



U.S. Department of Energy

Hanford Field Office
P.O. Box 550
Richland, Washington 99352

July 7, 2025

25-ECD-0080

Ms. Stephanie Schleif
Program Manager
Nuclear Waste Program
Washington State Department of Ecology
3100 Port of Benton Boulevard
Richland, Washington 99354

Dear Ms. Schleif:

REQUEST FOR CONCURRENCE TO USE NEW ANALYTICAL PREPARATORY METHOD, STIR BAR SORPTIVE EXTRACTION, TO SUPPORT DECISIONS AT THE HANFORD SITE

The U.S. Department of Energy, Hanford Field Office (HFO) is seeking concurrence from the Washington State Department of Ecology (Ecology) that Stir Bar Sorptive Extraction (SBSE), when used as a preparatory method for Method 8270E, is within the scope of Washington Administrative Code (WAC) 173-303-110, "Sampling, testing methods, and analyses." The analytical results obtained after performing SBSE can be used to support the Hanford Site dangerous and mixed waste decisions.

As discussed with your staff, SBSE provides numerous benefits at the Hanford Site including improved detection limits for semi volatile compounds in tank waste and a significant reduction of dangerous and mixed waste generation associated with liquid extraction preparatory methods.

Chapter Two of SW-846, "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods, Choosing the Correct Procedure," incorporated by reference into WAC 173-303-110 and referenced by Hanford Facility Dangerous Waste Permit Condition I.E.10.a., describes inherent flexibility for laboratories to use alternative analytical procedures and the precedence of quality control criteria except for "method-defined parameters." The SBSE is not planned to be used to measure constituents associated with a method-defined parameter.

222-S Laboratory staff provided a data validation packet and accreditation request to the Ecology Laboratory Accreditation Program on June 13, 2024, demonstrating quality control proficiency for 32 validated analytes. The Ecology Laboratory Accreditation Program provided accreditation on April 4, 2025 (Attachment). 222-S Laboratory staff intend to continue working with Ecology to obtain accreditation for expansion of additional analytes.

HFO believes the accreditation provided to the 222-S Laboratory for SBSE, as a preparatory method for method 8270E, results in compliance with the method flexibility standards provided by SW-846 and is within the scope of WAC 173-303-110, allowing data generated from this method for validated analytes to be used for decisions at the Hanford Site. HFO requests that Ecology provide written concurrence on this interpretation to support future Hanford Site dangerous and mixed waste management activities.

If you have any questions, please contact me, or you may contact Corey A. Low, Assistant Manager for Safety and Environment, at (509) 376-4820.

Sincerely,

Brian A.
Harkins

 Digitally signed by Brian
A. Harkins
Date: 2025.07.07
10:11:24 -07'00'

Brian A. Harkins
Acting Manager

ECD:MJD

Attachment:
Ecology Scope of Accreditation

cc w/attach:

J. C. Ardiente, HLMI
S. T. Bairai, HLMI
L. Contreras, YN
S. L. Dahl-Crumpler, Ecology
R. M. Geimer, HLMI
J. T. Hamilton, H2C
E. J. Holbrook, Ecology
L. Johnston, Ecology
G. E. Knutson, HLMI
M. J. Lindberg, HLMI
A. G. Miskho, H2C
M. R. Mullin, EPA
M. Murphy, CTUIR
M. T. Schanke, H2C

R. W. Schroeder, HLMI
R. S. Scott, H2C
R. S. Skeen, H2C
R. J. Utley, WDOH
E. J. Van Mason, HLMI
J. W. Yokel, Ecology
Administrative Record (DST: S-2-3, SST: S-2-4,
242-A: T-2-6, LAWPS: TS-2-8, 222-S: TS-2-1)
Environmental Portal, G3-35
Ecology NWP Library
H2C Correspondence
HLMI Correspondence
^Operating Record (HMIS)

Attachment
25-ECD-0080

Washington State Department of Ecology
Environmental Laboratory Accreditation Program
Scope of Accreditation

(17 pages including cover sheet)



STATE OF WASHINGTON

DEPARTMENT OF ECOLOGY

PO Box 488 • Manchester, WA 98353-0488 • (360) 871-8840

April 4, 2025

Jeanette Ardiente
Hanford Laboratory Management and Integration (HLMI)
295 Bradley Blvd Suite 203
Richland, WA 99352

Dear Jeanette Ardiente:

Thank you for your data validation packet and request for a scope revision to update your extraction technique for some of your EPA 8270E parameters. Please see the attached technical report summarizing our review of the validation for an in-depth review. All applicable analytes have footnote 7 on the attached Scope of Accreditation for approval to use the new extraction procedure. All analytes by EPA 8270E_6_(6/18) in Solid and Chemical Materials remain in Interim status pending an audit. The scope is effective April 4, 2025 with the following changes are on your scope:

In recognition of the data validation provided, Bis(2-ethylhexyl)adipate has been added to your scope.

The following analytes by EPA 8270E_6_(6/18) in Solid and Chemical Materials were previously Denied but in recognition of the validation packet and acceptable PT studies have been upgraded to Interim Status:

- 1,2-Dinitrobenzene
- 1,3-Dinitrobenzene (1,3-DNB)
- Azobenzene
- Benzyl Alcohol
- Carbazole

1-Methylnaphthalene by EPA 8270E_6_(6/18) in Solid and Chemical Materials is placed into Provisional status upgraded from denied, in recognition of the validation packet. Since two PT providers are available for this analyte Provisional status will remain until an acceptable PT is analyzed for the parameter.

2-Fluorobiphenyl by EPA 8270E_6_(6/18) in Solid and Chemical Materials was removed from your scope since it is a surrogate and LAU does not accredit surrogates.

No other changes were made to your scope of accreditation at this time.

Renewal of accreditation is based in part on review of your lab's performance over the past year as evidenced by participation in proficiency testing (PT) studies. In general, full accreditation is awarded for those parameters for which the two most recent PT results, if applicable, were rated satisfactory. Provisional accreditation is awarded if the latest of the two most recent PT results was rated "Not Acceptable" or only one PT result was submitted during the past twelve months. Accreditation is withheld for those parameters for which the two most recent PT results were rated "Not Acceptable" or no PT results were submitted during the past twelve months.

As a reminder, continued participation in the Ecology Lab Accreditation Program requires the lab to:

- Submit a renewal application and fees annually
- Report significant changes in facility, personnel, analytical methods, equipment, the lab's quality assurance (QA) manual or QA procedures as they occur
- **Participate in proficiency testing studies semi-annually, with the following exception: For each parameter where all PT results were satisfactory, you are required to submit only one PT result over this next year, and in subsequent years, as long as the results are satisfactory.**

Your Right To Appeal

You have a right to appeal Ecology's decision to the Pollution Control Hearing Board (PCHB) within 30 days of the date of receipt of this decision letter. The appeal process is governed by Chapter 43.21B RCW and Chapter 371-08 WAC. "Date of receipt" is defined in RCW 43.21B.001(2).

To appeal you must do the following within 30 days of the date of receipt of this decision:

- File your appeal and a copy of this decision with the PCHB (see addresses below). Filing means actual receipt by the PCHB during regular business hours.
- Serve a copy of your appeal and this decision on Ecology in paper form - by mail or in person. (See addresses below.) E-mail is not accepted.

You must also comply with other applicable requirements in Chapter 43.21B RCW and Chapter 371-08 WAC.

Address And Location Information

Street Addresses:

Department of Ecology
Attn: Appeals Processing Desk
300 Desmond Drive SE
Lacey, WA 98503

Pollution Control Hearings Board
1111 Israel RD SW
STE 301
Tumwater, WA 98501

Mailing Addresses:

Department of Ecology
Attn: Appeals Processing Desk
PO Box 47608
Olympia, WA 98504-7608

Pollution Control Hearings Board
PO Box 40903
Olympia, WA 98504-0903

E-Mail Address:

Department of Ecology
Not currently available (see WAC 371-08)

Pollution Control Hearings Board
Pchb-shbappeals@eluh0.wa.gov

If you have any questions concerning the accreditation of your lab, please contact Ryan Zboralski at (360) 871-8845, fax (360) 871-8849, or by e-mail at ryan.zboralski@ecy.wa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "Rebecca Wood". The signature is fluid and cursive, with a long horizontal stroke at the end.

Rebecca Wood
Lab Accreditation Unit Supervisor

RW:ERZ:erz
Enclosures

WASHINGTON STATE DEPARTMENT OF ECOLOGY

ENVIRONMENTAL LABORATORY ACCREDITATION PROGRAM

SCOPE OF ACCREDITATION

Hanford Laboratory Management and Integration (HLMI)

Richland, WA

is accredited for the analytes listed below using the methods indicated. Full accreditation is granted unless stated otherwise in a note. EPA is the U.S. Environmental Protection Agency. SM is "Standard Methods for the Examination of Water and Wastewater." SM refers to EPA approved method versions. ASTM is the American Society for Testing and Materials. USGS is the U.S. Geological Survey. AOAC is the Association of Official Analytical Chemists. Other references are described in notes.

Matrix/Analyte	Method	Notes
Non-Potable Water		
Acetate	EPA 300.0_2.1_1993	1
Bromide	EPA 300.0_2.1_1993	
Chloride	EPA 300.0_2.1_1993	
Fluoride	EPA 300.0_2.1_1993	
Formate	EPA 300.0_2.1_1993	1
Glycolate	EPA 300.0_2.1_1993	1
Nitrate + Nitrite as N	EPA 300.0_2.1_1993	
Nitrate as N	EPA 300.0_2.1_1993	
Nitrite as N	EPA 300.0_2.1_1993	
Orthophosphate as P	EPA 300.0_2.1_1993	
Oxalate	EPA 300.0_2.1_1993	1
Sulfate	EPA 300.0_2.1_1993	
Ammonium	EPA 300.7	
Specific Conductance	SM 2510 B-2011	
Solids, Total Dissolved	SM 2540 C-2015	
Solids, Total Suspended	SM 2540 D-2015	3
Total Organic Carbon	SM 5310 B-2014	3
Tritium	LA-508-122	
Solid and Chemical Materials		
Chromium, Hexavalent	EPA 7196A_1_1992	
Cyanide, Total	EPA 9014_ (7/14)	
pH	EPA 9040C_2004	2
pH	EPA 9045 D_2004	
Acetate	EPA 9056A_(02/07)	1
Bromide	EPA 9056A_(02/07)	6
Chloride	EPA 9056A_(02/07)	

Hanford Laboratory Management and Integration (HLMI)

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Fluoride	EPA 9056A_(02/07)	
Formate	EPA 9056A_(02/07)	1
Glycolate	EPA 9056A_(02/07)	1
Nitrate + Nitrite as N	EPA 9056A_(02/07)	2
Nitrate as N	EPA 9056A_(02/07)	6
Orthophosphate as P	EPA 9056A_(02/07)	
Oxalate	EPA 9056A_(02/07)	1
Sulfate	EPA 9056A_(02/07)	
Sulfide	EPA 9215	2,3
Total Organic Carbon	SM 5310 B-2014	3
Aluminum	EPA 6010D_(7/14)	
Antimony	EPA 6010D_(7/14)	
Arsenic	EPA 6010D_(7/14)	
Barium	EPA 6010D_(7/14)	
Beryllium	EPA 6010D_(7/14)	
Bismuth	EPA 6010D_(7/14)	1
Boron	EPA 6010D_(7/14)	
Cadmium	EPA 6010D_(7/14)	
Calcium	EPA 6010D_(7/14)	
Chromium	EPA 6010D_(7/14)	
Cobalt	EPA 6010D_(7/14)	
Copper	EPA 6010D_(7/14)	
Hardness, Total (as CaCO3)	EPA 6010D_(7/14)	2
Iron	EPA 6010D_(7/14)	
Lead	EPA 6010D_(7/14)	
Lithium	EPA 6010D_(7/14)	
Magnesium	EPA 6010D_(7/14)	
Manganese	EPA 6010D_(7/14)	
Molybdenum	EPA 6010D_(7/14)	
Nickel	EPA 6010D_(7/14)	
Phosphorus, Total	EPA 6010D_(7/14)	
Potassium	EPA 6010D_(7/14)	
Selenium	EPA 6010D_(7/14)	
Silica	EPA 6010D_(7/14)	2
Silver	EPA 6010D_(7/14)	
Sodium	EPA 6010D_(7/14)	
Strontium	EPA 6010D_(7/14)	

Hanford Laboratory Management and Integration (HLMI)

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Thallium	EPA 6010D_(7/14)	
Thorium	EPA 6010D_(7/14)	1
Titanium	EPA 6010D_(7/14)	1
Vanadium	EPA 6010D_(7/14)	
Zinc	EPA 6010D_(7/14)	
Zirconium	EPA 6010D_(7/14)	
Antimony	EPA 6020B_(7/14)	
Arsenic	EPA 6020B_(7/14)	
Barium	EPA 6020B_(7/14)	
Beryllium	EPA 6020B_(7/14)	
Cadmium	EPA 6020B_(7/14)	
Chromium	EPA 6020B_(7/14)	
Cobalt	EPA 6020B_(7/14)	
Lead	EPA 6020B_(7/14)	
Manganese	EPA 6020B_(7/14)	
Molybdenum	EPA 6020B_(7/14)	
Selenium	EPA 6020B_(7/14)	
Silver	EPA 6020B_(7/14)	
Thallium	EPA 6020B_(7/14)	
Tin	EPA 6020B_(7/14)	
Total Uranium	EPA 6020B_(7/14)	
Uranium	EPA 6020B_(7/14)	3
Uranium 234	EPA 6020B_(7/14)	3,5
Uranium 235	EPA 6020B_(7/14)	3
Uranium 238	EPA 6020B_(7/14)	3
Vanadium	EPA 6020B_(7/14)	
Mercury	EPA 7470A_1_1994	2
Mercury	EPA 7471B_(1/98)	
Aroclor-1016 (PCB-1016)	EPA 8082A_(2/07)	
Aroclor-1221 (PCB-1221)	EPA 8082A_(2/07)	
Aroclor-1232 (PCB-1232)	EPA 8082A_(2/07)	
Aroclor-1242 (PCB-1242)	EPA 8082A_(2/07)	
Aroclor-1248 (PCB-1248)	EPA 8082A_(2/07)	
Aroclor-1254 (PCB-1254)	EPA 8082A_(2/07)	
Aroclor-1260 (PCB-1260)	EPA 8082A_(2/07)	
1,1,1-Trichloroethane	EPA 8260D_4_(6/18)	3
1,1,2,2-Tetrachloroethane	EPA 8260D_4_(6/18)	3

Hanford Laboratory Management and Integration (HLMI)

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
1,1,2-Trichloro-1,2,2-trifluoroethane (Freon 113)	EPA 8260D_4_(6/18)	3
1,1,2-Trichloroethane	EPA 8260D_4_(6/18)	3
1,1-Dichloroethane	EPA 8260D_4_(6/18)	3
1,1-Dichloroethylene	EPA 8260D_4_(6/18)	3
1,2-Dibromo-3-chloropropane (DBCP)	EPA 8260D_4_(6/18)	3
1,2-Dibromoethane (EDB, Ethylene dibromide)	EPA 8260D_4_(6/18)	3
1,2-Dichlorobenzene	EPA 8260D_4_(6/18)	3
1,2-Dichloroethane (Ethylene dichloride)	EPA 8260D_4_(6/18)	3
1,2-Dichloropropane	EPA 8260D_4_(6/18)	3
1,3-Dichlorobenzene	EPA 8260D_4_(6/18)	3
1,4-Dichlorobenzene	EPA 8260D_4_(6/18)	3
2-Butanone (Methyl ethyl ketone, MEK)	EPA 8260D_4_(6/18)	3
2-Hexanone	EPA 8260D_4_(6/18)	3
2-Nitropropane	EPA 8260D_4_(6/18)	3
4-Methyl-2-pentanone (MIBK)	EPA 8260D_4_(6/18)	3
Acetone	EPA 8260D_4_(6/18)	3
Benzene	EPA 8260D_4_(6/18)	3
Bromodichloromethane	EPA 8260D_4_(6/18)	3
Bromoform	EPA 8260D_4_(6/18)	3
Carbon disulfide	EPA 8260D_4_(6/18)	3
Carbon tetrachloride	EPA 8260D_4_(6/18)	3
Chlorobenzene	EPA 8260D_4_(6/18)	3
Chlorodibromomethane	EPA 8260D_4_(6/18)	3
Chloroethane (Ethyl chloride)	EPA 8260D_4_(6/18)	3
Chloroform	EPA 8260D_4_(6/18)	3
cis-1,2-Dichloroethylene	EPA 8260D_4_(6/18)	3
cis-1,3-Dichloropropene	EPA 8260D_4_(6/18)	3
Cyclohexanone	EPA 8260D_4_(6/18)	3
Dichlorodifluoromethane (Freon-12)	EPA 8260D_4_(6/18)	3
Diethyl ether	EPA 8260D_4_(6/18)	3
Ethylbenzene	EPA 8260D_4_(6/18)	3
Hexachloroethane	EPA 8260D_4_(6/18)	3
Isobutyl alcohol (2-Methyl-1-propanol)	EPA 8260D_4_(6/18)	3
Isopropylbenzene	EPA 8260D_4_(6/18)	3
m+p-xylene	EPA 8260D_4_(6/18)	3
Methanol	EPA 8260D_4_(6/18)	3
Methyl bromide (Bromomethane)	EPA 8260D_4_(6/18)	3

Hanford Laboratory Management and Integration (HLMI)

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Methyl chloride (Chloromethane)	EPA 8260D_4_(6/18)	3
Methyl tert-butyl ether (MTBE)	EPA 8260D_4_(6/18)	3
Methylene chloride (Dichloromethane)	EPA 8260D_4_(6/18)	3
n-Butyl alcohol (1-Butanol, n-Butanol)	EPA 8260D_4_(6/18)	3
n-Butylbenzene	EPA 8260D_4_(6/18)	3
o-Xylene	EPA 8260D_4_(6/18)	3
Styrene	EPA 8260D_4_(6/18)	3
Tetrachloroethylene (Perchloroethylene)	EPA 8260D_4_(6/18)	3
Tetrahydrofuran (THF)	EPA 8260D_4_(6/18)	3,4
Toluene	EPA 8260D_4_(6/18)	3
trans-1,2-Dichloroethylene	EPA 8260D_4_(6/18)	3
trans-1,3-Dichloropropylene	EPA 8260D_4_(6/18)	3
Trichloroethene (Trichloroethylene)	EPA 8260D_4_(6/18)	3
Trichlorofluoromethane (Freon 11)	EPA 8260D_4_(6/18)	3
Vinyl chloride	EPA 8260D_4_(6/18)	3
Xylene (total)	EPA 8260D_4_(6/18)	3
1,2,4-Trichlorobenzene	EPA 8270E_6_(6/18)	3,7
1,2-Dichlorobenzene	EPA 8270E_6_(6/18)	3
1,2-Dinitrobenzene	EPA 8270E_6_(6/18)	3,7
1,3-Dinitrobenzene (1,3-DNB)	EPA 8270E_6_(6/18)	3,7
1,4-Dichlorobenzene	EPA 8270E_6_(6/18)	3
1-Methylnaphthalene	EPA 8270E_6_(6/18)	3,4,7
2,2'-Oxybis(1-chloropropane)	EPA 8270E_6_(6/18)	3
2,4,5-Trichlorophenol	EPA 8270E_6_(6/18)	3
2,4,6-Trichlorophenol	EPA 8270E_6_(6/18)	3
2,4-Dichlorophenol	EPA 8270E_6_(6/18)	3
2,4-Dimethylphenol	EPA 8270E_6_(6/18)	3
2,4-Dinitrophenol	EPA 8270E_6_(6/18)	3
2,4-Dinitrotoluene (2,4-DNT)	EPA 8270E_6_(6/18)	3,7
2,6-Dinitrotoluene (2,6-DNT)	EPA 8270E_6_(6/18)	3
2-Butoxyethanol	EPA 8270E_6_(6/18)	3
2-Chloronaphthalene	EPA 8270E_6_(6/18)	3,7
2-Chlorophenol	EPA 8270E_6_(6/18)	3
2-Ethoxyethanol (cellosolve)	EPA 8270E_6_(6/18)	3
2-Methyl-4,6-dinitrophenol	EPA 8270E_6_(6/18)	3
2-Methylnaphthalene	EPA 8270E_6_(6/18)	3,7
2-Methylphenol (o-Cresol)	EPA 8270E_6_(6/18)	3,7

Hanford Laboratory Management and Integration (HLMI)

Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
2-Nitroaniline	EPA 8270E_6_(6/18)	3
2-Nitrophenol	EPA 8270E_6_(6/18)	3
3-Methylphenol (m-Cresol)	EPA 8270E_6_(6/18)	3
3-Nitroaniline	EPA 8270E_6_(6/18)	3
4-Bromophenyl phenyl ether (BDE-3)	EPA 8270E_6_(6/18)	3,7
4-Chloro-3-methylphenol	EPA 8270E_6_(6/18)	3,7
4-Chloroaniline	EPA 8270E_6_(6/18)	3
4-Chlorophenyl phenylether	EPA 8270E_6_(6/18)	3
4-Methylphenol (p-Cresol)	EPA 8270E_6_(6/18)	3
4-Nitroaniline	EPA 8270E_6_(6/18)	3
4-Nitrophenol	EPA 8270E_6_(6/18)	3
Acenaphthene	EPA 8270E_6_(6/18)	3,7
Acenaphthylene	EPA 8270E_6_(6/18)	3
Anthracene	EPA 8270E_6_(6/18)	3,7
Azobenzene	EPA 8270E_6_(6/18)	3,7
Benzo(a)anthracene	EPA 8270E_6_(6/18)	3
Benzo(a)pyrene	EPA 8270E_6_(6/18)	3,7
Benzo(g,h,i)perylene	EPA 8270E_6_(6/18)	3
Benzo(k)fluoranthene	EPA 8270E_6_(6/18)	3
Benzo[b]fluoranthene	EPA 8270E_6_(6/18)	3
Benzyl alcohol	EPA 8270E_6_(6/18)	3,7
bis(2-Chloroethoxy)methane	EPA 8270E_6_(6/18)	3
bis(2-Chloroethyl) ether	EPA 8270E_6_(6/18)	3
Butyl benzyl phthalate	EPA 8270E_6_(6/18)	3
Butylated Hydroxy Toluene (BHT)	EPA 8270E_6_(6/18)	3,7
Carbazole	EPA 8270E_6_(6/18)	3,7
Chrysene	EPA 8270E_6_(6/18)	3
Di(2-ethylhexyl)adipate	EPA 8270E_6_(6/18)	3,7
Di(2-ethylhexyl)phthalate, [Bis(2-ethylhexyl) phthalate], [DEHP]	EPA 8270E_6_(6/18)	3
Dibenz(a,h) anthracene	EPA 8270E_6_(6/18)	3
Dibenzofuran	EPA 8270E_6_(6/18)	3,7
Diethyl phthalate	EPA 8270E_6_(6/18)	3
Dimethyl phthalate	EPA 8270E_6_(6/18)	3
Di-n-butyl phthalate	EPA 8270E_6_(6/18)	3
Di-n-octyl phthalate	EPA 8270E_6_(6/18)	3
Diphenylamine	EPA 8270E_6_(6/18)	3,7
Ethyl acetate	EPA 8270E_6_(6/18)	3

Hanford Laboratory Management and Integration (HLMI)


Matrix/Analyte	Method	Notes
Solid and Chemical Materials		
Fluoranthene	EPA 8270E_6_(6/18)	3,7
Fluorene	EPA 8270E_6_(6/18)	3,7
Hexachlorobenzene	EPA 8270E_6_(6/18)	3,7
Hexachlorobutadiene	EPA 8270E_6_(6/18)	3,7
Hexachloroethane	EPA 8270E_6_(6/18)	3,7
Indeno(1,2,3-cd) pyrene	EPA 8270E_6_(6/18)	3
Isophorone	EPA 8270E_6_(6/18)	3
Naphthalene	EPA 8270E_6_(6/18)	3
Nitrobenzene	EPA 8270E_6_(6/18)	3,7
N-Nitrosodimethylamine	EPA 8270E_6_(6/18)	3
N-Nitroso-di-n-propylamine	EPA 8270E_6_(6/18)	3
N-Nitrosomorpholine	EPA 8270E_6_(6/18)	3
Pentachlorophenol	EPA 8270E_6_(6/18)	3
Phenanthrene	EPA 8270E_6_(6/18)	3,7
Phenol	EPA 8270E_6_(6/18)	3
Pyrene	EPA 8270E_6_(6/18)	3,7
Pyridine	EPA 8270E_6_(6/18)	3
Nickel-63	LA-508-122	
Technetium-99	LA-508-122	
Gross Alpha	LA-508-124	
Gross Beta	LA-508-124	
Strontium-90	LA-508-124	
Cesium 137	LA-508-167	
Cesium-134	LA-508-167	
Cobalt 60	LA-508-167	
Cobalt-57	LA-508-167	
Gamma Emitters	LA-508-167	
Iodine 129	LA-508-167	
Lead-212	LA-508-167	
Lead-214	LA-508-167	
Manganese-54	LA-508-167	
Potassium-40	LA-508-167	
Thorium-234	LA-508-167	
Zinc 65	LA-508-167	
Americium 241	LA-508-168	
Plutonium-238	LA-508-168	
Plutonium-239	LA-508-168	

Hanford Laboratory Management and Integration (HLMI)

Matrix/Analyte	Method	Notes
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Accredited Parameter Note Detail

(1) Method modified to determine this analyte according to lab SOP. (2) Limited to aqueous samples. (3) Interim accreditation pending the successful completion of an on-site audit to verify method capabilities (WAC 173-50-100). (4) Provisional accreditation pending submittal of acceptable Proficiency Testing (PT) results (WAC 173-50-110) or requested documentation. (5) Derived by calculation based on abundance relative to Uranium-235. (6) Provisional accreditation pending submittal of acceptable Proficiency Testing (PT) results (WAC 173-50-110). (7) Accreditation includes sorptive micro-extraction technique in aqueous matrices.



04/04/2025

Authentication Signature
Rebecca Wood, Lab Accreditation Unit Supervisor

Date

Parameters Not Accredited

Hanford Laboratory Management and Integration (HLMI)

Richland, WA

Analyte	Method	Notes	Matrix
Nickel	EPA 6020B_(7/14)	a	S
Strontium	EPA 6020B_(7/14)	a	S
Technetium-99	EPA 6020B_(7/14)	a	S
Zinc	EPA 6020B_(7/14)	a	S

Denied Parameter Accreditation Footnotes

(a) Denied pending completed review of acceptable supporting documentation.

Matrix Definitions - D = Drinking Water; N = Non-potable Water; S = Solid and Chemical Material; A = Air and Emissions.

Washington State Department of Ecology

Technical Report

For: Hanford Laboratory Management Integration

Author: Ryan Zboralski, WA Laboratory Accreditation Unit

Date: April 4, 2025

Re: Review of updated EPA 8270E extraction procedure: Sorptive Micro-extraction

Hanford Laboratory Management Integration has modified their 8270E SOP to incorporate a sorptive micro-extraction sample preparation instead of more traditional solvent extractions. The laboratory is doing this in order to minimize the exposure of its staff to the dangerous waste samples they typically test.

LAU has decided to maintain accreditation for the currently accredited method, EPA 8270E, and add footnotes to the applicable parameters using this this extraction procedure since the sample preparation is still utilizing solvent extraction. This is done instead of granting new accreditation for EPA 8275A as initially discussed. This decision is because EPA 8275 specifically requires thermal desorption in lieu of solvent extraction.

The laboratory submitted its entire data validation packet. It is crucial for the lab to retain this information, as clients may need access to it in the future. I focused my review on the following items:

- SOP
- PTs since 1/1/2024 utilizing this new procedure
- Data packet/method validation review, specifically targeting:
 - Accuracy/Bias Test
 - MDL/LLOQ review

Regular font contains notes and information from the review.

Bold underline font items require lab action and response.

SOP review

The laboratory submitted their SOP for this method modification titled, "HLMI-PRO-LA-51305." There was some back and forth with HLMI and my colleague Kamilee Ginder during the development process and the SOP as it stands now is excellent and adequately covers the method post-development.

At this time, there are no major changes necessary, but there is a minor adjustment in the Appendices specifying what analytes are analyzed using this modified version of EPA 8270E. The lab has made this change their copy of the SOP at the lab. **Once available, please submit the revised SOP that includes the separate tables for the validated and non-validated compounds.** As the laboratory expands the list of analytes covered by this preparation procedure, **please update your SOP accordingly and provide us with the validation for those additional analytes.**

PT review

The laboratory submitted two studies from ERA utilizing this new procedure: 010524O, analyzed on January 31, 2024, and 032824E on April 9, 2024. 010524O was acceptable for 80% of the reported analytes, specifically failing Acenaphthylene, bis(2-Chloroethoxy)methane, 1,2-Dichlorobenzene, Naphthalene, 2,2'-Oxybis(1-Chloropropane), and 2,4,5-Trichlorophenol. 032824E was also acceptable for 80% of the reported analytes, passed for the analytes previously mentioned from 010524O, was unacceptable for 2,4-Dichlorophenol and 2,4-Dimethylphenol, and passed for all other analytes in both PTs. I would like to highlight that not of the failed PT results were for analytes requested to be approved for this updated extraction procedure, at least at this time.

Aside from the unacceptable results, another item to point out with these two PTs is that the cited method is 8275A. At the time of analysis for these two PTs, the method development was for this method. As mentioned earlier, as method development carried on, it was determined that the development was not for a new method but more akin to a modification of the currently held 8270E.

Within the Data Validation packet, the below table was included that summarizes the results but only includes the analytes that the laboratory is specifically looking to validate for this procedure at this time.

Table 10. Proficiency Test Results.

Analytes that Passed Proficiency Testing	ERA WP 010524O Results (µg/L)			ERA WP 032824E Results (µg/L)		
	Reported Value	Assigned Value	Acceptance Limit	Reported Value	Assigned Value	Acceptance Limit
4-chloro-3-methylphenol	N/A	N/A	N/A	N/A	N/A	N/A
Acenaphthene	31.5	31.7	11.5 – 39.3	62.0	74.4	26.3 – 90.7
Anthracene	55.7	48.3	20.4 – 60.4	79.6	73.6	31.2 – 89.9
Azobenzene	<30.0	<30.0	0.00 – 30.0	<30.0	<30.0	0.00 – 30.0
Benzo[a]pyrene	24.1	35.4	11.9 – 46.1	31.1	39.1	13.3 – 50.7
Benzyl Alcohol	<10.0	<10.0	0.00 – 10.0	<10.0	<10.0	0.00 – 10.0
Bis(2-ethylhexyl)adipate	N/A	N/A	N/A	N/A	N/A	N/A
Carbazole	<10.0	<10.0	0.00 – 10.0	<10.0	<10.0	0.00 – 10.0
Dibenzofuran	<11.3	<11.3	0.00 – 11.3	<11.3	<11.3	0.00 – 11.3
Diphenylamine	N/A	N/A	N/A	N/A	N/A	N/A
Fluoranthene	49.5	50.3	24.3 – 63.1	77.7	73.3	34.1 – 90.4
Fluorene	48.4	39.7	17.0 – 51.0	28.0	26.7	11.7 – 36.5
Hexachlorobenzene	46.3	50.0	22.3 – 60.2	<8.80	<8.80	0.00 – 8.80
Hexachlorobutadiene	<4.30	<4.30	0.00 – 4.30	57.0	130	15.6 – 153
Hexachloroethane	126	183	18.3 – 201	53.1	116	11.6 – 128
Nitrobenzene	28.4	43.2	13.9 – 52.6	37.8	54.9	17.7 – 66.2
Phenanthrene	74.0	69.0	32.3 – 83.9	58.2	55.7	26.0 – 68.8
Phenol-D6	N/A	N/A	N/A	N/A	N/A	N/A
p-Terphenyl-d14	N/A	N/A	N/A	N/A	N/A	N/A
Pyrene	42.3	39.4	16.6 – 52.2	49.2	42.2	17.8 – 55.8

ERA = Environmental Resource Associates
WP = Water Pollution

I want to highlight that both analyzed PTs did not contain 1-Methylnaphthalene. However, they both did contain 2-Methylnaphthalene, which was acceptable in both. Two approved PT providers are available for 1-Methylnaphthalene, so please analyze one by your next renewal. 1-Methylnaphthalene is placed into Provisional status pending acceptable PT analysis.

Also, please ensure your PTs cite EPA 8270E going forward.

Data Validation Packet

As of the writing of this technical report, the following analytes are included in the data validation packet. Most of the information covered was in the spreadsheet titled, "Calculations Workbook_Public." The raw data for much of the studies was also included. Please note that 2,6-bis(tert-butyl)-4-methylphenol is listed on your scope as Butylated Hydroxy Toluene (BHT).

APPENDIX B - LIST OF COMPOUNDS VALIDATED FOR ANALYSIS BY TD/GC/MS

Compound	CAS No.	Compound	CAS No.
1,2,4-Trichlorobenzene	120-82-1	2,6-Bis(tert-butyl)-4-methylphenol	128-37-0
1,2-Dinitrobenzene	528-29-0	Benzyl alcohol	100-51-6
1,3-Dinitrobenzene	99-65-0	Bis (2-ethylhexyl) adipate	103-23-1
1-Methylnaphthalene	90-12-0	Carbazole	86-74-8
2,4-Dinitrotoluene	121-14-2	Dibenzofuran	132-64-9
2-Chloronaphthalene	91-58-7	Diphenylamine	122-39-4
2-Fluorobiphenyl	321-60-8	Fluoranthene	205-44-0
2-Fluorophenol	367-12-4	Fluorene	86-73-7
2-Methylnaphthalene	91-57-6	Hexachlorobenzene	118-74-1
2-Methylphenol	95-48-7	Hexachlorobutadiene	87-68-3
4-Bromophenyl phenyl ether	101-55-3	Hexachloroethane	67-72-1
4-chloro-3-methylphenol	59-50-7	Nitrobenzene	98-95-3
Acenaphthene	83-32-9	Phenanthrene	85-01-8
Anthracene	120-12-7	Phenol-d ₆	13127-88-3
Azobenzene	103-33-3	p-Terphenyl-d ₁₄	1718-51-0
Benzo(a)pyrene	50-32-8	Pyrene	129-00-0

Accuracy and/Bias Test

The laboratory submitted a summary excel spreadsheet showing the average % recovery and RSD for all the above analytes. The control limits are from the laboratory's existing control charts for the method. All above parameters had acceptable average recoveries and RSDs.

MDL/LLOQ review

The excel spreadsheet mentioned above also contained tabs for the MDL study (including blank analysis) and LLOQ study for the listed analytes. The presented studies using this preparation procedure were acceptable.

Recommendation

The method modifications are acceptable to gain accreditation for Di(2-ethylhexyl)adipate, re-gain accreditation for some of the parameters that were previously Denied, or retain accreditation for the remaining analytes discussed in this technical report by EPA 8270E in Solid and Chemical Materials with a couple exceptions. The laboratory can begin regulatory work with the new method for the validated analytes. 1-Methylnaphthalene has Provisional status pending an acceptable PT. I also removed 2-Fluorobiphenyl from your scope since it is a surrogate. LAU does not accredit for surrogates. All analytes by this method remain in Interim status pending an audit.

The validated analytes received a footnote on your scope of accreditation (see attached scope revision) designating the use of the new prep procedure. This footnote will remain until all applicable parameters on HLMI's scope for 8270E until the lab is exclusively utilizing this prep procedure for its 8270E analysis.

In summary, the following actions are required of the laboratory going forward:

- **Submission of the revised SOP including the separate tables for the validated and non-validated compounds as they are currently constructed**
 - **As the validation procedure advances to the other analytes on your scope, keep updating the tables accordingly. We will need to verify this before adding the footnote to any new parameters. An example would be the lead up to an audit.**
- **1-Methylnaphthalene will need an acceptable PT before your next renewal to remove Provisional status.**
- **PTs for this extraction method going forward need to cite EPA 8270E.**