

**Appendix**  
**Water Quality and Mineralogy Analysis**

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**Water Quality and Mineralogy Analysis**



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1811A77 B

**Report Created for:** Monterey Peninsula Water Management

5 Harris Ct. Bldg G  
Monterey, CA 93940

**Project Contact:** Jonathan Lear

**Project P.O.:**

**Project:** ASR; Monterey, CA

**Project Received:** 11/20/2018

Analytical Report reviewed & approved for release on 12/11/2018 by:

Jennifer Lagerbom  
Project Manager

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## Glossary of Terms & Qualifier Definitions

**Client:** Monterey Peninsula Water Management  
**Project:** ASR; Monterey, CA  
**WorkOrder:** 1811A77

### 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
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## **Glossary of Terms & Qualifier Definitions**

**Client:** Monterey Peninsula Water Management  
**Project:** ASR; Monterey, CA  
**WorkOrder:** 1811A77

### **Analytical Qualifiers**

B Analyte detected in the associated Method Blank and in the sample  
J Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.  
j1 See attached narrative



## Case Narrative

**Client:** Monterey Peninsula Water Management

**Work Order:** 1811A77

**Project:** ASR; Monterey, CA

December 14, 2018

SW6010B:

j1) Phosphorous was analyzed by SW6010B from the same SW3050B extracts originally analyzed by SW6020 for Hg only. The QC samples were not spiked for Phosphorous and therefore not analyzed.

SW6020:

The metals including Hg by SW6020 were all analyzed from the original SW3050B Hg only extracts. The associated QC was analyzed.

E300.0 and SM2320B:

The data is reported from new aliquots (non-acidified/digested) of the solid samples weighed and stored.



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 11/20/18 13:10  
**Date Prepared:** 12/4/18  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg-dry

### Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
595-600	1811A77-002A	Solid	11/15/2018	IC4 12061833.D	169369

Analytes	Result	MDL	RL	DF	Date Analyzed
Chloride	50	0.86	13	1	12/05/2018 15:46
Sulfate	1800	11	67	5	12/05/2018 21:22

Surrogates	REC (%)	Limits
Formate	93	80-120

Analyst(s): AO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
465	1811A77-011A	Solid	11/15/2018	IC4 12061834.D	169369

Analytes	Result	MDL	RL	DF	Date Analyzed
Chloride	35	0.79	12	1	12/05/2018 16:00
Sulfate	74	2.1	12	1	12/05/2018 16:00

Surrogates	REC (%)	Limits
Formate	92	80-120

Analyst(s): AO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
420	1811A77-014A	Solid	11/15/2018	IC4 12061835.D	169369

Analytes	Result	MDL	RL	DF	Date Analyzed
Chloride	17	0.67	11	1	12/05/2018 16:13
Sulfate	17	1.8	11	1	12/05/2018 16:13

Surrogates	REC (%)	Limits
Formate	90	80-120

Analyst(s): AO



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 11/20/18 13:10  
**Date Prepared:** 12/11/18  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**Extraction Method:** SM2320 Bm-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/kg-dry

### Total & Speciated Alkalinity as Calcium Carbonate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
595-600	1811A77-002A	Solid	11/15/2018	Titrimo F059179	169764

Analytes	Result	MDL	RL	DF	Date Analyzed
Total Alkalinity	3960	539	539	1	12/11/2018 14:41
Carbonate	ND	539	539	1	12/11/2018 14:41
Bicarbonate	3960	539	539	1	12/11/2018 14:41
Hydroxide	ND	539	539	1	12/11/2018 14:41

Analyst(s): HN

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
465	1811A77-011A	Solid	11/15/2018	Titrimo F059181	169764

Analytes	Result	MDL	RL	DF	Date Analyzed
Total Alkalinity	3650	493	493	1	12/11/2018 14:54
Carbonate	ND	493	493	1	12/11/2018 14:54
Bicarbonate	3650	493	493	1	12/11/2018 14:54
Hydroxide	ND	493	493	1	12/11/2018 14:54

Analyst(s): HN

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
420	1811A77-014A	Solid	11/15/2018	Titrimo F059182	169764

Analytes	Result	MDL	RL	DF	Date Analyzed
Total Alkalinity	1030	421	421	1	12/11/2018 14:56
Carbonate	ND	421	421	1	12/11/2018 14:56
Bicarbonate	1030	421	421	1	12/11/2018 14:56
Hydroxide	ND	421	421	1	12/11/2018 14:56

Analyst(s): HN





## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 11/20/18 13:10  
**Date Prepared:** 12/4/18  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6010B  
**Unit:** mg/Kg-dry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
595-600	1811A77-002A	Solid	11/15/2018	ICP-OES 40	169368

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Phosphorous	<b>6600</b>	5.5	67	1	12/05/2018 15:08

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>
Terbium	101	75-125

Analyst(s): ND Analytical Comments: j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
465	1811A77-011A	Solid	11/15/2018	ICP-OES 41	169368

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Phosphorous	<b>1500</b>	5.1	62	1	12/05/2018 15:11

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>
Terbium	106	75-125

Analyst(s): ND Analytical Comments: j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
420	1811A77-014A	Solid	11/15/2018	ICP-OES 3	169368

<u>Analytes</u>	<u>Result</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Phosphorous	<b>660</b>	4.3	53	1	12/05/2018 15:19

<u>Surrogates</u>	<u>REC (%)</u>	<u>Limits</u>
Terbium	110	75-125

Analyst(s): ND Analytical Comments: j1



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 11/20/18 13:10  
**Date Prepared:** 11/27/18  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg-dry

### Metals

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
595-600	1811A77-002A	Solid	11/15/2018			ICP-MS1 012SMPL.D	168977

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	43.9		0.0782	0.337	1	11/28/2018 09:14
Calcium	73,000	B	89	670	10	12/04/2018 15:39
Copper	43.0		0.0930	0.674	1	11/28/2018 09:14
Iron	15,900		1.62	27.0	1	11/28/2018 09:14
Magnesium	29,800		1.75	27.0	1	11/28/2018 09:14
Manganese	213		0.822	27.0	1	11/28/2018 09:14
Mercury	0.0981		0.00674	0.0674	1	11/28/2018 09:14
Nickel	62.4		0.0970	0.674	1	11/28/2018 09:14
Selenium	7.71		0.175	0.674	1	11/28/2018 09:14
Strontium	190		0.889	27.0	1	11/28/2018 09:14
Uranium	18.2		0.0943	0.674	1	11/28/2018 09:14
Zinc	171		1.89	6.74	1	11/28/2018 09:14

Surrogates	REC (%)	Limits
Terbium	105	70-130

**Analyst(s):** MIG, ND



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 11/20/18 13:10  
**Date Prepared:** 11/27/18  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg-dry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
465	1811A77-011A	Solid	11/15/2018	ICP-MS1 024SMPL.D	169001

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	0.811		0.0715	0.308	1	11/28/2018 10:28
Calcium	7370		8.14	61.7	1	11/28/2018 10:28
Copper	2.74		0.0851	0.617	1	11/28/2018 10:28
Iron	6280		1.48	24.7	1	11/28/2018 10:28
Magnesium	2450		1.60	24.7	1	11/28/2018 10:28
Manganese	43.8		0.752	24.7	1	11/28/2018 10:28
Mercury	0.0565	J	0.00617	0.0617	1	11/28/2018 10:28
Nickel	6.98		0.0888	0.617	1	11/28/2018 10:28
Selenium	ND		0.160	0.617	1	11/28/2018 10:28
Strontium	21.5	J	0.814	24.7	1	11/28/2018 10:28
Uranium	3.98		0.0863	0.617	1	11/28/2018 10:28
Zinc	23.4		1.73	6.17	1	11/28/2018 10:28

Surrogates	REC (%)	Limits
Terbium	109	70-130

**Analyst(s):** ND



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 11/20/18 13:10  
**Date Prepared:** 11/27/18  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg-dry

### Metals

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
420	1811A77-014A	Solid	11/15/2018			ICP-MS1 027SMPL.D	169001
Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed	
Cadmium	0.137	J	0.0611	0.263	1	11/28/2018 10:46	
Calcium	2380		6.95	52.6	1	11/28/2018 10:46	
Copper	1.61		0.0726	0.526	1	11/28/2018 10:46	
Iron	2720		1.26	21.1	1	11/28/2018 10:46	
Magnesium	637		1.37	21.1	1	11/28/2018 10:46	
Manganese	26.1		0.642	21.1	1	11/28/2018 10:46	
Mercury	0.0334	J	0.00526	0.0526	1	11/28/2018 10:46	
Nickel	2.23		0.0758	0.526	1	11/28/2018 10:46	
Selenium	ND		0.137	0.526	1	11/28/2018 10:46	
Strontium	5.76	J	0.695	21.1	1	11/28/2018 10:46	
Uranium	1.12		0.0737	0.526	1	11/28/2018 10:46	
Zinc	4.06	J	1.47	5.26	1	11/28/2018 10:46	
Surrogates	REC (%)				Limits		
Terbium	115				70-130	11/28/2018 10:46	
<b>Analyst(s):</b> ND							



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 12/4/18  
**Date Analyzed:** 12/5/18  
**Instrument:** IC4  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 169369  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg  
**Sample ID:** MB/LCS/LCSD-169369

### QC Summary Report for E300.0

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Chloride	ND	0.64	10	-	-	-
Sulfate	ND	1.7	10	-	-	-
<b>Surrogate Recovery</b>						
Formate	10			10	100	80-120

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chloride	89	91	100	89	91	80-120	2.19	20
Sulfate	91	93	100	91	93	80-120	2.07	20
<b>Surrogate Recovery</b>								
Formate	9.8	9.7	10	98	97	80-120	0.847	20



# Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 12/11/18  
**Date Analyzed:** 12/11/18  
**Instrument:** Titrino  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 169764  
**Extraction Method:** SM2320 Bm-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/kg

## QC Summary Report for SM2320B (Alkalinity)

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1811A77-002A	2940	1	2600	1	12.3	<20



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 11/27/18  
**Date Analyzed:** 11/28/18 - 12/12/18  
**Instrument:** ICP-MS1, ICP-MS3  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 168977  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-168977

### QC Summary Report for Mercury

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Cadmium	ND	0.058	0.25	-	-	-
Calcium	140	6.6	50	-	-	-
Copper	ND	0.069	0.50	-	-	-
Iron	3.1,J	1.2	20	-	-	-
Magnesium	17,J	1.3	20	-	-	-
Manganese	ND	0.61	20	-	-	-
Mercury	ND	0.0050	0.050	-	-	-
Nickel	ND	0.072	0.50	-	-	-
Selenium	ND	0.13	0.50	-	-	-
Uranium	ND	0.070	0.50	-	-	-
Zinc	1.8,J	1.4	5.0	-	-	-

**Surrogate Recovery**

Terbium	510			500	103	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Cadmium	50	49	50	101	97	75-125	3.71	20
Calcium	5400	5200	5000	107	105	75-125	2.35	20
Copper	51	49	50	101	99	75-125	2.18	20
Iron	5100	5000	5000	102	100	75-125	2.00	20
Magnesium	5100	4900	5000	102	99	75-125	3.39	20
Manganese	5200	5000	5000	104	101	75-125	3.07	20
Mercury	1.2	1.2	1.25	97	97	75-125	0	20
Nickel	50	49	50	101	98	75-125	2.45	20
Selenium	50	50	50	101	100	75-125	0.358	20
Uranium	54	52	50	107	104	75-125	2.92	20
Zinc	500	490	500	100	98	75-125	2.27	20

**Surrogate Recovery**

Terbium	520	510	500	104	101	70-130	2.57	20
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(Cont.)



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 11/27/18  
**Date Analyzed:** 11/28/18 - 12/12/18  
**Instrument:** ICP-MS1, ICP-MS2, ICP-MS3  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 169001  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-169001  
 1811A77-015AMS/MSD

### QC Summary Report for Mercury

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Cadmium	ND	0.058	0.25	-	-	-
Calcium	14,J	6.6	50	-	-	-
Copper	ND	0.069	0.50	-	-	-
Iron	ND	1.2	20	-	-	-
Magnesium	ND	1.3	20	-	-	-
Manganese	ND	0.61	20	-	-	-
Mercury	ND	0.0050	0.050	-	-	-
Nickel	ND	0.072	0.50	-	-	-
Selenium	ND	0.13	0.50	-	-	-
Uranium	ND	0.070	0.50	-	-	-
Zinc	ND	1.4	5.0	-	-	-
<b>Surrogate Recovery</b>						
Terbium	500			500	100	70-130





## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 11/27/18  
**Date Analyzed:** 11/28/18 - 12/12/18  
**Instrument:** ICP-MS1, ICP-MS2, ICP-MS3  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 169001  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-169001  
 1811A77-015AMS/MSD

### QC Summary Report for Mercury

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Cadmium	49	49	50	97	98	75-125	0.410	20
Calcium	5200	5300	5000	105	106	75-125	1.44	20
Copper	49	50	50	98	100	75-125	1.89	20
Iron	5000	5000	5000	100	100	75-125	0	20
Magnesium	5000	5000	5000	99	101	75-125	1.76	20
Manganese	5100	5100	5000	101	102	75-125	0.985	20
Mercury	1.2	1.2	1.25	94	96	75-125	2.02	20
Nickel	50	50	50	100	101	75-125	1.32	20
Selenium	49	50	50	98	101	75-125	2.58	20
Uranium	52	51	50	105	102	75-125	2.65	20
Zinc	490	490	500	98	99	75-125	0.712	20

**Surrogate Recovery**

Terbium	510	520	500	103	104	70-130	1.45	20
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Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	1	52	52	50	ND	103	104	75-125	0.734	20
Calcium	1	7800	8400	5000	3209	92	104	75-125	7.19	20
Copper	1	52	53	50	0.7698	103	104	75-125	1.25	20
Iron	1	6400	6600	5000	1279	102	106	75-125	2.88	20
Magnesium	1	5500	5600	5000	355.1	103	106	75-125	1.92	20
Manganese	1	5200	5300	5000	ND	104	105	75-125	1.16	20
Mercury	1	1.2	1.3	1.25	ND	98	101	75-125	3.01	20
Nickel	1	54	55	50	1.758	104	106	75-125	1.12	20
Selenium	1	52	52	50	ND	104	104	75-125	0	20
Uranium	1	53	53	50	0.5904	104	105	75-125	0.530	20
Zinc	1	510	520	500	ND	102	103	75-125	1.01	20

**Surrogate Recovery**

Terbium	1	530	530	500		106	107	70-130	0.527	20
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Analyte	DLT Result	DLTRef Val	%D	%D Limit
Cadmium	ND<1.2	ND	-	-
Calcium	3100	3209	3.40	20

(Cont.)



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 11/27/18  
**Date Analyzed:** 11/28/18 - 12/12/18  
**Instrument:** ICP-MS1, ICP-MS2, ICP-MS3  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 169001  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-169001  
 1811A77-015AMS/MSD

### QC Summary Report for Mercury

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Copper	ND<2.5	0.7698	-	-
Iron	1200	1279	6.18	20
Magnesium	360	355.1	1.38	-
Manganese	ND<100	ND	-	-
Mercury	ND<0.25	ND	-	-
Nickel	ND<2.5	1.758	-	-
Selenium	ND<2.5	ND	-	-
Uranium	ND<2.5	0.5904	-	-
Zinc	ND<25	ND	-	-

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



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 11/27/18  
**Date Analyzed:** 11/28/18 - 11/29/18  
**Instrument:** ICP-MS3  
**Matrix:** Soil  
**Project:** ASR; Monterey, CA

**WorkOrder:** 1811A77  
**BatchID:** 169014  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-169014

### QC Summary Report for Mercury

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Cadmium	ND	0.058	0.25	-	-	-
Calcium	75	6.6	50	-	-	-
Copper	ND	0.069	0.50	-	-	-
Iron	1.3,J	1.2	20	-	-	-
Magnesium	4.3,J	1.3	20	-	-	-
Manganese	ND	0.61	20	-	-	-
Mercury	ND	0.0050	0.050	-	-	-
Nickel	ND	0.072	0.50	-	-	-
Selenium	ND	0.13	0.50	-	-	-
Uranium	ND	0.070	0.50	-	-	-
Zinc	ND	1.4	5.0	-	-	-

**Surrogate Recovery**

Terbium	510			500	103	70-130
---------	-----	--	--	-----	-----	--------

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Cadmium	48	47	50	95	95	75-125	0	20
Calcium	5300	5300	5000	106	106	75-125	0	20
Copper	47	47	50	94	95	75-125	0.0212	20
Iron	4800	4800	5000	97	96	75-125	0.870	20
Magnesium	4900	4900	5000	98	98	75-125	0	20
Manganese	5000	5000	5000	101	100	75-125	0.258	20
Mercury	1.2	1.2	1.25	95	95	75-125	0	20
Nickel	48	48	50	95	95	75-125	0	20
Selenium	49	48	50	98	97	75-125	1.37	20
Uranium	42	40	50	85	81	75-125	4.37	20
Zinc	480	480	500	96	96	75-125	0	20

**Surrogate Recovery**

Terbium	520	510	500	104	103	70-130	0.931	20
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1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262



# CHAIN-OF-CUSTODY RECORD

WorkOrder: **1811A77 B** ClientCode: **MPWM**

- WaterTrax   
  WriteOn   
  EDF   
  Excel   
  Fax   
  Email   
  HardCopy   
  ThirdParty   
  J-flag  
 Detection Summary   
  Dry-Weight

**Report to:**

Jonathan Lear  
Monterey Peninsula Water Management  
5 Harris Ct. Bldg G  
Monterey, CA 93940  
(831) 658-5600 FAX:

Email: jlear@mpwmd.net  
cc/3rd Party: stanner@pueblo-water.com; steve@ecoen  
PO:  
Project: ASR; Monterey, CA

**Bill to:**

Maureen Hamilton  
Monterey Peninsula Water Management  
5 Harris Ct. Bldg G  
Monterey, CA 93940

**Requested TAT: 3 days;**

**Date Received: 11/20/2018**  
**Date Logged: 11/27/2018**  
**Date Add-On: 12/04/2018**

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	
1811A77-002	595-600	Solid	11/15/2018 00:00	<input type="checkbox"/>	A	A	A										
1811A77-011	465	Solid	11/15/2018 00:00	<input type="checkbox"/>	A	A	A										
1811A77-014	420	Solid	11/15/2018 00:00	<input type="checkbox"/>	A	A	A										

**Test Legend:**

1	300_0_S	2	Alk_S	3	METALS_TTLC_S	4	
5		6		7		8	
9		10		11		12	

**Prepared by: Nancy Palacios**  
**Add-On 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:** MONTEREY PENINSULA WATER MANAGEMEN **Project:** ASR; Monterey, CA

**Client Contact:** Jonathan Lear

**Contact's Email** jlear@mpwmd.net

**Comments:**

**Work Order:** 1811A77

**QC Level:** LEVEL 2

**Date Logged:** 11/27/2018

**Date Add-On:** 12/4/2018

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1811A77-002A	595-600	Solid	SW6010B (Metals) <Phosphorous>	1	Vacuumed Sealed Packet	11/15/2018	3 days		<input type="checkbox"/>	
			SM2320Bm (Alkalinity)				3 days	<input type="checkbox"/>		
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				3 days	<input type="checkbox"/>		
1811A77-011A	465	Solid	SW6010B (Metals) <Phosphorous>	1	Vacuumed Sealed Packet	11/15/2018	3 days		<input type="checkbox"/>	
			SM2320Bm (Alkalinity)				3 days	<input type="checkbox"/>		
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				3 days	<input type="checkbox"/>		
1811A77-014A	420	Solid	SW6010B (Metals) <Phosphorous>	1	Vacuumed Sealed Packet	11/15/2018	3 days		<input type="checkbox"/>	
			SM2320Bm (Alkalinity)				3 days	<input type="checkbox"/>		
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				3 days	<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.





# McC Campbell Analytical, Inc.

1534 Willow Pass Rd. / Pittsburg, Ca. 94565-1701  
 www.mcccampbell.com / main@mcccampbell.com  
 Telephone: (877) 252-9262 / Fax: (925) 252-9269

**RUSH**  
 1811A77

## CHAIN OF CUSTODY RECORD

TURN AROUND TIME: RUSH  1 DAY  2 DAY  3 DAY  5 DAY

GeoTracker EDF  PDF  EDD  Write On (DW)  EQulS  10 DAY

Effluent Sample Requiring "J" flag  UST Clean Up Fund Project ; Claim # \_\_\_\_\_

Report To: Jonathan Lear Bill To: same

Company: Monterey Peninsula Water District

Tele: ( 831 ) 227-6001 E-Mail: jlear@mpwmd.net

Project #: Project Name: ASR

Project Location: Monterey, CA Purchase Order#

Sampler Signature: *[Signature]*

### Analysis Request

SAMPLE ID	Location/ Field Point Name	SAMPLING		# Containers	MATRIX								METHOD PRESERVED				
		Date	Time		Ground Water	Waste Water	Drinking Water	Sea Water	Soil	Air	Sludge	Other	HCL	HNO <sub>3</sub>	Other		
455		11/15/18								X				X			
435		11/15/18								X				X			
420		11/15/18								X				X			
410		11/15/18								X				X			
390		11/15/18								X				X			
375		11/15/18								X				X			
365		11-15-18								X				X			

Please Contact Steve Tanner for Testing Protocol (805) 620-2238

XX XX XX X HGMS-8  
XX XX XX X PERMOIST

Ca, Mg, Sr, P, Fe, Mn, Cu, Ni, Zn  
U, Se, Cd, Cl, S, Sulf, Alkalinity

\*\*MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

\*\*\* If metals are requested for water samples and the water type is not specified on the chain of custody, then MAI will default to metals by E200.8.

Relinquished By: <i>[Signature]</i>	Date: 11/19/18	Time: 10:00	Received By: Fedex 7838 6892 4407 11-20-18 1310
Relinquished By:	Date:	Time:	Received By: Nancy Palacios 11-20-18 1310
Relinquished By:	Date:	Time:	Received By:

ICE/°	COMMENTS:
GOOD CONDITION _____	
HEAD SPACE ABSENT _____	
DECHLORINATED IN LAB _____	
APPROPRIATE CONTAINERS _____	
PRESERVED IN LAB _____	
VOAS O&G METALS OTHER HAZARDOUS:	
PRESERVATION pH<2	



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1901874 A **Amended:** 02/28/2019

**Report Created for:** Monterey Peninsula Water Management

5 Harris Ct. Bldg G  
Monterey, CA 93940

**Project Contact:** Jonathan Lear

**Project P.O.:**

**Project:** Cuttings Analysis Step 3 (After Leaching)

**Project Received:** 01/16/2019

Analytical Report reviewed & approved for release on 02/28/2019 by:

Jennifer Lagerbom  
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:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (After Leaching)  
**WorkOrder:** 1901874 A

### 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
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (After Leaching)  
**WorkOrder:** 1901874 A

### Analytical Qualifiers

B	Analyte detected in the associated Method Blank and in the sample
J	Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
N	Collection date not provided
S	Spike recovery outside accepted recovery limits
a1	Sample diluted due to matrix interference
c1	Surrogate recovery outside of the control limits due to the dilution of the sample.
c2	Surrogate recovery outside of the control limits due to matrix interference.
j1 & j2	See attached narrative



## Case Narrative

**Client:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**Work Order:** 1901874  
February 14, 2019

j1) Percent Moisture Procedure was performed by ASTM D2216-05 with a temperature of 60 degrees C to prevent Hg vapor loss.



## Case Narrative

**Client:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**Work Order:** 1901874  
February 14, 2019

j2) Metals data is reported without QC. "6010 and 6020 DISTLC for 1901874 were rotated without a DI method blank, LCS, or LCSD. The client water was used and had high background; therefore the QC did not provide useful recovery data.



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** E300.0  
**Unit:** mg/L

### Inorganic Anions by IC (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
MPWMD 465' w/ Injectate	1901874-005A	Sludge	<Not Provided>	IC4 02041933.D	172377	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Chloride	<b>29</b>	N	0.20	5.0	5	02/02/2019 02:24
Sulfate	<b>73</b>	N	0.16	5.0	5	02/02/2019 02:24
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>			
Formate	79	S	90-115			02/02/2019 02:24
<u>Analyst(s):</u>	AO		<u>Analytical Comments:</u> c1			

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
MPWMD 595'-600' w/ Injectate	1901874-006A	Sludge	<Not Provided>	IC4 02041934.D	172377	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Chloride	<b>30</b>	N	0.20	5.0	5	02/02/2019 02:37
Sulfate	<b>360</b>	N	0.78	25	25	02/02/2019 03:57
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>	<u>Limits</u>			
Formate	78	S	90-115			02/02/2019 02:37
<u>Analyst(s):</u>	AO		<u>Analytical Comments:</u> c1			

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
MPWMD 465' w/ Post-Lime Treatment	1901874-007A	Sludge	<Not Provided>	IC4 02041932.D	172377	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Chloride	<b>13</b>	N	0.039	1.0	1	02/01/2019 19:30
Sulfate	<b>6.6</b>	N	0.031	1.0	1	02/01/2019 19:30
<u>Surrogates</u>	<u>REC (%)</u>		<u>Limits</u>			
Formate	102		90-115			02/01/2019 19:30
<u>Analyst(s):</u>	AO					

(Cont.)



# Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** E300.0  
**Unit:** mg/L

## Inorganic Anions by IC (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime Treatment	1901874-008A	Sludge	<Not Provided>	IC4 02041935.D	172377

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Chloride	14	N	0.20	5.0	5	02/02/2019 03:04
Sulfate	280	N	0.78	25	25	02/02/2019 04:23

Surrogates	REC (%)	Qualifiers	Limits
Formate	79	S	90-115

Analyst(s): AO

Analytical Comments: c1



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg-D ry

### Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
MPWMD 465' w/ Injectate DRIED Portion	1901874-005B	Sludge	<Not Provided>	IC4 02081942.D	172571	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Chloride	25	N	0.64	10	1	02/06/2019 19:30
Sulfate	57	N	1.7	10	1	02/06/2019 19:30
<u>Surrogates</u>	<u>REC (%)</u>			<u>Limits</u>		
Formate	100			80-120		02/06/2019 19:30
<u>Analyst(s):</u> AO						

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
MPWMD 595'-600' w/ Injectate DRIED Portion	1901874-006B	Sludge	<Not Provided>	IC4 02081943.D	172571	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Chloride	27	N	0.64	10	1	02/06/2019 19:43
Sulfate	800	N	17	100	10	02/08/2019 19:25
<u>Surrogates</u>	<u>REC (%)</u>			<u>Limits</u>		
Formate	102			80-120		02/06/2019 19:43
<u>Analyst(s):</u> AO						

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID	
MPWMD 465' w/ Post-Lime DRIED Portion	1901874-007B	Sludge	<Not Provided>	IC4 02081947.D	172571	
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>
Chloride	19	N	0.64	10	1	02/07/2019 01:30
Sulfate	17	N	1.7	10	1	02/07/2019 01:30
<u>Surrogates</u>	<u>REC (%)</u>	<u>Qualifiers</u>		<u>Limits</u>		
Formate	8	S		80-120		02/07/2019 01:30
<u>Analyst(s):</u> AO	<u>Analytical Comments:</u> c2					

(Cont.)



# Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg-D ry

## Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime DRIED Portion	1901874-008B	Sludge	<Not Provided>	IC4 02081945.D	172571

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Chloride	19	N	0.64	10	1	02/06/2019 20:36
Sulfate	760	N	17	100	10	02/07/2019 01:16

Surrogates	REC (%)	Limits
Formate	103	80-120

Analyst(s): AO





## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/5/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/L

### Total & Speciated Alkalinity as Calcium Carbonate (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate	1901874-005A	Sludge	<Not Provided>	Titrimo F059647	172495

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	146	N	0.260	1.00	1	02/05/2019 15:55
Carbonate	ND	N	0.260	1.00	1	02/05/2019 15:55
Bicarbonate	146	N	0.260	1.00	1	02/05/2019 15:55
Hydroxide	ND	N	0.260	1.00	1	02/05/2019 15:55

Analyst(s): HN

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate	1901874-006A	Sludge	<Not Provided>	Titrimo F059648	172495

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	156	N	0.260	1.00	1	02/05/2019 15:59
Carbonate	ND	N	0.260	1.00	1	02/05/2019 15:59
Bicarbonate	156	N	0.260	1.00	1	02/05/2019 15:59
Hydroxide	ND	N	0.260	1.00	1	02/05/2019 15:59

Analyst(s): HN

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime Treatment	1901874-007A	Sludge	<Not Provided>	Titrimo F059649	172495

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	65.9	N	0.260	1.00	1	02/05/2019 16:02
Carbonate	ND	N	0.260	1.00	1	02/05/2019 16:02
Bicarbonate	65.9	N	0.260	1.00	1	02/05/2019 16:02
Hydroxide	ND	N	0.260	1.00	1	02/05/2019 16:02

Analyst(s): HN

(Cont.)



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/5/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/L

### Total & Speciated Alkalinity as Calcium Carbonate (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime Treatment	1901874-008A	Sludge	<Not Provided>	Titrimo F059650	172495

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	122	N	0.260	1.00	1	02/05/2019 16:06
Carbonate	ND	N	0.260	1.00	1	02/05/2019 16:06
Bicarbonate	122	N	0.260	1.00	1	02/05/2019 16:06
Hydroxide	ND	N	0.260	1.00	1	02/05/2019 16:06

**Analyst(s):** HN



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/7/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SM2320 Bm-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/kg-D ry

### Total & Speciated Alkalinity as Calcium Carbonate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate DRIED Portion	1901874-005B	Sludge	<Not Provided>	Titrimo F059691	172653

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	3840	N	400	400	1	02/07/2019 16:05
Carbonate	ND	N	400	400	1	02/07/2019 16:05
Bicarbonate	3840	N	400	400	1	02/07/2019 16:05
Hydroxide	ND	N	400	400	1	02/07/2019 16:05

Analyst(s): PHU

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate DRIED Portion	1901874-006B	Sludge	<Not Provided>	Titrimo F059683	172653

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	6100	N	400	400	1	02/07/2019 15:14
Carbonate	ND	N	400	400	1	02/07/2019 15:14
Bicarbonate	6100	N	400	400	1	02/07/2019 15:14
Hydroxide	ND	N	400	400	1	02/07/2019 15:14

Analyst(s): PHU

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime DRIED Portion	1901874-007B	Sludge	<Not Provided>	Titrimo F059684	172653

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	3140	N	400	400	1	02/07/2019 15:16
Carbonate	ND	N	400	400	1	02/07/2019 15:16
Bicarbonate	3140	N	400	400	1	02/07/2019 15:16
Hydroxide	ND	N	400	400	1	02/07/2019 15:16

Analyst(s): PHU

(Cont.)



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/7/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SM2320 Bm-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/kg-D ry

### Total & Speciated Alkalinity as Calcium Carbonate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime DRIED Portion	1901874-008B	Sludge	<Not Provided>	Titrimo F059890	172653

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	4060	N	400	400	1	02/27/2019 14:49
Carbonate	ND	N	400	400	1	02/27/2019 14:49
Bicarbonate	4060	N	400	400	1	02/27/2019 14:49
Hydroxide	ND	N	400	400	1	02/27/2019 14:49

**Analyst(s):** PHU



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate	1901874-005A	Sludge	<Not Provided>	ICP-MS1 021SMPL.D	172374

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	ND	N	0.0025	0.0025	10	02/05/2019 10:04
Calcium	<b>45</b>	N	1.0	1.0	10	02/05/2019 10:04
Copper	ND	N	0.0050	0.0050	10	02/05/2019 10:04
Iron	ND	N	0.20	0.20	10	02/05/2019 10:04
Magnesium	<b>11</b>	N	0.20	0.20	10	02/05/2019 10:04
Manganese	ND	N	0.20	0.20	10	02/05/2019 10:04
Mercury	<b>0.00055</b>	BN	0.00050	0.00050	10	02/05/2019 10:04
Nickel	ND	N	0.0050	0.0050	10	02/05/2019 10:04
Selenium	ND	N	0.0050	0.0050	10	02/05/2019 10:04
Strontium	<b>0.23</b>	N	0.20	0.20	10	02/05/2019 10:04
Uranium	ND	N	0.0050	0.0050	10	02/05/2019 10:04
Zinc	ND	N	0.050	0.050	10	02/05/2019 10:04

Analyst(s): DB

Analytical Comments: a1,j2



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate	1901874-006A	Sludge	<Not Provided>	ICP-MS1 025SMPL.D	172374

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	ND	N	0.0025	0.0025	10	02/05/2019 10:28
Calcium	<b>110</b>	N	1.0	1.0	10	02/05/2019 10:28
Copper	ND	N	0.0050	0.0050	10	02/05/2019 10:28
Iron	ND	N	0.20	0.20	10	02/05/2019 10:28
Magnesium	<b>36</b>	N	0.20	0.20	10	02/05/2019 10:28
Manganese	ND	N	0.20	0.20	10	02/05/2019 10:28
Mercury	ND	N	0.00050	0.00050	10	02/05/2019 10:28
Nickel	<b>0.010</b>	BN	0.0050	0.0050	10	02/05/2019 10:28
Selenium	ND	N	0.0050	0.0050	10	02/05/2019 10:28
Strontium	<b>0.50</b>	N	0.20	0.20	10	02/05/2019 10:28
Uranium	<b>0.0061</b>	N	0.0050	0.0050	10	02/05/2019 10:28
Zinc	ND	N	0.050	0.050	10	02/05/2019 10:28

**Analyst(s):** DB

**Analytical Comments:** a1,j2



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime Treatment	1901874-007A	Sludge	<Not Provided>	ICP-MS1 026SMPL.D	172374

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	ND	N	0.0025	0.0025	10	02/05/2019 10:34
Calcium	15	N	1.0	1.0	10	02/05/2019 10:34
Copper	ND	N	0.0050	0.0050	10	02/05/2019 10:34
Iron	ND	N	0.20	0.20	10	02/05/2019 10:34
Magnesium	2.5	N	0.20	0.20	10	02/05/2019 10:34
Manganese	ND	N	0.20	0.20	10	02/05/2019 10:34
Mercury	ND	N	0.00050	0.00050	10	02/05/2019 10:34
Nickel	ND	N	0.0050	0.0050	10	02/05/2019 10:34
Selenium	ND	N	0.0050	0.0050	10	02/05/2019 10:34
Strontium	ND	N	0.20	0.20	10	02/05/2019 10:34
Uranium	ND	N	0.0050	0.0050	10	02/05/2019 10:34
Zinc	ND	N	0.050	0.050	10	02/05/2019 10:34

Analyst(s): DB

Analytical Comments: a1,j2



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SW6020  
**Unit:** mg/L

### Metals (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime Treatment	1901874-008A	Sludge	<Not Provided>	ICP-MS1 030SMPL.D	172374

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	ND	N	0.0025	0.0025	10	02/05/2019 10:59
Calcium	<b>96</b>	N	1.0	1.0	10	02/05/2019 10:59
Copper	ND	N	0.0050	0.0050	10	02/05/2019 10:59
Iron	ND	N	0.20	0.20	10	02/05/2019 10:59
Magnesium	<b>26</b>	N	0.20	0.20	10	02/05/2019 10:59
Manganese	ND	N	0.20	0.20	10	02/05/2019 10:59
Mercury	ND	N	0.00050	0.00050	10	02/05/2019 10:59
Nickel	ND	N	0.0050	0.0050	10	02/05/2019 10:59
Selenium	ND	N	0.0050	0.0050	10	02/05/2019 10:59
Strontium	<b>0.39</b>	N	0.20	0.20	10	02/05/2019 10:59
Uranium	<b>0.0092</b>	N	0.0050	0.0050	10	02/05/2019 10:59
Zinc	ND	N	0.050	0.050	10	02/05/2019 10:59

Analyst(s): DB

Analytical Comments: a1,j2





## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg-D ry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate DRIED Portion	1901874-005B	Sludge	<Not Provided>	ICP-MS1 189SMPL.D	172541

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	1.1	N	0.058	0.25	1	02/07/2019 04:12
Calcium	7900	N	6.6	50	1	02/07/2019 04:12
Copper	3.5	N	0.069	0.50	1	02/07/2019 04:12
Iron	6400	N	1.2	20	1	02/07/2019 04:12
Magnesium	2500	N	1.3	20	1	02/07/2019 04:12
Manganese	82	N	0.61	20	1	02/07/2019 04:12
Mercury	0.039	JBN	0.0050	0.050	1	02/07/2019 04:12
Nickel	7.4	N	0.072	0.50	1	02/07/2019 04:12
Selenium	ND	N	0.13	0.50	1	02/07/2019 04:12
Strontium	21	N	0.66	20	1	02/07/2019 04:12
Uranium	3.4	N	0.070	0.50	1	02/07/2019 04:12
Zinc	29	N	1.4	5.0	1	02/07/2019 04:12

Surrogates	REC (%)	Limits
Terbium	104	70-130

**Analyst(s):** JC



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg-D ry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate DRIED Portion	1901874-006B	Sludge	<Not Provided>	ICP-MS1 190SMPL.D	172541

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	35	N	0.058	0.25	1	02/07/2019 04:18
Calcium	69,000	N	33	250	5	02/07/2019 19:34
Copper	37	N	0.069	0.50	1	02/07/2019 04:18
Iron	15,000	N	1.2	20	1	02/07/2019 04:18
Magnesium	30,000	N	1.3	20	1	02/07/2019 04:18
Manganese	210	N	0.61	20	1	02/07/2019 04:18
Mercury	0.10	N	0.0050	0.050	1	02/07/2019 04:18
Nickel	55	N	0.072	0.50	1	02/07/2019 04:18
Selenium	6.3	N	0.13	0.50	1	02/07/2019 04:18
Strontium	130	N	0.66	20	1	02/07/2019 04:18
Uranium	17	N	0.070	0.50	1	02/07/2019 04:18
Zinc	150	N	1.4	5.0	1	02/07/2019 04:18

Surrogates	REC (%)	Limits
Terbium	99	70-130

**Analyst(s):** JC



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg-D ry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime DRIED Portion	1901874-007B	Sludge	<Not Provided>	ICP-MS1 191SMPL.D	172541

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	0.70	N	0.058	0.25	1	02/07/2019 04:24
Calcium	5100	N	6.6	50	1	02/07/2019 04:24
Copper	2.7	N	0.069	0.50	1	02/07/2019 04:24
Iron	5500	N	1.2	20	1	02/07/2019 04:24
Magnesium	2100	N	1.3	20	1	02/07/2019 04:24
Manganese	60	N	0.61	20	1	02/07/2019 04:24
Mercury	0.028	JBN	0.0050	0.050	1	02/07/2019 04:24
Nickel	6.0	N	0.072	0.50	1	02/07/2019 04:24
Selenium	ND	N	0.13	0.50	1	02/07/2019 04:24
Strontium	17	JN	0.66	20	1	02/07/2019 04:24
Uranium	3.0	N	0.070	0.50	1	02/07/2019 04:24
Zinc	23	N	1.4	5.0	1	02/07/2019 04:24

Surrogates	REC (%)	Limits
Terbium	102	70-130

**Analyst(s):** JC



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg-D ry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime DRIED Portion	1901874-008B	Sludge	<Not Provided>	ICP-MS1 192SMPL.D	172541

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	27	N	0.058	0.25	1	02/07/2019 04:31
Calcium	54,000	N	33	250	5	02/07/2019 19:40
Copper	25	N	0.069	0.50	1	02/07/2019 04:31
Iron	9700	N	1.2	20	1	02/07/2019 04:31
Magnesium	20,000	N	1.3	20	1	02/07/2019 04:31
Manganese	200	N	0.61	20	1	02/07/2019 04:31
Mercury	0.074	N	0.0050	0.050	1	02/07/2019 04:31
Nickel	34	N	0.072	0.50	1	02/07/2019 04:31
Selenium	4.3	N	0.13	0.50	1	02/07/2019 04:31
Strontium	86	N	0.66	20	1	02/07/2019 04:31
Uranium	9.9	N	0.070	0.50	1	02/07/2019 04:31
Zinc	100	N	1.4	5.0	1	02/07/2019 04:31

Surrogates	REC (%)	Limits
Terbium	98	70-130

**Analyst(s):** JC



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/1/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** CA Title 22 Modified  
**Analytical Method:** SW6010B  
**Unit:** mg/L

### Metals (DISTLC)

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate	1901874-005A	Sludge	<Not Provided>	ICP-OES 22	172375

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	ND	N	0.010	0.20	1	02/04/2019 14:07

Analyst(s): DB

Analytical Comments: j2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate	1901874-006A	Sludge	<Not Provided>	ICP-OES 56	172375

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	ND	N	0.010	0.20	1	02/04/2019 15:41

Analyst(s): DB

Analytical Comments: j2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime Treatment	1901874-007A	Sludge	<Not Provided>	ICP-OES 57	172375

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	ND	N	0.010	0.20	1	02/04/2019 15:43

Analyst(s): DB

Analytical Comments: j2

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime Treatment	1901874-008A	Sludge	<Not Provided>	ICP-OES 58	172375

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	ND	N	0.010	0.20	1	02/04/2019 15:46

Analyst(s): DB

Analytical Comments: j2



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/6/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6010B  
**Unit:** mg/Kg-D ry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate DRIED Portion	1901874-005B	Sludge	<Not Provided>	ICP-OES 12	172570

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	1500	N	4.1	50	1	02/11/2019 16:39

Surrogates	REC (%)	Limits
Terbium	108	75-125

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate DRIED Portion	1901874-006B	Sludge	<Not Provided>	ICP-OES 20	172570

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	3300	N	4.1	50	1	02/11/2019 17:02

Surrogates	REC (%)	Limits
Terbium	101	75-125

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime DRIED Portion	1901874-007B	Sludge	<Not Provided>	ICP-OES 19	172570

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	1300	N	4.1	50	1	02/11/2019 16:59

Surrogates	REC (%)	Limits
Terbium	109	75-125

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime DRIED Portion	1901874-008B	Sludge	<Not Provided>	ICP-OES 16	172570

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Phosphorous	2200	N	4.1	50	1	02/11/2019 16:51

Surrogates	REC (%)	Limits
Terbium	105	75-125

Analyst(s): ND



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 2/4/19  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** ASTM D2216-05  
**Analytical Method:** ASTM D2216-05  
**Unit:** wet wt%

### Percent Moisture at 60 Degrees C

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Injectate DRIED Portion	1901874-005B	Sludge	<Not Provided>	WetChem	172463

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
% Moisture	46.1	N	0.100	0.100	1	02/05/2019 06:31

Analyst(s): RB

Analytical Comments: j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Injectate DRIED Portion	1901874-006B	Sludge	<Not Provided>	WetChem	172463

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
% Moisture	52.4	N	0.100	0.100	1	02/05/2019 06:32

Analyst(s): RB

Analytical Comments: j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465' w/ Post-Lime DRIED Portion	1901874-007B	Sludge	<Not Provided>	WetChem	172463

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
% Moisture	45.8	N	0.100	0.100	1	02/05/2019 06:33

Analyst(s): RB

Analytical Comments: j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600' w/ Post-Lime DRIED Portion	1901874-008B	Sludge	<Not Provided>	WetChem	172463

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
% Moisture	49.2	N	0.100	0.100	1	02/05/2019 06:34

Analyst(s): RB

Analytical Comments: j1



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 2/1/19  
**Date Analyzed:** 2/4/19  
**Instrument:** IC4  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**BatchID:** 172377  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** E300.0  
**Unit:** mg/L  
**Sample ID:** MB/LCS/LCSD-172377

### QC Summary Report for E300.1 (DISTLC)

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Chloride	ND	0.039	1.0	-	-	-
Sulfate	ND	0.031	1.0	-	-	-
<b>Surrogate Recovery</b>						
Formate	0.99			1	99	90-115

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chloride	8.7	9.1	10	87	91	85-115	4.16	15
Sulfate	9.0	9.3	10	90	93	85-115	4.32	15
<b>Surrogate Recovery</b>								
Formate	0.97	1.0	1	97	101	90-115	4.29	10





## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 2/6/19  
**Date Analyzed:** 2/6/19  
**Instrument:** IC4  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**BatchID:** 172571  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg  
**Sample ID:** MB/LCS-172571

### QC Summary Report for E300.0

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Chloride	ND	0.64	10	-	-	-
Sulfate	ND	1.7	10	-	-	-
<b>Surrogate Recovery</b>						
Formate	10			10	101	80-120

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chloride	87	-	100	87	-	80-120	-	-
Sulfate	86	-	100	86	-	80-120	-	-
<b>Surrogate Recovery</b>								
Formate	10	-	10	102	-	80-120	-	-



# Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 2/5/19  
**Date Analyzed:** 2/5/19  
**Instrument:** Titrino  
**Matrix:** Water  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**BatchID:** 172495  
**Extraction Method:** CA Title 22 modified  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/L

## QC Summary Report for Alkalinity

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1901791-007A	183	1	184	1	1.04	<20
1901F17-001C	580	1	598	1	3.09	<20



# Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 2/7/19  
**Date Analyzed:** 2/7/19 - 2/27/19  
**Instrument:** Titrino  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**BatchID:** 172653  
**Extraction Method:** SM2320 Bm-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/kg

## QC Summary Report for SM2320B (Alkalinity)

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1901874-005B	3840	1	3920	1	2.06	<20
1901874-008B	4060	1	4160	1	2.43	<20
1901E84-001A	2180	1	2020	1	7.62	<20



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 2/5/19  
**Date Analyzed:** 2/6/19  
**Instrument:** ICP-MS1  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (After Leaching)

**WorkOrder:** 1901874  
**BatchID:** 172541  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-172541

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Cadmium	ND	0.058	0.25	-	-	-
Calcium	ND	6.6	50	-	-	-
Copper	ND	0.069	0.50	-	-	-
Iron	ND	1.2	20	-	-	-
Magnesium	ND	1.3	20	-	-	-
Manganese	ND	0.61	20	-	-	-
Mercury	0.0071,J	0.0050	0.050	-	-	-
Nickel	ND	0.072	0.50	-	-	-
Selenium	ND	0.13	0.50	-	-	-
Uranium	ND	0.070	0.50	-	-	-
Zinc	ND	1.4	5.0	-	-	-

**Surrogate Recovery**

Terbium	520			500	103	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Cadmium	50	48	50	100	95	75-125	4.41	20
Calcium	4900	4800	5000	98	96	75-125	2.55	20
Copper	50	49	50	100	97	75-125	2.84	20
Iron	5200	5000	5000	104	101	75-125	3.10	20
Magnesium	5200	5000	5000	103	100	75-125	3.48	20
Manganese	5200	5000	5000	103	100	75-125	3.13	20
Mercury	1.3	1.3	1.25	104	102	75-125	2.02	20
Nickel	50	48	50	101	96	75-125	4.54	20
Selenium	49	48	50	99	96	75-125	2.23	20
Uranium	52	49	50	104	98	75-125	5.81	20
Zinc	500	490	500	101	97	75-125	3.29	20

**Surrogate Recovery**

Terbium	520	510	500	105	101	70-130	3.18	20
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1534 Willow Pass Rd  
Pittsburg, CA 94565-1701  
(925) 252-9262



# CHAIN-OF-CUSTODY RECORD

**WorkOrder:** 1901874 **A**      **ClientCode:** MPWM      **QuoteID:** 183043

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

<b>Report to:</b>	<b>Bill to:</b>	<b>Requested TAT:</b> 5 days;
Jonathan Lear	Maureen Hamilton	
Monterey Peninsula Water Management	Monterey Peninsula Water Management	<b>Date Received:</b> 01/16/2019
5 Harris Ct. Bldg G	5 Harris Ct. Bldg G	<b>Date Logged:</b> 01/18/2019
Monterey, CA 93940	Monterey, CA 93940	<b>Date Add-On:</b> 01/29/2019
(831) 658-5600    FAX:		

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
1901874-005	MPWMD 465' w/ Injectate	Sludge	<Not Provided>	<input type="checkbox"/>	A		A		A		A					
1901874-005	MPWMD 465' w/ Injectate DRIED Portion	Sludge	<Not Provided>	<input type="checkbox"/>		B		B		B		B	B	B		
1901874-006	MPWMD 595'-600' w/ Injectate	Sludge	<Not Provided>	<input type="checkbox"/>	A		A		A		A					
1901874-006	MPWMD 595'-600' w/ Injectate DRIED	Sludge	<Not Provided>	<input type="checkbox"/>		B		B		B		B	B	B		
1901874-007	MPWMD 465' w/ Post-Lime DRIED Portion	Sludge	<Not Provided>	<input type="checkbox"/>		B		B		B		B	B	B		
1901874-007	MPWMD 465' w/ Post-Lime Treatment	Sludge	<Not Provided>	<input type="checkbox"/>	A		A		A		A					
1901874-008	MPWMD 595'-600' w/ Post-Lime DRIED	Sludge	<Not Provided>	<input type="checkbox"/>		B		B		B		B	B	B		
1901874-008	MPWMD 595'-600' w/ Post-Lime Treatment	Sludge	<Not Provided>	<input type="checkbox"/>	A		A		A		A					

**Test Legend:**

1	300_0_DISTLC	2	300_0_S	3	Aik_DISTLC	4	Aik_S
5	METALS_DISTLC_S	6	METALS_TTLC_S	7	METALSMS_DISTLC_S	8	METALSMS_TTLC_S
9	PERmoist_S	10	PRMISC	11		12	

**Project Manager:** Jennifer Lagerbom      **Prepared by:** Jena Alfaro  
**Add-On Prepared By:** Jena Alfaro

**Comments:**      DISTLCs added to Soil samples using Water samples and Dried Leachates added 1/29/2019 STAT

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:** MONTEREY PENINSULA WATER MANAGEMEN

**Project:** Cuttings Analysis Step 3 (Before Leaching)

**Work Order:** 1901874

**Client Contact:** Jonathan Lear

**QC Level:** LEVEL 2

**Contact's Email** jlear@mpwmd.net

**Comments:** DISTLCs added to Soil samples using Water samples and Dried Leachates added 1/29/2019 STAT

**Date Logged:** 1/18/2019

**Date Add-On:** 1/29/2019

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1901874-005A	MPWMD 465' w/ Injectate	Sludge	SW6020 (Metals) (DISTLC) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>	1	16OZ GJ, Unpres	<Not Provided>	5 days*		<input type="checkbox"/>	
			SW6010B (Metals) (DISTLC) <Phosphorous>				5 days*	<input type="checkbox"/>		
			SM2320B Alkalinity (DISTLC)				5 days*	<input type="checkbox"/>		
			E300.1 Inorganic Anions (DISTLC) <Chloride, Sulfate>				5 days*	<input type="checkbox"/>		
1901874-005B	MPWMD 465' w/ Injectate DRIED Portion	Sludge	ASTM D2216-05 (Percent Moisture)	1	16OZ GJ, Unpres	<Not Provided>	5 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>				5 days	<input type="checkbox"/>		
			SW6010B (Metals) <Phosphorous>				5 days	<input type="checkbox"/>		
			SM2320Bm (Alkalinity)				5 days	<input type="checkbox"/>		
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				5 days	<input type="checkbox"/>		
1901874-006A	MPWMD 595'-600' w/ Injectate	Sludge	SW6020 (Metals) (DISTLC) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>	1	16OZ GJ, Unpres	<Not Provided>	5 days*		<input type="checkbox"/>	
			SW6010B (Metals) (DISTLC) <Phosphorous>				5 days*	<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.



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			E300.1 Inorganic Anions (DISTLC) <Chloride, Sulfate>				5 days*		<input type="checkbox"/>	
1901874-006B	MPWMD 595'-600' w/ Injectate DRIED Portion	Sludge	ASTM D2216-05 (Percent Moisture)	1	16OZ GJ, Unpres	<Not Provided>	5 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>				5 days		<input type="checkbox"/>	
			SW6010B (Metals) <Phosphorous>				5 days		<input type="checkbox"/>	
			SM2320Bm (Alkalinity)				5 days		<input type="checkbox"/>	
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				5 days		<input type="checkbox"/>	
1901874-007A	MPWMD 465' w/ Post-Lime Treatment	Sludge	SW6020 (Metals) (DISTLC) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>	1	16OZ GJ, Unpres	<Not Provided>	5 days*		<input type="checkbox"/>	
			SW6010B (Metals) (DISTLC) <Phosphorous>				5 days*		<input type="checkbox"/>	
			SM2320B Alkalinity (DISTLC)				5 days*		<input type="checkbox"/>	
			E300.1 Inorganic Anions (DISTLC) <Chloride, Sulfate>				5 days*		<input type="checkbox"/>	

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**Client Name:** MONTEREY PENINSULA WATER MANAGEMEN **Project:** Cuttings Analysis Step 3 (Before Leaching) **Work Order:** 1901874  
**Client Contact:** Jonathan Lear **QC Level:** LEVEL 2  
**Contact's Email:** jlear@mpwmd.net **Comments:** DISTLCs added to Soil samples using Water samples and Dried Leachates added 1/29/2019 STAT **Date Logged:** 1/18/2019  
**Date Add-On:** 1/29/2019

Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
1901874-007B	MPWMD 465' w/ Post-Lime DRIED Portion	Sludge	ASTM D2216-05 (Percent Moisture)	1	16OZ GJ, Unpres	<Not Provided>	5 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>				5 days		<input type="checkbox"/>	
			SW6010B (Metals) <Phosphorous>				5 days		<input type="checkbox"/>	
			SM2320Bm (Alkalinity)				5 days		<input type="checkbox"/>	
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				5 days		<input type="checkbox"/>	
1901874-008A	MPWMD 595'-600' w/ Post-Lime Treatment	Sludge	SW6020 (Metals) (DISTLC) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>	1	16OZ GJ, Unpres	<Not Provided>	5 days*		<input type="checkbox"/>	
			SW6010B (Metals) (DISTLC) <Phosphorous>				5 days*		<input type="checkbox"/>	
			SM2320B Alkalinity (DISTLC)				5 days*		<input type="checkbox"/>	
			E300.1 Inorganic Anions (DISTLC) <Chloride, Sulfate>				5 days*		<input type="checkbox"/>	
1901874-008B	MPWMD 595'-600' w/ Post-Lime DRIED Portion	Sludge	ASTM D2216-05 (Percent Moisture)	1	16OZ GJ, Unpres	<Not Provided>	5 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>				5 days		<input type="checkbox"/>	

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**Contact's Email** jlear@mpwmd.net

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Lab ID	Client ID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Collection Date & Time	TAT	Sediment Content	Hold	SubOut
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			SM2320Bm (Alkalinity)				5 days		<input type="checkbox"/>	
			E300.0 (Inorganic Anions) <Chloride, Sulfate>				5 days		<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).


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 <b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701 Telephone: (877) 252-9262 / Fax: (925) 252-9269 www.mccampbell.com      main@mccampbell.com					<b>CHAIN OF CUSTODY RECORD</b>																
					Turn Around Time: 1 Day Rush		2 Day Rush		3 Day Rush		STD <input checked="" type="checkbox"/>		Quote # <u>183042</u>		Bottle Order # <u>183043 AD</u>						
J-Flag / MDL		ESL		Cleanup Approved																	
Delivery Format: PDF		GeoTracker EDF		EDD		Write On (DW)		EQuIS													
Report To: <u>Jonathan Lear</u> Bill To: <u>Same</u>					<b>Analysis Requested</b>																
Company: <u>Monterey Peninsula Water Management (MPWM)</u>					Phosphorous 6010	Cd Ca Cu Fe Mg Mn	Hg Ni Se Sr U Zn	300.0 / 1 CL SO4	Alkalinity	% Moisture											
Email: <u>jlear@mpwmd.net</u>																					
Alt Email:																					
Project Name: <u>Cuttings Analysis Step 3 (Before Leaching)</u>																					
Project Location: <u>PO #</u>																					
Sampler Signature:																					
SAMPLE ID Location / Field Point		Sampling Date      Time		#Containers	Matrix	Preservative															
<del>MPWMD 465'</del>				<del>1</del>	<del>SL</del>	<del>7</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>									
<del>MPWMD 595'-600'</del>				<del>1</del>	<del>SL</del>	<del>7</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>									
✓ MPWMD Injectate		11/14/19 1530		3		7	X	X	X	X	X	X									
465' w/ Injectate Dried							X	X	X	X	X	X									
595'-600' w/ Injectate Dried							X	X	X	X	X	X									
<del>Post Lime Treatment</del>		<del>11/15/19 17:20</del>		<del>3</del>		<del>7</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>	<del>X</del>									
465' Post-Lime Dried							X	X	X	X	X	X									
595'-600' Post-Lime Dried							X	X	X	X	X	X									

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

\* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name		Date	Time	Received By / Company Name		Date	Time
Liana Olivas / Trussell Tech		01/15/19	17:00	UPS		1/15/19	17:00
UPS		11/16/19	1011			11/16/19	1011

Comments / Instructions  
 APH adjusted in Lab for metals 2/11/18/19 1000AM


Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other  
 Preservative Code: 1=4°C    2=HCl    3=H<sub>2</sub>SO<sub>4</sub>    4=HNO<sub>3</sub>    5=NaOH    6=ZnOAc/NaOH    7=None

Temp 17.4 °C      Initials JW  
 NOTICE

added 1/29/19 standard

Page 2 of 2  
 COPY

COPY

 <b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701 Telephone: (877) 252-9262 / Fax: (925) 252-9269 www.mccampbell.com      main@mccampbell.com						<b>CHAIN OF CUSTODY RECORD</b>																																																																																																																																																																																																																																											
Report To: <u>Jonathan Lear</u> Bill To: <u>Same</u> Company: <u>Monterey Peninsula Water Management (MPWM)</u> Email: <u>jlear@mpwmd.net</u> Alt Email: _____      Tel: <u>(831) 658-5000</u> Project Name: <u>Cuttings Analysis Step 3 (Before Leaching)</u> Project Location: _____      PO # _____ Sampler Signature: _____						Turn Around Time: 1 Day Rush <input type="checkbox"/> 2 Day Rush <input type="checkbox"/> 3 Day Rush <input type="checkbox"/> STD <input checked="" type="checkbox"/> Quote # <u>183042</u> J-Flag / MDL <input type="checkbox"/> ESL <input type="checkbox"/> Cleanup Approved <input type="checkbox"/> Bottle Order # <u>183043 A0</u> Delivery Format: PDF <input type="checkbox"/> GeoTracker EDF <input type="checkbox"/> EDD <input type="checkbox"/> Write On (DW) <input type="checkbox"/> EQUIS <input type="checkbox"/> <u>Quote</u>						Analysis Requested																																																																																																																																																																																																																																					
<table border="1"> <thead> <tr> <th rowspan="2">SAMPLE ID Location / Field Point</th> <th colspan="2">Sampling</th> <th rowspan="2">#Containers</th> <th rowspan="2">Matrix</th> <th rowspan="2">Preservative</th> <th rowspan="2">Phosphorous 6010</th> <th rowspan="2">Cd</th> <th rowspan="2">Ca</th> <th rowspan="2">Cu</th> <th rowspan="2">Fe</th> <th rowspan="2">Mg</th> <th rowspan="2">Mn</th> <th rowspan="2">Hg</th> <th rowspan="2">Ni</th> <th rowspan="2">Se</th> <th rowspan="2">Sc</th> <th rowspan="2">V</th> <th rowspan="2">Zn</th> <th rowspan="2">300.0 / 1 CL So4</th> <th rowspan="2">Alkalinity</th> <th rowspan="2">% Moisture</th> <th rowspan="2">DISTC P 6010</th> <th rowspan="2">DISTC 6020 *</th> <th rowspan="2">DISTC Alkalinity</th> <th rowspan="2">DISTC 300.1 So4</th> </tr> <tr> <th>Date</th> <th>Time</th> </tr> </thead> <tbody> <tr> <td>MPWMD 465'</td> <td></td> <td></td> <td>1</td> <td>SL</td> <td>7</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>MPWMD 595'-600'</td> <td></td> <td></td> <td>1</td> <td>SL</td> <td>7</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>✓ MPWMD Injectate</td> <td>11/14/19</td> <td>1530</td> <td>3</td> <td></td> <td>7</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>465' w/ Injectate</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>595'-600' w/ Injectate</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>✓ Post-Lime Treatment</td> <td>11/15/19</td> <td>17:20</td> <td>3</td> <td></td> <td>7</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> <td></td> <td></td> <td></td> <td></td> <td></td> </tr> <tr> <td>465' w/ Post-Lime</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> <tr> <td>595'-600' w/ Post-Lime</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>X</td> <td>X</td> <td>X</td> <td>X</td> </tr> </tbody> </table>						SAMPLE ID Location / Field Point	Sampling		#Containers	Matrix	Preservative	Phosphorous 6010	Cd	Ca	Cu	Fe	Mg	Mn	Hg	Ni	Se	Sc	V	Zn	300.0 / 1 CL So4	Alkalinity	% Moisture	DISTC P 6010	DISTC 6020 *	DISTC Alkalinity	DISTC 300.1 So4	Date	Time	MPWMD 465'			1	SL	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					MPWMD 595'-600'			1	SL	7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X					✓ MPWMD Injectate	11/14/19	1530	3		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						465' w/ Injectate																						X	X	X	X	595'-600' w/ Injectate																						X	X	X	X	✓ Post-Lime Treatment	11/15/19	17:20	3		7	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X						465' w/ Post-Lime																						X	X	X	X	595'-600' w/ Post-Lime																						X	X	X	X
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MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.																																																																																																																																																																																																																																																	
* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.																																																																																																																																																																																																																																																	
Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.																																																																																																																																																																																																																																																	
Relinquished By / Company Name <u>Liana Olivas / Trussell Tech</u> <u>Liana Olivas</u> 01/15/19    17:00 <u>UPS</u> 11/16/19    1011														Received By / Company Name <u>UPS</u> 1/15/19    17:00 <u>[Signature]</u> 11/16/19    1011																																																																																																																																																																																																																																			

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other  
 Preservative Code: 1=4°C    2=HCl    3=H<sub>2</sub>SO<sub>4</sub>    4=HNO<sub>3</sub>    5=NaOH    6=ZnOAc/NaOH    7=None    Temp 17.4 °C    Initials JW

added 1/29/19 standard

NOTICE  
 Page 1 of 2  
COPY

**COPY**



McC Campbell Analytical, Inc.

*"When Quality Counts"*

1534 Willow Pass Road, Pittsburg, CA. 94565-1701  
Toll Free Telephone : (877) 252-9262 / Fax : (925) 252-9269  
<http://www.mccampbell.com> / E-mail: [main@mccampbell.com](mailto:main@mccampbell.com)

2-14-19

<b>sample ID</b>	<b>wet weight used for DISTLC(pre leach)g</b>	<b>percent moisture at 60 degree C (pre leach)%</b>	<b>dry weight (pre leach)g</b>	<b>Dry weight (post leach)g</b>	<b>Difference in mass g</b>
1901874-005A 465'	50	23%	38.5 g	34.273g	4.227g
1901874-006A 595'-600'	50	26%	37.1 g	31.536g	5.564g
1901874-007A 465'	50	23.00%	38.5 g	37.417g	1.083g
1901874-008A 595'-600'	50	25.80%	37.1 g	33.536g	3.564g



# McC Campbell Analytical, Inc.

"When Quality Counts"

## Analytical Report

**WorkOrder:** 1901874 **Amended:** 01/28/2019

**Report Created for:** Monterey Peninsula Water Management

5 Harris Ct. Bldg G  
Monterey, CA 93940

**Project Contact:** Jonathan Lear

**Project P.O.:**

**Project:** Cuttings Analysis Step 3 (Before Leaching)

**Project Received:** 01/16/2019

Analytical Report reviewed & approved for release on 01/24/2019 by:

Jennifer Lagerbom  
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:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (Before Leaching)  
**WorkOrder:** 1901874

### 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
TZA	TimeZone Net Adjustment for sample collected outside of MAI's UTC.
WET (STLC)	Waste Extraction Test (Soluble Threshold Limit Concentration)



## Glossary of Terms & Qualifier Definitions

**Client:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (Before Leaching)  
**WorkOrder:** 1901874

### Analytical Qualifiers

B	Analyte detected in the associated Method Blank and in the sample
J	Result is less than the RL/ML but greater than the MDL. The reported concentration is an estimated value.
N	Collection date not provided
S	Spike recovery outside accepted recovery limits
c1	Surrogate recovery outside of the control limits due to the dilution of the sample.
j1	See attached narrative



## Case Narrative

**Client:** Monterey Peninsula Water Management  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**Work Order:** 1901874  
January 28, 2019

j1) Percent Moisture Procedure was performed by ASTM D2216-05 with a temperature of 60 degrees C to prevent Hg vapor loss.





## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/18/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg-dry

### Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465'	1901874-001A	Sludge	<Not Provided>	IC4 01221993.D	171623

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Chloride	35	N	0.83	13	1	01/18/2019 20:24
Sulfate	77	N	2.2	13	1	01/18/2019 20:24

Surrogates	REC (%)	Limits
Formate	117	80-120

Analyst(s): AO

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600'	1901874-002A	Sludge	<Not Provided>	IC4 01221994.D	171623

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Chloride	50	N	0.86	13	1	01/18/2019 20:37
Sulfate	2000	N	23	130	10	01/22/2019 14:59

Surrogates	REC (%)	Limits

Analyst(s): AO

Analytical Comments: c1



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/18/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** E300.1  
**Analytical Method:** E300.1  
**Unit:** mg/L

### Inorganic Anions by IC

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD Injectate	1901874-003A	Water	01/14/2019 15:30	IC4 01181945.D	171661

Analytes	Result	MDL	RL	DF	Date Analyzed
Chloride	31	0.039	1.0	10	01/18/2019 15:33
Sulfate	69	0.12	4.0	40	01/18/2019 17:57

Surrogates	REC (%)	Qualifiers	Limits	
Formate	64	S	90-115	01/18/2019 17:57

Analyst(s): AO Analytical Comments: c1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Post-Lime Treatment	1901874-004A	Water	01/15/2019 17:20	IC4 01181946.D	171661

Analytes	Result	MDL	RL	DF	Date Analyzed
Chloride	10	0.039	1.0	10	01/18/2019 15:46
Sulfate	0.17	0.0031	0.10	1	01/18/2019 15:20

Surrogates	REC (%)	Limits	
Formate	101	90-115	01/18/2019 15:20

Analyst(s): AO Analytical Comments: c1



## Analytical Report

<b>Client:</b> Monterey Peninsula Water Management	<b>WorkOrder:</b> 1901874
<b>Date Received:</b> 1/16/19 10:11	<b>Extraction Method:</b> SM2320 Bm-1997
<b>Date Prepared:</b> 1/23/19	<b>Analytical Method:</b> SM2320 B
<b>Project:</b> Cuttings Analysis Step 3 (Before Leaching)	<b>Unit:</b> mg CaCO <sub>3</sub> /kg-dry

### Total & Speciated Alkalinity as Calcium Carbonate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465'	1901874-001A	Sludge	<Not Provided>	Titrimo F059496	171876

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	1640	N	519	519	1	01/23/2019 15:09
Carbonate	ND	N	519	519	1	01/23/2019 15:09
Bicarbonate	1640	N	519	519	1	01/23/2019 15:09
Hydroxide	ND	N	519	519	1	01/23/2019 15:09

Analyst(s): PHU

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600'	1901874-002A	Sludge	<Not Provided>	Titrimo F059498	171876

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Total Alkalinity	3290	N	539	539	1	01/23/2019 15:35
Carbonate	ND	N	539	539	1	01/23/2019 15:35
Bicarbonate	3290	N	539	539	1	01/23/2019 15:35
Hydroxide	ND	N	539	539	1	01/23/2019 15:35

Analyst(s): PHU



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/22/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SM2320 B-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/L

### Total & Speciated Alkalinity as Calcium Carbonate

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD Injectate	1901874-003A	Water	01/14/2019 15:30	Titrimo F059469	171803

Analytes	Result	MDL	RL	DF	Date Analyzed
Total Alkalinity	140	5.00	5.00	1	01/22/2019 16:30
Carbonate	ND	5.00	5.00	1	01/22/2019 16:30
Bicarbonate	140	5.00	5.00	1	01/22/2019 16:30
Hydroxide	ND	5.00	5.00	1	01/22/2019 16:30

Analyst(s): PHU

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Post-Lime Treatment	1901874-004A	Water	01/15/2019 17:20	Titrimo F059471	171803

Analytes	Result	MDL	RL	DF	Date Analyzed
Total Alkalinity	54.5	5.00	5.00	1	01/22/2019 16:37
Carbonate	ND	5.00	5.00	1	01/22/2019 16:37
Bicarbonate	54.5	5.00	5.00	1	01/22/2019 16:37
Hydroxide	ND	5.00	5.00	1	01/22/2019 16:37

Analyst(s): PHU



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/22/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3005  
**Analytical Method:** SW6020  
**Unit:** µg/L

### Metals

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
MPWMD Injectate	1901874-003A	Water	01/14/2019 15:30			ICP-MS3 060SMPL.D	171775
<u>Analytes</u>	<u>Result</u>	<u>Qualifiers</u>	<u>MDL</u>	<u>RL</u>	<u>DF</u>	<u>Date Analyzed</u>	
Cadmium	0.070	J	0.066	0.50	1	01/22/2019 21:20	
Calcium	41,000		31	50	1	01/22/2019 21:20	
Copper	13		0.55	1.0	1	01/22/2019 21:20	
Iron	24	J	20	50	1	01/22/2019 21:20	
Magnesium	14,000		17	50	1	01/22/2019 21:20	
Manganese	ND		4.9	50	1	01/22/2019 21:20	
Mercury	0.34		0.021	0.050	1	01/22/2019 21:20	
Nickel	1.4		0.34	0.50	1	01/22/2019 21:20	
Selenium	0.48	J	0.20	0.50	1	01/22/2019 21:20	
Strontium	230		0.32	5.0	1	01/22/2019 21:20	
Uranium	ND		0.77	1.0	1	01/22/2019 21:20	
Zinc	200		18	25	1	01/22/2019 21:20	
<u>Surrogates</u>	<u>REC (%)</u>			<u>Limits</u>			
Terbium	102			70-130		01/22/2019 21:20	
<u>Analyst(s):</u>	DB						



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/22/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3005  
**Analytical Method:** SW6020  
**Unit:** µg/L

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Post-Lime Treatment	1901874-004A	Water	01/15/2019 17:20	ICP-MS3 082SMPL.D	171775

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	ND		0.066	0.50	1	01/22/2019 23:35
Calcium	<b>18,000</b>		31	50	1	01/22/2019 23:35
Copper	<b>4.5</b>		0.55	1.0	1	01/22/2019 23:35
Iron	<b>42</b>	J	20	50	1	01/22/2019 23:35
Magnesium	<b>190</b>		17	50	1	01/22/2019 23:35
Manganese	ND		4.9	50	1	01/22/2019 23:35
Mercury	ND		0.021	0.050	1	01/22/2019 23:35
Nickel	ND		0.34	0.50	1	01/22/2019 23:35
Selenium	ND		0.20	0.50	1	01/22/2019 23:35
Strontium	<b>8.5</b>		0.32	5.0	1	01/22/2019 23:35
Uranium	ND		0.77	1.0	1	01/22/2019 23:35
Zinc	ND		18	25	1	01/22/2019 23:35

Surrogates	REC (%)	Limits
Terbium	105	70-130

**Analyst(s):** DB



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/18/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg-dry

### Metals

Client ID	Lab ID	Matrix	Date Collected			Instrument	Batch ID
MPWMD 465'	1901874-001A	Sludge	<Not Provided>			ICP-MS3 074SMPL.D	171650
Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed	
Cadmium	0.56	N	0.075	0.32	1	01/23/2019 15:24	
Calcium	4000	N	8.6	65	1	01/23/2019 15:24	
Copper	1.9	N	0.090	0.65	1	01/23/2019 15:24	
Iron	4900	N	1.6	26	1	01/23/2019 15:24	
Magnesium	1900	N	1.7	26	1	01/23/2019 15:24	
Manganese	42	N	0.79	26	1	01/23/2019 15:24	
Mercury	0.042	JBN	0.0065	0.065	1	01/23/2019 15:24	
Nickel	5.6	N	0.094	0.65	1	01/23/2019 15:24	
Selenium	ND	N	0.17	0.65	1	01/23/2019 15:24	
Strontium	17	JN	0.86	26	1	01/23/2019 15:24	
Uranium	2.2	N	0.091	0.65	1	01/23/2019 15:24	
Zinc	25	N	1.8	6.5	1	01/23/2019 15:24	
Surrogates	REC (%)				Limits		
Terbium	104				70-130	01/23/2019 15:24	
<b>Analyst(s):</b> JC							

(Cont.)



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/18/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/kg-dry

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600'	1901874-002A	Sludge	<Not Provided>	ICP-MS3 037SMPL.D	171650

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
Cadmium	23	N	0.078	0.34	1	01/22/2019 15:26
Calcium	81,000	N	89	670	10	01/23/2019 15:18
Copper	26	N	0.093	0.67	1	01/22/2019 15:26
Iron	16,000	N	1.6	27	1	01/22/2019 15:26
Magnesium	35,000	N	1.8	27	1	01/22/2019 15:26
Manganese	220	N	0.82	27	1	01/22/2019 15:26
Mercury	0.098	N	0.0067	0.067	1	01/22/2019 15:26
Nickel	40	N	0.097	0.67	1	01/22/2019 15:26
Selenium	4.3	N	0.18	0.67	1	01/22/2019 15:26
Strontium	150	N	0.89	27	1	01/22/2019 15:26
Uranium	12	N	0.094	0.67	1	01/22/2019 15:26
Zinc	120	N	1.9	6.7	1	01/22/2019 15:26

Surrogates	REC (%)	Limits
Terbium	100	70-130

**Analyst(s):** DB, JC





## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/22/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6010B  
**Unit:** µg/L

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD Injectate	1901874-003A	Water	01/14/2019 15:30	ICP-OES 21	171776

Analytes	Result	MDL	RL	DF	Date Analyzed
Phosphorous	330	11	200	1	01/23/2019 11:05

Surrogates	REC (%)	Limits
Terbium	105	70-130

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Post-Lime Treatment	1901874-004A	Water	01/15/2019 17:20	ICP-OES 13	171776

Analytes	Result	MDL	RL	DF	Date Analyzed
Phosphorous	ND	11	200	1	01/23/2019 10:43

Surrogates	REC (%)	Limits
Terbium	106	70-130

Analyst(s): ND



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/18/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6010B  
**Unit:** mg/Kg

### Metals

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465'	1901874-001A	Sludge	<Not Provided>	ICP-OES 7	171693

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Phosphorous	800	N	50	1	01/22/2019 16:09

Surrogates	REC (%)	Limits
Terbium	107	75-125

Analyst(s): ND

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600'	1901874-002A	Sludge	<Not Provided>	ICP-OES 13	171693

Analytes	Result	Qualifiers	RL	DF	Date Analyzed
Phosphorous	3000	N	50	1	01/22/2019 16:25

Surrogates	REC (%)	Limits
Terbium	102	75-125

Analyst(s): ND



## Analytical Report

**Client:** Monterey Peninsula Water Management  
**Date Received:** 1/16/19 10:11  
**Date Prepared:** 1/21/19  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**Extraction Method:** ASTM D2216-05  
**Analytical Method:** ASTM D2216-05  
**Unit:** wet wt%

### Percent Moisture

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 465'	1901874-001A	Sludge	<Not Provided>	WetChem	171755

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
% Moisture	23.0	N	0.100	0.100	1	01/22/2019 06:31

Analyst(s): RB

Analytical Comments: j1

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
MPWMD 595'-600'	1901874-002A	Sludge	<Not Provided>	WetChem	171755

Analytes	Result	Qualifiers	MDL	RL	DF	Date Analyzed
% Moisture	25.8	N	0.100	0.100	1	01/22/2019 06:33

Analyst(s): RB

Analytical Comments: j1



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/17/19  
**Date Analyzed:** 1/17/19  
**Instrument:** IC4  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171623  
**Extraction Method:** E300.0  
**Analytical Method:** E300.0  
**Unit:** mg/kg  
**Sample ID:** MB/LCS/LCSD-171623

### QC Summary Report for E300.0

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Chloride	ND	0.64	10	-	-	-
Sulfate	ND	1.7	10	-	-	-
<b>Surrogate Recovery</b>						
Formate	10			10	105	80-120

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chloride	94	95	100	94	95	80-120	0.895	20
Sulfate	95	96	100	95	96	80-120	0.972	20
<b>Surrogate Recovery</b>								
Formate	10	10	10	102	102	80-120	0	20



## Quality Control Report

<b>Client:</b> Monterey Peninsula Water Management	<b>WorkOrder:</b> 1901874
<b>Date Prepared:</b> 1/17/19 - 1/18/19	<b>BatchID:</b> 171661
<b>Date Analyzed:</b> 1/17/19 - 1/18/19	<b>Extraction Method:</b> E300.1
<b>Instrument:</b> IC4	<b>Analytical Method:</b> E300.1
<b>Matrix:</b> Water	<b>Unit:</b> mg/L
<b>Project:</b> Cuttings Analysis Step 3 (Before Leaching)	<b>Sample ID:</b> MB/LCS/LCSD-171661

### QC Summary Report for E300.1

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Chloride	ND	0.0039	0.10	-	-	-
Sulfate	ND	0.0031	0.10	-	-	-
<b>Surrogate Recovery</b>						
Formate	0.10			0.10	103	85-115

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Chloride	0.92	0.92	1	92	92	85-115	0	15
Sulfate	0.93	0.93	1	93	93	85-115	0	15
<b>Surrogate Recovery</b>								
Formate	0.10	0.10	0.10	101	101	90-115	0	10



## Quality Control Report

<b>Client:</b> Monterey Peninsula Water Management	<b>WorkOrder:</b> 1901874
<b>Date Prepared:</b> 1/23/19	<b>BatchID:</b> 171876
<b>Date Analyzed:</b> 1/23/19	<b>Extraction Method:</b> SM2320 Bm-1997
<b>Instrument:</b> Titrino	<b>Analytical Method:</b> SM2320 B
<b>Matrix:</b> Soil	<b>Unit:</b> mg CaCO <sub>3</sub> /kg
<b>Project:</b> Cuttings Analysis Step 3 (Before Leaching)	

### QC Summary Report for SM2320B (Alkalinity)

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1901874-001A	1260	1	1300	1	3.12	<20



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/22/19  
**Date Analyzed:** 1/22/19  
**Instrument:** Titrino  
**Matrix:** Water  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171803  
**Extraction Method:** SM2320 B-1997  
**Analytical Method:** SM2320 B  
**Unit:** mg CaCO<sub>3</sub>/L

### QC Summary Report for Alkalinity

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1901874-003A	140	1	141	1	0.71	<20



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/22/19  
**Date Analyzed:** 1/22/19  
**Instrument:** ICP-MS3  
**Matrix:** Water  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171775  
**Extraction Method:** SW3005  
**Analytical Method:** SW6020  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-171775  
 1901874-003AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Cadmium	ND	0.066	0.50	-	-	-
Calcium	ND	31	50	-	-	-
Copper	ND	0.55	1.0	-	-	-
Iron	ND	20	50	-	-	-
Magnesium	ND	17	50	-	-	-
Manganese	ND	4.9	50	-	-	-
Mercury	ND	0.021	0.050	-	-	-
Nickel	ND	0.34	0.50	-	-	-
Selenium	ND	0.20	0.50	-	-	-
Strontium	ND	0.32	5.0	-	-	-
Uranium	ND	0.77	1.0	-	-	-
Zinc	ND	18	25	-	-	-
<b>Surrogate Recovery</b>						
Terbium	500			500	101	70-130





## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/22/19  
**Date Analyzed:** 1/22/19  
**Instrument:** ICP-MS3  
**Matrix:** Water  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171775  
**Extraction Method:** SW3005  
**Analytical Method:** SW6020  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-171775  
 1901874-003AMS/MSD

### QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Cadmium	53	52	50	106	105	85-115	1.40	20
Calcium	5400	5300	5000	107	107	85-115	0	20
Copper	52	52	50	104	103	85-115	0.502	20
Iron	5000	4900	5000	100	99	85-115	1.21	20
Magnesium	5100	5100	5000	102	102	85-115	0	20
Manganese	5100	5000	5000	102	101	85-115	0.830	20
Mercury	1.3	1.3	1.25	103	101	85-115	2.04	20
Nickel	51	51	50	103	101	85-115	1.55	20
Selenium	54	53	50	107	106	85-115	1.43	20
Strontium	540	540	500	108	107	85-115	1.04	20
Uranium	54	54	50	108	107	85-115	0.335	20
Zinc	520	520	500	104	104	85-115	0	20

**Surrogate Recovery**

Terbium	510	510	500	102	102	70-130	0	20
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Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Cadmium	1	53	53	50	ND	106	105	75-125	0.341	20
Calcium	1	47,000	46,000	5000	41,060	111	101	75-125	1.14	20
Copper	1	63	63	50	12.66	100	100	75-125	0	20
Iron	1	5100	5000	5000	ND	101	100	75-125	0.436	20
Magnesium	1	20,000	19,000	5000	14,140	116	103	75-125	3.32	20
Manganese	1	5000	5000	5000	ND	100	99	75-125	0.702	20
Mercury	1	1.7	1.6	1.25	0.3415	106	105	75-125	0.785	20
Nickel	1	52	51	50	1.353	101	100	75-125	0.621	20
Selenium	1	53	54	50	ND	105	107	75-125	1.59	20
Strontium	1	770	770	500	229.7	108	108	75-125	0	20
Uranium	1	56	56	50	ND	111	112	75-125	0.162	20
Zinc	1	710	700	500	198.0	101	101	75-125	0	20

**Surrogate Recovery**

Terbium	1	530	520	500		107	105	70-130	1.48	20
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Analyte	DLT Result	DLTRef Val	%D	%D Limit
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(Cont.)



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/22/19  
**Date Analyzed:** 1/22/19  
**Instrument:** ICP-MS3  
**Matrix:** Water  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171775  
**Extraction Method:** SW3005  
**Analytical Method:** SW6020  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-171775  
 1901874-003AMS/MSD

### QC Summary Report for Metals

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Cadmium	ND<2.5	ND	-	-
Calcium	44,000	41,060	7.16	20
Copper	13	12.66	2.69	-
Iron	ND<250	ND	-	-
Magnesium	15,000	14,140	6.08	20
Manganese	ND<250	ND	-	-
Mercury	0.43	0.3415	25.9	-
Nickel	ND<2.5	1.353	-	-
Selenium	ND<2.5	ND	-	-
Strontium	240	229.7	4.48	20
Uranium	ND<5.0	ND	-	-
Zinc	200	198.0	1.01	-

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



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/17/19  
**Date Analyzed:** 1/18/19  
**Instrument:** ICP-MS1, ICP-MS2  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171650  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6020  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-171650

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Cadmium	ND	0.058	0.25	-	-	-
Calcium	ND	6.6	50	-	-	-
Copper	ND	0.069	0.50	-	-	-
Iron	ND	1.2	20	-	-	-
Magnesium	ND	1.3	20	-	-	-
Manganese	ND	0.61	20	-	-	-
Mercury	0.0069,J	0.0050	0.050	-	-	-
Nickel	ND	0.072	0.50	-	-	-
Selenium	ND	0.13	0.50	-	-	-
Uranium	ND	0.070	0.50	-	-	-
Zinc	ND	1.4	5.0	-	-	-

#### Surrogate Recovery

Terbium	510			500	101	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Cadmium	49	49	50	97	98	75-125	0.575	20
Calcium	5000	4900	5000	99	99	75-125	0	20
Copper	49	51	50	99	102	75-125	3.32	20
Iron	4900	5100	5000	98	102	75-125	4.84	20
Magnesium	4900	5100	5000	98	102	75-125	3.56	20
Manganese	4900	5100	5000	99	103	75-125	3.67	20
Mercury	1.2	1.3	1.25	98	102	75-125	3.85	20
Nickel	49	51	50	98	102	75-125	3.33	20
Selenium	48	50	50	96	99	75-125	3.86	20
Uranium	49	50	50	97	99	75-125	1.79	20
Zinc	480	510	500	97	101	75-125	4.75	20

#### Surrogate Recovery

Terbium	500	510	500	99	103	70-130	3.60	20
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## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/22/19  
**Date Analyzed:** 1/23/19  
**Instrument:** ICP-OES  
**Matrix:** Water  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171776  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6010B  
**Unit:** µg/L  
**Sample ID:** MB/LCS/LCSD-171776  
 1901874-004AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Phosphorous	ND	11	200	-	-	-
<b>Surrogate Recovery</b>						
Terbium	530			500	106	70-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Phosphorous	10,000	10,000	10000	103	102	85-115	1.04	20
<b>Surrogate Recovery</b>								
Terbium	540	530	500	108	106	70-130	1.80	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Phosphorous	1	10,000	10,000	10000	ND	103	101	70-130	1.47	20
<b>Surrogate Recovery</b>										
Terbium	1	530	520	500		107	105	70-130	1.89	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Phosphorous	ND<1000	ND	-	-

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



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/18/19  
**Date Analyzed:** 1/22/19  
**Instrument:** ICP-OES  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171693  
**Extraction Method:** SW3050B  
**Analytical Method:** SW6010B  
**Unit:** mg/Kg  
**Sample ID:** MB/LCS/LCSD-171693  
 1901874-001AMS/MSD

### QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Phosphorous	ND	4.1	50	-	-	-
<b>Surrogate Recovery</b>						
Terbium	550			500	110	75-130

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Phosphorous	2600	2500	2500	104	102	75-125	1.99	20
<b>Surrogate Recovery</b>								
Terbium	550	530	500	109	107	70-130	2.27	20

Analyte	MS DF	MS Result	MSD Result	SPK Val	SPKRef Val	MS %REC	MSD %REC	MS/MSD Limits	RPD	RPD Limit
Phosphorous	1	3400	3500	2500	799.0	105	109	75-125	3.01	20
<b>Surrogate Recovery</b>										
Terbium	1	540	530	500		107	107	70-130	0	20

Analyte	DLT Result	DLTRef Val	%D	%D Limit
Phosphorous	890	799.0	11.4	-

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



## Quality Control Report

**Client:** Monterey Peninsula Water Management  
**Date Prepared:** 1/21/19  
**Date Analyzed:** 1/22/19  
**Instrument:** WetChem  
**Matrix:** Soil  
**Project:** Cuttings Analysis Step 3 (Before Leaching)

**WorkOrder:** 1901874  
**BatchID:** 171755  
**Extraction Method:** ASTM D2216-05  
**Analytical Method:** ASTM D2216-05  
**Unit:** wet wt%

### QC Summary Report for Percent Moisture

SampleID	Sample Result	Sample DF	Dup / Serial Dilution Result	Dup / Serial Dilution DF	RPD	Acceptance Criteria (%)
1901874-001A	23.0	1	20.1	1	13.6	<15



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

# CHAIN-OF-CUSTODY RECORD

**WorkOrder: 1901874**

**ClientCode: MPWM**

**QuoteID: 183042**

- WaterTrax   
  WriteOn   
  EDF   
  Excel   
  EQuIS   
  Email   
  HardCopy   
  ThirdParty   
  J-flag  
 Detection Summary   
  Dry-Weight

**Report to:**

Jonathan Lear  
Monterey Peninsula Water Management  
5 Harris Ct. Bldg G  
Monterey, CA 93940  
(831) 658-5600    FAX:

Email: jlear@mpwmd.net  
cc/3rd Party:  
PO:  
Project: Cuttings Analysis Step 3 (Before Leaching)

**Bill to:**

Maureen Hamilton  
Monterey Peninsula Water Management  
5 Harris Ct. Bldg G  
Monterey, CA 93940

**Requested TAT: 5 days;**

**Date Received: 01/16/2019**

**Date Logged: 01/18/2019**

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
1901874-001	MPWMD 465'	Sludge	<Not Provided>	<input type="checkbox"/>	A		A			A		A	A			
1901874-002	MPWMD 595'-600'	Sludge	<Not Provided>	<input type="checkbox"/>	A		A			A		A	A			
1901874-003	MPWMD Injectate	Water	1/14/2019 15:30	<input type="checkbox"/>		A		A	A		A					
1901874-004	Post-Lime Treatment	Water	1/15/2019 17:20	<input type="checkbox"/>		A		A	A		A					

**Test Legend:**

1	300_0_S	2	300_1_W	3	Alk_S	4	Alk_W
5	METALS_6010_TTLC_W	6	METALS_TTLC_S	7	METALSMS_6020_W	8	METALSMS_TTLC_S
9	PERmoist_S	10		11		12	

**Project Manager: Jennifer Lagerbom**

**Prepared by: Jena Alfaro**

**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:** MONTEREY PENINSULA WATER MANAGEMENT **Project:** Cuttings Analysis Step 3 (Before Leaching)

**Work Order:** 1901874

**Client Contact:** Jonathan Lear

**QC Level:** LEVEL 2

**Contact's Email:** jlear@mpwmd.net

**Comments:**

**Date Logged:** 1/18/2019

WaterTrax  WriteOn  EDF  Excel  EQUIS  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
1901874-001A	MPWMD 465'	Sludge	ASTM D2216-05 (Percent Moisture)	1	16OZ GJ, Unpres	<input type="checkbox"/>	<Not Provided>	5 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>			<input type="checkbox"/>		5 days			
			SW6010B (Metals) <Phosphorous>			<input type="checkbox"/>		5 days			
			SM2320Bm (Alkalinity)			<input type="checkbox"/>		5 days			
			E300.0 (Inorganic Anions) <Chloride, Sulfate>			<input type="checkbox"/>		5 days			
1901874-002A	MPWMD 595'-600'	Sludge	ASTM D2216-05 (Percent Moisture)	1	16OZ GJ, Unpres	<input type="checkbox"/>	<Not Provided>	5 days		<input type="checkbox"/>	
			SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>			<input type="checkbox"/>		5 days			
			SW6010B (Metals) <Phosphorous>			<input type="checkbox"/>		5 days			
			SM2320Bm (Alkalinity)			<input type="checkbox"/>		5 days			
			E300.0 (Inorganic Anions) <Chloride, Sulfate>			<input type="checkbox"/>		5 days			
1901874-003A	MPWMD Injectate	Water	SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>	1	1L HDPE, unprsv.	<input type="checkbox"/>	1/14/2019 15:30	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.





### WORK ORDER SUMMARY

**Client Name:** MONTEREY PENINSULA WATER MANAGEMENT **Project:** Cuttings Analysis Step 3 (Before Leaching)

**Work Order:** 1901874

**Client Contact:** Jonathan Lear

**QC Level:** LEVEL 2

**Contact's Email:** jlear@mpwmd.net

**Comments:**


**Date Logged:** 1/18/2019

WaterTrax    WriteOn    EDF    Excel    EQUIS    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
1901874-003A	MPWMD Injectate	Water	SW6010B (Metals) <Phosphorous>	1	1L HDPE, unprsv.	<input type="checkbox"/>	1/14/2019 15:30	5 days	None	<input type="checkbox"/>	
			SM2320B (Alkalinity)			<input type="checkbox"/>		5 days	None	<input type="checkbox"/>	
			E300.1 (Inorganic Anions) <Chloride, Sulfate>			<input type="checkbox"/>		5 days	None	<input type="checkbox"/>	
				2	1L HDPE, unprsv.	<input type="checkbox"/>			None	<input type="checkbox"/>	
1901874-004A	Post-Lime Treatment	Water	SW6020 (Metals) <Cadmium, Calcium, Copper, Iron, Magnesium, Manganese, Mercury, Nickel, Selenium, Strontium, Uranium, Zinc>	1	1L HDPE, unprsv.	<input type="checkbox"/>	1/15/2019 17:20	5 days	None	<input type="checkbox"/>	
			SW6010B (Metals) <Phosphorous>			<input type="checkbox"/>		5 days	None	<input type="checkbox"/>	
			SM2320B (Alkalinity)			<input type="checkbox"/>		5 days	None	<input type="checkbox"/>	
			E300.1 (Inorganic Anions) <Chloride, Sulfate>			<input type="checkbox"/>		5 days	None	<input type="checkbox"/>	
				2	1L HDPE, unprsv.	<input type="checkbox"/>			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.

 <b>McCAMPBELL ANALYTICAL, INC.</b> 1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701 Telephone: (877) 252-9262 / Fax: (925) 252-9269 www.mccampbell.com      main@mccampbell.com						<b>CHAIN OF CUSTODY RECORD</b>																																	
						Turn Around Time: 1 Day Rush			2 Day Rush		3 Day Rush		STD <input checked="" type="checkbox"/>		Quote # 183042																								
						J-Flag / MDL		ESL		Cleanup Approved			Bottle Order #																										
Delivery Format: PDF		GeoTracker EDF			EDD		Write On (DW)			EQuIS																													
Report To: <u>Jonathan Lear</u> Bill To: <u>Same</u>						<b>Analysis Requested</b>																																	
Company: <u>Monterey Peninsula Water Management (MPWM)</u>						Phosphorous 6010	Cd	Ca	Cu	Fe	Mg	Mn	Hg	Ni	Se	Sr	V	Zn	300.0/.1 CL SO4	Alkalinity	% Moisture																		
Email: <u>jlear@mpwmd.net</u>																																							
Alt Email:      Tele: <u>(831) 658-5000</u>																																							
Project Name: <u>Cuttings Analysis Step Project # - 3 (Before Leaching)</u>																																							
Project Location:      PO #																																							
Sampler Signature:																																							
SAMPLE ID Location / Field Point	Sampling		# Containers	Matrix	Preservative																																		
	Date	Time																																					
<u>MPWMD 465'</u>			1	SL	7																	X	X	X	X	X	X	X	X	X	X	X							
<u>MPWMD 595'-600'</u>			1	SL	7																	X	X	X	X	X	X	X	X	X	X	X							
<input checked="" type="checkbox"/> <u>MPWMD Insectate</u>	<u>1/14/19</u>	<u>1530</u>	3		7	X	X	X	X	X	X	X	X	X	X	X																							
<input checked="" type="checkbox"/> <u>Post-Lime Treatment</u>	<u>1/15/19</u>	<u>17:20</u>	3		7	X	X	X	X	X	X	X	X	X	X	X																							

MAI clients MUST disclose any dangerous chemicals known to be present in their submitted samples in concentrations that may cause immediate harm or serious future health endangerment as a result of brief, gloved, open air, sample handling by MAI staff. Non-disclosure incurs an immediate \$250 surcharge and the client is subject to full legal liability for harm suffered. Thank you for your understanding and for allowing us to work safely.

\* If metals are requested for water samples and the water type (Matrix) is not specified on the chain of custody, MAI will default to metals by E200.8.

Please provide an adequate volume of sample. If the volume is not sufficient for a MS/MSD a LCS/LCSD will be prepared in its place and noted in the report.

Relinquished By / Company Name			Date	Time	Received By / Company Name			Date	Time	
<u>Liana Olivas / Trussell Tech</u>			<u>Liana Olivas</u>	<u>01/15/19</u>	<u>17:00</u>	<u>UPS</u>			<u>1/15/19</u>	<u>17:00</u>
<u>UPS</u>			<u>UPS</u>	<u>1/16/19</u>	<u>1011</u>	<u>[Signature]</u>			<u>1/16/19</u>	<u>1011</u>

Comments / Instructions

APH adjusted in Lab for metals 1/18/19 1000AM JN

Matrix Code: DW=Drinking Water, GW=Ground Water, WW=Waste Water, SW=Seawater, S=Soil, SL=Sludge, A=Air, WP=Wipe, O=Other  
 Preservative Code: 1=4°C 2=HCl 3=H<sub>2</sub>SO<sub>4</sub> 4=HNO<sub>3</sub> 5=NaOH 6=ZnOAc/NaOH 7=None

Temp 17.4 °C      Initials JN  
 NOICE





## Sample Receipt Checklist

Client Name: **Monterey Peninsula Water Management**  
 Project: **Cuttings Analysis Step 3 (Before Leaching)**  
 WorkOrder No: **1901874** Matrix: Sludge/Water  
 Carrier: UPS

Date and Time Received: **1/16/2019 10:11**  
 Date Logged: **1/18/2019**  
 Received by: Jena Alfaro  
 Logged by: Jena Alfaro

### Chain of Custody (COC) Information

Chain of custody present?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Chain of custody signed when relinquished and received?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Chain of custody agrees with sample labels?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample IDs noted by Client on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Date and Time of collection noted by Client on COC?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sampler's name noted on COC?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
COC agrees with Quote?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>

### Sample Receipt Information

Custody seals intact on shipping container/cooler?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Shipping container/cooler in good condition?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Samples in proper containers/bottles?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sample containers intact?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sufficient sample volume for indicated test?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	

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

All samples received within holding time?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample/Temp Blank temperature		Temp: 17.4°C	NA <input type="checkbox"/>
Water - VOA vials have zero headspace / no bubbles?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Sample labels checked for correct preservation?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	NA <input type="checkbox"/>
<u>UCMR Samples:</u>			
pH tested and acceptable upon receipt (200.8: ≤2; 525.3: ≤4; 530: ≤7; 541: <3; 544: <6.5 & 7.5)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>
Free Chlorine tested and acceptable upon receipt (<0.1mg/L)?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" type="checkbox"/>

Comments: The following SampID(s) does not have collection date: 1901874-001A, 1901874-002A. pH adjusted in Lab. Method E300.0 (Inorganic Anions) was received with temperature condition not met. Method E300.1 (Inorganic Anions) was received with temperature condition not met. Method SM2320Bm (Alkalinity) was received with temperature condition not met. Method SM2320B (Alkalinity) was received with temperature condition not met. Method ASTM D2216-05 (Percent Moisture) was received with temperature condition not met.