



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2212657

Report Created for: Contra Costa-Hazardous Materials

4585 Pacheco Blvd., Ste 100
Martinez, CA 94553

Project Contact: Adam Springer

Project P.O.: #023961

Project: MRC Followup

Note: CCH storm drain samples collected from storm drain up wind from the refinery. Samples reported in milligrams per kilogram.

Project Received: 12/09/2022

Analytical Report reviewed & approved for release on 12/16/2022 by:

Yen Cao

Project Manager

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





Glossary of Terms & Qualifier Definitions

Client: Contra Costa-Hazardous Materials

WorkOrder: 2212657

Project: MRC Followup

Glossary Abbreviation

%D	Serial Dilution Percent Difference
95% Interval	95% Confident Interval
CPT	Consumer Product Testing not NELAP Accredited
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
LQL	Lowest Quantitation Level
MB	Method Blank
MB % Rec	% Recovery of Surrogate in Method Blank, if applicable
MDL	MDL is the minimum measured concentration of a substance that can be reported with 99% confidence that the measured concentration is distinguishable from method blank results. Definition and Procedure for the Determination of the Method Detection Limit, Revision 2, 40CFR, Part 136, Appendix B, EPA 821-R-16-006, December 2016.
ML	Minimum Level of Quantitation
MS	Matrix Spike
MSD	Matrix Spike Duplicate
NA	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 is the lowest level that can be reliably determined within specified limits of precision and accuracy during routine laboratory operating conditions. (The RL cannot be lower than the lowest calibration standard used in the initial calibration of the instrument and must be greater than the MDL.)
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

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Analytical Qualifiers

h4 Sulfuric acid permanganate (EPA 3665) cleanup



Analytical Report

Client: Contra Costa-Hazardous Materials
Date Received: 12/09/2022 10:54
Date Prepared: 12/09/2022
Project: MRC Followup

WorkOrder: 2212657
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors

Client ID	Background sample	Lab ID	Matrix	Date Collected	Instrument	Batch ID
#4 HazMat	Office storm drain	2212657-001A	Solid	12/09/2022 09:25	GC20 1212235.D	259889

Analytes	Result	RL	DF	Date Analyzed
Aroclor1016	ND	0.050	1	12/12/2022 16:54
Aroclor1221	ND	0.050	1	12/12/2022 16:54
Aroclor1232	ND	0.050	1	12/12/2022 16:54
Aroclor1242	ND	0.050	1	12/12/2022 16:54
Aroclor1248	ND	0.050	1	12/12/2022 16:54
Aroclor1254	ND	0.050	1	12/12/2022 16:54
Aroclor1260	ND	0.050	1	12/12/2022 16:54
PCBs, total	ND	0.050	1	12/12/2022 16:54

Surrogates	REC (%)	Limits	Date Analyzed
Decachlorobiphenyl	72	60-130	12/12/2022 16:54

Analyst(s): CK **Analytical Comments:** h4



Analytical Report

Client: Contra Costa-Hazardous Materials
Date Received: 12/09/2022 10:54
Date Prepared: 12/09/2022
Project: MRC Followup

WorkOrder: 2212657
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/Kg

CAM / CCR 17 Metals + Misc. Elements

Client ID	Background sample	Lab ID	Matrix	Date Collected	Instrument	Batch ID
#4 HazMat	Office storm drain	2212657-001A	Solid	12/09/2022 09:25	ICP-MS4 1147SMPL.d	259834

Analytes	Result	RL	DF	Date Analyzed
Aluminum	16,000	500	10	12/12/2022 21:31
Antimony	3.8	0.50	1	12/12/2022 11:30
Arsenic	2.5	0.50	1	12/12/2022 11:30
Barium	50	5.0	1	12/12/2022 11:30
Beryllium	ND	0.50	1	12/12/2022 11:30
Cadmium	ND	0.50	1	12/12/2022 11:30
Chromium	54	0.50	1	12/12/2022 11:30
Cobalt	14	0.50	1	12/12/2022 11:30
Copper	60	0.50	1	12/12/2022 11:30
Lead	11	0.50	1	12/12/2022 11:30
Mercury	0.20	0.050	1	12/12/2022 11:30
Molybdenum	1.6	0.50	1	12/12/2022 11:30
Nickel	33	0.50	1	12/12/2022 11:30
Selenium	ND	0.50	1	12/12/2022 11:30
Silver	ND	0.50	1	12/12/2022 11:30
Thallium	ND	0.50	1	12/12/2022 11:30
Vanadium	86	0.50	1	12/12/2022 11:30
Zinc	480	5.0	1	12/12/2022 11:30

Surrogates	REC (%)	Limits	Date Analyzed
Terbium	104	70-130	12/12/2022 11:30

Analyst(s): AL, MIG



Quality Control Report

Client: Contra Costa-Hazardous Materials
Date Prepared: 12/09/2022
Date Analyzed: 12/12/2022
Instrument: GC20
Matrix: Soil
Project: MRC Followup

WorkOrder: 2212657
BatchID: 259889
Extraction Method: SW3550B
Analytical Method: SW8082
Unit: mg/kg
Sample ID: MB/LCS/LCSD-259889

QC Summary Report for SW8082

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.032	0.050	-	-	-
Aroclor1221	ND	0.032	0.050	-	-	-
Aroclor1232	ND	0.032	0.050	-	-	-
Aroclor1242	ND	0.032	0.050	-	-	-
Aroclor1248	ND	0.032	0.050	-	-	-
Aroclor1254	ND	0.032	0.050	-	-	-
Aroclor1260	ND	0.032	0.050	-	-	-

Surrogate Recovery

Decachlorobiphenyl	0.041			0.05	82	70-130
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Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.15	0.15	0.15	98	97	70-130	0.776	20
Aroclor1260	0.14	0.14	0.15	95	95	70-130	0.147	20

Surrogate Recovery

Decachlorobiphenyl	0.043	0.044	0.050	87	88	70-130	1.80	20
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Quality Control Report

Client: Contra Costa-Hazardous Materials
Date Prepared: 12/09/2022
Date Analyzed: 12/12/2022
Instrument: ICP-MS4
Matrix: Soil
Project: MRC Followup

WorkOrder: 2212657
BatchID: 259834
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/kg
Sample ID: MB/LCS/LCSD-259834

QC Summary Report for Metals

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aluminum	ND	17	50	-	-	-
Antimony	ND	0.12	0.50	-	-	-
Arsenic	ND	0.11	0.50	-	-	-
Barium	ND	0.71	5.0	-	-	-
Beryllium	ND	0.10	0.50	-	-	-
Cadmium	ND	0.092	0.50	-	-	-
Chromium	ND	0.13	0.50	-	-	-
Cobalt	ND	0.064	0.50	-	-	-
Copper	ND	0.13	0.50	-	-	-
Lead	ND	0.065	0.50	-	-	-
Mercury	ND	0.038	0.050	-	-	-
Molybdenum	ND	0.092	0.50	-	-	-
Nickel	ND	0.080	0.50	-	-	-
Selenium	ND	0.21	0.50	-	-	-
Silver	ND	0.057	0.50	-	-	-
Thallium	ND	0.072	0.50	-	-	-
Vanadium	ND	0.11	0.50	-	-	-
Zinc	ND	2.5	5.0	-	-	-
Surrogate Recovery						
Terbium	530			500	106	70-130



Quality Control Report

Client: Contra Costa-Hazardous Materials
Date Prepared: 12/09/2022
Date Analyzed: 12/12/2022
Instrument: ICP-MS4
Matrix: Soil
Project: MRC Followup

WorkOrder: 2212657
BatchID: 259834
Extraction Method: SW3050B
Analytical Method: SW6020
Unit: mg/kg
Sample ID: MB/LCS/LCSD-259834

QC Summary Report for Metals

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aluminum	510	510	500	103	102	75-125	1.10	20
Antimony	50	49	50	100	99	75-125	1.27	20
Arsenic	50	50	50	100	100	75-125	0.0619	20
Barium	500	500	500	100	100	75-125	0.261	20
Beryllium	51	51	50	102	102	75-125	0.699	20
Cadmium	50	50	50	100	100	75-125	0.605	20
Chromium	52	52	50	103	104	75-125	0.477	20
Cobalt	51	50	50	101	101	75-125	0.154	20
Copper	51	51	50	101	102	75-125	0.963	20
Lead	49	49	50	98	99	75-125	0.789	20
Mercury	1.3	1.3	1.25	101	102	75-125	0.632	20
Molybdenum	51	52	50	103	104	75-125	0.961	20
Nickel	51	51	50	102	102	75-125	0.821	20
Selenium	51	50	50	101	100	75-125	1.36	20
Silver	52	52	50	104	104	75-125	0.0965	20
Thallium	50	51	50	101	101	75-125	0.459	20
Vanadium	51	50	50	102	100	75-125	1.55	20
Zinc	500	510	500	100	102	75-125	1.69	20
Surrogate Recovery								
Terbium	520	540	500	104	107	70-130	3.06	20



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

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2212657

ClientCode: CCHM

- WaterTrax
 CLIP
 EDF
 EQUIS
 Dry-Weight
 Email
 HardCopy
 ThirdParty
 J-flag
 Detection Summary
 Excel

Report to:

Adam Springer
Contra Costa-Hazardous Materials
4585 Pacheco Blvd., Ste 100
Martinez, CA 94553
(925) 335-3216 FAX: (925) 646-2073

Email: adam.springer@hsd.cccounty.us
cc/3rd Party: trisha.asuncion@hsd.cccounty.us;
PO: #023961
Project: MRC Followup

Bill to:

Alexandra McMullen
Contra Costa-Hazardous Materials
4585 Pacheco Blvd., Ste 100
Martinez, CA 94553
cchazmat@cchealth.org

Requested TATs: 1 day;
5 days;

Date Received: 12/09/2022
Date Logged: 12/09/2022

Lab ID	ClientSampID	Matrix	Collection Date	Hold	Requested Tests (See legend below)												
					1	2	3	4	5	6	7	8	9	10	11	12	
2212657-001	#4 HazMat Office storm drain	Solid	12/9/2022 09:25	<input type="checkbox"/>	A	A	A										

Test Legend:

1	8082_PCB_Solid	2	CAMMETMS_TTLC_S	3	PRDisposal Fee	4	
5		6		7		8	
9		10		11		12	

Prepared by: Agustina Venegas

Comments:

NOTE: Soil samples are discarded 60 days after receipt 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: CONTRA COSTA-HAZARDOUS MATERIALS

Project: MRC Followup

Work Order: 2212657

Client Contact: Adam Springer

QC Level: LEVEL 2

Contact's Email: adam.springer@hsd.cccounty.us

Comments:

Date Logged: 12/9/2022

WaterTrax CLIP EDF Excel EQUIS Email HardCopy ThirdParty J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	U**	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	Sub Out
001A	#4 HazMat Office storm drain	Solid	SW6020 (Metals) <Aluminum, Antimony, Arsenic, Barium, Beryllium, Cadmium, Chromium, Cobalt, Copper, Lead, Mercury, Molybdenum, Nickel, Selenium, Silver, Thallium, Vanadium, Zinc>	1	8OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	12/9/2022 9:25	1 day	12/12/2022		<input type="checkbox"/>	<input type="checkbox"/>
			SW8082 (PCBs Only)			<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>		5 days	12/16/2022		<input type="checkbox"/>	<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).

- Organic extracts are held for 40 days before disposal; Inorganic extract are held for 30 days.

- 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.

U** = An unpreserved container was received for a method that suggests a preservation in order to extend hold time for analysis.



McCAMPBELL ANALYTICAL, INC.
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CHAIN OF CUSTODY RECORD											
Turn Around Time: 1 Day Rush		<input checked="" type="radio"/>	2 Day Rush		<input type="radio"/>	3 Day Rush		<input type="radio"/>	STD	<input checked="" type="radio"/>	Quote #
J-Flag / MDL	ESL	Cleanup Approved			Dry Weight		Bottle Order #				
Delivery Format: PDF		GeoTracker EDF			EDD		Write On (DW)		Detect Summary		

Report To: Contra Costa Health Haz Mat Bill To: Contra Costa Health Haz Mat
 Company: Contra Costa Health Haz Mat
 Address: 4585 Pacheco Blvd., Ste. 100
 Email: adam.springer@cchealth.org; trisha.johnson@cchealth.org Tele: (925) 655-3200
 Project Name: MRC Followup Project #:
 Project Location: Martinez PO #
 Sampler Signature: *[Signature]*

Analysis Requested

SAMPLE ID Location / Field Point	Sampling		#Containers	Matrix	Preservative	Multi Range as Gas, Diesel, and Motor Oil (8021/8015)	BTEX & TPH as Gas (8021/ 8015) MTBE	TPH as Diesel (8015) + Motor Oil Without Silica Gel	TPH as Diesel (8015) + Motor Oil With Silica Gel	Total Oil & Grease (1664 / 9071) Without Silica Gel	Total Petroleum Hydrocarbons - Oil & Grease (1664 / 9071) With Silica Gel	Total Petroleum Hydrocarbons (418.1) With Silica Gel	EPA 505/ 608 / 8081 (CI Pesticides)	EPA 608 / 8082 PCB's ; Aroclors only	EPA 524.2 / 624 / 8260 (VOCs)	EPA 525.2 / 625 / 8270 (SVOCs)	EPA 8270 SIM / 8310 (PAHs / PNAs)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)*	Baylands Requirements	Lab to filter sample for dissolved metals analysis	
	Date	Time																				
#4 HazMat Office storm drain	12/9/22	0925	1	S	1									<input checked="" type="radio"/>				<input checked="" type="radio"/>	<input checked="" type="radio"/>			

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
<i>[Signature]</i>	12/9/22	1057	<i>[Signature]</i>	12/9/2022	1057

Comments / Instructions
CAM17, Metals (aluminum only) - 1 day rush
PCB's - STD

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=H₂SO₄ 4=HNO₃ 5=NaOH 6=ZnOAc/NaOH 7=None
 Temp 3.8 °C Initials WEST



Sample Receipt Checklist

Client Name: Contra Costa-Hazardous Materials
Project: MRC Followup
WorkOrder No: 2212657 Matrix: Solid
Carrier: Client Drop-In

Date and Time Received: 12/9/2022 10:54
Date Logged: 12/9/2022
Received by: Agustina Venegas
Logged by: Agustina Venegas

Chain of Custody (COC) Information

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

Sample Receipt Information

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

Sample Preservation and Hold Time (HT) Information

- All samples received within holding time? Yes No NA
- Samples Received on Ice? Yes No

(Ice Type: WET ICE)

- Sample/Temp Blank temperature Temp: 3.8°C NA
- ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)? Yes No NA
- Sample labels checked for correct preservation? Yes No
- pH acceptable upon receipt (Metal: <2; Nitrate 353.2/4500NO3: <2; 522: <4; 218.7: >8)? Yes No NA

UCMR Samples:

- pH tested and acceptable upon receipt (200.7: ≤2; 533: 6 - 8; 537.1: 6 - 8)? Yes No NA
- Free Chlorine tested and acceptable upon receipt (<0.1mg/L) [not applicable to 200.7]? Yes No NA

Comments: