STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
Ten Franklin Square, New Britain, CT 06051
Phone: (860) 827-2935 Fax: (860) 827-2950
E-Mail: siting.council@ct.gov
Web Site: portal.ct.gov/csc

VIA ELECTRONIC MAIL

July 3, 2024

Lee D. Hoffman, Esq.
Pullman & Comley, LLC
90 State House Square
Hartford, CT 06103-3702
lhoffman@pullcom.com

RE: **PETITION NO. 1562** – 524 NLR LLC Declaratory Ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the construction, maintenance and operation of a 3.99-megawatt AC solar photovoltaic electric generating facility located at 524 New London Road, Colchester, Connecticut, and associated electrical interconnection. **Compliance with Condition No. 1 of July 1, 2024 Project Change Approval.**

Dear Attorney Hoffman:

The Connecticut Siting Council (Council) is in receipt of your correspondence dated July 2, 2024 regarding compliance with Condition No. 1 of the Project Change approval letter issued by the Council on July 1, 2024 for the above-referenced facility. The correspondence includes the specification sheets for the new 695-Watt modules and the Toxicity Characteristic Leaching Procedure test results in accordance with Condition No. 1.

Therefore, the Council acknowledges that Condition No. 1 of the Council's July 1, 2024 Project Change approval has been satisfied. This acknowledgment applies only to the condition satisfied by the July 2, 2024 correspondence.

Please be advised that deviations from the standards established by the Council in the Declaratory Ruling are enforceable under the provisions of Connecticut General Statutes §16-50u.

Thank you for your attention and cooperation.

Sincerely,

Melanie A. Bachman
Executive Director

MB/RDM/dll

c: The Honorable Bernie Dennler, First Selectperson, Town of Colchester (bdennler@colchesterct.gov)
The Honorable Ed Chmielewski, First Selectperson, Town of Salem (selectman@salemct.gov)
Service List, dated March 7, 2024

PULLMAN &COMLEY

Lee D. Hoffman
90 State House Square
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f 860 424 4370
lhoffman@pullcom.com
www.pullcom.com

July 2, 2024

VIA ELECTRONIC MAIL AND U.S. MAIL
Melanie Bachman
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

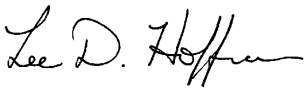
Re: PETITION NO. 1562 - 524 NLR LLC petition for a declaratory ruling, pursuant to Connecticut General Statutes §4-176 and §16-50k, for the proposed construction, maintenance and operation of a 3.99-megawatt AC solar photovoltaic electric generating facility located at 524 New London Road, Colchester, Connecticut, and associated electrical interconnection.

Dear Ms. Bachman:

I am writing on behalf of my client, 524 NLR LLC ("Petitioner"), in connection with the above referenced Petition. Thank you for the Council's July 1, 2024 approval of the Petitioner's requested project changes ("Approval"). Pursuant to the Council's Approval, the Council required the Petitioner to submit specification sheets for the new 695-Watt modules. In addition, the Council required the Petitioner to submit Toxicity Characteristic Leaching Procedure ("TCLP") test results that indicate the 695-Watt modules would not be characterized as hazardous waste at the time of disposal, under current testing criteria.

The requested specification sheets and corresponding TCLP test results are included with this letter. Please confirm that this submission meets the conditions required in the Council's Approval. Should you have any questions concerning this submittal, please contact me at your convenience. I certify that copies of this submittal have been made to all parties on the Petition's Service List as of this date.

Sincerely,



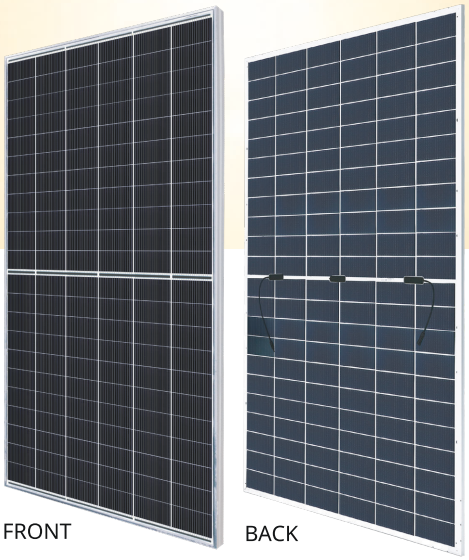
Lee D. Hoffman

cc: Service List, Docket 1562

Enclosures

NEW

CanadianSolar



TOPBiHiKu7

N-type Bifacial TOPCon Technology

675 W ~ 705 W

CS7N-675|680|685|690|695|705TB-AG

MORE POWER

- 705 W — Module power up to 705 W, Module efficiency up to 22.7 %
- EXTRA POWER — Up to 85% Power Bifaciality, more power from the back side
- Excellent anti-LeTID & anti-PID performance. Low power degradation, high energy yield
- Lower temperature coefficient (Pmax): -0.29%/°C, increases energy yield in hot climate
- Lower LCOE & system cost

MORE RELIABLE

- Minimizes micro-crack impacts
- Heavy snow load up to 5400 Pa, wind load up to 2400 Pa*

12 Years **Enhanced Product Warranty on Materials and Workmanship***

30 Years **Linear Power Performance Warranty***

1st year power degradation no more than 1%
Subsequent annual power degradation no more than 0.4%

*According to the applicable Canadian Solar Limited Warranty Statement.

MANAGEMENT SYSTEM CERTIFICATES*

ISO 9001: 2015 / Quality management system
ISO 14001: 2015 / Standards for environmental management system
ISO 45001: 2018 / International standards for occupational health & safety
IEC 62941: 2019 / Photovoltaic module manufacturing quality system

PRODUCT CERTIFICATES*

IEC 61215 / IEC 61730 / CE / INMETRO / MCS / UKCA / CGC
CEC listed (US California) / FSEC (US Florida)
UL 61730 / IEC 61701 / IEC 62716 / IEC 60068-2-68
Take-e-way

* The specific certificates applicable to different module types and markets will vary, and therefore not all of the certifications listed herein will simultaneously apply to the products you order or use. Please contact your local Canadian Solar sales representative to confirm the specific certificates available for your Product and applicable in the regions in which the products will be used.

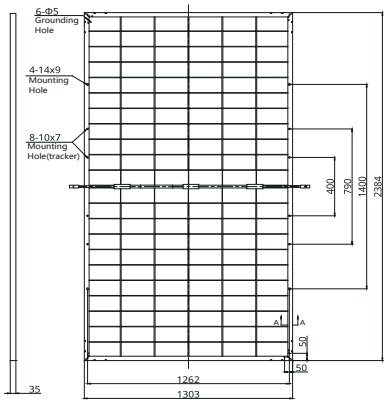
CSI Solar Co., Ltd. is committed to providing high quality solar photovoltaic modules, solar energy and battery storage solutions to customers. The company was recognized as the No. 1 module supplier for quality and performance/price ratio in the IHS Module Customer Insight Survey. Over the past 22 years, it has successfully delivered around 100 GW of premium-quality solar modules across the world.

* For detailed information, please refer to the Installation Manual.

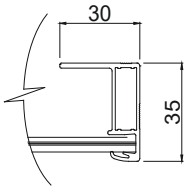
Canadian Solar (USA) Inc.
1350 Treat Blvd. Suite 500, Walnut Creek, CA 94597 | www.csisolar.com/na | support.ca@csisolar.com

ENGINEERING DRAWING (mm)

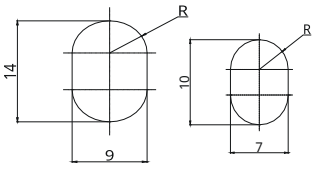
Rear View



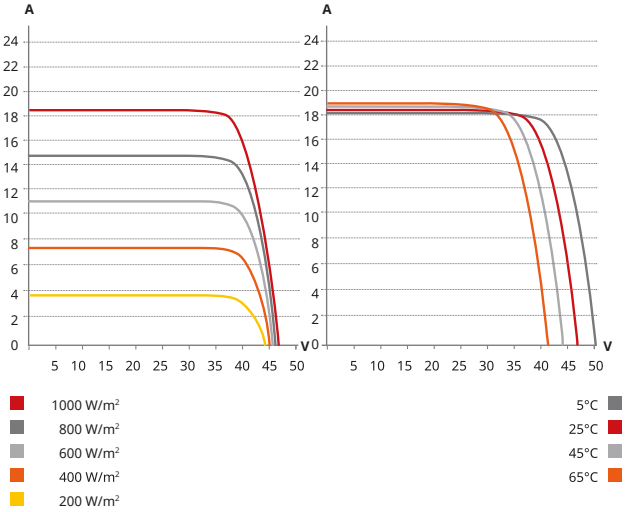
Frame Cross Section A-A



Mounting Hole



CS7N-680TB-AG / I-V CURVES



ELECTRICAL DATA | STC*

		Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)	Module Efficiency
CS7N-675TB-AG		675 W	39.0 V	17.31 A	46.9 V	18.24 A	21.7%
Bifacial Gain**	5%	709 W	39.0 V	18.19 A	46.9 V	19.15 A	22.8%
	10%	743 W	39.0 V	19.04 A	46.9 V	20.06 A	23.9%
	20%	810 W	39.0 V	20.77 A	46.9 V	21.89 A	26.1%
CS7N-680TB-AG		680 W	39.2 V	17.35 A	47.1 V	18.29 A	21.9%
Bifacial Gain**	5%	714 W	39.2 V	18.22 A	47.1 V	19.20 A	23.0%
	10%	748 W	39.2 V	19.09 A	47.1 V	20.12 A	24.1%
	20%	816 W	39.2 V	20.82 A	47.1 V	21.95 A	26.3%
CS7N-685TB-AG		685 W	39.4 V	17.39 A	47.3 V	18.34 A	22.1%
Bifacial Gain**	5%	719 W	39.4 V	18.26 A	47.3 V	19.26 A	23.1%
	10%	754 W	39.4 V	19.14 A	47.3 V	20.17 A	24.3%
	20%	822 W	39.4 V	20.87 A	47.3 V	22.01 A	26.5%
CS7N-690TB-AG		690 W	39.6 V	17.43 A	47.5 V	18.39 A	22.2%
Bifacial Gain**	5%	725 W	39.6 V	18.31 A	47.5 V	19.31 A	23.3%
	10%	759 W	39.6 V	19.17 A	47.5 V	20.23 A	24.4%
	20%	828 W	39.6 V	20.92 A	47.5 V	22.07 A	26.7%
CS7N-695TB-AG		695 W	39.8 V	17.47 A	47.7 V	18.44 A	22.4%
Bifacial Gain**	5%	730 W	39.8 V	18.34 A	47.7 V	19.36 A	23.5%
	10%	765 W	39.8 V	20.18 A	47.7 V	20.28 A	24.6%
	20%	834 W	39.8 V	20.96 A	47.7 V	22.13 A	26.8%
CS7N-700TB-AG		700 W	40.0 V	17.51 A	47.9 V	18.49 A	22.5%
Bifacial Gain**	5%	735 W	40.0 V	18.39 A	47.9 V	19.41 A	23.7%
	10%	770 W	40.0 V	20.22 A	47.9 V	20.34 A	24.8%
	20%	840 W	40.0 V	21.01 A	47.9 V	22.19 A	27.0%
CS7N-705TB-AG		705 W	40.2 V	17.55 A	48.1 V	18.54 A	22.7%
Bifacial Gain**	5%	740 W	40.2 V	18.43 A	48.1 V	19.47 A	23.8%
	10%	776 W	40.2 V	20.27 A	48.1 V	20.39 A	25.0%
	20%	846 W	40.2 V	21.06 A	48.1 V	22.25 A	27.2%

* Under Standard Test Conditions (STC) of irradiance of 1000 W/m², spectrum AM 1.5 and cell temperature of 25°C.
** Bifacial Gain: The additional gain from the back side compared to the power of the front side at the standard test condition. It depends on mounting (structure, height, tilt angle etc.) and albedo of the ground.

ELECTRICAL DATA | NMOT*

	Nominal Max. Power (Pmax)	Opt. Operating Voltage (Vmp)	Opt. Operating Current (Imp)	Open Circuit Voltage (Voc)	Short Circuit Current (Isc)
CS7N-675TB-AG	510 W	36.9 V	13.84 A	44.4 V	14.71 A
CS7N-680TB-AG	514 W	37.1 V	13.88 A	44.6 V	14.75 A
CS7N-685TB-AG	518 W	37.2 V	13.91 A	44.8 V	14.79 A
CS7N-690TB-AG	522 W	37.4 V	13.94 A	45.0 V	14.83 A
CS7N-695TB-AG	526 W	37.6 V	13.97 A	45.2 V	14.87 A
CS7N-700TB-AG	529 W	37.8 V	14.00 A	45.4 V	14.91 A
CS7N-705TB-AG	533 W	38.0 V	14.03 A	45.5 V	14.95 A

* Under Nominal Module Operating Temperature (NMOT), irradiance of 800 W/m² spectrum AM 1.5, ambient temperature 20°C, wind speed 1 m/s.

MECHANICAL DATA

Specification	Data
Cell Type	TOPCon cells
Cell Arrangement	132 [2 x (11 x 6)]
Dimensions	2384 × 1303 × 35 mm (93.9 × 51.3 × 1.38 in)
Weight	37.9 kg (83.6 lbs)
Front Glass	2.0 mm heat strengthened glass with anti-reflective coating
Back Glass	2.0 mm heat strengthened glass
Frame	Anodized aluminium alloy
J-Box	IP68, 3 bypass diodes
Cable	4.0 mm² (IEC), 12 AWG (UL)
Cable Length (Including Connector)	410 mm (16.1 in) (+) / 250 mm (9.8 in) (-) or 2000 mm (78.7 in) (+) / 1400 mm (55.1 in) (-)
Connector	T6 or MC4 series
Per Pallet	31 pieces
Per Container (40' HQ)	558 pieces or 496 pieces (only for US & Canada)

* For detailed information, please contact your local Canadian Solar sales and technical representatives.

ELECTRICAL DATA

Operating Temperature	-40°C ~ +85°C
Max. System Voltage	1500 V (IEC/UL) or 1000 V (IEC/UL)
Module Fire Performance	TYPE 29 (UL 61730) or CLASS C (IEC61730)
Max. Series Fuse Rating	35 A
Application Classification	Class A
Power Tolerance	0 ~ + 10 W
Power Bifaciality*	80 %

* Power Bifaciality = $Pmax_{rear}$ / $Pmax_{front}$, both $Pmax_{rear}$ and $Pmax_{front}$ are tested under STC, Bifaciality Tolerance: ± 5 %

* The specifications and key features contained in this datasheet may deviate slightly from our actual products due to the on-going innovation and product enhancement. CSI Solar Co., Ltd. reserves the right to make necessary adjustment to the information described herein at any time without further notice.
Please be kindly advised that PV modules should be handled and installed by qualified people who have professional skills and please carefully read the safety and installation instructions before using our PV modules.

TEMPERATURE CHARACTERISTICS

Specification	Data
Temperature Coefficient (Pmax)	-0.29 % / °C
Temperature Coefficient (Voc)	-0.25 % / °C
Temperature Coefficient (Isc)	0.05 % / °C
Nominal Module Operating Temperature	41 ± 3°C

PARTNER SECTION

TEST REPORT

CLIENT DETAILS

Contact	-
Client	CSI Solar Co., Ltd.
Address	199 Lushan Road, SND, Suzhou, Jiangsu CHINA
Telephone	-
Facsimile	-
Email	-
Order Number	-
Samples	Solid waste(1)
Project	-

LABORATORY DETAILS

Manager	SGS-CSTC
Laboratory	Environment Laboratory
Address	2/F, 3RD BUILDING NO. 889, YISHAN ROAD, XUHUI DISTRICT, SHANGHAI, CHINA
Telephone	+86 (21) 6140 2666-2002
Facsimile	+86 (21) 6115 2164
Email	REPORT.ENV @SGS.COM
Report Number	SHE23-01445 R3
SGS Reference	0000269060
Date Reported	2023/05/17
Analysis Date	2023/03/27 - 2023/04/07

COMMENTS

1.The results apply to the sample(s) as received.
2.The report is translated from SHE23-01445 R2.
3.This Report certificate cancels and supersedes the Report SHE23-01445 R1 dated 2023/04/07 issued by SGS, original report will be invalid from today.
4.Amendment:Add comments.

SIGNATORIES

Edith LI	Jun Meng	Vivian LI
Reported by	Reviewed by	Approved by

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. Testing Center-Environmental Laboratory
3rd Building, No.889 Yishan Road, Xuhui District, Shanghai, China 200233 t (86-21) 61072828 f (86-21) 61152164 www.sgsgroup.com.cn
中国·上海·徐汇区宜山路889号3号楼 邮编: 200233 t (86-21) 61072828 f (86-21) 61152164 e sgs.china@sgs.com

声明
Statement

1. 检测报告无本实验室检验检测专用章无效。

   The test report is invalid without the official seal of the laboratory.

2. 未经本公司书面许可，不得复制 (全文复制除外) 检测报告。

   This test report cannot be reproduced in any way, except in full content, without prior approval in writing by the laboratory.

3. 检测报告无编制、审核、批准人签字无效。

   The test report is invalid without the signature of the compiler, the checker and the approver

4. 检测报告涂改无效。

   The test report is invalid if altered.

5. 本检测报告以中文为准，英文文本（如有）仅为译文，两者发生冲突时，应以中文文本为准。

   The test report has been drafted in Chinese and translated into English (if applicable) for convenience only. In the event of discrepancy, the Chinese version shall prevail.

6. 送检样品的样品类型、样品名称、样品描述、项目名称等信息由客户提供。

   The sample type, sample name, sample description, project name and other information of the submitted samples are provided by the client.

7. 如未加盖CMA章则仅供内部参考，不具有对社会的证明作用。

   The report is for internal reference only if it is not stamped with CMA mark, it has no proof function to the society.

8. 如对本检测报告有异议，请在收到报告10天之内与本公司联系。

   Should you have any queries or objection to the test report, please contact us within 10 days after receiving the report.

符号表/Legend

"-" 未测试该参数或不适用/The parameter is not tested or not applicable

↑ 提高检出限/Detection limit raised

↓ 降低检出限/Detection limit lowered

ND 未检出/Not Detected

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Parameter	Method	Units	MDL	Limit	Testing Results
			Sample Number		23-01445.001
			Sample Name		PV Module:CS7x-TB-AG
			Test Object		Solid waste
			Sample Description		CP23-014221
			Receive Date		2023/03/27
Arsenic (As)	USEPA 200.8	mg/L	0.050	≤5	ND
Barium (Ba)	USEPA 200.8	mg/L	0.010	≤100	ND
Cadmium (Cd)	USEPA 200.8	mg/L	0.001	≤1	**0.008**
Chromium (Cr)	USEPA 200.8	mg/L	0.010	≤5	ND
Lead (Pb)	USEPA 200.8	mg/L	0.010	≤5	**1.47**
Selenium (Se)	USEPA 200.8	mg/L	0.050	≤1	ND
Silver (Ag)	USEPA 200.8	mg/L	0.010	≤5	ND
Mercury (Hg)	USEPA 7473	mg/L	0.005	≤0.2	ND
Benzene	USEPA 8260D	mg/L	0.0005	≤0.5	ND
Carbon tetrachloride	USEPA 8260D	mg/L	0.0005	≤0.5	ND
Chlorobenzene	USEPA 8260D	mg/L	0.0005	≤100	ND
Chloroform	USEPA 8260D	mg/L	0.0005	≤6	ND
1,4-Dichlorobenzene	USEPA 8260D	mg/L	0.0005	≤7.5	ND
1,2-Dichloroethane	USEPA 8260D	mg/L	0.0005	≤0.5	ND
1,1-Dichloroethene	USEPA 8260D	mg/L	0.0005	≤0.7	ND
2-butanone(MEK)	USEPA 8260D	mg/L	0.020	≤200	ND
Tetrachloroethene	USEPA 8260D	mg/L	0.0005	≤0.7	ND
Trichloroethene	USEPA 8260D	mg/L	0.0005	≤0.5	ND
Vinyl chloride	USEPA 8260D	mg/L	0.0005	≤0.2	ND
Methylphenol[1]	USEPA 8270E	mg/L	0.001	≤200	ND
2-Methylphenol	USEPA 8270E	mg/L	0.0005	-	ND
3&4-Methylphenol	USEPA 8270E	mg/L	0.0005	-	ND
2,4-Dinitrotoluene	USEPA 8270E	mg/L	0.0005	≤0.13	ND
Hexachlorobenzene	USEPA 8270E	mg/L	0.0005	≤0.13	ND
Hexachlorobutadiene	USEPA 8270E	mg/L	0.0005	≤0.5	ND
Hexachloroethane	USEPA 8270E	mg/L	0.0005	≤3	ND
Nitrobenzene	USEPA 8270E	mg/L	0.0005	≤2	ND
Pentachlorophenol	USEPA 8270E	mg/L	0.0025	≤100	ND
Pyridine	USEPA 8270E	mg/L	0.002	≤5.0	ND
2,4,5-Trichlorophenol	USEPA 8270E	mg/L	0.0005	≤400	ND
2,4,6-Trichlorophenol	USEPA 8270E	mg/L	0.0005	≤2	ND
Chlordane(Total)[2]	USEPA 8270E	mg/L	0.001	≤0.03	ND
Endrin	USEPA 8270E	mg/L	0.0005	≤0.02	ND
γ-BHC	USEPA 8270E	mg/L	0.0005	≤0.4	ND
Toxaphene	USEPA 8270E	mg/L	0.050	≤0.5	ND
γ-Chlordane	USEPA 8270E	mg/L	0.0005	-	ND
α-Chlordane	USEPA 8270E	mg/L	0.0005	-	ND
Methoxychlor	USEPA 8270E	mg/L	0.0005	≤10	ND
Heptachlor	USEPA 8270E	mg/L	0.0005	≤0.008	ND
2,4-D*	USEPA 8151A	mg/L	0.0005	≤10	ND
2,4,5-TP (Silvex, Fenopop)	USEPA 8151A	mg/L	0.0005	≤1	ND

Remark:
1.Methylphenol are the sum of 2-Methylphenol and 3&4-Methylphenol
2.Chlordane(Total) are the sum of α-Chlordane and γ-Chlordane
3.Preparative method:USEPA1311-1992(Toxicity Characteristic Leaching Procedure)
4.The Limits comes from CFR(code of federal regulations) title 40 part 261.24
5.CS7x: x=N or L, according to manufacturing's product name

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Method List

USEPA 200.8-1994 Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry
USEPA 7473-2007 Metals-Hg
USEPA 8260D-2018 VOCs
USEPA 8270E-2018 SVOCs
USEPA 8151A-1996 Acid Herbicides in Water by GC-MS

SGS-CSTC Standards Technical Services (Shanghai) Co., Ltd. Testing Center-Environmental Laboratory
检验检测专用章 Inspection & Testing Services
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Method:USEPA 200.8-1994

Equipment Name	Model	Equipment Number	Serial Number
ICP-MS	Agilent 7900	CHEM-998	JP16311502

Method:USEPA 7473-2007

Equipment Name	Model	Equipment Number	Serial Number
Hg analyzer	Milestone DMA-80	CHEM-958	16041979

Method:USEPA 8260D-2018

Equipment Name	Model	Equipment Number	Serial Number
PT-GC-MS	Agilent TWR-AQUA100/7890B/5977B	chem-979	US16083002/CN16243106/US1623M026

Method:USEPA 8270E-2018

Equipment Name	Model	Equipment Number	Serial Number
GC-MS	Agilent 7890B/5977A	CHEM-1118	CN18053182/US1805M023

Method:USEPA 8270E-2018

Equipment Name	Model	Equipment Number	Serial Number
GC-MS	Agilent 7890B/5977A	CHEM-1118	CN18053182/US1805M023

Method:USEPA 8151A-1996

Equipment Name	Model	Equipment Number	Serial Number
GC-MS	Agilent6890N/5973i	CHEM-126	US144004/CN10539052/US52411034

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Method Blank(MB)

Parameter	Batch ID	Unit	MDL	MB	Control Range
Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry Method: USEPA 200.8-1994					
Arsenic (As)	LB2311671	mg/L	0.050	<0.050	<0.050
Barium (Ba)	LB2311671	mg/L	0.010	<0.01	<0.010
Cadmium (Cd)	LB2311671	mg/L	0.001	<0.001	<0.001
Chromium (Cr)	LB2311671	mg/L	0.010	<0.01	<0.010
Lead (Pb)	LB2311671	mg/L	0.010	<0.010	<0.010
Selenium (Se)	LB2311671	mg/L	0.050	<0.050	<0.050
Silver (Ag)	LB2311671	mg/L	0.010	<0.010	<0.010
Metals-Hg Method: USEPA 7473-2007					
Mercury (Hg)	LB2311451	mg/L	0.005	<0.005	<0.005
Acid Herbicides in Water by GC-MS Method: USEPA 8151A-1996					
2,4-D	LB2311761	mg/L	0.0005	<0.0005	<0.0005
2,4,5-TP (Silvex, Fenopop)	LB2311761	mg/L	0.0005	<0.0005	<0.0005
VOCs Method: USEPA 8260D-2018					
Benzene	LB2311764	mg/L	0.0005	<0.0005	<0.0005
Carbon tetrachloride	LB2311764	mg/L	0.0005	<0.0005	<0.0005
Chlorobenzene	LB2311764	mg/L	0.0005	<0.0005	<0.0005
Chloroform	LB2311764	mg/L	0.0005	<0.0005	<0.0005
1,4-Dichlorobenzene	LB2311764	mg/L	0.0005	<0.0005	<0.0005
1,2-Dichloroethane	LB2311764	mg/L	0.0005	<0.0005	<0.0005
1,1-Dichloroethene	LB2311764	mg/L	0.0005	<0.0005	<0.0005
2-butanone(MEK)	LB2311764	mg/L	0.020	<0.020	<0.020
Tetrachloroethene	LB2311764	mg/L	0.0005	<0.0005	<0.0005
Trichloroethene	LB2311764	mg/L	0.0005	<0.0005	<0.0005
Vinyl chloride	LB2311764	mg/L	0.0005	<0.0005	<0.0005
SVOCs Method: USEPA 8270E-2018					
2-Methylphenol	LB2311607	mg/L	0.0005	<0.0005	<0.0005
3&4-Methylphenol	LB2311607	mg/L	0.0005	<0.0005	<0.0005
2,4-Dinitrotoluene	LB2311607	mg/L	0.0005	<0.0005	<0.0005
Hexachlorobenzene	LB2311607	mg/L	0.0005	<0.0005	<0.0005
Hexachlorobutadiene	LB2311607	mg/L	0.0005	<0.0005	<0.0005
Hexachloroethane	LB2311607	mg/L	0.0005	<0.0005	<0.0005
Nitrobenzene	LB2311607	mg/L	0.0005	<0.0005	<0.0005
Pentachlorophenol	LB2311607	mg/L	0.0025	<0.0025	<0.0025

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Method Blank(MB)

Parameter	Batch ID	Unit	MDL	MB	Control Range
SVOCs Method: USEPA 8270E-2018 (continued)					
Pyridine	LB2311607	mg/L	0.002	<0.002	<0.002
2,4,5-Trichlorophenol	LB2311607	mg/L	0.0005	<0.0005	<0.0005
2,4,6-Trichlorophenol	LB2311607	mg/L	0.0005	<0.0005	<0.0005
SVOCs Method: USEPA 8270E-2018					
Endrin	LB2311615	mg/L	0.0005	<0.0005	<0.0005
γ-BHC	LB2311615	mg/L	0.0005	<0.0005	<0.0005
Toxaphene	LB2311615	mg/L	0.050	<0.050	<0.050
γ-Chlordane	LB2311615	mg/L	0.0005	<0.0005	<0.0005
α-Chlordane	LB2311615	mg/L	0.0005	<0.0005	<0.0005
Methoxychlor	LB2311615	mg/L	0.0005	<0.0005	<0.0005
Heptachlor	LB2311615	mg/L	0.0005	<0.0005	<0.0005

The evaluation of Method Blanks (MB): All results of MB on this batch are lower than method detection limits, which meet the acceptance criteria of lab quality control.

Laboratory Control Sample(LCS)

LCS Recovery%= Result*100/ Reference Value.

Parameter	Batch ID	Unit	MDL	Result	Ref. Value	Recevory%	Control Range Lower	Control Range Upper
Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry Method: USEPA 200.8-1994								
Arsenic (As)	LB2311671	mg/L	0.050	0.199	0.2	99.5	80%	120%
Barium (Ba)	LB2311671	mg/L	0.010	0.202	0.2	101	80%	120%
Cadmium (Cd)	LB2311671	mg/L	0.001	0.192	0.2	95.8	80%	120%
Chromium (Cr)	LB2311671	mg/L	0.010	0.189	0.2	94.6	80%	120%
Lead (Pb)	LB2311671	mg/L	0.010	0.221	0.2	111	80%	120%
Selenium (Se)	LB2311671	mg/L	0.050	0.172	0.2	86.2	80%	120%
Silver (Ag)	LB2311671	mg/L	0.010	0.200	0.2	99.8	80%	120%
Metals-Hg Method: USEPA 7473-2007								
Mercury (Hg)	LB2311451	mg/L	0.005	<0.005	0.001	96.9	80%	120%
Acid Herbicides in Water by GC-MS Method: USEPA 8151A-1996								
2,4-D	LB2311761	mg/L	0.0005	0.0010	0.001	96.0	70%	130%
2,4,5-TP (Silvex, Fenopop)	LB2311761	mg/L	0.0005	0.0008	0.001	76.0	70%	130%
VOCs Method: USEPA 8260D-2018								
Benzene	LB2311764	mg/L	0.0005	0.0202	0.02	101	70%	130%

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Laboratory Control Sample(LCS)

LCS Recovery%= Result*100/ Reference Value.

Parameter	Batch ID	Unit	MDL	Result	Ref. Value	Recevory%	Control Range Lower	Control Range Upper
VOCs Method: USEPA 8260D-2018 (continued)								
Carbon tetrachloride	LB2311764	mg/L	0.0005	0.0164	0.02	82.0	70%	130%
Chlorobenzene	LB2311764	mg/L	0.0005	0.0187	0.02	93.4	70%	130%
Chloroform	LB2311764	mg/L	0.0005	0.0199	0.02	99.6	70%	130%
1,4-Dichlorobenzene	LB2311764	mg/L	0.0005	0.0197	0.02	98.7	70%	130%
1,2-Dichloroethane	LB2311764	mg/L	0.0005	0.0201	0.02	100	70%	130%
1,1-Dichloroethene	LB2311764	mg/L	0.0005	0.0233	0.02	117	70%	130%
2-butanone(MEK)	LB2311764	mg/L	0.020	<0.02	0.02	89.6	70%	130%
Tetrachloroethene	LB2311764	mg/L	0.0005	0.0173	0.02	86.7	70%	130%
Trichloroethene	LB2311764	mg/L	0.0005	0.0161	0.02	80.5	70%	130%
Vinyl chloride	LB2311764	mg/L	0.0005	0.0216	0.02	108	70%	130%
SVOCs Method: USEPA 8270E-2018								
2-Methylphenol	LB2311607	mg/L	0.0005	0.0042	0.005	83.0	30%	144%
3&4-Methylphenol	LB2311607	mg/L	0.0005	0.0079	0.01	79.1	30%	141%
2,4-Dinitrotoluene	LB2311607	mg/L	0.0005	0.0040	0.005	81.0	46%	140%
Hexachlorobenzene	LB2311607	mg/L	0.0005	0.0032	0.005	64.6	61%	127%
Hexachlorobutadiene	LB2311607	mg/L	0.0005	0.0017	0.005	34.8	10%	111%
Hexachloroethane	LB2311607	mg/L	0.0005	0.0036	0.005	73.0	38%	131%
Nitrobenzene	LB2311607	mg/L	0.0005	0.0039	0.005	78.6	25%	133%
Pentachlorophenol	LB2311607	mg/L	0.0025	0.0228	0.025	91.3	35%	130%
Pyridine	LB2311607	mg/L	0.002	0.002	0.005	48.8	10%	200%
2,4,5-Trichlorophenol	LB2311607	mg/L	0.0005	0.0044	0.005	89.0	40%	140%
2,4,6-Trichlorophenol	LB2311607	mg/L	0.0005	0.0048	0.005	95.6	40%	140%

The evaluation of recoveries for Laboratory Control Samples (LCS): All recoveries of LCS on this batch are in the controlled range, which meet the acceptance criteria of lab quality control.

Laboratory Duplicate(DUP)

Relative deviation(RD)%=|Sample Result -Duplicate Result|*100/(Sample Result +Duplicate Result).

Parameter	Sample ID	Unit	MDL	Sample Result	Duplicate Result	RD%	RD Control Range%	Sur Control Range
Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry Method: USEPA 200.8-1994								
Arsenic (As)	SHE23-01445.001	mg/L	0.050	<0.05	<0.05	0.0	≤20	-
Barium (Ba)	SHE23-01445.001	mg/L	0.010	<0.01	<0.01	0.0	≤20	-

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Laboratory Duplicate(DUP)

Relative deviation(RD)%=|Sample Result -Duplicate Result|*100/(Sample Result +Duplicate Result).

Parameter	Sample ID	Unit	MDL	Sample Result	Duplicate Result	RD%	RD Control Range%	Sur Control Range
Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry Method: USEPA 200.8-1994 (continued)								
Cadmium (Cd)	SHE23-01445.001	mg/L	0.001	0.009	0.008	2.8	≤20	-
Chromium (Cr)	SHE23-01445.001	mg/L	0.010	<0.01	<0.01	0.0	≤20	-
Lead (Pb)	SHE23-01445.001	mg/L	0.010	1.47	1.47	0.1	≤20	-
Selenium (Se)	SHE23-01445.001	mg/L	0.050	<0.05	<0.05	0.0	≤20	-
Silver (Ag)	SHE23-01445.001	mg/L	0.010	<0.01	<0.01	0.0	≤20	-
Metals-Hg Method: USEPA 7473-2007								
Mercury (Hg)	SHE23-01445.001	mg/L	0.005	<0.005	<0.005	0.0	≤10	-
VOCs Method: USEPA 8260D-2018								
Benzene	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
Carbon tetrachloride	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
Chlorobenzene	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
Chloroform	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
1,4-Dichlorobenzene	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
1,2-Dichloroethane	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
1,1-Dichloroethene	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
2-butanone(MEK)	SHE23-01445.001	mg/L	0.020	<0.02	<0.02	0.0	≤30	-
Tetrachloroethene	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
Trichloroethene	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
Vinyl chloride	SHE23-01445.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤30	-
SVOCs Method: USEPA 8270E-2018								
2-Methylphenol	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
3&4-Methylphenol	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
2,4-Dinitrotoluene	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Hexachlorobenzene	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Hexachlorobutadiene	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Hexachloroethane	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Nitrobenzene	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Pentachlorophenol	QCO23-00230.001	mg/L	0.0025	<0.0025	<0.0025	0.0	≤17.5	-
Pyridine	QCO23-00230.001	mg/L	0.002	<0.002	<0.002	0.0	≤17.5	-
2,4,5-Trichlorophenol	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
2,4,6-Trichlorophenol	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
SVOCs Method: USEPA 8270E-2018								
Endrin	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
γ-BHC	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-

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Laboratory Duplicate(DUP)

Relative deviation(RD)%=|Sample Result -Duplicate Result|*100/(Sample Result +Duplicate Result).

Parameter	Sample ID	Unit	MDL	Sample Result	Duplicate Result	RD%	RD Control Range%	Sur Control Range
SVOCs Method: USEPA 8270E-2018 (continued)								
Toxaphene	QCO23-00230.001	mg/L	0.050	<0.05	<0.05	0.0	≤17.5	-
γ-Chlordane	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
α-Chlordane	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Methoxychlor	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-
Heptachlor	QCO23-00230.001	mg/L	0.0005	<0.0005	<0.0005	0.0	≤17.5	-

The evaluation of Relative Deviation (RD) for Duplicates: All RD of duplicates on this batch are in the controlled range, which meet the acceptance criteria of lab quality control.

Matrix Spike(MS)

MS Recovery%= (MS Result-Sample Result) *100/Spike Added (Related factor should be taken into consideration) .

Parameter	Sample ID	Unit	MDL	Sample Result	MS Result	Spike Added	Recevory%	Control Range Lower	Control Range Upper
Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry Method: USEPA 200.8-1994									
Arsenic (As)	SHE23-01445.001	mg/L	0.050	<0.050	0.204	0.2	102	70%	130%
Barium (Ba)	SHE23-01445.001	mg/L	0.010	<0.010	0.218	0.2	105	70%	130%
Cadmium (Cd)	SHE23-01445.001	mg/L	0.001	0.008	0.208	0.2	99.8	70%	130%
Chromium (Cr)	SHE23-01445.001	mg/L	0.010	<0.010	0.221	0.2	106	70%	130%
Lead (Pb)	SHE23-01445.001	mg/L	0.010	1.47	1.66	0.2	94.4	70%	130%
Selenium (Se)	SHE23-01445.001	mg/L	0.050	<0.050	0.221	0.2	110	70%	130%
Silver (Ag)	SHE23-01445.001	mg/L	0.010	<0.010	0.195	0.2	97.2	70%	130%
VOCs Method: USEPA 8260D-2018									
Benzene	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0195	0.02	97.3	50%	150%
Carbon tetrachloride	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0166	0.02	82.8	50%	150%
Chlorobenzene	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0213	0.02	106	50%	150%
Chloroform	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0193	0.02	96.6	50%	150%
1,4-Dichlorobenzene	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0191	0.02	95.3	50%	150%
1,2-Dichloroethane	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0185	0.02	92.6	50%	150%
1,1-Dichloroethene	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0251	0.02	126	50%	150%
2-butanone(MEK)	SHE23-01445.001	mg/L	0.020	<0.020	<0.02	0.02	88.4	50%	150%
Tetrachloroethene	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0192	0.02	96.2	50%	150%
Trichloroethene	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0147	0.02	73.6	50%	150%
Vinyl chloride	SHE23-01445.001	mg/L	0.0005	<0.0005	0.0209	0.02	105	50%	150%

The evaluation of recoveries for Matrix Spiked (MS): All recoveries for MS on this batch are in the controlled range, which meet the acceptance criteria of lab quality control.

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Matrix Spike Duplicate(MSD)

Relative deviation(RD)%=|MS Recovery% -MSD Recovery%|*100/(MS Recovery%+MSD Recovery%).

Parameter	Sample ID	Unit	MDL	MS Recovery%	MSD Recovery%	RD%	RD Control Range%	Sur Control Range
Determination of trace elements in waters and wastes by inductively coupled plasma-mass spectrometry Method: USEPA 200.8-1994								
Arsenic (As)	SHE23-01445.001	mg/L	0.050	102	107	2.5	≤20	-
Barium (Ba)	SHE23-01445.001	mg/L	0.010	105	106	0.5	≤20	-
Cadmium (Cd)	SHE23-01445.001	mg/L	0.001	99.8	100	0.3	≤20	-
Chromium (Cr)	SHE23-01445.001	mg/L	0.010	106	108	0.6	≤20	-
Lead (Pb)	SHE23-01445.001	mg/L	0.010	94.4	99.4	2.6	≤20	-
Selenium (Se)	SHE23-01445.001	mg/L	0.050	110	116	2.3	≤20	-
Silver (Ag)	SHE23-01445.001	mg/L	0.010	97.2	98.2	0.6	≤20	-
VOCs Method: USEPA 8260D-2018								
Benzene	SHE23-01445.001	mg/L	0.0005	97.3	100	1.6	≤30	-
Carbon tetrachloride	SHE23-01445.001	mg/L	0.0005	82.8	82.1	0.4	≤30	-
Chlorobenzene	SHE23-01445.001	mg/L	0.0005	106	107	0.1	≤30	-
Chloroform	SHE23-01445.001	mg/L	0.0005	96.6	99.5	1.5	≤30	-
1,4-Dichlorobenzene	SHE23-01445.001	mg/L	0.0005	95.3	97.8	1.3	≤30	-
1,2-Dichloroethane	SHE23-01445.001	mg/L	0.0005	92.6	101	4.2	≤30	-
1,1-Dichloroethene	SHE23-01445.001	mg/L	0.0005	126	92.5	15.1	≤30	-
2-butanone(MEK)	SHE23-01445.001	mg/L	0.020	88.4	95.2	3.7	≤30	-
Tetrachloroethene	SHE23-01445.001	mg/L	0.0005	96.2	96.2	0.0	≤30	-
Trichloroethene	SHE23-01445.001	mg/L	0.0005	73.6	77.2	2.4	≤30	-
Vinyl chloride	SHE23-01445.001	mg/L	0.0005	105	99.4	2.6	≤30	-

The evaluation of Matrix Spiked Duplicates (MSD): All recoveries for MSD on this batch are in the controlled range, which meet the acceptance criteria of lab quality control. All RD for MS and MSD on this batch are in the controlled range, which meet the acceptance criteria of lab quality control.

*** End of Report ***

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