ANALYTICAL REPORT

Eurofins Calscience Irvine
17461 Derian Ave
Suite 100
Irvine, CA 92614-5817
Tel: (949)261-1022

Laboratory Job ID: 440-261334-1
Client Project/Site: REC TWIN PEAK 2M SERIES

For:
REC Americas LLC
111 Narlene Way
Pismo Beach, California 93449

Attn: George McClellan

Authorized for release by:
2/29/2020 10:38:50 AM

Rossina Tomova, Project Manager I
(949)260-3276
rossina.tomova@testamericainc.com

Table of Contents

Sample Summary

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received	Asset ID
440-261334-1	REC TWIN PEAK 2M SERIES	Solid	02/19/20 17:00	02/20/20 10:08	

Case Narrative

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Job ID: 440-261334-1

Laboratory: Eurofins Calscience Irvine

Narrative

Job Narrative
440-261334-1

Comments
No additional comments.

Receipt
The sample was received on 2/20/2020 10:08 AM; the sample arrived in good condition, properly preserved and, where required, on ice. The temperature of the cooler at receipt was 4.5º C.

Metals
Method 6010B: The matrix spike / matrix spike duplicate (MS/MSD) precision of Selenium for preparation batch 440-596844 and 440-597385 and analytical batch 440-597706 was outside control limits. Sample matrix interference and/or non-homogeneity are suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/Glossary page.

Organic Prep
No analytical or quality issues were noted, other than those described in the Definitions/Glossary page.

Client Sample Results

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Client Sample ID: REC TWIN PEAK 2M SERIES

Lab Sample ID: 440-261334-1

Date Collected: 02/19/20 17:00

Matrix: Solid

Date Received: 02/20/20 10:08

Method: 6010B - Metals (ICP) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.070	mg/L		02/26/20 10:10	02/27/20 15:46	1
Barium	**0.068**	**J**	0.20	0.060	mg/L		02/26/20 10:10	02/27/20 15:46	1
Cadmium	ND		0.10	0.020	mg/L		02/26/20 10:10	02/27/20 15:46	1
Chromium	**0.22**		0.10	0.020	mg/L		02/26/20 10:10	02/27/20 15:46	1
Lead	**0.68**		0.10	0.040	mg/L		02/26/20 10:10	02/27/20 15:46	1
Selenium	ND		0.10	0.080	mg/L		02/26/20 10:10	02/27/20 15:46	1
Silver	ND		0.20	0.060	mg/L		02/26/20 10:10	02/27/20 15:46	1

Method: 7470A - Mercury (CVAA) - TCLP

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		02/27/20 09:32	02/27/20 19:21	1

Method Summary

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Method	Method Description	Protocol	Laboratory
6010B	Metals (ICP)	SW846	TAL IRV
7470A	Mercury (CVAA)	SW846	TAL IRV
1311	TCLP Extraction	SW846	TAL IRV
3010A	Preparation, Total Metals	SW846	TAL IRV
7470A	Preparation, Mercury	SW846	TAL IRV

Protocol References:

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

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

Lab Chronicle

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Client Sample ID: REC TWIN PEAK 2M SERIES

Date Collected: 02/19/20 17:00
Date Received: 02/20/20 10:08

Lab Sample ID: 440-261334-1

Matrix: Solid

Prep Type	Batch Type	Batch Method	Run	Dil Factor	Initial Amount	Final Amount	Batch Number	Prepared or Analyzed	Analyst	Lab
TCLP	Leach	1311			99.94 g	2000 mL	596844	02/23/20 12:25	CDH	TAL IRV
TCLP	Prep	3010A			5 mL	50 mL	597385	02/26/20 10:10	EMS	TAL IRV
TCLP	Analysis	6010B		1			597706	02/27/20 15:46	TQN	TAL IRV
TCLP	Leach	1311			99.94 g	2000 mL	596844	02/23/20 12:25	CDH	TAL IRV
TCLP	Prep	7470A			2 mL	20 mL	597613	02/27/20 09:32	MEM	TAL IRV
TCLP	Analysis	7470A		1			597759	02/27/20 19:21	DB	TAL IRV

Laboratory References:

TAL IRV = Eurofins Calscience Irvine, 17461 Derian Ave, Suite 100, Irvine, CA 92614-5817, TEL (949)261-1022

QC Sample Results

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Method: 6010B - Metals (ICP)

Lab Sample ID: MB 440-596844/1-B
Matrix: Solid
Analysis Batch: 597706

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 597385

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	ND		0.20	0.070	mg/L		02/26/20 10:10	02/27/20 15:19	1
Barium	ND		0.20	0.060	mg/L		02/26/20 10:10	02/27/20 15:19	1
Cadmium	ND		0.10	0.020	mg/L		02/26/20 10:10	02/27/20 15:19	1
Chromium	ND		0.10	0.020	mg/L		02/26/20 10:10	02/27/20 15:19	1
Lead	ND		0.10	0.040	mg/L		02/26/20 10:10	02/27/20 15:19	1
Selenium	ND		0.10	0.080	mg/L		02/26/20 10:10	02/27/20 15:19	1
Silver	ND		0.20	0.060	mg/L		02/26/20 10:10	02/27/20 15:19	1

Lab Sample ID: LCS 440-596844/2-B
Matrix: Solid
Analysis Batch: 597706

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 597385

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	2.00	1.99		mg/L		100	80 - 120
Barium	2.00	1.99		mg/L		99	80 - 120
Cadmium	2.00	1.96		mg/L		98	80 - 120
Chromium	2.00	2.05		mg/L		102	80 - 120
Lead	2.00	1.98		mg/L		99	80 - 120
Selenium	2.00	1.84		mg/L		92	80 - 120
Silver	1.00	0.988		mg/L		99	80 - 120

Lab Sample ID: 440-261192-A-1-F MS ^5
Matrix: Solid
Analysis Batch: 597706

Client Sample ID: Matrix Spike
Prep Type: TCLP
Prep Batch: 597385

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits
Arsenic	ND		2.00	2.16		mg/L		108	75 - 125
Barium	ND		2.00	1.94		mg/L		97	75 - 125
Cadmium	ND		2.00	1.93		mg/L		96	75 - 125
Chromium	ND		2.00	1.93		mg/L		97	75 - 125
Lead	1100		2.00	810	4	mg/L		-15650	75 - 125
Selenium	ND	F2	2.00	1.67		mg/L		83	75 - 125
Silver	ND		1.00	0.970	J	mg/L		97	75 - 125

Lab Sample ID: 440-261192-A-1-G MSD ^5
Matrix: Solid
Analysis Batch: 597706

Client Sample ID: Matrix Spike Duplicate
Prep Type: TCLP
Prep Batch: 597385

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Arsenic	ND		2.00	2.34		mg/L		117	75 - 125	8	20
Barium	ND		2.00	2.09		mg/L		105	75 - 125	7	20
Cadmium	ND		2.00	2.06		mg/L		103	75 - 125	7	20
Chromium	ND		2.00	2.13		mg/L		107	75 - 125	10	20
Lead	1100		2.00	898	4	mg/L		-11275	75 - 125	10	20
Selenium	ND	F2	2.00	2.15	F2	mg/L		108	75 - 125	25	20
Silver	ND		1.00	1.03		mg/L		103	75 - 125	6	20

Method: 7470A - Mercury (CVAA)

Lab Sample ID: MB 440-596844/1-C
Matrix: Solid
Analysis Batch: 597759

Client Sample ID: Method Blank
Prep Type: TCLP
Prep Batch: 597613

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Mercury	ND		0.0020	0.0010	mg/L		02/27/20 09:32	02/27/20 23:54	1

Lab Sample ID: LCS 440-596844/2-C
Matrix: Solid
Analysis Batch: 597759

Client Sample ID: Lab Control Sample
Prep Type: TCLP
Prep Batch: 597613

Analyte			Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury			0.0400	0.0400		mg/L		100	80 - 120		

Lab Sample ID: 440-261334-1 MS
Matrix: Solid
Analysis Batch: 597759

Client Sample ID: REC TWIN PEAK 2M SERIES
Prep Type: TCLP
Prep Batch: 597613

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec. Limits		
Mercury	ND		0.0400	0.0405		mg/L		101	70 - 130		

Lab Sample ID: 440-261334-1 MSD
Matrix: Solid
Analysis Batch: 597759

Client Sample ID: REC TWIN PEAK 2M SERIES
Prep Type: TCLP
Prep Batch: 597613

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec. Limits	RPD	RPD Limit
Mercury	ND		0.0400	0.0399		mg/L		100	70 - 130	2	20

QC Association Summary

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Metals

Leach Batch: 596844

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-261334-1	REC TWIN PEAK 2M SERIES	TCLP	Solid	1311	
MB 440-596844/1-B	Method Blank	TCLP	Solid	1311	
MB 440-596844/1-C	Method Blank	TCLP	Solid	1311	
LCS 440-596844/2-B	Lab Control Sample	TCLP	Solid	1311	
LCS 440-596844/2-C	Lab Control Sample	TCLP	Solid	1311	
440-261192-A-1-F MS ^5	Matrix Spike	TCLP	Solid	1311	
440-261192-A-1-G MSD ^5	Matrix Spike Duplicate	TCLP	Solid	1311	
440-261334-1 MS	REC TWIN PEAK 2M SERIES	TCLP	Solid	1311	
440-261334-1 MSD	REC TWIN PEAK 2M SERIES	TCLP	Solid	1311	

Prep Batch: 597385

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-261334-1	REC TWIN PEAK 2M SERIES	TCLP	Solid	3010A	596844
MB 440-596844/1-B	Method Blank	TCLP	Solid	3010A	596844
LCS 440-596844/2-B	Lab Control Sample	TCLP	Solid	3010A	596844
440-261192-A-1-F MS ^5	Matrix Spike	TCLP	Solid	3010A	596844
440-261192-A-1-G MSD ^5	Matrix Spike Duplicate	TCLP	Solid	3010A	596844

Prep Batch: 597613

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-261334-1	REC TWIN PEAK 2M SERIES	TCLP	Solid	7470A	596844
MB 440-596844/1-C	Method Blank	TCLP	Solid	7470A	596844
LCS 440-596844/2-C	Lab Control Sample	TCLP	Solid	7470A	596844
440-261334-1 MS	REC TWIN PEAK 2M SERIES	TCLP	Solid	7470A	596844
440-261334-1 MSD	REC TWIN PEAK 2M SERIES	TCLP	Solid	7470A	596844

Analysis Batch: 597706

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-261334-1	REC TWIN PEAK 2M SERIES	TCLP	Solid	6010B	597385
MB 440-596844/1-B	Method Blank	TCLP	Solid	6010B	597385
LCS 440-596844/2-B	Lab Control Sample	TCLP	Solid	6010B	597385
440-261192-A-1-F MS ^5	Matrix Spike	TCLP	Solid	6010B	597385
440-261192-A-1-G MSD ^5	Matrix Spike Duplicate	TCLP	Solid	6010B	597385

Analysis Batch: 597759

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
440-261334-1	REC TWIN PEAK 2M SERIES	TCLP	Solid	7470A	597613
MB 440-596844/1-C	Method Blank	TCLP	Solid	7470A	597613
LCS 440-596844/2-C	Lab Control Sample	TCLP	Solid	7470A	597613
440-261334-1 MS	REC TWIN PEAK 2M SERIES	TCLP	Solid	7470A	597613
440-261334-1 MSD	REC TWIN PEAK 2M SERIES	TCLP	Solid	7470A	597613

Definitions/Glossary

Client: REC Americas LLC
Project/Site: REC TWIN PEAK 2M SERIES

Job ID: 440-261334-1

Qualifiers

Metals

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
F2	MS/MSD RPD exceeds control limits
J	Result is less than the RL but greater than or equal to the MDL and the concentration is an approximate value.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
¤	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
PQL	Practical Quantitation Limit
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)

Accreditation/Certification Summary

Client: REC Americas LLC
Job ID: 440-261334-1
Project/Site: REC TWIN PEAK 2M SERIES

Laboratory: Eurofins Calscience Irvine

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
California	State	2706	06-30-20

The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.

Analysis Method	Prep Method	Matrix	Analyte

Chain of Custody Record 308895

TestAmerica
THE LEADER IN ENVIRONMENTAL TESTING
TestAmerica Laboratories, Inc.

TAL-8210 (0713)

Regulatory Program: ☐ DW ☐ NPDES ☐ RCRA ☐ Other:

Client Contact	Project Manager: McClellan	Site Contact:	Date: 20 Feb 20	COC No.
Company Name: REC AMERICAS	Tel/Fax:	Lab Contact: Rossini	Carrier:	1 of 1 COCs
Address: 1640 GATEWAY DR	**Analysis Turnaround Time**			Sampler: McClellan
City/State/Zip: SAN MATEO, CA 94404	☐ CALENDAR DAYS ☐ WORKING DAYS			**For Lab Use Only:**
Phone: 805-704-3226	TAT if different from Below _____			Walk-in Client
Fax:	☐ 2 weeks			Lab Sampling
Project Name: REC TCLP	☐ 1 week			
Site: REC TWIN PEAK 2M SERIES	☐ 2 days			Job / SDG No.
P O #	☐ 1 day			

Sample Identification	Sample Date	Sample Time	Sample Type (C=Comp, G=Grab)	Matrix	# of Cont.	Filtered Sample (Y/N)	Perform MS / MSD (Y/N)	RCRA TCLP + Hg TCLP	Sample Specific Notes:
REC TWN PEAK 2M Series	2/19	17:00		S	1	N	X	✓ ✓	

440-261334 Chain of Custody

Preservation Used: 1= Ice, 2= HCl; 3= H_2SO_4; 4=HNO_3; 5=NaOH; 6= Other _____

Possible Hazard Identification:
Are any samples from a listed EPA Hazardous Waste? Please List any EPA Waste Codes for the sample in the Comments Section if the lab is to dispose of the sample

☑ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown

Sample Disposal (A fee may be assessed if samples are retained longer than 1 month)

☐ Return to Client ☐ Disposal by Lab ☐ Archive for _____ Months

Special Instructions/QC Requirements & Comments:

Custody Seals Intact: ☐ Yes ☐ No | Custody Seal No.: | Cooler Temp. (°C): Obs'd. 4.5 Corr'd: 4.5 Therm ID No 93

Relinquished by:	Company	Date/Time	Received by:	Company:	Date/Time
Jon Mclellan	REC AmericAS	20 Feb/10:00			
Relinquished by:	Company	Date/Time	Received by:	Company	Date/Time:
Relinquished by:	Company:	Date/Time:	Received in Laboratory by:	Company EC 112V	Date/Time 2/20/20 1008

Page 13 of 14

2/20/2020

Login Sample Receipt Checklist

Client: REC Americas LLC

Job Number: 440-261334-1

Login Number: 261334
List Number: 1
Creator: Escalante, Maria I

List Source: Eurofins Irvine

Question	Answer	Comment
Radioactivity wasn't checked or is </= background as measured by a survey meter.	True	
The cooler's custody seal, if present, is intact.	N/A	Not present
Sample custody seals, if present, are intact.	N/A	Not Present
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	N/A	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is <6mm (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	