50	0.0	mg/l	10	9.60	96.0	90-110%
Solids, Total Dissolved	GN91810	10	0.0	mg/l	500	489	97.8	88-110%
Sulfate	GP48903/GN91800	0.50	0.0	mg/l	10	9.63	96.3	90-110%

Associated Samples:  
Batch GN91810: LA46412-1  
Batch GP48903: LA46412-1  
(\* ) Outside of QC limits

12.1  
12

DUPLICATE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

Analyte	Batch ID	QC Sample	Units	Original Result	DUP Result	RPD	QC Limits
Bromide	GP48903/GN91800	LA46357-2	mg/l	0.0	0.0	0.0	0-19%
Chloride	GP48903/GN91800	LA46357-2	mg/l	7.2	7.5	4.1	0-13%
Solids, Total Dissolved	GN91810	LA46412-1	mg/l	543	547	0.7	0-5%
Sulfate	GP48903/GN91800	LA46357-2	mg/l	0.52	0.51	1.9	0-20%

Associated Samples:  
Batch GN91810: LA46412-1  
Batch GP48903: LA46412-1  
(\* Outside of QC limits)

12.2  
12

MATRIX SPIKE RESULTS SUMMARY  
GENERAL CHEMISTRY

Login Number: LA46412  
Account: ALLA - SGS Scott, LA  
Project: APPRLAS: Comstock (Derrick Rig Supply)

Analyte	Batch ID	QC Sample	Units	Original Result	Spike Amount	MS Result	%Rec	QC Limits
Bromide	GP48903/GN91800	LA46357-2	mg/l	0.0	10	9.8	98.0	80-120%
Chloride	GP48903/GN91800	LA46357-2	mg/l	7.2	10	17.5	103.0	80-120%
Sulfate	GP48903/GN91800	LA46357-2	mg/l	0.52	10	10.2	96.8	80-120%

Associated Samples:

Batch GP48903: LA46412-1

(\*) Outside of QC limits

(N) Matrix Spike Rec. outside of QC limits

12.3  
12