



Technical Memorandum

To: Erin Griffin, PMP
Project Manager II
Kitchell CEM

From: Salvador Mendoza, P.G.
Jeff Raines, P.E., G.E.
Terraphase Engineering Inc.

Date: April 1, 2021

Project No.: 0034.017.001

Subject Supplemental PCB Sampling – Merritt College Horticulture Greenhouse

Terraphase Engineering Inc. (Terraphase) mobilized to the Subject site on March 30, 2021 to assess the gray caulking material applied to the greenhouse exterior for polychlorinated biphenyl (PCB) content. Terraphase's bulk sample was placed in laboratory supplied glass jar and submitted to McCampbell Analytical, Inc. located in Pittsburg, CA 94565 under standard chain-of-custody protocol. This sample was analyzed for PCB content using the Environmental Protection Agency (EPA) analytical Method 8082. The gray caulk was reported by the laboratory as not containing PCBs above the laboratory detection limit of 10 parts per million.

Additional suspect PCB containing materials were not identified during Terraphase's supplemental sampling event. Terraphase is grateful for the opportunity to offer our services on this important project. If you have any questions or comments regarding this submittal, please contact Salvador Mendoza at 916.661.2484.

Sincerely,

for Terraphase Engineering Inc.

Salvador Mendoza, P.G.
Senior Project Geologist

Jeff Raines, P.E., G.E.
Principal Geotechnical Engineer

SM:JR

Attachment:

A Laboratory Report and Chain of Custody Documentation



McC Campbell Analytical, Inc.

"When Quality Counts"

Analytical Report

WorkOrder: 2103H63

Report Created for: Terraphase Engineering Inc.
1404 Franklin Street, Ste. 600
Oakland, CA 94612

Project Contact: Sal Mendoza
Project P.O.:
Project: 0034.017.001; Merritt College

Project Received: 03/30/2021

Analytical Report reviewed & approved for release on 04/01/2021 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: Terraphase Engineering Inc.

Project: 0034.017.001; Merritt College

WorkOrder: 2103H63

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	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: Terraphase Engineering Inc.
Project: 0034.017.001; Merritt College
WorkOrder: 2103H63

Analytical Qualifiers

S Surrogate recovery outside accepted recovery limits.
a3 Sample diluted due to high organic content interfering with quantitative/or qualitative analysis.
c4 Surrogate recovery outside of the control limits due to coelution with another peak(s) / cluttered chromatogram.



Analytical Report

Client: Terraphase Engineering Inc.
Date Received: 03/30/2021 14:25
Date Prepared: 03/30/2021
Project: 0034.017.001; Merritt College

WorkOrder: 2103H63
Extraction Method: SW3550B/3630C
Analytical Method: SW8082
Unit: mg/kg

Polychlorinated Biphenyls (PCBs) Aroclors w/ Column Style Clean-up

Client ID	Lab ID	Matrix	Date Collected	Instrument	Batch ID
Greenhouse Rain Drain	2103H63-001A	Solid	03/30/2021 12:30	GC40 03312169.d	218504

Analytes	Result	MDL	RL	DF	Date Analyzed
Aroclor1016	ND	10	10	20	04/01/2021 05:43
Aroclor1221	ND	10	10	20	04/01/2021 05:43
Aroclor1232	ND	10	10	20	04/01/2021 05:43
Aroclor1242	ND	10	10	20	04/01/2021 05:43
Aroclor1248	ND	10	10	20	04/01/2021 05:43
Aroclor1254	ND	10	10	20	04/01/2021 05:43
Aroclor1260	ND	10	10	20	04/01/2021 05:43
PCBs, total	ND	NA	10	20	04/01/2021 05:43

Surrogates	REC (%)	Qualifiers	Limits	Date Analyzed
Decachlorobiphenyl	156	S	70-130	04/01/2021 05:43

Analyst(s): CN

Analytical Comments: a3,c4



Quality Control Report

Client: Terraphase Engineering Inc.
Date Prepared: 03/30/2021
Date Analyzed: 04/01/2021
Instrument: GC22, GC40
Matrix: Bulk Material
Project: 0034.017.001; Merritt College

WorkOrder: 2103H63
BatchID: 218504
Extraction Method: SW3550B/3630C
Analytical Method: SW8082
Unit: mg/kg
Sample ID: MB/LCS/LCSD-218504

QC Summary Report for SW8082 w/ Column Clean-up

Analyte	MB Result	MDL	RL	SPK Val	MB SS %REC	MB SS Limits
Aroclor1016	ND	0.0500	0.0500	-	-	-
Aroclor1221	ND	0.0500	0.0500	-	-	-
Aroclor1232	ND	0.0500	0.0500	-	-	-
Aroclor1242	ND	0.0500	0.0500	-	-	-
Aroclor1248	ND	0.0500	0.0500	-	-	-
Aroclor1254	ND	0.0500	0.0500	-	-	-
Aroclor1260	ND	0.0500	0.0500	-	-	-

Surrogate Recovery

Decachlorobiphenyl	0.0463			0.05	93	70-130
--------------------	--------	--	--	------	----	--------

Analyte	LCS Result	LCSD Result	SPK Val	LCS %REC	LCSD %REC	LCS/LCSD Limits	RPD	RPD Limit
Aroclor1016	0.174	0.174	0.15	116	116	70-130	0.0592	20
Aroclor1260	0.157	0.159	0.15	104	106	70-130	1.53	20

Surrogate Recovery

Decachlorobiphenyl	0.0495	0.0505	0.050	99	101	70-130	2.14	20
--------------------	--------	--------	-------	----	-----	--------	------	----



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

WaterTrax WriteOn EDF

CHAIN-OF-CUSTODY RECORD

WorkOrder: 2103H63

ClientCode: TEOC

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

Report to:

Sal Mendoza
Terraphase Engineering Inc.
1404 Franklin Street, Ste. 600
Oakland, CA 94612
(775) 234-2459 FAX: (510) 380-6304

Email: sal.mendoza@terrphase.com
cc/3rd Party:
PO:
Project: 0034.017.001; Merritt College

Bill to:

Accounts Payable
Terraphase Engineering Inc.
1404 Franklin Street, Ste. 600
Oakland, CA 94612
ap@terrphase.com

Requested TAT: 2 days;

Date Received: 03/30/2021

Date Logged: 03/30/2021

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	
2103H63-001	Greenhouse Rain Drain	Solid	3/30/2021 12:30	<input type="checkbox"/>	A	A											

Test Legend:

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

Project Manager: Rosa Venegas

Prepared by: Lilly Ortiz

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: TERRAPHASE ENGINEERING INC.

Project: 0034.017.001; Merritt College

Work Order: 2103H63

Client Contact: Sal Mendoza

QC Level: LEVEL 2

Contact's Email: sal.mendoza@terrphase.com

Comments

Date Logged: 3/30/2021

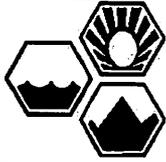
WaterTrax WriteOn EDF Excel EQUIS Email HardCopy ThirdParty J-flag

LabID	ClientSampID	Matrix	Test Name	Containers /Composites	Bottle & Preservative	Head Space	Dry-Weight	Collection Date & Time	TAT	Test Due Date	Sediment Content	Hold	SubOut
001A	Greenhouse Rain Drain	Solid	SW8082 (PCBs)	1	16OZ GJ, Unpres	<input type="checkbox"/>	<input type="checkbox"/>	3/30/2021 12:30	2 days	4/1/2021		<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.

RUSH



McCAMPBELL ANALYTICAL, INC.

1534 Willow Pass Rd. Pittsburg, Ca. 94565-1701

Telephone: (877) 252-9262 / Fax: (925) 252-9269

www.mccampbell.com

main@mccampbell.com

CHAIN OF CUSTODY RECORD

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

Report To: Sal Mendora Bill To: Terraphase
 Company: Terraphase
 Address: 1404 Franklin
 Email: Sal.mendora@terraphase.com Phone: 916.661.2484
 Project Name: Merritt College Project #: 0034.017.001
 Project Location: Merritt College 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 / PNA's)	CAM 17 Metals (200.8 / 6020)*	Metals (200.8 / 6020)*	Baylands Requirements	Lab to filter sample for dissolved metals analysis	
	Date	Time																				
<u>Greenhouse Rain Drain</u>	<u>3/30/21</u>	<u>1230</u>	<u>1</u>		<u>NA</u>									<input checked="" type="checkbox"/>								

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>Sal Torres - Terraphase</u>	<u>3-30-21</u>	<u>1425</u>	<u>[Signature]</u>	<u>3/30/21</u>	<u>1425</u>

Comments / Instructions

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 28.2°C Initials Lo



Sample Receipt Checklist

Client Name: **Terraphase Engineering Inc.**
 Project: **0034.017.001; Merritt College**

Date and Time Received: **3/30/2021 14:25**

Date Logged: **3/30/2021**

Received by: **Lilly Ortiz**

Logged by: **Lilly Ortiz**

WorkOrder No: **2103H63** Matrix: Solid
 Carrier: Client Drop-In

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 checked="" type="checkbox"/>	No <input 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 checked="" type="checkbox"/>	No <input type="checkbox"/>	
Sampler's name noted on COC?	Yes <input checked="" type="checkbox"/>	No <input type="checkbox"/>	
COC agrees with Quote?	Yes <input type="checkbox"/>	No <input type="checkbox"/>	NA <input checked="" 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"/>
Custody seals intact on sample bottles?	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 checked="" type="checkbox"/>	No <input type="checkbox"/>	NA <input type="checkbox"/>
Samples Received on Ice?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Sample/Temp Blank temperature		Temp: 28.2°C	NA <input type="checkbox"/>
ZHS conditional analyses: VOA meets zero headspace requirement (VOCs, TPHg/BTEX, RSK)?	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 type="checkbox"/>	NA <input checked="" type="checkbox"/>

UCMR Samples:

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: