



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1712964

**Report Created for:** Patrick Roddie

1935 Franklin Street #603  
San Francisco, CA 94109

**Project Contact:** Patrick Roddie

**Project P.O.:**

**Project:** SF rain 12-3-17

**Project Received:** 12/20/2017

Analytical Report reviewed & approved for release on 12/28/2017 by:

Yen Cao

Project Manager

*The report shall not be reproduced except in full, without the written approval of the laboratory. The analytical results relate only to the items tested. Results reported conform to the most current NELAP standards, where applicable, unless otherwise stated in the case narrative.*





## Glossary of Terms & Qualifier Definitions

**Client:** Patrick Roddie  
**Project:** SF rain 12-3-17  
**WorkOrder:** 1712964

### Glossary Abbreviation

|              |  |
|--------------|--|
| %D           | Serial Dilution Percent Difference   |
| 95% Interval | 95% Confident Interval   |
| DF           | Dilution Factor  |
| DI WET       | (DISTLC) Waste Extraction Test using DI water  |
| DISS         | Dissolved (direct analysis of 0.45 µm filtered and acidified water sample)               |
| DLT          | Dilution Test (Serial Dilution)  |
| DUP          | Duplicate  |
| EDL          | Estimated Detection Limit  |
| ERS          | External reference sample. Second source calibration verification.                       |
| ITEF         | International Toxicity Equivalence Factor  |
| LCS          | Laboratory Control Sample  |
| MB           | Method Blank   |
| MB % Rec     | % Recovery of Surrogate in Method Blank, if applicable                                   |
| MDL          | Method Detection Limit   |
| ML           | Minimum Level of Quantitation  |
| MS           | Matrix Spike   |
| MSD          | Matrix Spike Duplicate   |
| N/A          | Not Applicable   |
| ND           | Not detected at or above the indicated MDL or RL   |
| NR           | Data Not Reported due to matrix interference or insufficient sample amount.              |
| PDS          | Post Digestion Spike   |
| PDSD         | Post Digestion Spike Duplicate   |
| PF           | Prep Factor  |
| RD           | Relative Difference  |
| RL           | Reporting Limit (The RL is the lowest calibration standard in a multipoint calibration.) |
| RPD          | Relative Percent Deviation   |
| RRT          | Relative Retention Time  |
| SPK Val      | Spike Value  |
| SPKRef Val   | Spike Reference Value  |
| SPLP         | Synthetic Precipitation Leachate Procedure   |
| ST           | Sorbent Tube   |
| TCLP         | Toxicity Characteristic Leachate Procedure   |
| TEQ          | Toxicity Equivalents   |
| WET (STLC)   | Waste Extraction Test (Soluble Threshold Limit Concentration)                            |

### Analytical Qualifiers

J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.



# Analytical Report

**Client:** Patrick Roddie  
**Date Received:** 12/20/17 17:00  
**Date Prepared:** 12/20/17  
**Project:** SF rain 12-3-17

**WorkOrder:** 1712964  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L

## Metals

| Client ID     | Lab ID       | Matrix | Date Collected   | Instrument        | Batch ID |
|---------------|--------------|--------|------------------|-------------------|----------|
| San Francisco | 1712964-001A | Water  | 12/03/2017 07:00 | ICP-MS1 130SMPL.D | 150610   |

| Analytes | Result | Qualifiers | MDL  | RL   | DF | Date Analyzed    |
|----------|--------|------------|------|------|----|------------------|
| Aluminum | ND     |            | 14   | 50   | 1  | 12/22/2017 03:20 |
| Barium   | 9.6    |            | 1.1  | 5.0  | 1  | 12/22/2017 03:20 |
| Iron     | 19     | J          | 4.4  | 20   | 1  | 12/22/2017 03:20 |
| Titanium | 0.38   | J          | 0.13 | 0.50 | 1  | 12/22/2017 03:20 |

| Surrogates | REC (%) | Limits |
|------------|---------|--------|
| Terbium    | 95      | 70-130 |

Analyst(s): ND



## Quality Control Report

**Client:** Patrick Roddie  
**Date Prepared:** 12/20/17  
**Date Analyzed:** 12/21/17 - 12/22/17  
**Instrument:** ICP-MS1, ICP-MS3  
**Matrix:** Water  
**Project:** SF rain 12-3-17

**WorkOrder:** 1712964  
**BatchID:** 150610  
**Extraction Method:** E200.8  
**Analytical Method:** E200.8  
**Unit:** µg/L  
**Sample ID:** MB/LCS-150610  
 1712950-001GMS/MSD

### QC Summary Report for Metals

| Analyte  | MB Result | LCS Result | MDL  | RL   | SPK Val | MB SS %REC | LCS %REC | LCS Limits |
|----------|-----------|------------|------|------|---------|------------|----------|------------|
| Aluminum | ND        | 498        | 14   | 50   | 500     | -          | 100      | 85-115     |
| Barium   | ND        | 486        | 1.1  | 5.0  | 500     | -          | 97       | 85-115     |
| Iron     | ND        | 4890       | 4.4  | 20   | 5000    | -          | 98       | 85-115     |
| Titanium | ND        | 48.9       | 0.13 | 0.50 | 50      | -          | 98       | 85-115     |

#### Surrogate Recovery

|         |       |     |  |  |     |     |    |        |
|---------|-------|-----|--|--|-----|-----|----|--------|
| Terbium | 780.2 | 744 |  |  | 750 | 104 | 99 | 70-130 |
|---------|-------|-----|--|--|-----|-----|----|--------|

| Analyte  | MS Result | MSD Result | SPK Val | SPKRef Val | MS %REC | MSD %REC | MS/MSD Limits | RPD  | RPD Limit |
|----------|-----------|------------|---------|------------|---------|----------|---------------|------|-----------|
| Aluminum | 595       | 595        | 500     | 120        | 96      | 96       | 75-125        | 0    | 20        |
| Barium   | 638       | 627        | 500     | 130        | 102     | 99       | 75-125        | 1.64 | 20        |
| Iron     | 5520      | 5450       | 5000    | 670        | 97      | 96       | 75-125        | 1.19 | 20        |
| Titanium | 57.4      | 56.7       | 50      | 7.3        | 100     | 99       | 75-125        | 1.30 | 20        |

#### Surrogate Recovery

|         |     |     |     |  |     |     |        |   |    |
|---------|-----|-----|-----|--|-----|-----|--------|---|----|
| Terbium | 773 | 775 | 750 |  | 103 | 103 | 70-130 | 0 | 20 |
|---------|-----|-----|-----|--|-----|-----|--------|---|----|

| Analyte  | DLT Result | DLTRef Val | %D   | %D Limit |
|----------|------------|------------|------|----------|
| Aluminum | ND<250     | 120        | -    | -        |
| Barium   | 123        | 130        | 5.38 | -        |
| Iron     | 650        | 670        | 2.99 | 20       |
| Titanium | 7.08       | 7.3        | 3.01 | -        |

%D Control Limit applied to analytes with concentrations greater than 25 times the reporting limits.



1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262

WaterTrax     WriteOn     EDF

# CHAIN-OF-CUSTODY RECORD

WorkOrder: 1712964

ClientCode: PRSF

Excel     EQulS     Email     HardCopy     ThirdParty     J-flag  
 Detection Summary     Dry-Weight

**Report to:**

Patrick Roddie  
Patrick Roddie  
1935 Franklin Street #603  
San Francisco, CA 94109  
415 336-4728    FAX:

Email: patrick@webbery.com  
cc/3rd Party:  
PO:  
Project: SF rain 12-3-17

**Bill to:**

Accounts Payable  
Patrick Roddie  
1935 Franklin Street #603  
San Francisco, CA 94109

**Requested TAT: 5 days;**

**Date Received: 12/20/2017**

**Date Logged: 12/20/2017**

| Lab ID      | Client ID     | Matrix | Collection Date | Hold                     | Requested Tests (See legend below) |   |   |   |   |   |   |   |   |    |    |    |  |
|-------------|---------------|--------|-----------------|--------------------------|------------------------------------|---|---|---|---|---|---|---|---|----|----|----|--|
|             |               |        |                 |                          | 1                                  | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |  |
| 1712964-001 | San Francisco | Water  | 12/3/2017 07:00 | <input type="checkbox"/> | A                                  |   |   |   |   |   |   |   |   |    |    |    |  |

**Test Legend:**

|   |                 |    |  |    |  |    |  |
|---|-----------------|----|--|----|--|----|--|
| 1 | METALSMS_TTLC_W | 2  |  | 3  |  | 4  |  |
| 5 |                 | 6  |  | 7  |  | 8  |  |
| 9 |                 | 10 |  | 11 |  | 12 |  |

**Prepared by: Nancy Palacios**

**Comments:**

NOTE: Soil samples are discarded 60 days after results are reported unless other arrangements are made (Water samples are 30 days).  
Hazardous samples will be returned to client or disposed of at client expense.



### WORK ORDER SUMMARY

**Client Name:** PATRICK RODDIE  
**Client Contact:** Patrick Roddie  
**Contact's Email:** patrick@webbery.com

**Project:** SF rain 12-3-17

**Work Order:** 1712964  
**QC Level:** LEVEL 2  
**Date Logged:** 12/20/2017

**Comments:**

WaterTrax     WriteOn     EDF     Excel     Fax     Email     HardCopy     ThirdParty     J-flag

| Lab ID       | Client ID     | Matrix | Test Name  | Containers /Composites | Bottle & Preservative | De-chlorinated           | Collection Date & Time | TAT    | Sediment Content | Hold                     | SubOut |
|--------------|---------------|--------|--|------------------------|-----------------------|--------------------------|------------------------|--------|------------------|--------------------------|--------|
| 1712964-001A | San Francisco | Water  | E200.8 (Metals) <Aluminum, Barium, Iron, Titanium> | 1                      | 250mL HDPE w/ HNO3    | <input type="checkbox"/> | 12/3/2017 7:00         | 5 days | None             | <input type="checkbox"/> |        |

**NOTES:** - STLC and TCLP extractions require 2 days to complete; therefore, all TATs begin after the extraction is completed (i.e., One-day TAT yields results in 3 days from sample submission).  
- MAI assumes that all material present in the provided sampling container is considered part of the sample - MAI does not exclude any material from the sample prior to sample preparation unless requested in writing by the client.





### Sample Receipt Checklist

Client Name: **Patrick Roddie**  
 Project: **SF rain 12-3-17**

Date and Time Received: **12/20/2017 17:00**  
 Date Logged: **12/20/2017**  
 Received by: **Nancy Palacios**  
 Logged by: **Nancy Palacios**

WorkOrder No: **1712964** Matrix: Water  
 Carrier: Moises Vasquez (contract courier)

**Chain of Custody (COC) Information**

- Chain of custody present? Yes  No
- Chain of custody signed when relinquished and received? Yes  No
- Chain of custody agrees with sample labels? Yes  No
- Sample IDs noted by Client on COC? Yes  No
- Date and Time of collection noted by Client on COC? Yes  No
- Sampler's name noted on COC? Yes  No
- COC agrees with Quote? Yes  No  NA

**Sample Receipt Information**

- Custody seals intact on shipping container/cooler? Yes  No  NA
- Shipping container/cooler in good condition? Yes  No
- Samples in proper containers/bottles? Yes  No
- Sample containers intact? Yes  No
- Sufficient sample volume for indicated test? Yes  No

**Sample Preservation and Hold Time (HT) Information**

- All samples received within holding time? Yes  No  NA
- Sample/Temp Blank temperature Temp: 3.5°C NA
- Water - VOA vials have zero headspace / no bubbles? Yes  No  NA
- Sample labels checked for correct preservation? Yes  No
- pH acceptable upon receipt (Metal: <2; 522: <4; 218.7: >8)? Yes  No  NA
- Samples Received on Ice? Yes  No

(Ice Type: WET ICE )

**UCMR Samples:**

- Total Chlorine tested and acceptable upon receipt for EPA 522? Yes  No  NA
- Free Chlorine tested and acceptable upon receipt for EPA 218.7, 300.1, 537, 539? Yes  No  NA

Comments: