APPENDIX A
FIELD LOGBOOKS

Rite in the Rain®

ALL-WEATHER

JOURNAL

№ 391

Gelman

INCH

Rite in the Rain®
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Name Janelle Myers

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Project Gelman

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Gelman 9/12/22

60°F - cloudy. considerable rain yesterday.

~~0750~~ J. Myers onsite to ground truth sampling locations

0755 Take photos of eastern Barton Pond proposed location. current location seems to be on private property. Took photos of dry creek bed where it crosses Dakeview Dr.

0810 Take photos of western Barton Pond proposed location. current location seems to be on private property. Possible sample point off of bridge on West Huron River Dr. Access from either side of road.

0820 possible Barton Pond sample location identified along West Huron River Dr. on north side of road. Small tributary feeding into Barton Pond.

0825 possible Barton Pond sample location identified along West Huron River Dr. on north side of road. South of railroad bridge.

0845 unable to locate MW-100. possible large cover identified on ground between two concrete bollards at intersection of Valley Dr and Pinnwood St on south side of Valley Dr.

Gelman 9/12/22

60°F - cloudy, drizzle

0910 Take photos of SW/SD BK-02. Access from southern parking area. Trash present in surface water.

0930 ground truth SW/SD BK-01 location. wetland area north of second sister lake does not currently have standing water. Access: walk east past MW-105S/D, turn left on path at MW-15S/D (yellow stick-ups). follow path to left across bridge (no water under bridge), go up stairs, past bench on right, then take second path on the right towards wetland area. Possible alternative location at second sister lake. Access: enter trailhead across from parking area, follow signs for second sister lake. access to water surface near wooden walking bridge.

1020 Evaluate soil boring and PPE areas on community church property. southwest location may be difficult to access. All other locations ok.

1045 locate MW-108d.

Rite in the Rain.

Gelman 9/12/22

62°F, cloudy. - Janelle Meyers (Weston) onsite

1055 attempt to locate Lakeview Ave background water supply well. Unable to find. nearby auto shop.

1110 locate MW-28. Access: park at end of road near intersection of Duck Dr and Parkland Plaza walk east along trail along north side of pond. well along right side of trail (locked).

1125 unable to locate 175 Jackson Plaza.

1130 locate boring east of Gelman property. lots of staged materials / equipment in grass, but can access a drilling location.

1140 arrive at hotel to meet EPA (Nuria) and EGLE (Dan) to discuss plan for this afternoon.

1230 collect access agreements from 600 S Wagner Rd for MW-28 and 600 S. Wagner Rd.

1235 attempt access at [redacted] no one home.

1255 received contact info for building owner at 110 Parkland Plaza.

1310 attempt access at [redacted] no one home.

Gelman 9/12/22

1325 discuss sampling with resident (renter) at [redacted] received phone number for property owner.

1335 arrive at Montgomery well, wait for Brian

1400 Brian meet up at Montgomery well

1420 locate PW-1 and PW-2 wells. Both artesian wells. Discuss Steere farm wells. Will coordinate access with Brian for sampling PW-1, PW-2, and Steere Farm wells.

1445 arrive at MW-100. unable to locate.

1510 arrive at [redacted] Receive access from property owner for [redacted].

1515 [redacted] residences sampled from outside spigots.

1525 Nuria spoke to owner of Parkland

1530 knock on door of [redacted] no one home still. Attempt at [redacted]

1545 Access to [redacted] received verbally will send access via email.

1550 check-in with Natalie.

1610 owner of [redacted] signed access.

1615 Back to hotel. offsite.

Rite in the Rain

Gelman 9/13/22

0815 arrive onsite to meet EPA (Nuria) at hotel.

0830 arrive at Gelman and meet with Keith, Jim, and Mike. Brief overview of the treatment system operations.

0845 Begin recon of boring and sample locations.

1040 complete recon of sampling locations.

1055 drop off Nuria to hotel.

1120 recon MW-120 series wells.

1125 offsite.

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Gelman Sciences

Rite in the Rain®
ALL-WEATHER
JOURNAL
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GW/SW/Sed Sampling

field book 1 of 4

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— EST. 1916 —
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— DEFYING MOTHER NATURE —

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Project

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	Gelman Sciences Inc. 09/26 – 10/01/22	
	Groundwater, surface water, sediment sampling. Soil Boring.	
	Z. Ashauer / T. O'Brien / K. Eppler	
	Book 1 of 4	

Mon 9/26th Gelman SI
20510.012.028.0063.00

0730 Arrive onsite Zach Ashauer + Taylor Oberman - Prepare Field Items
Weather ~ 50° overcast, rain showers afternoon in forecast
Nick M Gelman Oversight
Mitch Gelman Onsite - 248-227-8595
Keith 734-320-3010
0745 Safety tailgate meeting with crew
0800 Mark soil boring locations with private utility locator
11:45 Leave Gelman site with Tayler O. Nick + Keith notified
12:00 Arrive at MI Saginaw Forest with Kathleen Mcdonald to mw-127s
12:15 Setup on mw-127s
YSI ProDSS 6178, 17L100298
Calibration Date 9/25/22

				cal	Read
Cond	Lot#	2GA256	1/23	1.413 ms	1.413
pH	7	2GB162	2/24	7.00	7.00
	10	1GI516	9/23	10.01	10.01
Orp		2GG952	4/23	220	220
Turb		14679	8/23	124	124
DO		CMK10114		96.1%	96.1%

Submersible pump GeoSub 2 01A0397

Mon 9/26
1251 Start purging 250
1330 Sample mw-127s
G-GWBK-mw-127s 1330
1415 Leave mw-127s location for Gelman Facility
1430 Arrive at Gelman Facility
Let Nick M. know Finished mw-127s and going to Sample mw-120s +d
1435 Keith (Gelman) Notified Going to Sample mw-120s +d
1500 Left Gelman for mw-120s+D ZA+TO
1515 Arrive at mw-120s+D ZA+TO
Start setup on mw-120D ZA
Bladder Pump #1752
YSI 6178
1620 TO setup on mw-120s
01A0411 Geo Pump
YSI 14L103127 / 5003

Cal date 9/25/22		cal	Read
Cond	Lot# 2GA256	1.413	1.413
pH	2GB162	7.00	7.00
	1GI516	10.00	10.01
ORP	2GG952	220	220
Turb	14679	0	0
DO	CMK1014	96.2%	96.2%

Rite in the Rain

Mon 9/26

1800 Bladder pump Controller for MW-120d - Not working
Shipping back to get new one

1835 Sample G-GWRS-MW-120s
On phone with GeoTech - Fix Controller

1915 Leave site ZA, TO

ZA

Tuesday 9/27 Gelman

0700 Arrive onsite
ZA, TO, LW, KE, Nurica (EPA)
Safety Tailgate meeting
Prepare Field Equipment

0800 Decon Buckets Prepped - using Tap Water from Gelman Building 5 NW corner. - Connected to city water

0830 Left Gelman site to sample 120d
Keith (Gelman) Nick (FV) notified

0840 Arrive at MW-120d ZA, TO
Set up to sample

0830 YSI 6178 Calibrate in field 9/27

4.0 pH	4.00	3.98	3.97
7.0 pH	6.95	6.96	6.95
10.0 pH	9.99	10.00	10.00
Turb	124.02	124.04	124.03
Cond	1.378	1.379	1.378
ORP	241.9	241.7	241.6

YSI 5003 Calibrate in field 9/27

4.0	4.03	4.02	4.03
7.0	6.98	6.97	6.96
10.0	10.04	10.02	10.02
Turb	124.04	124.05	124.06
Cond	1,416.2	1,416.3	1,416.1
ORP	246.1	246.2	246.1

Rite in the Rain

Tues 9/27

1000 Begin Purge MW-120d
YSI 5003

1125 Sample G-GWBK-MW-120d
EB

TO Leaves to MW-105s

ZA Begin resample of MW-120d with lower turbidity readings

1305 Sample G-GWBK-MW-120d

1415 Leave site to sample 5005 Jackson Rd, Notified Kieth + Nick

1430 Sample set up, Nick on site

1500 No water depth at 5005 Jackson Rd

Nathalie + Nurion called to Notify The well is dry, Total depth 6.73'

Nick indicated past static water level reading were between 3.5-4' below TOC.

1515 Arrive at 4141 Jackson Road
ZA + Nick M.
Find well + Grab key from Gelman site

1600 Start set up
Submersible pump - 01A0397
YSI 6178

1705 Start Purging 4141 Jackson

1825 Sample G-GWRW-4141

1900 Leave site 4141 - Go to TO to assist and Drop off equipment

Tues 9/27
at Gelman site
2015 leave Gelman site
ZA

Rite in the Rain

Wed 9/28 Gelman SI

0710 Arrive onsite ZA TO
Weather Cloudy 50°
Safety tailgate meeting
0730 Leave Gelman Facility for MW-124s rd
0745 Arrive MW-124s rd ZA
0800 TO Arrive for MW-124s
0800 MW-124d WL 54.22'
Total depth 182.06
Submersible pump 01A0397
YSI 6178
0835 Start Purging, 0930 Nick Marrive
1045 End Purging
1055 Sample G-GWBK-MW-124d
1140 Leave site for Gelman Facility
1155 Arrive Gelman Site
Keith, Nick, M Notified going to NMW-2d
1230 Keith shows me the back around way to access NMW-2d from North due to Paving restricting access
1245 Pick up another drum for IDW
1315 Set up on NMW-2d
TOC Total depth 17.12 -
TOC - Ground 3'
WL - 4.02 ft below TOC
0.95 below GS

Wed 9/28
Pump Set 11' below GS
1448 8.69 bgs
1453 8.65 bgs
1500 8.55 bgs
1505 8.55 bgs
1430 Pumped NMW-2d dry on lowest setting of submersible pump
~ < 100 ml/minute
Let recharge for times above
1545 Start to sample NMW-2d
WL 11.59 from TOC
1549 Drained to below pump
1600 Begin Pumping Again - Filled one VOA before drained to below pump
1630 Begain pumping again - Filled Last VOA Then drained below pump
1720 Call with Natalie. Plan to resample NMW-2d when fully recharged tomorrow morning
Informed Keith of Plan to Leave Site and sample MW-85
1735 Depth to water from TOC at NMW-2d 12.27'
1805 Leave Gelman Site for MW-85
1825 MW-85 TD 163' WL 45.21

Rite in the Rain

Wed 9/28

1830 Car parked too close to MW
to get pump in well.
Return to Gelman Site
1900 Leave Gelman Site

ZA

Thurs 9/29/22 Gelman Si

0720 Arrive At Gelman site ZA
0745 TO ZA drive to Montgomery
PW-1 to sample
0800 Arrive At Mont PW-1 well
0830 City arrives to let us in, YSI 6178
0905 Sample G-GWPW-01
0915 Leave Mont well and head to
Steere well
0935 Arrive at Steere G-GWPW-25
ZA, TO
0940 start Purge, YSI 6178
1000 End Purge
1010 Sample G-GWPW-25
+ MS/MSD collected
1030 Leave Steere well site
Sample Management
1100 Arrive on Gelman Site, Keith + Nick
Go to NMW-2d Notified
1120 WL NMW-2d 8.20' below TOC
Call to Kara E. wait until tomorrow
until fully recharged to sample
1155 Car still parked over MW-85
head back to Gelman site to help Taylor.
1210 Help TO with MW-1 replacement samples
1400 Arrive at Barton Pond Honey Creek Trib
3096 Huron

Rite in the Rain.

Thurs 9/29

1430 Sample G-SWRS-01
1450 Sample G-SERS-01
YSI 5003
1550 Leave site head to Barton Pond 2 Location
1600 Arrive at Barton Pond 2/ Setup
1630 Sample G-SWRS-02
1730 Sample G-SERS-02
YSI 5003 +MS/MSD sample
ZA Sample management
1905 Leave SW/SE-02 Sample site

ZA

Fri 9/30 Gelman SI

0745 Arrive at Gelman Site
Equipment prep
Safety Tailgate meeting with TO
0850 Leave site
0900 Arrive at BK-02, ZA, TO, Nick M.
0905 No surface water, Just collect Sediment
0910 Sample G-SEBK-02
0930 Trip Blank - 9/30/2022 - 1
0930 Field Blank - 9/30/2022
1000 Arrive at PP3 outfall ZA, TO, Nick M.
1010 Collected SW samples
1030 Nick M. meeting to check location of samples.
1050 Call to Natalie - Sample to be taken right from outfall not tributary water
1100 Outfall from pipe directly to tributary
- No Sediment Sample
- Collecting SW dupe per Natalie
1110 Collect Sample G-SWPPE-03
Sample management
1210 head to RS-03
1215 Arrive at RS-03 to scout Location
1245 Bring Equipment to RS-03, ZA, TO, Nick M.

Rite in the Rain

9/30 Fri Gelman SI

1300 Sample G-SWRS-03 Some organic matter Leaf grains

1315 Sample G-SERS-03 - Mostly organic matter

Sample management

1400 Leave for PPE-1 outfall

1410 Scout for PPE-1 Location

1420 Call to Natalie - Dig hole to find surface water - water visible in deep footprints.

1515 Call to Keith for help sampling Settling Pond

Last Cleaned in June

Gelman to Sample sediment with own dedicated sampling tool

1530 - Decon Alconox DI rinse by ZA

1554 YSI 5003 in water

1559 Temp: 13.6°C

DO: 5.62 mg/L

Cond/SPC: 1.361

pH: 7.15

Orp: 146.1

NTU: 17.15

1600 Sample G-SWSS-01

1620 Not enough sediment on bottom of pond to collect, workers needed to leave site.

Sample management

1815 Arrive at PPE-02 ZA, TO, Olivia.

walk through wetland

1825 Call to Natalie about wetland dry

1830 - Auger down 6" - No water infiltrated

Very dark brown soil, some organics

1835 Sample G-GEPPE-02

Sample management

1715 Scout Stormwater location for access

1725 Drop off ~~location~~ at Gelman stuff

1730 Leave site

ZA

9/30

Rite in the Rain

10/1 Sat Gelman SI

0715 Arrive at Gelman site to collect equipment

0730 Safety Tailgate meeting with TO

0740 Arrive at SW-01 to Sample

0800 Sample G-SWSW-01

Dupe G-SWSW-01

0825 Sample G-SESW-01 / Few inches Organic matter over gray sediment

dupe G-SESW-01

0900 Trip Blank 10/01/22

0900 Field Blank 10/01/22

0905 Leave SW-01 for Gelman site to unload equipment

1000 ZA Leave site

ZA

10/01/22 Transfer Logbook to Kara Epple

[illegible]

10/6/22

Rite in the Rain

10/02/22 Geiman Sciences

weather: 55°F, Sunny, moderate humidity

0800 pack Bottom / trip blank

0852 Arrive on site, pick up equipment

0902 Gate site, lock gate

Go to MW-100

0936 Arrive 3 open well flush mount

Depth to water: 64.33

Depth to Bottom: 223.35'

1040 Begin GW sampling

Pump ID: Geo Sub 2 - S/N 04D0588-cont.

pump: 2962 (Geotech)

1158 Sample MW-100 / MW-900 (Duplicate)

final H_2O Quality parameters

Temp: 12.5°C pH: 7.09

DO: 0.07 mg/L ORP: -99.3

Turb: 2.75 NTU DTW: 64.49 ft bgs

12:50 Leave location

1443 Arrive at [redacted]

1452 Begin 15 min purge from spigot in front of house.

1507 Sample G-GWRW-[redacted]

1528 Begin purge on 35[redacted]

By K. Eppie

1530 Begin purge on [redacted]

by S. Mitchell

1543 Begin Sampling G-GWRW-3568

⊕ Dupe G-GWRW-93563 By K. Eppie

1545 Begin sampling G-GWRW-[redacted]

By S. Mitchell.

1606 Begin purge on [redacted]

By S. Mitchell

1621 Sample G-GWRW-3573

please note: spoke w/all residents except for resident at [redacted] to confirm well water, w/ no filtration

checked all spigot heads for directors. found none.

1635 Elizabeth road sampling completed

1643 Arrive at [redacted]

1644 Begin purge.

Appears driveway on side of residence where spigot is was recently paved.

Owners not ~~owned~~ home

~~1800 B~~ 1700 Begin sampling G-GWRW[redacted]

⊕ MS/MSD

1731 finish sampling, leave [redacted]

Rite in the Rain

10/03/22 Gelman Science S.
Weather: Sunny, 45°F, low humidity
0600 meet in lobby to discuss day.
0645 Pick up? Leave for site.
0700 Decon pump, move to 175 Jackson
set up well for H_2O sampling
0830 Drillers begin to drill out SS05
0937 finish grouting well, 10 bags
50 lbs bentonite in 40' hole.
1020 Begin redrilling SS06
Hand auger N. Hole to confirm pipe
Back fill SS06 (S. hole) w/ 8 Bags
of Bentonite
1107 Complete filling SS06 track to
SS07
1139 Begin drilling out SS07
to regrout / backfill w/ bentonite
1147 Arrive at 4401 Park Rd for access
1218 finish filling SS07.
1500 finish moving PDW Drums to
staging area as confirmed by Keith
of Gelman. He also indicated Gelman did
not need information about when Weston staff
was sampling on site of Gelman owned wells
1326 Arrive at Cascade rig on Sequoia pkwy
for trenching pipe.

1533 Arrive at MW-85
1540 Send trenching pipe down, Resistance
at approx 110' ~~down~~ bags
Still able to push to 160', not able
to dislodge pump
1613 Pump dislodged :)
1642 Leave MW85 to MW-108d
Cascade to move back to site to demobe.
1700 Arrive at 108d.
DTW: 33.39' DTB: 183.66
1810 Begin to purge MW-108d
~~* Leave add~~
1838 turned rate down for pumping
1907 Sample G-GWRW MW-108d
final parameters:
Temp: 11.2°C DO: 0.55 mg/L pH: 7.21
Cond: 0.921 mS/cm ORP: 161.1 mV Turb: 6.75 NTU
DTW: 33.44 Flow Rate: 400 ml/min
1949 finish sampling, pack, leave to
hotel.
Late addition: SS07 filled with
7 bags of 50 lbs bentonite.

Rite in the Rain

10/04/22 Gelman Sciences

weather: Sunny, mod. humidity, appx 45°F. low wind.

0648: Arrive on site, decon pumps, pack for day

0800 Leave site

0817 Arrive at [redacted] Speak w/ owner to confirm on well/ground water.

0823 Begin purge

0838 Begin to sample

0863 Sampling complete, pack? Move to MW-85

1030 Arrive at MW-85 to scope well meet w/ dan.

1037 call Keith? Jim from Gelman et al to inform scoping MW-85 w/ cascade drilling. Left message for Keith, mailbox full for Jim. Water very turbid. Setting up pump to purge well w/ flow through for turbidity

1114 Begin purge

1151 turn water pump speed to appx 750 ml/min, re scope w/ turbidity below 100 NTU.

1211, no damage to screen according

to dan from Cascade (appears to be no damage to well from weston). Begin sample purge, drop FR to 500 ml/min

1318 Begin Sampling G-GWRS-MW-85

Final Readings: Temp: 13.4°C

DO: 0.34 mg/L Cond: 1.426 mS/cm pH: 7.24

ORP: -95.9 mV Turb: 9.91 NTU DTW 44.13

Rite in the Rain

10/05/22 Gelman Sciences Inc
K Epple.
Begin clean up/clear out of
Steel on gelman property.
Shippy, packing of cables.
Pick up Signed Access agreement
form [redacted] or well
sampling.
Wells appear to be DW wells,
Sealed (not accessible). Spoke
w/ N.Q. who spoke w/ owner, on
City water not f.w.
Several emails/conversations
about equipment.
Spoke w/ Kathy about wire
to discard of PPE waste?
Boxes. He indicated the
gelman solid waste dumpster
on site was fine

10/05/22

10/05/22

Rite in the Rain

10/06/22 Gelman Sciences Inc
Arrive onsite at Gelman.
Finish Clearing Storage Shed
w/ J. Emmendorfer.
Dispose of waste in solid
waste dumpster on Gelman
site per Keith (of Gelman
water treatment) instructions.
Only sample boxes, PPE, etc.
disposed off. all other material
to drums for identification.
as RCRA waste (pending analysis).
Punch ? Strip coolers.

10/06/22

Gelman Sciences Inc
K. Eppie 10/06/22

10/06/22

Rite in the Rain.

10/07/22 Gelman Sciences Inc
K. Epple. Weather. Partly cloudy
Cool, moderate humidity.
0800 Arrive onsite w/ J. Emmelofer
to finish cleaning & decon instruments
& equipment. Speak w/ Keith &
he shows K. Epple location of
well on 5005 Jackson property.
0950, prepare to sample well at
5005 Jackson. J. Emmelofer to
complete closeout equip. tests.
1327: Arrive 5005 Jackson
DTB: 23.4' bgs DTW: ~~4.84' bgs~~ 4.78' bgs
1343: Begin purge
DTW: 4.79' bgs
1445: Sample G-GWPW-5005
Temp 11.2°C, DO 1.19 / 0.12 mg/L, 7.05 pH
1.165 spc, -142.3 mV ORP, 6.98 NTU
1457 Finish sampling, pack up.
1508 Leave 5005 Jackson
1520 Arrive on Gelman Site to
decon pump & YSI & dispose of
purge water / drop key.
1630, leave Gelman Site.
Arrive at hotel & finish packing
samples.

10/07/22 Gelman Sciences cont'd.
1900 Stop removing samples.
Package up all equipment
for shipment on 10/08/22.
Drop off equipment at geotech
in Lansing.

10/07/22

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GW Sampling

field Book 2 of 4

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	~~09/26 [illegible]~~	
	09/27 – 10/04/22	
	Groundwater Sampling	
	T. Oberman / O. McMillan	
	Book 2 of 4	

Weather: 40°/57°F, Wind: NNE 5 mph, 72% humidity.
0700 Arrive onsite. Begin packing supplies into car for groundwater sampling. — TO
0715 Meet with Leah Wills (Weston) for extra garbage bags. — TO
0800 Arrive at well MW-124s. Zach Ashauer setting up at MW-124d. — TO
0845 Nick (F+V) arrives at well set.
0930 Final YSI readings. pH: 7.55, Cond: 0.528 mS/cm, ORP(mV): -159.8, DO (mg/L): 0.35, Turb(NTU): 7.85, Temp (C): 14. — TO
0945 Collect sample G-GWBK-MW-124s for VOCs, SVOCs, + PAHs. — TO
0950 MS/MSD collected w/ same ID as above.
1025 Decon pump + water level. — TO
1045 Assist Zach Ashauer with sample preservation. — TO
1120 Arrive at Gelman site to drum purge water and pick up more tubing. — TO
1140 Head to MW-04d. — TO
1230 Arrive at MW-04d and begin setting up to purge well. — TO
1435 Final YSI readings. pH: 7.18, Cond (mS/cm): 1.244, ORP(mV): -114.1, DO (mg/L): 0.42, Turb(NTU): 7.63, Temp(C): 12.6. — TO

1445 Collect sample G-GWRS-MW-4d for VOCs, SVOCs, PAHs. — TO
1520 ~~1500~~ Head back to Gelman site to drum purge water. — TO
1530 Arrive at MW-77. Cannot open well. Call Kara Epple (Weston) to see if Keith (Gelman) or Nick (F+V) could assist. — TO
1545 Arrive on Gelman site to meet with Nick (F+V). Head towards MW-77.
1600 Begin setting up at MW-77. — TO
1740 Final YSI readings: pH: 7.23, Cond (mS/cm): 1.044, ORP(mV): -102.8, DO (mg/L): 0.39, Turb(NTU): 9.35, temp (C): 11.9. — TO
1750 Collect samples G-GWRS-MW-77 + G-GWRS-MW-77 for VOCs, SVOCs, + PAHs.
1820 Arrive onsite with ice for samples and to drum purge water. — TO
1840 Offsite for the day. — TO

Taylor Olmer
9/28/2022

Rite in the Rain

 9/29/2022 Gelman SI

Weather: 40°/61°, wind: N4 mph, humidity: 62%.

0710 Arrive at Gelman site to drum purge water. Safety tailgate w/ Zach Ashauer. —TO

* See Zach Ashauer's log book for details about samples G-GWPW-01 and G-GWPW-25.

1100 Arrive onsite for additional bottleware.

1125 Arrive at MW-1 and begin setting up. Nick (F+V) + Nuria (EPA) in area watching drilling nearby. —TO

1210 Collect sample G-GWRS-MW-1R + —TO
G-GWRS-MW-91R for VOCs, SVOCs, + PAHs.

1215 ZA (Weston) arrives at MW-1R. —TO

* See ZA log book for details. —TO

Zachary Ashauer
9/29/2022

Zachary Ashauer
9/30/2022

Gelman SI 60°F sunny 9/30/22

0945 O. McMillen (weston on site) — am

1030 Set up on MW 85. — am

Check in with Nick (Gelman) — am

1100 Adjust pump, not pumping. Got stuck on casing, will not pull up. Call crew for trouble shooting.

1130 Leah (weston) arrive to help. Try calling GeoTech, for support.

1230 Leah gets hook with wire from Gelman. Try to get out. — am

1400 Leave Leah to pick up another pump ~~well~~ from site to head over to MW-28 — am

1500 Locate MW-28, go back on site to get keys from Taylor.

1630 Sub pump not working - trouble shoot with Taylor / Kara / GeoTech. — am

1715 Need generator to run pump.

1745 Pack up, will sample another day with proper power source. — am

1800 Help Taylor / Zach finish SE samples for the day. — am

1930 O. McMillen off site, headed to hotel to drop samples w/ Taylor / Zach.

Olena McMillen

Gelman SI 60°F sunny 10/1/22

0900 O. McMillen (weston) on site. - Help Taylor / Zach pack-up equipment. — am

1000 Off site to Kara's hotel for sample management. — am

1200 Mob to Home Depot for fish tape to attempt to get pump out of MW 85. — am

1230 Drop battery off to charge full 48 hrs before Monday sampling

1300 Arrive at MW 85 to attempt fish tape. — am

1530 No success with fish tape.

~~1630~~ 1600 am Finish sample management with Kara / Kelsea (weston) — am

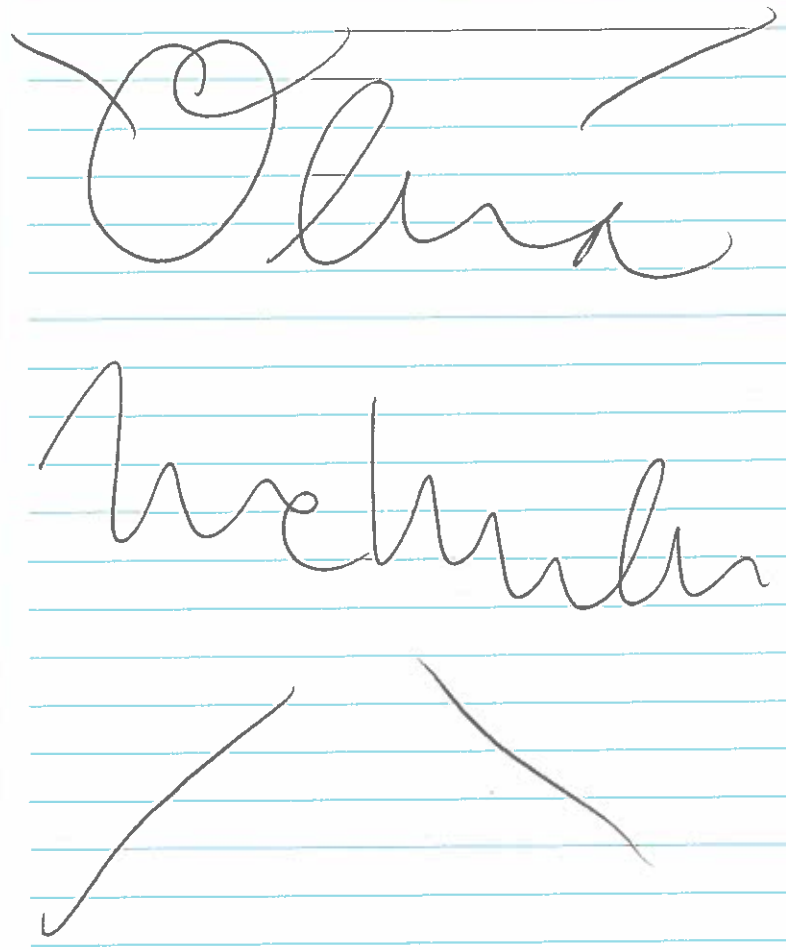
1630 O. McMillen off site. — am

Olena McMillen

Rite in the Rain

Gelman SI 60°F sunny 10/3/22
1000 O. McMillen (weston) on site.
1015 Go to Stephanie (weston) to help finish up well 175 —— on
1150 Stephanie and O. McMillen arrive at Dolph Park to sample SW/SE. —— on
1215 Prep for sampling, preserve en bottles —— on
1300 Arrive at SW/SE-BK01 location. Hand auger to ~2.5 ft no water for SW sample. —— on
1345 Discuss with Natalie/Kara options on location. —— on
1400 Locate stream connecting 2nd sister lake and wetland.
1500 Discuss new location with Natalie. —— on
1600 Collect SW-BK01 —— on
Stephanie mdos to Kara —— on
1800 Collect SE-BK01 —— on
1830 Pack equipment up. —— on
1905 Arrive North of PPE-2 for SE sample. —— on
1915 Collect SERS-04 sample —— on
1945 GPS SW-BK01, SE-BK01, and SERS-04

Gelman SI 60°F sunny 10/3/22
2000 Get ice with Kara/Stephanie
2030 O. McMillen off site. —— on



Gelman SI 60°F sunny 10/4/22
0730 O. McMillen (Weston) on site.
Load equipment for day. ——— am
0815 Stephanie + Olivia (Weston) arrive
at MW-28 location, prep bottles/equip.
0830 Set up on MW-28 ——— am
0845 Pump (bladder) not working
- troubleshoot. ——— am
0930 Battery still not enough power,
go to main site to get generator.
1000 Set up on MW-28 with generator.
1150 Continue to pump while calibrating
YSI due to turbidity not stabilizing.
1250 Collect MW-28 sample. ——— am
1450 Depart MW-28, head to hotel
to pack coolers. ——— am
1835 ~~Collect TCLP~~ am Depart to site
to collect IDW samples. ——— am
1945 Collect TCLP water from drums
1920 Collect TCLP soil from drums
2015 Collect Equipment blank off am
bladder pump ——— am
2050 Off site, headed to hotel
to continue to pack coolers with
Kara/Stephanie. ——— am
9/30-10/4 iPad used signed into Kara's
account. Olivia McMillen

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Soil Sampling

field Book 3 of 4

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	Gelman Sciences DRC 09/26 – 09/30/22	
	Soil Sampling / Boring	
	L. Mills	
	Book 3 of 4	

Gelman Sciences Monday 9/26/22 LWills

0730 Leah Wills, Zach Ashauer, + Taylor Oberman onsite @ Gelman Sciences. USIC already onsite — LW

0800 Jenelle Myers onsite — LW

0815 Meet w/ Keith Patterson + Nick Moleski (Gelman) Jim (Bloodhound locating) onsite — LW

0830 Locating boring by pond 3 — LW

0915 Begin Hand Auging G-SS01 — LW

1000 Cleared to 6' bgs w/ hand auger. Gelman - Keith Said we should be clear — LW

1020 Set up rig — LW

1053 Begin drilling G-SS01 w/ Terrasonic CC150 — LW

1100 Kara Epple (Weston) onsite — LW

1145 Collected G-SS01-1213 — LW

1152 " G-SS01-2930 — LW

Note: Boring TD @ 1126 @ 40' — LW

1220 Backfilling SS01 w/ cuttings, hand clearing SS02

1300 Moving SS02 ~7' SE due to recommendation from Gelman Excavator Contractor. Cascade needs approval from their H+S. Taking lunch — LW

1430 Keith (Gelman) said this location is good for SS02 + he takes liability if its not — LW

1436 Begin drilling G-SS02 — LW

1505 Collect G-SS02-0910 — LW

1510 Collect G-SS02-2425 — LW

1512 Nuria (EPA) onsite — LW

Gelman Sciences Monday 9/26/22 LWills

1522 Backfilling boring w/ cuttings — LW

1531 Begin drilling G-SS03 — LW

1546 TD hole @ 30' bgs. water ~20' bgs — LW

1600 Collected G-SS03-0405 — LW

1605 " G-SS03-1718 — LW

1630 Put cuttings back down hole + move to next hole — LW

1700 Set up on G-SS04. Hand cleared to 7' bgs.

Pack up for the day — LW

1710 All personnel offsite — LW

Rite in the Rain

Gelman Sciences Tuesday 9/27/22 L. Wills

0700 All weston personnel, Cascade, Nuria + Nick ansite
H+S meeting
0720 Calibrate PID 100ppm read 110.2 - ok
0728 Begin drilling G-SS04
0811 TD @ 40', water ~25
0820 FID needs H2 12-13
0835 Collected G-SS04 ~~0840~~
0840 G-SS04-1718
0858 Backfill boring w/cuttings + move locations
1001 Begin drilling G-SS05
1107 TD @ 40', water @ ~36
1132 G-SS05-0002 Collected
1140 Collected G-SS05-1213
1150 " G-SS05-3031, + Field dup (1151)
1220 Backfill boring w/cuttings
1250 Driller lunch break
330 Begin hand clearing G-SS06
1400 Pipe @ ~3' bgs. Back up + try again
1452 Cleared to 6' bgs begin drilling G-SS06
1525 TD @ 30', water ~20' bgs
1540 Collected G-SS06-0506
1550 " G-SS06-~~1415~~ 1011
1600 " G-SS06-1415
1610 Backfill boring + pack up to move
1700 Set up @ G-SS07 + begin hand clearing

Gelman Sciences Tuesday 9/27/22 L. Wills

1700 Collected G-SS07-0002
1713 Begin drilling G-SS07
1828 TD @ 40', water ~36'
1840 Collect G-SS07-2223
1850 Collect G-SS07-3031
1900 Pack up for the day. All personnel offsite

Gelman Sciences Wednesday 9/28/22 L.Wills

0700 Leah Wills + Cascade onsite
0715 HS meeting & waiting for sun to rise
0730 Logging G-SS07 + packing up tomorrow
0830 Moving to G-SS08
0900 Hand clearing G-SS08
0950 Begin drilling G-SS08
1011 PID bump test read 105.2 in 100ppm gas → OK
1040 TD @ 40', DTW ~35
1100 Collected G-SS08-0506
1110 " G-SS08-~~3021~~ 1920
1115 " G-SS08 3233 + field dupe
1145 Backfill boring w/cuttings, + pack up
1230 Hand clearing SS09
1310 Hand cleared to 5' bgs, begin drilling
1350 TD @ 30', DTW ~20' bgs
1415 Collect G-SS09-~~2506~~0708
1420 " G-SS01-1213
1425 " G-SS01-1314 MS/MSD

Jim Brade asked how borings were being abandoned, Weston responded w/cuttings. An email was sent by Michael Caldwell bringing up issue w/boring abandonment. Stop work.

1600 Backfilling SS09 w/Hydroplug Bentonite chips + hydrating w/water, collapse at 6' bgs.
1715 Begin hand augering SS10

Gelman Sciences Wednesday 9/28/22 L.Wills

1730 Begin drilling G-SS10
1744 TD @ 20', DTW @ 20'
1810 Collected G-SS10-0607
1815 " G-SS10-1314
1820 " G-SS10-1819
1900 All personnel offsite

Rite in the Rain

0700 All personnel onsite
0715 H&S Meeting
0730 Cleaning up @ SS10
0810 Backfilling SS10 w/Bentonite
0830 Backfill Complete. Used 65 bags holeplug + hydrated along the way
0850 Hand clearing SS11
0920 Begin drilling SS11
0935 Bump test for PID 100ppm Span gas read 100.1 ok
0948 TD @ 20', water ~20'
0950 Begin Backfilling w/ Holeplug
1015 Collect G-SS11-1213
1020 " G-SS11-1819, Field Duplicate
1030 Backfilled SS11 w/4 bags of holeplug
1112 Drilling at backfill from SS04
1210 SS04 Backfilled w/Holeplug from 40', used 7 bags
1240 Driller lunch
1310 Move to SS12 + hand clear
1414 SS12 Cleared to 5' bgs, begin drilling
1450 TD @ 30', DTW ~23'
1505 Begin backfilling w/holeplug from 21', hole caved
1510 Collect G-SS12-0708
1515 " G-SS12-1415, MS/MSD
1520 " G-SS12-1920
1530 SS12 backfilled w/5 bags holeplug

1618 SS13 Cleared to 5' bgs, began drilling SS13
~~1651~~ 1645 TD @ 30', DTW ~14
1700 Begin backfilling w/Holeplug
1708 PID wont ignite
1720 Collected G-SS13-0506
1725 " G-SS13-1011
1730 SS13 Backfilled w/6 bags of holeplug
1800 in Wetlands, begin hand augering SS14
1815 Collected G-SS14-0002
Wetlands GW @ ~2.5' bgs

Gelman Sciences Friday 9/30/22 LWills

0700 LW + Cascade onsite

0715 H+S meeting

0730 Set up on SS03 to drill out + backfill w/ cuttings

0830 SS03 redrilled to 30' bgs, begin backfill w/ holeplug

0845 Backfilled w/ 2 bags holeplug, some holecave

0930 Set up on SS02, begin redrilling

1015 Hole caved @ 24', used 6 bags of holeplug to backfill

1045 Begin redrilling SS01

1140 Drilled to 40, hole caved @ 33', backfilled w/ 4 bags

1230 Set up on #8

1400 Drilled to 40', hole caved @ 36, used 7 bags holeplug

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Waste, Geo, Sed
Sampling

field Book 4 of 4

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	Waste, GW, Sed inv	
	Sampling	
	K. Epple / S. Mitchell	
	Book 4 of 4	

Geleon Sciences Inc Site.
K. Epple 09/29/22
Weather: Sunny, Slight breeze, 50°f.
Reping and Sample NMW-2d
1700 Begin to load equipment to well NMW-2d after confirmation well had been previously purged dry (9/28/22) by Z. Ashaver
Signed by K. Martindale
1744 photo of well/Sample.
Depth to bottom 17.12
~~Depth~~ TOC to ground 2.3
Water level from TOC 10.4
No water quality parameters collected, full purge of well previously.
1815 Sample G-Gw NMW-02d
1830 Pack up and leave Site.

09/29/22

K. Epple, Geleon Services Inc.
Release Logbook to Stephanie Mitchel on ~~10/03/22~~ 10/02/22

10/02/22

Rite in the Rain

Ann Arbor, MI Gelman SI 10/03/22

Weather: Sunny 65°F high —— SM

Arrive at field shed @ 0645 —— SM

Begin to prep for the day @ 0650 —— SM

Arrive at MW-175 @ 0815 —— SM

Begin purging MW-175 @ 0900 —— SM

Collect final reading @ 0955 —— SM

Begin sampling MW-175 @ 1005 —— SM

Temp	DO	Cond	pH	ORP	Turb	DTW
13.5	0.08	1.104	7.20	-160.9	0.15	52.4
°C	mg/L	mS/cm		mV	NTU	ft

- DTB: 102.2 ft —— SM
- Pump placed @ 100.2 ft —— SM
- Initial DTW: 54.11 ft —— SM

Depart MW-175 @ 1130 —— SM

Arrive at Dolph Park @ 1150 —— SM

Look for SW/SE-BK01 location @ 1155

Find SW/SE-BK01 location @ 1215 —— SM

Prep for sampling @ 1225 —— SM

Trouble shoot/Find better location for SW location @ 1500

Collect SW-BK01 @ 1600

Collect SE-BK01 @ 1800

Arrive N of PPE-2 for SE sample @ 1907

Collect G-SERS-04 @ 1915 —— SM

Arrive at Hotel @ 1935 —— SM

Prep samples/coolers @ 1940 —— SM

EOD @ 2100 —— SM

Notes: —— SM

- Dolph Park was very dry, not much water throughout area. Called PM to confirm location of the SW location prior to sample. A lot of algae etc. in area

Temp	DO	Cond	pH	ORP	Turb
12.4	3.2	0.762	7.23	-50.6	160
°C	mg/L	mS/cm		mV	NTU

- MW-175 collected with submersible pump: VOCs, sVOCs, PAH, SemiVs Purge rate 500 mL/min
- SW sample analyzed for: VOCs, sVOCs, PAH, SemiVs, TAL metals plus mercury, Cyanid, Aroclors
- SE sample analyzed for: Aroclors, VOCs, TAL metals, plus mercury, and cyanid, sVOCs, plus PAHs

S. Mitchell

Rite in the Rain

6 Ann Arbor, MI Gelman SI 10/04/22

Weather: Sunny 72°F high —— SM

Arrive at Shed @ 0645 —— SM

Decon equip and prepare for the day @ 0650

Arrive at MW-28 @ 0830 —— SM

Trouble shoot pump @ 0900 —— SM

Begin to purge @ 1005 —— SM

Recalibrate YSI @ 1150 —— SM

Collect MW-28 @ 1250 —— SM

Depart MW-28 @ 1450 —— SM

Prep samples/pack coolers @ 1510 —— SM

Depart for shed @ 1835 —— SM

Collect IDW soil @ 1920 —— SM

Collect IDW water @ 1945 —— SM

Collect Equipment blank (Bladder pump) @ 2015 —— SM

Continue to prep coolers @ 2055 —— SM

EOD @ 2330 —— SM

Notes: —— SM

-MW-28 —— SM

DTB: 49.44 ft DTW (initial): 26.86 ft

Pump set @ 47.44 ft —— SM

Final Reading @ 1245 for MW-28

Temp	DO	Cond	pH	ORP	Turb	DTW
12.8	0.15	0.701	6.92	-93.1	503	26.45
°C	mg/L	mS/cm		mV	NTU	ft

Ann Arbor, MI Gelman SI 10/04/22

Notes Cont: —— SM

- Used Bladder pump to collect MW-28
- Purge Rate of 300mL/min —— SM
- Analyzed for: PAHs, VOCs, sVOCs, SemVs for Equipment Blank and MW-28
- IDW water: sVOCs, VOCs, TAL Metals
- IDW Soil: sVOCs, VOCs, TAL metals
- Both IDWs collect from All soil drums and Purge water drums on site —— SM

S. Mitchell

Rite in the Rain

APPENDIX B
PHOTOGRAPH LOG

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
1	09/26/2022

Photo Coordinates

Lat	42.277171
Long	-83.802902

Direction Photo Taken: 251

Description:

Drilling boring G-SS01

Photo No.	Date:
2	09/26/2022

Photo Coordinates

Lat	42.27726
Long	-83.802941

Direction Photo Taken: 217

Description:

Drilling boring G-SS01

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 3	Date: 09/26/2022
Photo Coordinates	
Lat	42.27724
Long	-83.802962
Direction Photo Taken: 224	
Description: Core from boring G-SS01	

Photo No. 4	Date: 09/26/2022
Photo Coordinates	
Lat	42.277463
Long	-83.803553
Direction Photo Taken: 313	
Description: Drilling boring G-SS02	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
5	09/26/2022

Photo Coordinates	
Lat	42.277405
Long	-83.803283

Direction Photo Taken: 292

Description:

Abondoning boring G-SS02

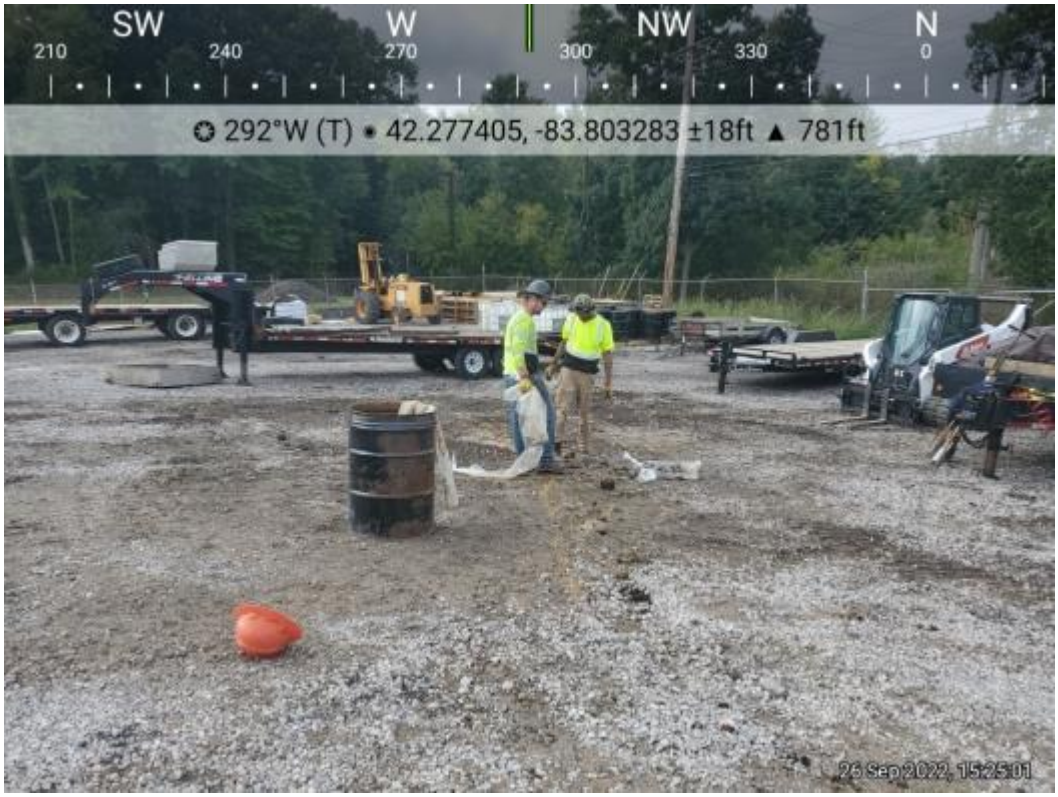


Photo No.	Date:
6	09/26/2022

Photo Coordinates	
Lat	42.277441
Long	-83.803033

Direction Photo Taken: 307

Description:

Drilling boring G-SS03

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 7	Date: 09/27/2022
Photo Coordinates	
Lat	42.277445
Long	-83.802102
Direction Photo Taken:	36
Description:	Drilling boring G-SS04

Photo No. 8	Date: 09/27/2022
Photo Coordinates	
Lat	42.277504
Long	-83.802067
Direction Photo Taken:	311
Description:	Drilling boring G-SS04

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 9	Date: 09/27/2022
Photo Coordinates	
Lat	42.274482
Long	-83.802413
Direction Photo Taken:	35
Description:	Drilling boring G-SS05

Photo No. 10	Date: 09/27/2022
Photo Coordinates	
Lat	42.274428
Long	-83.802312
Direction Photo Taken:	327
Description:	Drilling boring G-SS05

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 11	Date: 09/27/2022
Photo Coordinates	
Lat	42.275249
Long	-83.801362
Direction Photo Taken:	29
Description:	Drilling boring G-SS06

Photo No. 12	Date: 09/27/2022
Photo Coordinates	
Lat	42.27528
Long	-83.801314
Direction Photo Taken:	274
Description:	Hand auger boring G-SS06 to avoid utilities present in area

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 13	Date: 10/03/2022
Photo Coordinates	
Lat	42.274422
Long	-83.799888
Direction Photo Taken:	289
Description:	Abondoning boring G-SS07

Photo No. 14	Date: 09/28/2022
Photo Coordinates	
Lat	42.275984
Long	-83.802511
Direction Photo Taken:	225
Description:	Drilling boring G-SS07

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
15	09/27/2022

Photo Coordinates

Lat	42.274438
Long	-83.799789

Direction Photo Taken: 152

Description:

Drilling boring G-SS07

Photo No.	Date:
16	09/28/2022

Photo Coordinates

Lat	42.276022
Long	-83.802447

Direction Photo Taken: 258

Description:

Drilling boring G-SS08

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
17	09/28/2022

Photo Coordinates	
Lat	42.276061
Long	-83.802496

Direction Photo Taken: 189

Description:

Drilling boring G-SS08

Photo No.	Date:
18	09/28/2022

Photo Coordinates	
Lat	42.276187
Long	-83.800017

Direction Photo Taken: 318

Description:

Abandoned boring G-SS09

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 19	Date: 09/28/2022
Photo Coordinates	
Lat	42.2761
Long	-83.80001
Direction Photo Taken:	96
Description: Drilling boring G-SS09	

Photo No. 20	Date: 09/28/2022
Photo Coordinates	
Lat	42.276102
Long	-83.799922
Direction Photo Taken:	7
Description: Drilling boring G-SS09	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 21	Date: 09/28/2022
Photo Coordinates	
Lat	42.277014
Long	-83.801994
Direction Photo Taken:	320
Description: Drilling boring G-SS10	

Photo No. 22	Date: 09/28/2022
Photo Coordinates	
Lat	42.276979
Long	-83.802046
Direction Photo Taken:	44
Description: Drilling boring G-SS10	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
23	09/29/2022

Photo Coordinates	
Lat	42.276967
Long	-83.802023

Direction Photo Taken: 350

Description:

Abandoning boring G-SS10

Photo No.	Date:
24	09/28/2022

Photo Coordinates	
Lat	42.276927
Long	-83.802036

Direction Photo Taken: 18

Description:

Hand augering boring G-SS10 to avoid utilities in area

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
25	09/29/2022

Photo Coordinates

Lat	42.277544
Long	-83.802068

Direction Photo Taken: 318

Description:

Drilling boring G-SS11

Photo No.	Date:
26	09/29/2022

Photo Coordinates

Lat	42.27747
Long	-83.801968

Direction Photo Taken: 250

Description:

Drilling boring G-SS11

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 27	Date: 09/29/2022
Photo Coordinates	
Lat	42.277466
Long	-83.802073
Direction Photo Taken:	37
Description: Core from boring G-SS11	

Photo No. 28	Date: 09/29/2022
Photo Coordinates	
Lat	42.277384
Long	-83.801955
Direction Photo Taken:	321
Description: Hand Augering boring G-SS11 to avoid potential utilities in area	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 29	Date: 09/29/2022
Photo Coordinates	
Lat	42.277346
Long	-83.801724
Direction Photo Taken:	41
Description:	Drilling boring G-SS12

Photo No. 30	Date: 09/29/2022
Photo Coordinates	
Lat	42.277219
Long	-83.801259
Direction Photo Taken:	318
Description:	Drilling boring G-SS12

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 31	Date: 09/29/2022
Photo Coordinates	
Lat	42.277377
Long	-83.801301
Direction Photo Taken:	147
Description:	Drilling boring G-SS13

Photo No. 32	Date: 09/29/2022
Photo Coordinates	
Lat	42.27721
Long	-83.801364
Direction Photo Taken:	35
Description:	Drilling boring G-SS13

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
33	09/29/2022

Photo Coordinates	
Lat	42.277803
Long	-83.803674

Direction Photo Taken:
347

Description:

Hand Augering boring G-SS14 (located in north marsh area, water at 2 feet bgs)

Photo No.	Date:
34	09/29/2022

Photo Coordinates	
Lat	42.276961
Long	-83.802046

Direction Photo Taken:
75

Description:

Sonic drilling rig shoe decontamination

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 35	Date: 09/29/2022
Photo Coordinates	
Lat	42.276992
Long	-83.802135
Direction Photo Taken:	125
Description: Sonic drilling rig rod decontamination	

Photo No. 36	Date: 09/29/2022
Photo Coordinates	
Lat	42.276987
Long	-83.802063
Direction Photo Taken:	47
Description: Sonic drilling rig shoe decontamination	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
37	10/03/2022

Photo Coordinates	
Lat	
Long	

Direction Photo Taken: 94.04

Description:

Perservation of metals samples for G-SWBK-01

Photo No.	Date:
38	10/03/2022

Photo Coordinates	
Lat	
Long	

Direction Photo Taken: 254.14

Description:

Augering for water at G-SWBK-01

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 39	Date: 10/03/2022
Photo Coordinates	
Lat	
Long	
Direction Photo Taken: 5.52	
Description: Filtering for metals at G-SWBK-01	

Photo No. 40	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Collection of sample at G-SWBK-02/G-SEBK-02	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 41	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Location of G-SEPPE-01/G-SWPPE-01	

Photo No. 42	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Water at G-SEPPE-01/G-SWPPE-01	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 43	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Surface soil collection at G-SEPPE-01/G-SWPPE-01	

Photo No. 44	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Location of G-SEPPE-02	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 45	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Surface Soil at G-SEPPE-02	

Photo No. 46	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Location of G-SERS-01/G-SWRS-01	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 47	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Surface water collection at G-SERS-02/G-SWRS-02	

Photo No. 48	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Surface soil and surface water collection at G-SERS-03/G-SWRS-03	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 49	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Surface water collection at G-SERS-03/G-SWRS-03	

Photo No. 50	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Surface soil and surface water collection at G-SERS-03/G-SWRS-03	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
51	10/01/2022

Photo Coordinates

Lat	42.278723
Long	-83.802104

Direction Photo Taken: 207

Description:

Location of G-SESW-01/G-SWSW-01 (attribution sample)

Photo No.	Date:
52	

Photo Coordinates

Lat	
Long	

Direction Photo Taken:

Description:

Directly observed release at G-SWPPE-03

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 53	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Collection of water from pond 3 by Gelman Science, Inc. Staff using dedicated sampling equipment (G-SWSS-01)	

Photo No. 54	Date: 10/04/2022
Photo Coordinates	
Lat	
Long	
Direction Photo Taken: 204.32	
Description: Purging at G-GWBK-MW-28	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
55	10/04/2022

Photo Coordinates	
Lat	42.27612
Long	-83.809257

Direction Photo Taken: 179.53

Description:

Sample collection at G-GWBK-MW-28

Photo No.	Date:
56	09/27/2022

Photo Coordinates	
Lat	42.292933
Long	-83.788718

Direction Photo Taken: 128

Description:

Sample collection at G-GWBK-MW-120d

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
57	09/27/2022

Photo Coordinates	
Lat	42.292928
Long	-83.788794

Direction Photo Taken: 342

Description:

Purging at G-GWBK-MW-120d

Photo No.	Date:
58	09/26/2022

Photo Coordinates	
Lat	42.292916
Long	-83.788798

Direction Photo Taken: 322

Description:

Purging at G-GWBK-MW-120s

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 59	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Sample collection at G-GWBK-MW-124d	

Photo No. 60	Date: 09/28/2022
Photo Coordinates	
Lat	42.281748
Long	-83.744547
Direction Photo Taken: 251.46	
Description: Sample collection at G-GWBK-MW-124s	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 61	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Purging at G-GWBK-MW-120d & G-GWBK-MW-120s	

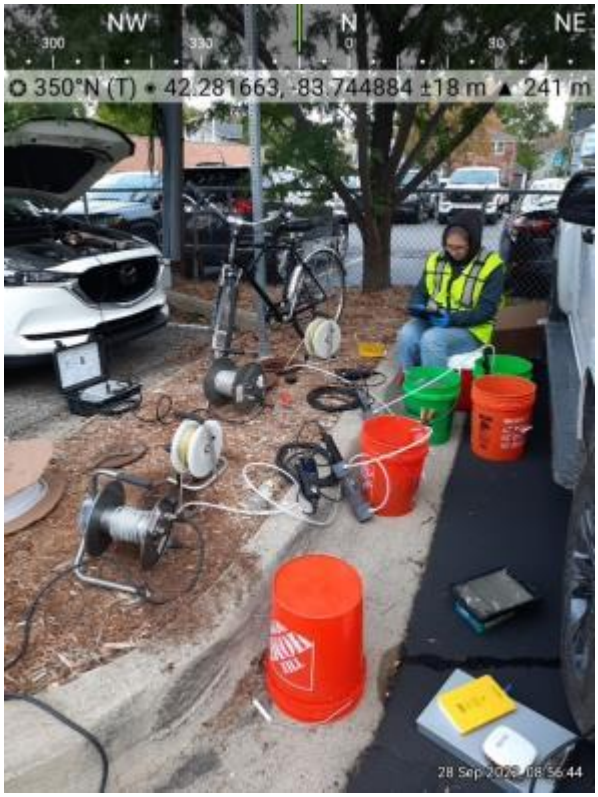


Photo No. 62	Date: 09/26/2022
Photo Coordinates	
Lat	42.274107
Long	-83.808245
Direction Photo Taken: 346.32	
Description: Sample collection at G-GWBK-MW-127s	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 63	Date: 09/26/2022
Photo Coordinates	
Lat	42.274115
Long	-83.808258
Direction Photo Taken:	343
Description: Purging at G-GWBK-MW-127s	

Photo No. 64	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Purging at G-GWRS-NMW-2d	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
65	09/28/2022

Photo Coordinates	
Lat	42.281032
Long	-83.804182

Direction Photo Taken: 100.83

Description:

Purging and sample collection at G-GWRS-MW-4d

Photo No.	Date:
66	09/28/2022

Photo Coordinates	
Lat	42.28847
Long	-83.792074

Direction Photo Taken: 81.2

Description:

Sample collection at G-GWRS-MW-77

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
67	09/28/2022

Photo Coordinates	
Lat	42.28849
Long	-83.79213

Direction Photo Taken: 128.28

Description:

Purging and sample collection at G-GWRS-MW-77

Photo No.	Date:
68	10/04/2022

Photo Coordinates	
Lat	42.282957
Long	-83.781702

Direction Photo Taken: 347

Description:

Purging at G-GWRS-MW-85

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
69	10/03/2022

Photo Coordinates	
Lat	42.282756
Long	-83.793109

Direction Photo Taken: 304

Description:

Purging at G-GWRS-MW-108d

Photo No.	Date:
70	

Photo Coordinates	
Lat	
Long	

Direction Photo Taken:

Description:

Purging and sample collection at G-GWRS-MW-100

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
71	09/27/2022

Photo Coordinates	
Lat	42.283175
Long	-83.814077

Direction Photo Taken: 135.15

Description:

Sample collection at G-GWRW-110

Photo No.	Date:
72	10/03/2022

Photo Coordinates	
Lat	42.281585
Long	-83.80132

Direction Photo Taken: 192

Description:

Sample collection and breakdown at G-GWRW-175

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
73	10/07/2022

Photo Coordinates

Lat	42.285999
Long	-83.825795

Direction Photo Taken: 310

Description:

Purging at G-GWRW-5005

Photo No.	Date:
74	09/27/2022

Photo Coordinates

Lat	42.284255
Long	-83.812341

Direction Photo Taken: 339

Description:

Purging and sample colleciton at G-GWRW-4141

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
75	09/27/2022

Photo Coordinates	
Lat	42.284178
Long	-83.812319

Direction Photo Taken: 0

Description:

Purging at G-GWRW-4141

Photo No.	Date:
76	09/27/2022

Photo Coordinates	
Lat	42.284635
Long	-83.822836

Direction Photo Taken: 336.92

Description:

Purging and sample colleciton at G-GWRW-4742

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 77	Date: 10/02/2022
Photo Coordinates	
Lat	42.276729
Long	-83.795479
Direction Photo Taken: 157	
Description: Post purge low flow at G-GWBK02	

Photo No. 78	Date: 10/02/2022
Photo Coordinates	
Lat	42.276876
Long	-83.795395
Direction Photo Taken: 323	
Description: Purge at G-GWBK02	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
79	10/04/2022

Photo Coordinates	
Lat	42.277149
Long	-83.795554

Direction Photo Taken: 69

Description:

Purge at G-GWBK03

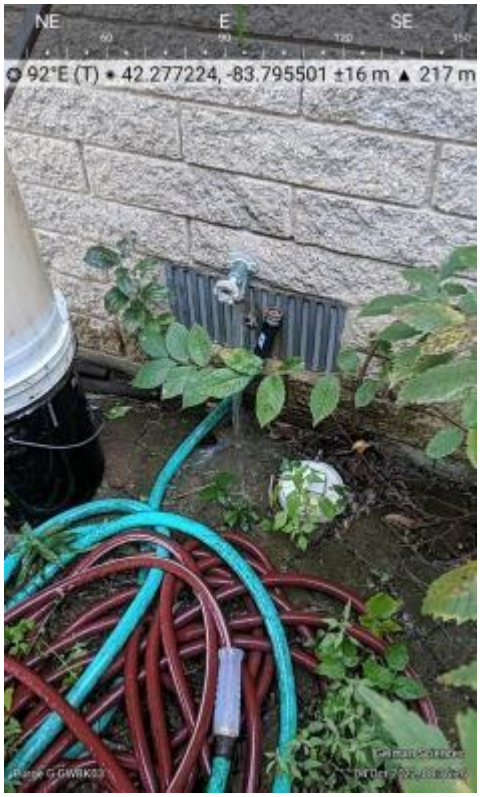


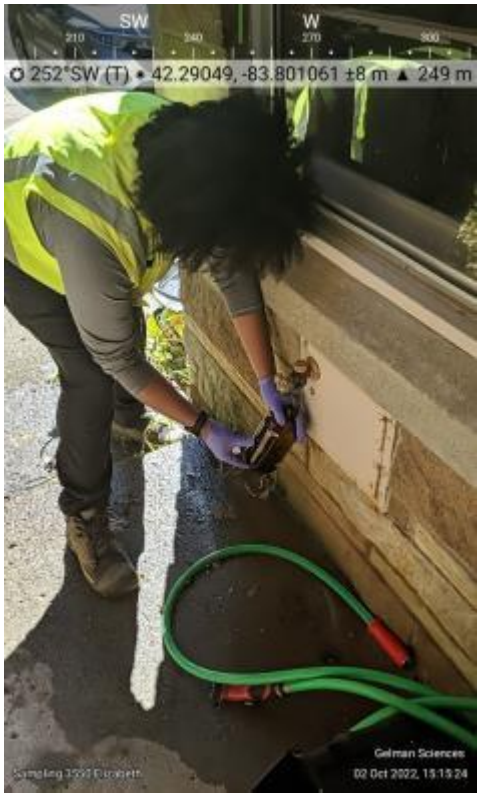
Photo No.	Date:
80	10/02/2022

Photo Coordinates	
Lat	42.290605
Long	-83.800929

Direction Photo Taken: 260

Description:

Sample collection at G-GWRS-3550



PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No.	Date:
81	10/02/2022

Photo Coordinates	
Lat	42.290152
Long	-83.801236

Direction Photo Taken: 335

Description:

Low flow post purge at G-GWRW-3563

Photo No.	Date:
82	10/02/2022

Photo Coordinates	
Lat	42.290048
Long	-83.801371

Direction Photo Taken: 356

Description:

Purge at G-GWRW-3563

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 83	Date: 10/02/2022
Photo Coordinates	
Lat	42.290232
Long	-83.801688
Direction Photo Taken:	167
Description: Sample collection at G-GWRW-3573	

Photo No. 84	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Sample collection at G-GWPW-01	

PHOTOGRAPH LOG

Project Name:	Site Location:	Project No.
Gelman Sciences Inc. SI	Ann Arbor, Washtenaw County, MI	20510.012.0028.0063.00

Photo No. 85	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Sample collection at G-GWPW-01	

Photo No. 86	Date:
Photo Coordinates	
Lat	
Long	
Direction Photo Taken:	
Description: Location of sample collection at G-GWPW-25	

APPENDIX C
SOIL BORING LOGS

LOG OF: **G-SS01**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/26/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/26/2022**
Latitude: **42.277201**	Longitude: **-83.80299805**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **30.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	60	20	10						Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 7 bags of bentonite clay.
2									
3									
4				SC		Brown, SANDY CLAY with gravel, fine to medium sand, medium stiff, moist, no odor, no sheen			
5									
6									
7									
8	5	95	0				0	0.3	
9									
10									
11									
12				SP		Brown, SAND, poorly graded, medium, loose, moist, few small pebbles, no odor, no sheen			
13							11.4	59	
14									
15							7.3	4.4	
16	95	5	0				6.7	27	
17				CH		Brown, CLAY, stiff, moist, no odor, no sheen			
18	5	95	0						
19				SP		Brown, SAND, poorly graded, medium, loose, moist, few small pebbles, no odor, no sheen			
20	5	95	0						

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LOG OF: **G-SS01**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/26/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/26/2022**
Latitude: **42.277201**	Longitude: **-83.80299805**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **30.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21	100	0	0	SP		Brown, SAND, fine, poorly graded, loose, moist, no odor	3.3	18	
22									
23							4.3	12.61	
24									
25							4.6	34.6	
26				CH		Brown & gray, CLAY, hard, moist transitioning to saturated at 30.0'			
27									
28									
29									
30	75	15	10				5	36	
31									
32									
33									Collapsed at 33.0'
34									
35				CH		Brown, CLAY with sand and gravel, stiff, saturated, no odor, no sheen			
36									
37									
38									
39									
40									

LOG OF: **G-SS02**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/26/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/26/2022**
Latitude: **42.27747105**	Longitude: **-83.80338703**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **27.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	60	35	5			GRAVEL FILL, moist			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 6 bags of bentonite clay.
2	60	35	5						
3						Brown, SANDY CLAY, fine, some cobbles, loose, dry, no odor	7.3	14.89	
4									
5									
6							12.1	341	
7				SC					
8							6.9	3351	
9									
10									
11	60	35	5				6.9	6500	
						Black to dark brown, ORGANICS like wood and clay			
	95	5	0						
12	100	0	0	CH		Red, CLAY, stiff			
13						Dark gray, CLAY, medium plasticity, hard, moist	15.5	2239	
14				CH					
15	5	95	0				4.8	4230	
16						Light brown, SAND, medium, poorly graded, few cobble fragments, loose, dry			
17									
18				SP			2.6	710	
19									
20									

LOG OF: **G-SS02**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/26/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/26/2022**
Latitude: **42.27747105**	Longitude: **-83.80338703**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **27.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21							3.1	1644	
22									
23				SP		Light brown, SAND, medium, poorly graded, few cobble fragments, loose, dry	4.3	71.49	
24									Collapsed at 24.0'
25	100	0	0						
26							2.4	50.84	
27									
28				ML		Gray, SILT, no plasticity, dense, saturated, no odor			
29									
30									

LOG OF: **G-SS03**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/26/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/26/2022**
Latitude: **42.2774903**	Longitude: **-83.80304405**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	30	60	10						Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 2 bags of bentonite clay.
2				SC		Tan to dark gray, CLAYEY SAND with gravel, medium, no plasticity, loose, dry, no odor			
3							9.2	267	
4	60	30	10						
5						Brownish gray, SANDY CLAY with gravel, fine to medium, medium plasticity, dry, no odor	1.7	12640	
6									
7									
8							3.7	210	
9									
10				CH			4.7	2291	
11									
12									
13							7.1	65.31	
14									
15							4.7	403	
16	30	65	5						
17									
18				SC		Dark gray, CLAYEY SAND, medium dense, moist, no odor, 2.0" of black staining at 20.0'	1.4	312	
19									
20	10	85	5						

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LOG OF: **G-SS03**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/26/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/26/2022**
Latitude: **42.2774903**	Longitude: **-83.80304405**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21							3.6	2714	
22									
23				SW-SC		Dark gray, SAND, fine to coarse, well graded, trace gravel, loose, saturated, no odor, 2.0" clay lens at 25.0'			
24									
25	5	95	0						
26									
27									
28				SW		Gray brown, SAND, well graded, loose, moist, no odor			
29									
30									

LOG OF: **G-SS04**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27747943**	Longitude: **-83.80217398**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **25.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0	60	30	10	SC		Brown to dark gray, SANDY CLAY, some gravel, low to medium plasticity, medium dense, moist, no odor	4.2 5 11.9 14.5		Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 7 bags of bentonite clay. Backfilled from 40.0'
10	95	5	0	CH		Brownish gray, CLAY, hard, medium plasticity, moist, no odor	8.5 5.8		
17	5	90	5	SW		Gray to brown, SAND, fine to coarse, well graded, loose, moist, no odor	9.6		

LOG OF: **G-SS04**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27747943**	Longitude: **-83.80217398**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **25.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21							7.3		
22				SW		Gray to brown, SAND, fine to coarse, well graded, loose, moist, no odor			
23							6.5		
24	95	5	0						
25							6.3		
26									
27									
28									
29									
30				ML		Grayish brown, SILT, no plasticity, some clay, saturated, no odor			
31									
32									
33									
34									
35	80	20	0						
36									
37									
38				ML		Gray, SANDY SILT, fine to medium, no plasticity, saturated			
39									
40									

LOG OF: **G-SS05**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27461242**	Longitude: **-83.80241548**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **36.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0	80	10	10	CL		Brown, CLAY with sand and gravel, fine to coarse, low plasticity, stiff, dry, no odor	11.7		Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 10 bags of bentonite clay.
1									
2									
3									
4									
5							12.4		
6									
7									
8							1.6		
9									
10							4.6		
11									
12									
13							20.9		
14									
15	5	90	5	SW		Brown, SAND, fine to coarse, well graded, loose, dry, no odor	16.1		
16									
17									
18							12.3		
19									
20									

LOG OF: **G-SS05**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27461242**	Longitude: **-83.80241548**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **36.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21	95	5	0	SW		Brown, SAND, fine to coarse, well graded, loose, dry, no odor	4.7		
22									
23							23.5		
24									
25									
26							25.2		
27									
28				CH		Gray, CLAY, medium to high plasticity, hard, moist, no odor, saturated towards bottom of interval	20.5		
29									
30									
31							24.7		
32									
33							10.1		
34									
35	5	85	10						
36							28.2		
37									
38				SW		Brown, SAND with gravel, fine to coarse, well graded, loose, moist, no odor	13		
39									
40									

ALBQ_TEMP 230106_HP.GPJ ALBQ_TEMP 1/20/23

LOG OF: **G-SS06**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27530313**	Longitude: **-83.80134186**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0	65	25	10	CL		FILL- brown, SANDY CLAY,			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 8 bags of bentonite clay.
1									
2									
3									
4									
5	85	10	5	CH		Brown, CLAY with sand, fine to coarse, trace gravel, medium plasticity, stiff, moist, no odor	1.8		
6									
7									
8									
9									
10							2.8		
11									
12							2.8		
13									
14									
15							4.5		
16									
17	5	90	5	SW		Brown, SAND, well graded, trace gravel and cobbles, loose, saturated, no odor	1.4		
18									
19									
20									

ALBQ_TEMP 230106_HP.GPJ ALBQ_TEMP 1/20/23

LOG OF: **G-SS06**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27530313**	Longitude: **-83.80134186**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21				SW		Brown, SAND, well graded, trace gravel and cobbles, loose, saturated, no odor			
22									
23	95	0	5						
24						Gray to brown, CLAY, medium plasticity, hard, saturated, no odor			
25				CH					
26									
27	100	0	0						
28				ML		Gray, SILT, saturated, no odor			
29	0	95	5						
30				SW		Brownish gray, SAND, well graded, loose, moist, no odor			

LOG OF: **G-SS07**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27444699**	Longitude: **-83.79973522**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **36.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	20	70	10	SC		Brown, CLAYEY SAND with gravel, fine to coarse, loose, dry, no odor			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 7 bags of bentonite clay.
2							0		
3									
4									
5	85	15	5				3.3		
6				CH		Brown, CLAY with sand, fine to coarse, trace gravel, medium plasticity, stiff, dry, no odor	0		
7									
8									
9									
10							2.5		
11									
12									
13							0.7		
14									
15									
16									
17	0	95	5						
18				SW		Brown, SAND, fine to coarse, well graded, loose, dry, no odor	1.6		
19	90	5	5						
20				CH		Gray, CLAY, medium plasticity, stiff, moist, no odor			

ALBQ_TEMP 230106_HP.GPJ ALBQ_TEMP 1/20/23

LOG OF: **G-SS07**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/27/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/27/2022**
Latitude: **42.27444699**	Longitude: **-83.79973522**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **36.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21	5	80	15	CH		Gray, CLAY, medium plasticity, stiff, moist, no odor	1.1		
22				SW		Brown, SAND with gravel, well graded, loose, dry, no odor			
23	90	5	5				6.8		
24						Gray, CLAY, medium plasticity, stiff, moist, no odor			
25									
26							3.4		
27									
28				CH			3.6		
29									
30									
31							2.8		
32	10	90	0						
33						Brown, SAND with clay, fine to medium sand, poorly graded, loose, moist to saturated at 36.0'	3.5		
34									
35									
36				SP-SC					
37									
38									
39									
40									

LOG OF: **G-SS08**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/28/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/28/2022**
Latitude: **42.27599616**	Longitude: **-83.80253312**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **35.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0	20	65	15	SC		Brown, CLAYEY SAND with gravel, fine and coarse, loose, dry, no odor			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 7 bags of bentonite clay.
1									
2									
3									
4									
5	95	0	5	CH		Brown, CLAY, trace fine to coarse gravel, dense, stiff, low plasticity, dry, no odor	5.5		
6									
7									
8							3		
9									
10							3.7		
11									
12									
13							16.2		
14									
15	10	75	15	SW-SC		Brown, SAND with clay and gravel, fine to coarse, well graded, loose, dry, no odor	7.7		
16									
17									
18							7.1		
19									
20									

LOG OF: **G-SS08**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/28/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/28/2022**
Latitude: **42.27599616**	Longitude: **-83.80253312**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **35.00**	Total Depth (ft BGS): **40.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21				SW-SC		Brown, SAND with clay and gravel, fine to coarse, well graded, loose, dry, no odor	19.3		
22									
23							7.2		
24									
25									
26							9.1		
27				CLS		Marbled gray, CLAY with brown fine sand, plastic, moist, sand is dry, medium dense, no odor			
28							6.3		
29									
30	5	95	0						
31				SP		Brown, SAND, fine, poorly graded, medium dense, moist, no odor	7.9		
32	5	85	10	SW		Brown, SAND, well graded, some gravel, loose, moist, no odor	13.6		
33									
34									
35				SP		Marbled gray, CLAY with brown fine sand, plastic, moist, sand is dry, medium dense, no odor	9.3		
36									Collapsed at 36.0'
37	100	0	0						
38				CH		Gray, CLAY with silt, low plasticity, saturated, no odor			
39									
40									

LOG OF: **G-SS09**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/28/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/28/2022**
Latitude: **42.27614441**	Longitude: **-83.79993999**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	25	65	10	SC		Brown, CLAYEY SAND with gravel, fine to coarse, loose, dry, no odor			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with bentonite clay.
2									
3									
4									
5							6.4	44	
6	20	75	5						Collapsed at 6.0'
7				SC		Brown, CLAYEY SAND, fine to coarse, medium dense, dry, no odor			
8	80	15	5				6.8	67	
9									
10				CL		Brownish gray, CLAY with sand, trace cobbles, stiff, plastic, dry, odor	5.3	69	
11	90	0	5						
12									
13							9.4	93	
14									
15				CH		Gray, CLAY, very stiff, moist, no odor	8.2	43	
16									
17									
18	15	70	15				7.8	87	
19				SC		Brown, CLAYEY SAND with gravel, fine to coarse, medium dense, saturated, no odor			
20									

LOG OF: **G-SS09**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/28/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/28/2022**
Latitude: **42.27614441**	Longitude: **-83.79993999**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21							6.5	122	
22									
23				SC		Brown, CLAYEY SAND with gravel, fine to coarse, medium dense, saturated, no odor			
24									
25	85	10	5						
26									
27									
28				CH		Gray, CLAY with sand, trace cobbles, stiff, plastic, saturated, no odor			
29									
30									

LOG OF: **G-SS10**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/28/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/28/2022**
Latitude: **42.27706487**	Longitude: **-83.80206839**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	15	70	15	SC		Brown, CLAYEY SAND with gravel, fine to coarse, loose, dry, no odor			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 6.5 bags of bentonite clay.
2									
3									
4									
5	5	85	10						
6				SW		Brown, SAND, fine to coarse, well graded, loose, dry	1.3	7	
7									
8									
9							2.6	17	
10									
11									
12									
13							5.8	33	
14									
15									
16									
17							1.7	36	
18									
19									
20	90	10	0				2.5	47	

ALBQ_TEMP 230106_HP.GPJ ALBQ_TEMP 1/20/23

LOG OF: **G-SS10**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/28/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/28/2022**
Latitude: **42.27706487**	Longitude: **-83.80206839**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21									
22									
23									
24				CH		Gray, CLAY, stiff, saturated, decrease in sand and transition to grayish brown			
25									
26									
27	100	0	0						
28									
29				ML		Gray, SILT, no plasticity, saturated			
30									

LOG OF: **G-SS11**
(1 of 1)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/29/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/29/2022**
Latitude: **42.27749313**	Longitude: **-83.80206495**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **20.00**	Total Depth (ft BGS): **20.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	10	75	15	SC		Brown, CLAYEY SAND, fine to coarse, loose, dry, no odor			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 4 bags of bentonite clay.
2									
3									
4									
5							3.6	28	
6									
7	25	70	5						
8							4.6	33	
9				SC		Brown, CLAYEY SAND, medium dense, moist, no odor, grayish brown, stiff, clay lens			
10	20	80	0						
11				SC		Dark gray, CLAYEY SAND, fine to coarse, moist, moderate odor, color changes to black at 12.0'	2.4	20	
12	100	0	0						
13							6.1	2253	
14				CH		Brownish gray, CLAY, plastic, hard, moist			
15							6.2	259	
16	5	95	5						
17							6.4	76	
18				SW		Gray to brown, SAND, find to coarse, well graded, trace cobbles, loose, moist, no odor			
19									
20							3.9	104	

ALBQ_TEMP 230106_HP.GPJ ALBQ_TEMP 1/20/23

LOG OF: **G-SS12**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/29/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/29/2022**
Latitude: **42.27749978**	Longitude: **-83.80154074**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **23.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1	5	90	5	SW		Brown, SAND, well graded, loose, dry, no odor			Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 5 bags of bentonite clay.
2									
3									
4									
5							9.4	109	
6									
7	100	0	0						
8				CH		Gray, CLAY, hard, plastic, dry, no odor	16.4	2477	
9									
10							20	2385	
11	5	85	10						
12				SW		Brown, SAND with gravel, fine to coarse, well graded, loose, dry, no odor			
13							7.3	157	
14									
15							6.4	109	
16									
17									
18							10.5	91	
19									
20	100	0	0						

ALBQ_TEMP 230106_HP.GPJ ALBQ_TEMP 1/20/23

LOG OF: **G-SS12**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/29/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/29/2022**
Latitude: **42.27749978**	Longitude: **-83.80154074**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **23.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21							6.4	85	Backfilled from 21.0'
22				CH		Gray, CLAY, hard, plastic, moist, no odor			
23	100	0	0						
24									
25									
26									
27				ML		Gray, SILT, saturated, no odor			
28									
29									
30									

LOG OF: **G-SS13**
(1 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/29/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/29/2022**
Latitude: **42.2772505**	Longitude: **-83.80124789**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **15.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
0									
1									Soil boring abandoned to meet State of Michigan dry hole/boring requirements. Backfilled with 6 bags of bentonite clay.
2									
3				SC		Brown, CLAYEY SAND with gravel, fine to coarse, dry, no odor			
4									
5	90	5	5						
6							31.1		
7				CH		Brown, CLAY, stiff, hard, plastic, dry, no odor			
8	5	90	5				3.4		
9									
10							2.4		
11									
12				SW		Brown, SAND with gravel, fine to coarse, well graded, loose, dry, no odor	4.4		
13									
14									
15	100	0	0				2.2		
16									
17									
18				CH		Gray, CLAY, hard, plastic, no odor, saturated at 15.0'			
19									
20	100	0	0						

LOG OF: **G-SS13**
(2 of 2)

Project Number: **68HE0722F0001**

Client:	**EPA Region 5**	Drilling Company:	**Cascade Environmental**
Project:	**Gelman Sciences Inc.**	Date Started:	**9/29/2022**
Location:	**South Wagner Road, Ann Arbor, Michigan**	Date Completed:	**9/29/2022**
Latitude: **42.2772505**	Longitude: **-83.80124789**	Drilling Method:	**Rotosonic**
Depth to Water (ft BGS): **15.00**	Total Depth (ft BGS): **30.0**	Logged by:	**L. Wills**

DEPTH (ft)	% fines	% sand	% gravel	USCS	Symbol (USCS)	SOIL DESCRIPTION	PID (ppm)	FID (ppm)	REMARKS
20									
21									
22									
23									
24									
25				ML		Gray, SILT, saturated, no plasticity			
26									
27									
28									
29									
30									

APPENDIX D
ANALYTICAL DATA SUMMARY TABLES

Table D-1
Surface Soil Boring Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EPA Residential Soil RSL	EGLE Soil Background	Location Sample ID Depth Date Type	SS05 G-SS05-0002 0-2 feet 9/27/2022 FS	SS07 G-SS07-0002 0-2 feet 9/27/2022 FS
SVOCs										
1,1'-Biphenyl	92-52-4	mg/kg	--	--	--	--	--	--	0.19 U	0.18 U
1,2,4,5-Tetrachlorobenzene	95-94-3	mg/kg	1500	3.4	--	--	--	--	0.19 U	0.18 U
1,4-Dioxane	123-91-1	mg/kg	1700	5600	24	5.3	--	--	0.073 U	0.072 U
1-Methylnaphthalene	90-12-0	mg/kg	--	--	73	18	--	--	0.19 U	0.18 U
2,2'-Oxybis(1-chloropropane)	108-60-1	mg/kg	--	--	47000	3100	--	--	0.36 U	0.35 U
2,3,4,6-Tetrachlorophenol	58-90-2	mg/kg	--	--	--	--	--	--	0.19 U	0.18 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	39	--	82000	6300	--	--	0.19 U	0.18 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	2.4	0.33	210	49	--	--	0.19 U	0.18 U
2,4-Dichlorophenol	120-83-2	mg/kg	1.5	0.33	2500	190	--	--	0.19 U	0.18 U
2,4-Dimethylphenol	105-67-9	mg/kg	7.4	7.6	16000	1300	--	--	0.19 U	0.18 U
2,4-Dinitrophenol	51-28-5	mg/kg	--	--	1600	130	--	--	0.36 UJ	0.35 UJ
2,4-Dinitrotoluene	121-14-2	mg/kg	0.43	--	7.4	1.7	--	--	0.19 U	0.18 U
2,6-Dinitrotoluene	606-20-2	mg/kg	--	--	1.5	0.36	--	--	0.19 U	0.18 U
2-Chloronaphthalene	91-58-7	mg/kg	620	--	60000	4800	--	--	0.19 U	0.18 U
2-Chlorophenol	95-57-8	mg/kg	0.9	0.36	5800	390	--	--	0.19 U	0.18 U
2-Methylnaphthalene	91-57-6	mg/kg	57	4.2	3000	240	--	--	0.19 U	0.18 U
2-Methylphenol	95-48-7	mg/kg	7.4	1	41000	3200	--	--	0.36 U	0.35 U
2-Nitroaniline	88-74-4	mg/kg	--	--	8000	630	--	--	0.19 U	0.18 U
2-Nitrophenol	88-75-5	mg/kg	0.4	--	--	--	--	--	0.19 U	0.18 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	2	2	5.1	1.2	--	--	0.36 U	0.35 U
3-Nitroaniline	99-09-2	mg/kg	--	--	--	--	--	--	0.36 U	0.35 U
4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	0.83	--	66	5	--	--	0.36 U	0.35 U
4-Bromophenyl-phenylether	101-55-3	mg/kg	--	--	--	--	--	--	0.19 U	0.18 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	5.8	0.28	82000	6300	--	--	0.19 U	0.18 U
4-Chloroaniline	106-47-8	mg/kg	--	--	--	--	--	--	0.36 U	0.35 U
4-Chlorophenyl-phenyl ether	7005-72-3	mg/kg	--	--	--	--	--	--	0.19 U	0.18 U
4-Methylphenol	106-44-5	mg/kg	--	--	--	--	--	--	0.36 U	0.35 U
4-Nitroaniline	100-01-6	mg/kg	--	--	110	27	--	--	0.36 U	0.35 U
4-Nitrophenol	100-02-7	mg/kg	--	--	--	--	--	--	0.36 U	0.35 U
Acenaphthene	83-32-9	mg/kg	300	8.7	45000	3600	--	--	0.19 U	0.18 U
Acenaphthylene	208-96-8	mg/kg	5.9	--	--	--	--	--	0.19 U	0.18 U
Acetophenone	98-86-2	mg/kg	30	--	120000	7800	--	--	0.36 U	0.35 U
Anthracene	120-12-7	mg/kg	41	--	230000	18000	--	--	0.19 U	0.18 U
Atrazine	1912-24-9	mg/kg	0.06	0.15	10	2.4	--	--	0.36 U	0.35 U
Benzaldehyde	100-52-7	mg/kg	--	--	820	170	--	--	0.36 U	0.35 U
Benzo(a)anthracene	56-55-3	mg/kg	--	--	21	1.1	--	--	0.19 U	0.18 U
Benzo(a)pyrene	50-32-8	mg/kg	--	--	2.1	0.11	--	--	0.19 U	0.18 U
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	21	1.1	--	--	0.19 U	0.18 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	--	--	--	--	0.19 UJ	0.18 U
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	210	1.1	--	--	0.19 U	0.18 U
Bis(2-chloroethoxy)methane	111-91-1	mg/kg	--	--	2500	190	--	--	0.19 U	0.18 U
Bis(2-chloroethyl)ether	111-44-4	mg/kg	0.1	0.1	1	0.23	--	--	0.36 U	0.35 U
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	--	--	160	39	--	--	0.19 U	0.18 U
Butylbenzylphthalate	85-68-7	mg/kg	2200	120	1200	290	--	--	0.19 U	0.18 U
Caprolactam	105-60-2	mg/kg	120	--	400000	31000	--	--	0.36 U	0.35 U
Carbazole	86-74-8	mg/kg	9.4	1.1	--	--	--	--	0.36 U	0.35 U
Chrysene	218-01-9	mg/kg	--	--	2100	110	--	--	0.19 U	0.18 U
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	2.1	0.11	--	--	0.19 U	0.18 U
Dibenzofuran	132-64-9	mg/kg	--	1.7	1200	78	--	--	0.19 U	0.18 U
Diethylphthalate	84-66-2	mg/kg	110	2.2	660000	51000	--	--	0.19 U	0.18 U
Dimethylphthalate	131-11-3	mg/kg	1500	--	--	--	--	--	0.19 U	0.18 U
Di-n-butylphthalate	84-74-2	mg/kg	960	11	82000	6300	--	--	0.19 U	0.18 U
Di-n-octylphthalate	117-84-0	mg/kg	100000	--	8200	630	--	--	0.36 U	0.35 U
Fluoranthene	206-44-0	mg/kg	730	5.5	30000	2400	--	--	0.19 U	0.18 U
Fluorene	86-73-7	mg/kg	390	5.3	30000	2400	--	--	0.19 U	0.18 U
Hexachlorobenzene	118-74-1	mg/kg	1.8	0.35	0.96	0.21	--	--	0.19 U	0.18 U
Hexachlorobutadiene	87-68-3	mg/kg	26	0.091	--	1.2	--	--	0.19 U	0.18 U
Hexachlorocyclo-pentadiene	77-47-4	mg/kg	320	--	7.5	1.8	--	--	0.36 U	0.35 U
Hexachloroethane	67-72-1	mg/kg	0.43	1.8	8	1.8	--	--	0.19 U	0.18 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	21	1.1	--	--	0.19 U	0.18 U
Isophorone	78-59-1	mg/kg	15	26	2400	570	--	--	0.19 U	0.18 U
Naphthalene	91-20-3	mg/kg	35	0.73	8.6	2	--	--	0.19 U	0.18 U
Nitrobenzene	98-95-3	mg/kg	0.33	3.6	22	5	--	--	0.19 U	0.18 U
N-Nitroso-di-n propylamine	621-64-7	mg/kg	0.33	--	0.33	0.078	--	--	0.19 U	0.18 U
N-Nitrosodiphenylamine	86-30-6	mg/kg	--	--	470	110	--	--	0.19 U	0.18 U
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	--	0.36 U	0.35 U
Phenanthrene	85-01-8	mg/kg	56	2.1	--	--	--	--	0.19 U	0.18 U
Phenol	108-95-2	mg/kg	88	9	250000	19000	--	--	0.36 U	0.35 U
Pyrene	129-00-0	mg/kg	480	--	23000	1800	--	--	0.19 U	0.18 U

Table D-1
Surface Soil Boring Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EPA Residential Soil RSL	EGLE Soil Background	Location Sample ID Depth Date Type	SS05 G-SS05-0002 0-2 feet 9/27/2022 FS	SS07 G-SS07-0002 0-2 feet 9/27/2022 FS
SVOC SIM										
1-Methylnaphthalene	90-12-0	mg/kg	--	--	73	18	--	--	**0.00041 J**	0.0036 U
2-Methylnaphthalene	91-57-6	mg/kg	57	4.2	3000	240	--	--	0.0036 U	0.0036 U
Acenaphthene	83-32-9	mg/kg	300	8.7	45000	3600	--	--	0.0036 U	0.0036 U
Acenaphthylene	208-96-8	mg/kg	5.9	--	--	--	--	--	0.0036 U	0.0036 U
Anthracene	120-12-7	mg/kg	41	--	230000	18000	--	--	**0.0012 J**	0.0036 U
Benzo(a)anthracene	56-55-3	mg/kg	--	--	21	1.1	--	--	**0.01**	**0.0021 J**
Benzo(a)pyrene	50-32-8	mg/kg	--	--	2.1	0.11	--	--	**0.0095**	**0.0026 J**
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	21	1.1	--	--	**0.016 J+**	0.0052 UJ
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	--	--	--	--	**0.0068 J+**	0.0036 UJ
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	210	1.1	--	--	**0.0067 J+**	0.0036 U
Chrysene	218-01-9	mg/kg	--	--	2100	110	--	--	**0.012 J+**	0.0036 U
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	2.1	0.11	--	--	0.0036 U	0.0036 U
Fluoranthene	206-44-0	mg/kg	730	5.5	30000	2400	--	--	**0.02**	**0.0045**
Fluorene	86-73-7	mg/kg	390	5.3	30000	2400	--	--	**0.00049 J**	0.0036 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	21	1.1	--	--	**0.0055 J+**	0.0036 U
Naphthalene	91-20-3	mg/kg	35	0.73	8.6	2	--	--	**0.00059 J**	0.0036 U
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	--	0.0074 U	0.0073 U
Phenanthrene	85-01-8	mg/kg	56	2.1	--	--	--	--	**0.0096**	**0.0014 J**
Pyrene	129-00-0	mg/kg	480	--	23000	1800	--	--	**0.019**	**0.004**
VOCs										
1,1,1-Trichloroethane	71-55-6	mg/kg	4	1.8	36000	8100	--	--	0.0052 U	0.0096 U
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	0.17	1.6	2.7	0.6	--	--	0.0052 U	0.0096 U
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	mg/kg	9000000	1.7	28000	6700	--	--	0.0052 U	0.0096 U
1,1,2-Trichloroethane	79-00-5	mg/kg	0.1	6.6	5	1.1	--	--	0.0052 U	0.0096 U
1,1-Dichloroethane	75-34-3	mg/kg	18	15	16	3.6	--	--	0.0052 U	0.0096 U
1,1-Dichloroethene	75-35-4	mg/kg	0.14	2.6	1000	230	--	--	0.0052 U	0.0096 U
1,2,3-Trichlorobenzene	87-61-6	mg/kg	--	--	930	63	--	--	0.0052 U	0.0096 U
1,2,3-Trichloropropane	96-18-4	mg/kg	--	--	--	--	--	--	0.0052 U	0.0096 U
1,2,4-Trichlorobenzene	120-82-1	mg/kg	2.1	0.57	110	24	--	--	0.0052 U	0.0096 U
1,2,4-Trimethylbenzene	95-63-6	mg/kg	--	--	--	--	--	--	0.0052 U	0.0096 U
1,2-Dibromo-3-chloropropane	96-12-8	mg/kg	0.01	--	0.06	0.0053	--	--	0.0052 U	0.0096 U
1,2-Dibromoethane	106-93-4	mg/kg	0.02	0.11	0.16	0.036	--	--	0.0052 U	0.0096 U
1,2-Dichlorobenzene	95-50-1	mg/kg	140	0.28	9300	1800	--	--	0.0052 UJ	0.0096 U
1,2-Dichloroethane	107-06-2	mg/kg	0.1	7.2	2	0.46	--	--	0.0052 U	0.0096 U
1,2-Dichloropropane	78-87-5	mg/kg	0.1	4.6	11	2.5	--	--	0.0052 U	0.0096 U
1,3,5-Trimethylbenzene	108-67-8	mg/kg	--	--	--	--	--	--	0.0052 U	0.0096 U
1,3-Dichlorobenzene	541-73-1	mg/kg	0.17	0.68	--	--	--	--	0.0052 UJ	0.0096 U
1,4-Dichlorobenzene	106-46-7	mg/kg	1.7	0.36	11	2.6	--	--	0.0052 U	0.0096 U
2-Butanone	78-93-3	mg/kg	260	44	190000	27000	--	--	0.01 U	0.019 U
2-Hexanone	591-78-6	mg/kg	20	--	1300	200	--	--	0.01 U	0.019 U
4-Methyl-2-pentanone	108-10-1	mg/kg	36	--	140000	33000	--	--	0.01 U	0.019 U
Acetone	67-64-1	mg/kg	15	34	670000	61000	--	--	**0.029 J+**	**0.02 J+**
Benzene	71-43-2	mg/kg	0.1	4	5.1	1.2	--	--	0.0052 U	0.0096 U
Bromochloromethane	74-97-5	mg/kg	--	--	630	150	--	--	0.0052 U	0.0096 U
Bromodichloromethane	75-27-4	mg/kg	1.6	--	1.3	0.29	--	--	0.0052 U	0.0096 U
Bromoform	75-25-2	mg/kg	1.6	--	86	19	--	--	0.0052 U	0.0096 U
Bromomethane	74-83-9	mg/kg	0.2	0.1	30	6.8	--	--	0.0052 U	0.0096 U
Carbon disulfide	75-15-0	mg/kg	16	--	3500	770	--	--	0.0052 U	0.0096 U
Carbon tetrachloride	56-23-5	mg/kg	0.1	0.76	2.9	0.65	--	--	0.0052 U	0.0096 U
Chlorobenzene	108-90-7	mg/kg	2	0.5	1300	280	--	--	0.0052 U	0.0096 U
Chloroethane	75-00-3	mg/kg	8.6	22	57000	14000	--	--	0.0052 U	0.0096 U
Chloroform	67-66-3	mg/kg	1.6	7	1.4	0.32	--	--	0.0052 U	0.0096 U
Chloromethane	74-87-3	mg/kg	5.2	--	460	110	--	--	0.0052 U	0.0096 U
cis-1,2-Dichloroethene	156-59-2	mg/kg	1.4	12	2300	160	--	--	0.0052 U	0.0096 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	--	--	--	--	--	--	0.0052 U	0.0096 U
Cyclohexane	110-82-7	mg/kg	--	--	27000	6500	--	--	0.0052 UJ	0.0096 UJ
Dibromochloromethane	124-48-1	mg/kg	1.6	--	39	8.3	--	--	0.0052 U	0.0096 U
Dichlorodifluoromethane	75-71-8	mg/kg	95	--	370	87	--	--	0.0052 U	0.0096 U
Ethylbenzene	100-41-4	mg/kg	1.5	0.36	25	5.8	--	--	0.0052 U	0.0096 U
Isopropylbenzene	98-82-8	mg/kg	91	3.2	9900	1900	--	--	0.0052 U	0.0096 U
m,p-Xylene	179601-23-1	mg/kg	5.6	0.98	--	--	--	--	0.0052 U	0.0096 U
Methyl acetate	79-20-9	mg/kg	--	--	1200000	78000	--	--	0.0052 U	0.0096 U
Methyl tert-butyl ether	1634-04-4	mg/kg	0.8	140	210	47	--	--	0.0052 U	0.0096 U
Methylcyclohexane	108-87-2	mg/kg	--	--	--	--	--	--	0.0052 U	0.0096 U
Methylene chloride	75-09-2	mg/kg	0.1	30	1000	57	--	--	0.0052 U	0.0096 U
o-Xylene	95-47-6	mg/kg	5.6	0.98	2800	650	--	--	0.0052 U	0.0096 U
Styrene	100-42-5	mg/kg	2.7	2.1	35000	6000	--	--	0.0052 U	0.0096 U
Tetrachloroethene	127-18-4	mg/kg	0.1	1.2	100	24	--	--	0.0052 U	0.0096 U
Toluene	108-88-3	mg/kg	16	5.4	47000	4900	--	--	0.0052 U	0.0096 U
trans-1,2-Dichloroethene	156-60-5	mg/kg	2	30	23000	1600	--	--	0.0052 U	0.0096 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	--	--	--	--	--	--	0.0052 U	0.0096 U
Trichloroethene	79-01-6	mg/kg	0.1	4	6	0.94	--	--	0.0052 U	0.0096 U
Trichlorofluoromethane	75-69-4	mg/kg	52	--	350000	23000	--	--	0.0052 U	0.0096 U
Vinyl chloride	75-01-4	mg/kg	0.04	0.26	1.7	0.059	--	--	0.0052 U	0.0096 U

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Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EPA Residential Soil RSL	EGLE Soil Background	Location Sample ID Depth Date Type	SS05 G-SS05-0002 0-2 feet 9/27/2022 FS	SS07 G-SS07-0002 0-2 feet 9/27/2022 FS
Aroclors										
Aroclor-1016	12674-11-2	mg/kg	--	--	27	4.1	--	--	0.036 UJ	0.036 UJ
Aroclor-1221	11104-28-2	mg/kg	--	--	0.83	0.2	--	--	0.036 U	0.036 U
Aroclor-1232	11141-16-5	mg/kg	--	--	0.72	0.17	--	--	0.036 U	0.036 U
Aroclor-1242	53469-21-9	mg/kg	--	--	0.95	0.23	--	--	0.036 UJ	0.036 UJ
Aroclor-1248	12672-29-6	mg/kg	--	--	0.95	0.23	--	--	0.036 UJ	0.036 UJ
Aroclor-1254	11097-69-1	mg/kg	--	--	0.97	0.24	--	--	0.036 UJ	0.036 UJ
Aroclor-1260	11096-82-5	mg/kg	--	--	0.99	0.24	--	--	0.036 UJ	0.036 UJ
Aroclor-1262	37324-23-5	mg/kg	--	--	--	--	--	--	0.036 U	0.036 U
Aroclor-1268	11100-14-4	mg/kg	--	--	--	--	--	--	0.036 U	0.036 U
Metals										
Aluminum	7429-90-5	mg/kg	6900	--	1100000	77000	9294	--	**9900 J+**	**7200 J+**
Antimony	7440-36-0	mg/kg	4.3	94	470	31	NA	--	**0.16 J**	**0.14 J**
Arsenic	7440-38-2	mg/kg	4.6	4.6	3	0.68	14.9	--	**5.9 J-**	**4.3 J-**
Barium	7440-39-3	mg/kg	1300	--	220000	15000	75	--	**45**	**21**
Beryllium	7440-41-7	mg/kg	51	--	2300	160	NA	--	**0.47 J**	0.49 U
Cadmium	7440-43-9	mg/kg	6	--	100	7.1	1.2	--	**0.17 J**	0.49 U
Chromium	7440-47-3	mg/kg	1000000	--	1800000	120000	18	--	**16 J+**	**13 J+**
Cobalt	7440-48-4	mg/kg	0.8	2	350	23	26.8	--	**5.8 J+**	5.4 U
Copper	7440-50-8	mg/kg	5.8	--	47000	3100	32	--	**13 J+**	**10**
Cyanide	57-12-5	mg/kg	4	0.1	150	23	--	--	0.54 R	0.51 R
Iron	7439-89-6	mg/kg	12000	--	820000	55000	20244	--	**16000 J+**	**13000 J+**
Lead	7439-92-1	mg/kg	700	--	800	400	21	--	**9.3 J+**	**4.7 J+**
Manganese	7439-96-5	mg/kg	440	--	26000	1800	440	--	**320 J+**	**340 J+**
Mercury	7439-97-6	mg/kg	1.7	0.05	46	11	0.13	--	**0.028 J**	**0.026 J**
Selenium	7782-49-2	mg/kg	4	0.4	5800	390	1.3	--	**0.48 J-**	**0.47 J-**
Silver	7440-22-4	mg/kg	4.5	0.1	5800	390	1	--	**0.012 J**	0.51 U
Thallium	7440-28-0	mg/kg	2.3	4.2	12	0.78	NA	--	0.5 U	0.51 U
Nickel	7440-02-0	mg/kg	100	--	22000	1500	16.6	--	**18**	**11**
Vanadium	7440-62-2	mg/kg	72	430	5800	390	89	--	**28 J+**	**21**
Zinc	7440-66-6	mg/kg	2400	--	350000	23000	118	--	**50**	**27**

Notes:

Bold	The analyte was detected above the method detection limit.
Bold	The analyte concentration is above the EGLE Soil Background Concentration for Topsoil and exceeds one or more regulatory criteria and/or scre
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
J+	Result is biased high
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWPC	Drinking Water Protection Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
GSIPC	Groundwater Surface Water Interface Protection Criteria
mg/kg	milligram(s) per kilogram
RSL	Regional Screening Level
SIM	Selected Ion Monitoring
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

Table D-2
Subsurface Soil Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EGLE Soil Background	Location	SS01	SS01	SS02	SS02	SS03	SS03	SS04	SS04	SS05	SS05	SS05	SS06	SS06	SS06	SS07	SS07
							Sample ID	G-SS01-1213	G-SS01-2930	G-SS02-0910	G-SS02-2425	G-SS03-0405	G-SS03-1718	G-SS04-1213	G-SS04-1718	G-SS05-1213	G-SS05-3031	G-SS95-3031	G-SS06-0506	G-SS06-1011	G-SS06-1415	G-SS07-2223	G-SS07-3031
							Depth	12-13 feet	29-30 feet	9-10 feet	24-25 feet	4-5 feet	17-18 feet	12-13 feet	17-18 feet	12-13 feet	30-31 feet	30-31 feet	5-6 feet	10-11 feet	14-15 feet	22-23 feet	30-31 feet
							Date	9/26/2022	9/26/2022	9/26/2022	9/26/2022	9/26/2022	9/26/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022
							Type	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FD	FS	FS	FS	FS	FS
SVOCs																							
1,1'-Biphenyl	92-52-4	mg/kg	--	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
1,2,4,5-Tetrachlorobenzene	95-94-3	mg/kg	1500	3.4	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
1,4-Dioxane	123-91-1	mg/kg	1700	5600	24	--	--	0.07 R	0.082 R	0.073 U	0.07 U	0.078 U	0.081 U	0.077 U	0.072 U	0.076 U	0.075 U	0.075 U	0.077 U	0.078 U	0.076 U	0.07 U	0.074 U
1-Methylnaphthalene	90-12-0	mg/kg	--	--	73	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.036 J**	0.2 U	0.2 U	0.18 U	0.19 U	**0.025 J**	**0.029 J**	0.19 U	0.2 U	0.19 U	0.18 U	**0.067 J**
2,2'-Oxybis(1-chloropropane)	108-60-1	mg/kg	--	--	47000	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
2,3,4,6-Tetrachlorophenol	58-90-2	mg/kg	--	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2,4,5-Trichlorophenol	95-95-4	mg/kg	39	--	82000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2,4,6-Trichlorophenol	88-06-2	mg/kg	2.4	0.33	210	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2,4-Dichlorophenol	120-83-2	mg/kg	1.5	0.33	2500	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2,4-Dimethylphenol	105-67-9	mg/kg	7.4	7.6	16000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2,4-Dinitrophenol	51-28-5	mg/kg	--	--	1600	--	--	0.35 R	0.4 R	0.36 UJ	0.35 UJ	0.38 UJ	0.4 UJ	0.38 UJ	0.35 UJ	0.38 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.39 UJ	0.38 UJ	0.34 UJ	0.37 UJ
2,4-Dinitrotoluene	121-14-2	mg/kg	0.43	--	7.4	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2,6-Dinitrotoluene	606-20-2	mg/kg	--	--	1.5	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2-Chloronaphthalene	91-58-7	mg/kg	620	--	60000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2-Chlorophenol	95-57-8	mg/kg	0.9	0.36	5800	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2-Methylnaphthalene	91-57-6	mg/kg	57	4.2	3000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.045 J**	0.2 U	0.2 U	0.18 U	0.19 U	**0.031 J**	**0.036 J**	0.19 U	0.2 U	0.19 U	0.18 U	**0.081 J**
2-Methylphenol	95-48-7	mg/kg	7.4	1	41000	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
2-Nitroaniline	88-74-4	mg/kg	--	--	8000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
2-Nitrophenol	88-75-5	mg/kg	0.4	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
3,3'-Dichlorobenzidine	91-94-1	mg/kg	2	2	5.1	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
3-Nitroaniline	99-09-2	mg/kg	--	--	--	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	0.83		66	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
4-Bromophenyl-phenylether	101-55-3	mg/kg	--	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
4-Chloro-3-methylphenol	59-50-7	mg/kg	5.8	0.28	82000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
4-Chloroaniline	106-47-8	mg/kg	--	--	--	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 UJ	0.4 U	0.38 U	0.35 U	0.38 U	0.37 UJ	0.37 UJ	0.38 U	0.39 U	0.38 U	0.34 U	0.37 UJ
4-Chlorophenyl-phenyl ether	7005-72-3	mg/kg	--	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
4-Methylphenol	106-44-5	mg/kg	--	--	--	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
4-Nitroaniline	100-01-6	mg/kg	--	--	110	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
4-Nitrophenol	100-02-7	mg/kg	--	--	--	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Acenaphthene	83-32-9	mg/kg	300	8.7	45000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Acenaphthylene	208-96-8	mg/kg	5.9	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Acetophenone	98-86-2	mg/kg	30	--	120000	--	--	**0.028 J-**	**0.026 J-**	**0.03 J**	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	**0.042 J**	**0.039 J**	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Anthracene	120-12-7	mg/kg	41	--	230000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Atrazine	1912-24-9	mg/kg	0.06	0.15	10	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Benzaldehyde	100-52-7	mg/kg	--	--	820	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Benzo(a)anthracene	56-55-3	mg/kg	--	--	21	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.085 J**	**0.057 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Benzo(a)pyrene	50-32-8	mg/kg	--	--	2.1	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.094 J+**	**0.053 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	21	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.19 J+**	**0.096 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	--	--	--	0.18 R	0.21 R	0.19 UJ	0.18 UJ	0.2 UJ	0.2 UJ	0.2 UJ	0.18 UJ	0.19 UJ	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	210	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.084 J+**	**0.043 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Bis(2-chloroethoxy)methane	111-91-1	mg/kg	--	--	2500	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Bis(2-chloroethyl)ether	111-44-4	mg/kg	0.1	0.1	1	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	--	--	160	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Butylbenzylphthalate	85-68-7	mg/kg	2200	120	1200	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Caprolactam	105-60-2	mg/kg	120	--	400000	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Carbazole	86-74-8	mg/kg	9.4	1.1	--	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Chrysene	218-01-9	mg/kg	--	--	2100	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.12 J**	**0.059 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	2.1	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 UJ	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Dibenzofuran	132-64-9	mg/kg	--	1.7	1200	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Diethylphthalate	84-66-2	mg/kg	110	2.2	660000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Dimethylphthalate	131-11-3	mg/kg	1500	--	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Di-n-butylphthalate	84-74-2	mg/kg	960	11	82000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Di-n-octylphthalate	117-84-0	mg/kg	100000	--	8200	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 UJ	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Fluoranthene	206-44-0	mg/kg	730	5.5	30000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.15 J**	**0.1 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Fluorene	86-73-7	mg/kg	390	5.3	30000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Hexachlorobenzene	118-74-1	mg/kg	1.8	0.35	0.96	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Hexachlorobutadiene	87-68-3	mg/kg	26	0.091	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Hexachlorocyclo-pentadiene	77-47-4	mg/kg	320	--	7.5	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Hexachloroethane	67-72-1	mg/kg	0.43	1.8	8	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	21	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 UJ	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Isophorone	78-59-1	mg/kg	15	26	2400	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Naphthalene	91-20-3	mg/kg	35	0.73	8.6	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	**0.028 J**
Nitrobenzene	98-95-3	mg/kg	0.33	3.6	22	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
N-Nitroso-di-n propylamine	621-64-7	mg/kg	0.33	--	0.33	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
N-Nitrosodiphenylamine	86-30-6	mg/kg	--	--	470	--	--	0.18 R	0.21 R	0.19 U	0.18 U	0.2 U	0.2 U	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Phenanthrene	85-01-8	mg/kg	56	2.1	--	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.098 J**	**0.053 J**	0.2 U	0.18 U	0.19 U	**0.027 J**	**0.029 J**	0.19 U	0.2 U	0.19 U	0.18 U	**0.05 J**
Phenol	108-95-2	mg/kg	88	9	250000	--	--	0.35 R	0.4 R	0.36 U	0.35 U	0.38 U	0.4 U	0.38 U	0.35 U	0.38 U	0.37 U	0.37 U	0.38 U	0.39 U	0.38 U	0.34 U	0.37 U
Pyrene	129-00-0	mg/kg	480	--	23000	--	--	0.18 R	0.21 R	0.19 U	0.18 U	**0.15 J**	**0.085 J**	0.2 U	0.18 U	0.19 U	0.19 U	0.19 U	0.19 U	0.2 U	0.19 U	0.18 U	0.19 U

Table D-2
Subsurface Soil Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EGLE Soil Background	Location Sample ID Depth Date Type	SS01 G-SS01-1213 12-13 feet 9/26/2022 FS	SS01 G-SS01-2930 29-30 feet 9/26/2022 FS	SS02 G-SS02-0910 9-10 feet 9/26/2022 FS	SS02 G-SS02-2425 24-25 feet 9/26/2022 FS	SS03 G-SS03-0405 4-5 feet 9/26/2022 FS	SS03 G-SS03-1718 17-18 feet 9/26/2022 FS	SS04 G-SS04-1213 12-13 feet 9/27/2022 FS	SS04 G-SS04-1718 17-18 feet 9/27/2022 FS	SS05 G-SS05-1213 12-13 feet 9/27/2022 FS	SS05 G-SS05-3031 30-31 feet 9/27/2022 FS	SS05 G-SS95-3031 30-31 feet 9/27/2022 FD	SS06 G-SS06-0506 5-6 feet 9/27/2022 FS	SS06 G-SS06-1011 10-11 feet 9/27/2022 FS	SS06 G-SS06-1415 14-15 feet 9/27/2022 FS	SS07 G-SS07-2223 22-23 feet 9/27/2022 FS	SS07 G-SS07-3031 30-31 feet 9/27/2022 FS
SVOC SIM																							
1-Methylnaphthalene	90-12-0	mg/kg	--	--	73	--	--	0.0035 R	**0.0013 J-**	**0.0014 J**	**0.00075 J**	**0.06**	**0.00081 J**	**0.00069 J**	**0.00064 J**	0.0035 U	**0.028**	**0.042**	**0.00045 J**	**0.00058 J**	**0.0013 J**	0.0035 U	**0.064**
2-Methylnaphthalene	91-57-6	mg/kg	57	4.2	3000	--	--	0.0035 R	**0.0013 J-**	0.0038 U	**0.00093 J**	**0.082**	**0.0012 J**	0.0038 U	0.0035 U	0.0038 U	**0.039**	**0.056**	0.0038 U	0.0039 U	**0.0012 J**	0.0035 U	**0.089**
Acenaphthene	83-32-9	mg/kg	300	8.7	45000	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.012 J**	**0.0013 J**	0.0038 U	0.0035 U	0.0038 U	**0.0035 J**	**0.0049**	0.0038 U	0.0039 U	0.0038 U	0.0035 U	**0.0055**
Acenaphthylene	208-96-8	mg/kg	5.9	--	--	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.012 J**	**0.0017 J**	0.0038 U	0.0035 U	0.0038 U	0.0037 U	**0.0017 J**	0.0038 U	0.0039 U	0.0038 U	0.0035 U	**0.0026 J**
Anthracene	120-12-7	mg/kg	41	--	230000	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.034**	**0.0048**	0.0038 U	0.0035 U	0.0038 U	0.0037 U	0.0037 U	0.0038 U	0.0039 U	0.0038 U	0.0035 U	0.0037 U
Benzo(a)anthracene	56-55-3	mg/kg	--	--	21	--	--	0.0035 R	0.0041 R	**0.0016 J**	0.0035 U	**0.19**	**0.039**	0.0038 U	0.0035 U	0.0038 U	**0.0019 J**	**0.0025 J**	0.0038 U	0.0039 U	0.0038 U	0.0035 U	**0.0026 J**
Benzo(a)pyrene	50-32-8	mg/kg	--	--	2.1	--	--	0.0035 R	0.0041 R	**0.0014 J**	0.0035 U	**0.19**	**0.039**	0.0038 U	0.0035 U	0.0038 U	**0.0023 J**	**0.0035 J**	0.0038 U	0.0039 U	0.0038 U	0.0035 U	**0.0036 J**
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	21	--	--	0.0035 R	0.0041 R	0.0047 UJ	0.0035 U	**0.27 J+**	**0.061 J+**	0.0038 U	0.0035 U	0.0043 U	0.004 U	0.0056 UJ	0.0038 U	0.0045 UJ	0.0058 UJ	0.0035 U	0.006 UJ
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	--	--	--	0.0035 R	**0.0063 J+**	**0.0067 J+**	0.0035 UJ	**0.095 J+**	**0.02 J+**	0.0038 UJ	0.0035 UJ	0.0038 UJ	**0.0065 J+**	**0.0095 J+**	0.0038 UJ	0.0039 UJ	0.0038 UJ	0.0035 UJ	**0.0079 J+**
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	210	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.085 J+**	**0.021 J+**	0.0038 U	0.0035 U	0.0038 U	0.0037 U	0.0037 U	0.0038 U	0.0039 U	0.0038 U	0.0035 U	0.0037 U
Chrysene	218-01-9	mg/kg	--	--	2100	--	--	0.0035 R	0.0041 R	0.0036 U	**0.0048 J+**	**0.19 J+**	**0.041 J+**	0.0038 U	0.0035 U	**0.01 J+**	**0.0058 J+**	**0.0091 J+**	**0.0043 J+**	**0.0058 J+**	**0.011 J+**	0.0035 U	**0.01 J+**
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	2.1	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.023**	**0.0045**	0.0038 U	0.0035 U	0.0038 U	0.0037 U	0.0037 U	0.0038 U	0.0039 U	0.0038 U	0.0035 U	0.0037 U
Fluoranthene	206-44-0	mg/kg	730	5.5	30000	--	--	0.0035 R	0.0041 R	**0.0015 J**	0.0035 U	**0.29**	**0.067**	0.0038 U	0.0035 U	**0.0016 J**	**0.0025 J**	**0.0036 J**	0.0038 U	**0.0016 J**	**0.0024 J**	0.0035 U	**0.0036 J**
Fluorene	86-73-7	mg/kg	390	5.3	30000	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.014 J**	**0.0018 J**	0.0038 U	0.0035 U	0.0038 U	**0.0022 J**	**0.003 J**	0.0038 U	0.0039 U	0.0038 U	0.0035 U	**0.0032 J**
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	21	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	**0.072 J+**	**0.019 J+**	0.0038 U	0.0035 U	0.0038 U	0.0037 U	0.0037 U	0.0038 U	0.0039 U	0.0038 U	0.0035 U	0.0037 U
Naphthalene	91-20-3	mg/kg	35	0.73	8.6	--	--	0.0035 R	0.0041 R	0.0036 U	0.0035 U	0.039 U	0.0081 U	0.0038 U	0.0038 U	0.0038 U	**0.012 J+**	**0.019 J+**	0.0035 U	0.0035 U	0.0038 U	0.0035 U	**0.036 J+**
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	0.007 R	0.0082 R	0.0073 U	0.0071 U	0.039 U	0.0081 U	0.0077 U	0.0072 U	0.0077 U	0.0075 U	0.0076 U	0.0077 U	0.0078 U	0.0077 U	0.007 U	0.0075 U
Phenanthrene	85-01-8	mg/kg	56	2.1	--	--	--	0.0035 R	**0.0015 J-**	**0.0028 J**	**0.0031 J**	**0.2**	**0.033**	**0.0013 J**	**0.0014 J**	**0.0048**	**0.027**	**0.037**	**0.001 J**	**0.0024 J**	**0.02**	0.0035 U	**0.048**
Pyrene	129-00-0	mg/kg	480	--	23000	--	--	0.0035 R	**0.0073 J-**	**0.0028 J**	**0.0013 J**	**0.29**	**0.057**	0.0038 U	0.0035 U	0.0038 U	**0.0078**	**0.0092**	0.0038 U	**0.002 J**	**0.0039**	0.0035 U	**0.012**
VOCs																							
1,1,1-Trichloroethane	71-55-6	mg/kg	4	1.8	36000	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	0.17	1.6	2.7	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	mg/kg	9000000	1.7	28000	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,1,2-Trichloroethane	79-00-5	mg/kg	0.1	6.6	5	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,1-Dichloroethane	75-34-3	mg/kg	18	15	16	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,1-Dichloroethene	75-35-4	mg/kg	0.14	2.6	1000	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,2,3-Trichlorobenzene	87-61-6	mg/kg	--	--	930	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 U	0.006 U	0.0044 UJ
1,2,3-Trichloropropane	96-18-4	mg/kg	--	--	--	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 UJ	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,2,4-Trichlorobenzene	120-82-1	mg/kg	2.1	0.57	110	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 U	0.006 U	0.0044 UJ
1,2,4-Trimethylbenzene	95-63-6	mg/kg	--	--	--	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,2-Dibromo-3-chloropropane	96-12-8	mg/kg	0.01	--	0.06	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,2-Dibromoethane	106-93-4	mg/kg	0.02	0.11	0.16	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,2-Dichlorobenzene	95-50-1	mg/kg	140	0.28	9300	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 U	0.006 U	0.0044 UJ
1,2-Dichloroethane	107-06-2	mg/kg	0.1	7.2	2	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,2-Dichloropropane	78-87-5	mg/kg	0.1	4.6	11	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 UJ	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,3,5-Trimethylbenzene	108-67-8	mg/kg	--	--	--	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
1,3-Dichlorobenzene	541-73-1	mg/kg	0.17	0.68	--	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 U	0.006 U	0.0044 UJ
1,4-Dichlorobenzene	106-46-7	mg/kg	1.7	0.36	11	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 U	0.006 U	0.0044 UJ
2-Butanone	78-93-3	mg/kg	260	44	190000	--	--	0.01 U	0.011 U	0.009 U	0.014 U	**0.015**	**0.034**	0.012 U	**0.019**	0.014 U	0.011 U	0.0088 U	0.01 U	0.0095 U	0.011 U	0.012 U	0.0088 U
2-Hexanone	591-78-6	mg/kg	20	--	1300	--	--	0.01 U	0.011 U	0.009 U	0.011 U	0.012 U	0.011 U	0.012 U	0.015 U	0.014 U	0.011 U	0.0088 U	0.01 U	0.0095 U	0.011 U	0.012 U	0.0088 U
4-Methyl-2-pentanone	108-10-1	mg/kg	36	--	140000	--	--	0.01 U	0.011 U	0.009 U	0.011 U	0.012 U	0.011 U	0.012 U	0.015 U	0.014 U	0.011 U	0.0088 U	0.01 U	0.0095 U	0.011 U	0.012 U	0.0088 U
Acetone	67-64-1	mg/kg	15	34	670000	--	--	**0.028 J+**	**0.041 J+**	**0.026 J+**	**0.022 J+**	**0.062 J+**	**0.12 J+**	**0.036 J+**	**0.066 J+**	**0.04 J+**	**0.019**	**0.03 J+**	**0.022 J+**	**0.017**	0.011 U	**0.018 J+**	**0.019**
Benzene	71-43-2	mg/kg	0.1	4	5.1	--	--	0.005 UJ	0.0053 U	0.0045 U	0.0053 U	0.0058 U	**0.00058 J**	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Bromochloromethane	74-97-5	mg/kg	--	--	630	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Bromodichloromethane	75-27-4	mg/kg	1.6	--	1.3	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 UJ	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Bromoform	75-25-2	mg/kg	1.6	--	86	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Bromomethane	74-83-9	mg/kg	0.2	0.1	30	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Carbon disulfide	75-15-0	mg/kg	16	--	3500	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	**0.0008 J**
Carbon tetrachloride	56-23-5	mg/kg	0.1	0.76	2.9	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Chlorobenzene	108-90-7	mg/kg	2	0.5	1300	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 U	0.006 U	0.0044 UJ
Chloroethane	75-00-3	mg/kg	8.6	22	57000	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Chloroform	67-66-3	mg/kg	1.6	7	1.4	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Chloromethane	74-87-3	mg/kg	5.2	--	460	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
cis-1,2-Dichloroethene	156-59-2	mg/kg	1.4	12	2300	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	--	--	--	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Cyclohexane	110-82-7	mg/kg	--	--	27000	--	--	0.005 UJ	0.0053 UJ	0.0045 UJ	0.0053 UJ	0.0058 UJ	0.0057 UJ	0.0061 UJ	0.0076 UJ	0.0071 UJ	0.0053 UJ	0.0044 UJ	0.0052 UJ	0.0047 UJ	0.0054 UJ	0.006 UJ	0.0044 UJ
Dibromochloromethane	124-48-1	mg/kg	1.6	--	39	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Dichlorodifluoromethane	75-71-8	mg/kg	95	--	370	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Ethylbenzene	100-41-4	mg/kg	1.5	0.36	25	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Isopropylbenzene	98-82-8	mg/kg	91	3.2	9900	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
m,p-Xylene	179601-23-1	mg/kg	5.6	0.98	--	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Methyl acetate	79-20-9	mg/kg	--	--	1200000	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Methyl tert-butyl ether	1634-04-4	mg/kg	0.8	140	210	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Methylcyclohexane	108-87-2	mg/kg	--	--	--	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 UJ	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Methylene chloride	75-09-2	mg/kg	0.1	30	1000	--	--	0.005 U	**0.006 J-**	**0.0045**	0.0053 U	**0.005 J**	0.0057 U	0.0061 U	0.0076 U	0.0071 U	**0.0049 J**	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	**0.0051**
o-Xylene	95-47-6	mg/kg	5.6	0.98	2800	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Styrene	100-42-5	mg/kg	2.7	2.1	35000	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Tetrachloroethene	127-18-4	mg/kg	0.1	1.2	100	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Toluene	108-88-3	mg/kg	16	5.4	47000	--	--	0.005 UJ	0.0053 U	0.0045 U	0.0053 U	**0.0014 J**	**0.00099 J**	**0.0018 J**	**0.0012 J**	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
trans-1,2-Dichloroethene	156-60-5	mg/kg	2	30	23000	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	--	--	--	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Trichloroethene	79-01-6	mg/kg	0.1	4	6	--	--	0.005 UJ	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Trichlorofluoromethane	75-69-4	mg/kg	52	--	350000	--	--	0.005 U	0.0053 UJ	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 UJ	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U
Vinyl chloride	75-01-4	mg/kg	0.04	0.26	1.7	--	--	0.005 U	0.0053 U	0.0045 U	0.0053 U	0.0058 U	0.0057 U	0.0061 U	0.0076 U	0.0071 U	0.0053 U	0.0044 U	0.0052 U	0.0047 U	0.0054 U	0.006 U	0.0044 U

Table D-2
Subsurface Soil Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EGLE Soil Background	Location	SS01	SS01	SS02	SS02	SS03	SS03	SS04	SS04	SS05	SS05	SS05	SS06	SS06	SS06	SS07	SS07
							Sample ID	G-SS01-1213	G-SS01-2930	G-SS02-0910	G-SS02-2425	G-SS03-0405	G-SS03-1718	G-SS04-1213	G-SS04-1718	G-SS05-1213	G-SS05-3031	G-SS95-3031	G-SS06-0506	G-SS06-1011	G-SS06-1415	G-SS07-2223	G-SS07-3031
							Depth	12-13 feet	29-30 feet	9-10 feet	24-25 feet	4-5 feet	17-18 feet	12-13 feet	17-18 feet	12-13 feet	30-31 feet	30-31 feet	5-6 feet	10-11 feet	14-15 feet	22-23 feet	30-31 feet
							Date	9/26/2022	9/26/2022	9/26/2022	9/26/2022	9/26/2022	9/26/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022	9/27/2022
							Type	FS	FS	FS	FS	FS	FS	FS	FS	FS	FS	FD	FS	FS	FS	FS	FS
Aroclors																							
Aroclor-1016	12674-11-2	mg/kg	--	--	27	--	--	0.035 U	0.041 U	0.036 U	0.035 U	0.039 U	0.04 U	0.038 U	0.035 U	0.038 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.039 UJ	0.038 UJ	0.035 UJ	0.037 UJ
Aroclor-1221	11104-28-2	mg/kg	--	--	0.83	--	--	0.035 U	0.041 U	0.036 U	0.035 U	0.039 U	0.04 U	0.038 U	0.035 U	0.038 U	0.037 U	0.037 U	0.038 U	0.039 U	0.038 U	0.035 U	0.037 U
Aroclor-1232	11141-16-5	mg/kg	--	--	0.72	--	--	0.035 U	0.041 U	0.036 U	0.035 U	0.039 U	0.04 U	0.038 U	0.035 U	0.038 U	0.037 U	0.037 U	0.038 U	0.039 U	0.038 U	0.035 U	0.037 U
Aroclor-1242	53469-21-9	mg/kg	--	--	0.95	--	--	0.035 UJ	0.041 UJ	0.036 UJ	0.035 UJ	0.039 UJ	0.04 UJ	0.038 UJ	0.035 UJ	0.038 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.039 UJ	0.038 UJ	0.035 UJ	0.037 UJ
Aroclor-1248	12672-29-6	mg/kg	--	--	0.95	--	--	0.035 UJ	0.041 UJ	0.036 UJ	0.035 UJ	0.039 UJ	0.04 UJ	0.038 UJ	0.035 UJ	0.038 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.039 UJ	0.038 UJ	0.035 UJ	0.037 UJ
Aroclor-1254	11097-69-1	mg/kg	--	--	0.97	--	--	0.035 UJ	0.041 UJ	0.036 UJ	0.035 UJ	0.039 UJ	0.04 UJ	0.038 UJ	0.035 UJ	0.038 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.039 UJ	0.038 UJ	0.035 UJ	0.037 UJ
Aroclor-1260	11096-82-5	mg/kg	--	--	0.99	--	--	0.035 U	0.041 U	0.036 U	0.035 U	0.039 U	0.04 U	0.038 U	0.035 U	0.038 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.039 UJ	0.038 UJ	0.035 UJ	0.037 UJ
Aroclor-1262	37324-23-5	mg/kg	--	--	--	--	--	0.035 U	0.041 U	0.036 U	0.035 U	0.039 U	0.04 U	0.038 U	0.035 U	0.038 U	0.037 U	0.037 U	0.038 U	0.039 U	0.038 U	0.035 U	0.037 U
Aroclor-1268	11100-14-4	mg/kg	--	--	--	--	--	0.035 U	0.041 U	0.036 U	0.035 U	0.039 U	0.04 U	0.038 U	0.035 U	0.038 U	0.037 U	0.037 U	0.038 U	0.039 U	0.038 U	0.035 U	0.037 U
Metals																							
Aluminum	7429-90-5	mg/kg	6900	--	1100000	Varies	--	**3100 J+**	**3500 J+**	**5500 J+**	**1900**	**6200 J+**	**8500 J+**	**16000 J+**	**6200 J+**	**18000 J+**	**8000 J+**	**7700 J+**	**12000 J+**	**13000 J+**	**13000 J+**	**4200 J+**	**13000 J+**
Antimony	7440-36-0	mg/kg	4.3	94	470	NA	--	**0.27 J**	**0.33 J**	**0.22 J**	0.71 U	**0.21 J**	**0.15 J**	**0.18 J**	**0.42 J**	**0.25 J**	**0.29 J**	**0.27 J**	**0.32 J**	**0.42 J**	**0.24 J**	**0.16 J**	**0.24 J**
Arsenic	7440-38-2	mg/kg	4.6	4.6	3	22.8	--	**6.6 J-**	**5 J-**	**5.8 J-**	**6.8**	**4.6 J-**	**4.9 J-**	**8.3 J-**	**6.1 J-**	**7.9 J-**	**7.1 J-**	**6.8 J-**	**12 J-**	**15 J-**	**6.5 J-**	**5.1 J-**	**6.7 J-**
Barium	7440-39-3	mg/kg	1300	--	220000	75	--	**12 J**	**16 J**	**33**	**28**	**33**	**52**	**96**	**23**	**120**	**43**	**41**	**63**	**59**	**56**	**14 J**	**62**
Beryllium	7440-41-7	mg/kg	51	--	2300	NA	--	**0.19 J**	**0.22 J**	0.54 U	**0.23 J**	0.56 U	**0.44 J**	**0.38 J**	**0.07 J**	**0.38 J**	**0.45 J**	**0.43 J**	**0.63**	**0.37 J**	**0.13 J**	0.48 U	**0.22 J**
Cadmium	7440-43-9	mg/kg	6	--	100	1.2	--	**0.15 J**	**0.32 J**	**0.51 J**	**0.25 J**	**0.099 J**	**0.28 J**	**0.46 J**	**0.34 J**	0.55 U	**0.28 J**	**0.25 J**	**0.46 J**	**1**	**0.23 J**	**0.22 J**	**0.45 J**
Chromium	7440-47-3	mg/kg	1000000	--	1800000	18	--	**7.3 J+**	**7.3 J+**	**9.9 J+**	**5**	**28 J+**	**13 J+**	**23 J+**	**12 J+**	**22 J+**	**14 J+**	**14 J+**	**19 J+**	**20 J+**	**18 J+**	**7.8 J+**	**18 J+**
Cobalt	7440-48-4	mg/kg	0.8	2	350	17.9	--	**3.6 J+**	**4.3 J**	5.4 U	**5.2**	5.4 U	**4.2 J+**	**8.8 J**	5.4 U	**9.4 J**	**6.2 J+**	**5.9 J+**	**9.4 J+**	**9.8 J**	**7 J**	5.4 U	**6.2 J**
Copper	7440-50-8	mg/kg	5.8	--	47000	32	--	**11 J+**	**14 J+**	**14**	**12**	**13**	**12 J+**	**19**	**20**	**21**	**17 J+**	**16 J+**	**20 J+**	**22**	**17**	**10**	**20**
Cyanide	57-12-5	mg/kg	4	0.1	150	--	--	0.52 R	0.58 R	0.54 R	0.5 R	0.53 R	0.59 R	0.53 R	0.49 R	0.55 R	0.54 R	**0.27 J-**	0.57 R	0.57 R	0.55 R	0.48 R	0.53 R
Iron	7439-89-6	mg/kg	12000	--	820000	20244	--	**8300 J+**	**11000 J+**	**12000 J+**	**8900**	**12000 J+**	**21000 J+**	**24000 J+**	**14000 J+**	**26000 J+**	**17000 J+**	**16000 J+**	**19000 J+**	**20000 J+**	**21000 J+**	**12000 J+**	**20000 J+**
Lead	7439-92-1	mg/kg	700	--	800	21	--	**4.5 J+**	**5.5 J+**	**4.7 J+**	**7 J**	**4.7 J+**	**9.4 J+**	**5.5 J+**	**5.5 J+**	**4.2 J+**	**8.2 J+**	**7.1 J+**	**9.1 J+**	**7.4 J+**	**4.2 J+**	**1.8 J+**	**4.7 J+**
Manganese	7439-96-5	mg/kg	440	--	26000	873	--	**250 J+**	**220 J+**	**310 J+**	**720**	**350 J+**	**1200 J+**	**350 J+**	**390 J+**	**590 J+**	**350 J+**	**320 J+**	**360 J+**	**390 J+**	**410 J+**	**290 J+**	**390 J+**
Mercury	7439-97-6	mg/kg	1.7	0.05	46	0.13	--	**0.011 J**	**0.031 J**	**0.016 J**	**0.021 J**	**0.013 J**	**0.023 J**	**0.019 J**	**0.016 J**	**0.022 J**	**0.018 J**	**0.017 J**	**0.021 J**	**0.024 J**	**0.02 J**	**0.0097 J**	**0.017 J**
Nickel	7440-02-0	mg/kg	100	--	22000	20	--	**10**	**12**	**14**	**21**	**11**	**16**	**25**	**16**	**23**	**19**	**19**	**25**	**30**	**20**	**9.6**	**23**
Selenium	7782-49-2	mg/kg	4	0.4	5800	1.2	--	2.5 UJ	**0.94 J-**	**0.31 J-**	1.8 U	**0.51 J-**	2.9 UJ	**0.77 J-**	**0.38 J-**	**0.81 J-**	**0.51 J-**	**0.95 J-**	**0.91 J-**	**1.2 J-**	**0.9 J-**	2.4 UJ	**0.61 J-**
Silver	7440-22-4	mg/kg	4.5	0.1	5800	NA	--	0.5 U	**0.028 J**	**0.013 J**	0.35 U	**0.019 J**	**0.015 J**	0.5 U	0.51 U	**0.011 J**	**0.044 J**	**0.037 J**	0.57 U	**0.013 J**	**0.016 J**	0.49 U	**0.038 J**
Thallium	7440-28-0	mg/kg	2.3	4.2	12	16.6	--	0.5 U	0.6 U	0.52 U	**0.35**	0.54 U	0.57 U	0.5 U	0.51 U	0.55 U	0.53 U	0.55 U	0.57 U	0.58 U	0.51 U	0.49 U	0.53 U
Vanadium	7440-62-2	mg/kg	72	430	5800	89	--	**13 J+**	**14 J+**	**18**	**7.8**	**20**	**28 J+**	**43**	**21**	**41**	**23 J+**	**22 J+**	**35 J+**	**37**	**32**	**13**	**29**
Zinc	7440-66-6	mg/kg	2400	--	350000	118	--	**38**	**46**	**49**	**35**	**32**	**57**	**57**	**74**	**48**	**59**	**51**	**67**	**68**	**52**	**33**	**53**

Notes:

Bold	The analyte was detected above the method detection limit.
Bold	The analyte concentration is above the applicable EGLE Soil Background Concentration and exceeds one or more regulatory criteria and/or screening benchmark.
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
J+	Result is biased high
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWPC	Drinking Water Protection Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
GSIPC	Groundwater Surface Water Interface Protection Criteria
mg/kg	milligram(s) per kilogram
RSL	Regional Screening Level
SIM	Selected Ion Monitoring
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

Table D-2
Subsurface Soil Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EGLE Soil Background	Location	SS08	SS08	SS08	SS08	SS09	SS09	SS09	SS10	SS10	SS10	SS11	SS11	SS11	SS12	SS12	SS12	SS13	SS13
							Sample ID	G-SS08-0506	G-SS08-1920	G-SS08-3233	G-SS98-3233	G-SS09-0708	G-SS09-1213	G-SS09-1819	G-SS10-0607	G-SS10-1314	G-SS10-1819	G-SS11-1213	G-SS11-1819	G-SS91-1819	G-SS12-0708	G-SS12-1415	G-SS12-1920	G-SS13-0506	G-SS13-1011
							Depth	5-5 feet	19-20 feet	32-33 feet	32-33 feet	7-8 feet	12-13 feet	18-19 feet	6-7 feet	14-14 feet	18-19 feet	12-13 feet	18-19 feet	18-19 feet	7-8 feet	14-15 feet	19-20 feet	5-6 feet	10-11 feet
							Date	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022
							Type	FS	FS	FS	FD	FS	FS	FS	FS	FS	FS	FS	FS	FD	FS	FS	FS	FS	FS
SVOCs																									
1,1'-Biphenyl	92-52-4	mg/kg	--	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
1,2,4,5-Tetrachlorobenzene	95-94-3	mg/kg	1500	3.4	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
1,4-Dioxane	123-91-1	mg/kg	1700	5600	24	--	--	0.075 UJ	0.07 UJ	0.073 UJ	0.072 UJ	0.075 UJ	0.075 UJ	0.076 UJ	0.069 UJ	0.65 UJ	0.069 UJ	0.075 UJ	0.071 UJ	0.071 UJ	0.077 UJ	0.071 UJ	0.071 UJ	0.077 UJ	0.072 UJ
1-Methylnaphthalene	90-12-0	mg/kg	--	--	73	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,2'-Oxybis(1-chloropropane)	108-60-1	mg/kg	--	--	47000	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
2,3,4,6-Tetrachlorophenol	58-90-2	mg/kg	--	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,4,5-Trichlorophenol	95-95-4	mg/kg	39	--	82000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,4,6-Trichlorophenol	88-06-2	mg/kg	2.4	0.33	210	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,4-Dichlorophenol	120-83-2	mg/kg	1.5	0.33	2500	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,4-Dimethylphenol	105-67-9	mg/kg	7.4	7.6	16000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,4-Dinitrophenol	51-28-5	mg/kg	--	--	1600	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
2,4-Dinitrotoluene	121-14-2	mg/kg	0.43	--	7.4	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2,6-Dinitrotoluene	606-20-2	mg/kg	--	--	1.5	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2-Chloronaphthalene	91-58-7	mg/kg	620	--	60000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2-Chlorophenol	95-57-8	mg/kg	0.9	0.36	5800	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2-Methylnaphthalene	91-57-6	mg/kg	57	4.2	3000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2-Methylphenol	95-48-7	mg/kg	7.4	1	41000	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
2-Nitroaniline	88-74-4	mg/kg	--	--	8000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
2-Nitrophenol	88-75-5	mg/kg	0.4	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
3,3'-Dichlorobenzidine	91-94-1	mg/kg	2	2	5.1	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
3-Nitroaniline	99-09-2	mg/kg	--	--	--	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	0.83		66	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
4-Bromophenyl-phenylether	101-55-3	mg/kg	--	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
4-Chloro-3-methylphenol	59-50-7	mg/kg	5.8	0.28	82000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
4-Chloroaniline	106-47-8	mg/kg	--	--	--	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
4-Chlorophenyl-phenyl ether	7005-72-3	mg/kg	--	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
4-Methylphenol	106-44-5	mg/kg	--	--	--	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
4-Nitroaniline	100-01-6	mg/kg	--	--	110	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
4-Nitrophenol	100-02-7	mg/kg	--	--	--	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Acenaphthene	83-32-9	mg/kg	300	8.7	45000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Acenaphthylene	208-96-8	mg/kg	5.9	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Acetophenone	98-86-2	mg/kg	30	--	120000	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Anthracene	120-12-7	mg/kg	41	--	230000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Atrazine	1912-24-9	mg/kg	0.06	0.15	10	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Benzaldehyde	100-52-7	mg/kg	--	--	820	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Benzo(a)anthracene	56-55-3	mg/kg	--	--	21	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Benzo(a)pyrene	50-32-8	mg/kg	--	--	2.1	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.24 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	21	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.44 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.27 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	210	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.14 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Bis(2-chloroethoxy)methane	111-91-1	mg/kg	--	--	2500	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Bis(2-chloroethyl)ether	111-44-4	mg/kg	0.1	0.1	1	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	--	--	160	--	--	**0.16 J**	**0.2 J**	0.18 UJ	**0.21 J**	0.19 UJ	**0.16 J**	0.19 UJ	**0.12 J**	1.6 UJ	**0.14 J**	**0.27 J**	**0.18 J**	0.18 UJ	**0.14 J**	**0.16 J**	0.18 UJ	0.2 UJ	0.18 UJ
Butylbenzylphthalate	85-68-7	mg/kg	2200	120	1200	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Caprolactam	105-60-2	mg/kg	120	--	400000	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Carbazole	86-74-8	mg/kg	9.4	1.1	--	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Chrysene	218-01-9	mg/kg	--	--	2100	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.2 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	2.1	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Dibenzofuran	132-64-9	mg/kg	--	1.7	1200	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Diethylphthalate	84-66-2	mg/kg	110	2.2	660000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Dimethylphthalate	131-11-3	mg/kg	1500	--	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Di-n-butylphthalate	84-74-2	mg/kg	960	11	82000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Di-n-octylphthalate	117-84-0	mg/kg	100000	--	8200	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Fluoranthene	206-44-0	mg/kg	730	5.5	30000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.29 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Fluorene	86-73-7	mg/kg	390	5.3	30000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Hexachlorobenzene	118-74-1	mg/kg	1.8	0.35	0.96	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Hexachlorobutadiene	87-68-3	mg/kg	26	0.091	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Hexachlorocyclo-pentadiene	77-47-4	mg/kg	320	--	7.5	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Hexachloroethane	67-72-1	mg/kg	0.43	1.8	8	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	21	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.23 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Isophorone	78-59-1	mg/kg	15	26	2400	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Naphthalene	91-20-3	mg/kg	35	0.73	8.6	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Nitrobenzene	98-95-3	mg/kg	0.33	3.6	22	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
N-Nitroso-di-n propylamine	621-64-7	mg/kg	0.33	--	0.33	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
N-Nitrosodiphenylamine	86-30-6	mg/kg	--	--	470	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Phenanthrene	85-01-8	mg/kg	56	2.1	--	--	--	0.19 UJ	0.18 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ
Phenol	108-95-2	mg/kg	88	9	250000	--	--	0.37 UJ	0.34 UJ	0.36 UJ	0.35 UJ	0.37 UJ	0.37 UJ	0.38 UJ	0.34 UJ	3.2 UJ	0.34 UJ	0.37 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.35 UJ	0.35 UJ	0.38 UJ	0.36 UJ
Pyrene	129-00-0	mg/kg	480	--	23000	--	--	0.19 UJ	0.18 UJ	0.18 UJ	**0.26 J**	0.19 UJ	0.19 UJ	0.19 UJ	0.17 UJ	1.6 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.19 UJ	0.18 UJ	0.18 UJ	0.2 UJ	0.18 UJ

Table D-2
Subsurface Soil Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EGLE Soil Background	Location	SS08	SS08	SS08	SS08	SS09	SS09	SS09	SS10	SS10	SS10	SS11	SS11	SS11	SS12	SS12	SS12	SS13	SS13
							Sample ID	G-SS08-0506	G-SS08-1920	G-SS08-3233	G-SS98-3233	G-SS09-0708	G-SS09-1213	G-SS09-1819	G-SS10-0607	G-SS10-1314	G-SS10-1819	G-SS11-1213	G-SS11-1819	G-SS91-1819	G-SS12-0708	G-SS12-1415	G-SS12-1920	G-SS13-0506	G-SS13-1011
							Depth	5-5 feet	19-20 feet	32-33 feet	32-33 feet	7-8 feet	12-13 feet	18-19 feet	6-7 feet	14-14 feet	18-19 feet	12-13 feet	18-19 feet	18-19 feet	7-8 feet	14-15 feet	19-20 feet	5-6 feet	10-11 feet
							Date	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022
							Type	FS	FS	FS	FD	FS	FS	FS	FS	FS	FS	FS	FS	FD	FS	FS	FS	FS	FS
SVOC SIM																									
1-Methylnaphthalene	90-12-0	mg/kg	--	--	73	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	**0.0045 J**	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
2-Methylnaphthalene	91-57-6	mg/kg	57	4.2	3000	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	**0.0053 J**	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Acenaphthene	83-32-9	mg/kg	300	8.7	45000	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	**0.0023 J**	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Acenaphthylene	208-96-8	mg/kg	5.9	--	--	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Anthracene	120-12-7	mg/kg	41	--	230000	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Benzo(a)anthracene	56-55-3	mg/kg	--	--	21	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Benzo(a)pyrene	50-32-8	mg/kg	--	--	2.1	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	21	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	--	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	210	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Chrysene	218-01-9	mg/kg	--	--	2100	--	--	0.0037 UJ	**0.0019 J**	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	2.1	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Fluoranthene	206-44-0	mg/kg	730	5.5	30000	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Fluorene	86-73-7	mg/kg	390	5.3	30000	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	**0.006 J**	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	21	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Naphthalene	91-20-3	mg/kg	35	0.73	8.6	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	0.0075 UJ	0.007 UJ	0.0072 UJ	0.007 UJ	0.0074 UJ	0.0074 UJ	0.0076 UJ	0.0069 UJ	0.0069 UJ	0.007 UJ	0.0076 UJ	0.0071 UJ	0.0072 UJ	0.0077 UJ	0.0071 UJ	0.0071 UJ	0.0077 UJ	0.0072 UJ
Phenanthrene	85-01-8	mg/kg	56	2.1	--	--	--	0.0037 UJ	**0.0017 J**	0.0035 UJ	0.0035 UJ	0.0036 UJ	**0.002 J**	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	**0.014 J**	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
Pyrene	129-00-0	mg/kg	480	--	23000	--	--	0.0037 UJ	0.0034 UJ	0.0035 UJ	0.0035 UJ	0.0036 UJ	0.0036 UJ	0.0038 UJ	0.0034 UJ	0.0034 UJ	0.0034 UJ	0.0037 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0035 UJ	0.0035 UJ	0.0038 UJ	0.0036 UJ
VOCs																									
1,1,1-Trichloroethane	71-55-6	mg/kg	4	1.8	36000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	**0.0031 J**	0.0043 U	**0.0023 J**	0.0047 U
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	0.17	1.6	2.7	--	--	0.004 UJ	0.0043 UJ	0.0056 UJ	0.0048 UJ	0.0044 UJ	0.0043 UJ	0.0047 UJ	0.0049 UJ	0.0041 UJ	0.0055 UJ	0.0055 UJ	0.0044 UJ	0.0047 UJ	0.0045 UJ	0.0043 UJ	0.0043 UJ	0.0043 UJ	0.0047 UJ
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	mg/kg	9000000	1.7	28000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,1,2-Trichloroethane	79-00-5	mg/kg	0.1	6.6	5	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	**0.0029 J**	0.0047 U
1,1-Dichloroethane	75-34-3	mg/kg	18	15	16	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,1-Dichloroethene	75-35-4	mg/kg	0.14	2.6	1000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2,3-Trichlorobenzene	87-61-6	mg/kg	--	--	930	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2,3-Trichloropropane	96-18-4	mg/kg	--	--	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2,4-Trichlorobenzene	120-82-1	mg/kg	2.1	0.57	110	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2,4-Trimethylbenzene	95-63-6	mg/kg	--	--	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2-Dibromo-3-chloropropane	96-12-8	mg/kg	0.01	--	0.06	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2-Dibromoethane	106-93-4	mg/kg	0.02	0.11	0.16	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2-Dichlorobenzene	95-50-1	mg/kg	140	0.28	9300	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2-Dichloroethane	107-06-2	mg/kg	0.1	7.2	2	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,2-Dichloropropane	78-87-5	mg/kg	0.1	4.6	11	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,3,5-Trimethylbenzene	108-67-8	mg/kg	--	--	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,3-Dichlorobenzene	541-73-1	mg/kg	0.17	0.68	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
1,4-Dichlorobenzene	106-46-7	mg/kg	1.7	0.36	11	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
2-Butanone	78-93-3	mg/kg	260	44	190000	--	--	0.0081 U	0.0087 U	0.011 U	0.0096 U	0.0088 U	0.0087 U	0.0094 U	0.0097 U	0.0082 U	0.011 U	0.011 U	0.0088 U	0.0093 U	0.009 U	0.0086 U	0.0087 U	0.0087 U	0.0094 U
2-Hexanone	591-78-6	mg/kg	20	--	1300	--	--	0.0081 U	0.0087 U	0.011 U	0.0096 U	0.0088 U	0.0087 U	0.0094 U	0.0097 U	0.0082 U	0.011 U	0.011 U	0.0088 U	0.0093 U	0.009 U	0.0086 U	0.0087 U	0.0087 U	**0.0063 J**
4-Methyl-2-pentanone	108-10-1	mg/kg	36	--	140000	--	--	0.0081 U	0.0087 U	0.011 U	0.0096 U	0.0088 U	0.0087 U	0.0094 U	0.0097 U	0.0082 U	0.011 U	0.011 U	0.0088 U	0.0093 U	0.009 U	0.0086 U	0.0087 U	0.0087 U	0.0094 U
Acetone	67-64-1	mg/kg	15	34	670000	--	--	**0.0087**	0.0087 U	0.011 U	0.0096 U	0.0088 U	**0.015**	0.0094 U	0.0097 U	0.0082 U	0.011 U	**0.023 J+**	0.0088 U	0.0093 U	**0.028 J+**	0.0086 U	0.0087 U	0.0087 U	0.0094 U
Benzene	71-43-2	mg/kg	0.1	4	5.1	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	**0.015**	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Bromochloromethane	74-97-5	mg/kg	--	--	630	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Bromodichloromethane	75-27-4	mg/kg	1.6	--	1.3	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Bromoform	75-25-2	mg/kg	1.6	--	86	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Bromomethane	74-83-9	mg/kg	0.2	0.1	30	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Carbon disulfide	75-15-0	mg/kg	16	--	3500	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Carbon tetrachloride	56-23-5	mg/kg	0.1	0.76	2.9	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Chlorobenzene	108-90-7	mg/kg	2	0.5	1300	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Chloroethane	75-00-3	mg/kg	8.6	22	57000	--	--	0.004 UJ	0.0043 UJ	0.0056 UJ	0.0048 UJ	0.0044 UJ	0.0043 UJ	0.0047 UJ	0.0049 UJ	0.0041 UJ	0.0055 UJ	0.0055 UJ	0.0044 UJ	0.0047 UJ	0.0045 UJ	0.0043 UJ	0.0043 UJ	0.0043 UJ	0.0047 UJ
Chloroform	67-66-3	mg/kg	1.6	7	1.4	--	--	0.004 U	0.0051 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	**0.0028 J**	0.0047 U	**0.0042 J**	**0.0044**	**0.0034 J**	**0.0035 J**	**0.0035 J**
Chloromethane	74-87-3	mg/kg	5.2	--	460	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
cis-1,2-Dichloroethene	156-59-2	mg/kg	1.4	12	2300	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
cis-1,3-Dichloropropene	10061-01-5	mg/kg	--	--	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Cyclohexane	110-82-7	mg/kg	--	--	27000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Dibromochloromethane	124-48-1	mg/kg	1.6	--	39	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Dichlorodifluoromethane	75-71-8	mg/kg	95	--	370	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Ethylbenzene	100-41-4	mg/kg	1.5	0.36	25	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Isopropylbenzene	98-82-8	mg/kg	91	3.2	9900	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
m,p-Xylene	179601-23-1	mg/kg	5.6	0.98	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Methyl acetate	79-20-9	mg/kg	--	--	1200000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Methyl tert-butyl ether	1634-04-4	mg/kg	0.8	140	210	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Methylcyclohexane	108-87-2	mg/kg	--	--	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Methylene chloride	75-09-2	mg/kg	0.1	30	1000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	**0.0041 J**	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	**0.0046**	0.0043 U	0.0043 U	0.0043 U	0.0047 U
o-Xylene	95-47-6	mg/kg	5.6	0.98	2800	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Styrene	100-42-5	mg/kg	2.7	2.1	35000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Tetrachloroethene	127-18-4	mg/kg	0.1	1.2	100	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	**0.0052**	0.0043 U	0.0043 U	0.0047 U
Toluene	108-88-3	mg/kg	16	5.4	47000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
trans-1,2-Dichloroethene	156-60-5	mg/kg	2	30	23000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
trans-1,3-Dichloropropene	10061-02-6	mg/kg	--	--	--	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Trichloroethene	79-01-6	mg/kg	0.1	4	6	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Trichlorofluoromethane	75-69-4	mg/kg	52	--	350000	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 UJ	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U
Vinyl chloride	75-01-4	mg/kg	0.04	0.26	1.7	--	--	0.004 U	0.0043 U	0.0056 U	0.0048 U	0.0044 U	0.0043 U	0.0047 U	0.0049 U	0.0041 U	0.0055 U	0.0055 U	0.0044 U	0.0047 U	0.0045 U	0.0043 U	0.0043 U	0.0043 U	0.0047 U

Table D-2
Subsurface Soil Analytical Results - Source
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Soil DWPC	EGLE Residential Soil GSIPC	EPA Industrial Soil RSL	EGLE Soil Background	Location	SS08	SS08	SS08	SS08	SS09	SS09	SS09	SS10	SS10	SS10	SS11	SS11	SS11	SS12	SS12	SS12	SS13	SS13
							Sample ID	G-SS08-0506	G-SS08-1920	G-SS08-3233	G-SS98-3233	G-SS09-0708	G-SS09-1213	G-SS09-1819	G-SS10-0607	G-SS10-1314	G-SS10-1819	G-SS11-1213	G-SS11-1819	G-SS91-1819	G-SS12-0708	G-SS12-1415	G-SS12-1920	G-SS13-0506	G-SS13-1011
							Depth	5-5 feet	19-20 feet	32-33 feet	32-33 feet	7-8 feet	12-13 feet	18-19 feet	6-7 feet	14-14 feet	18-19 feet	12-13 feet	18-19 feet	18-19 feet	7-8 feet	14-15 feet	19-20 feet	5-6 feet	10-11 feet
							Date	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/28/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022	9/29/2022
							Type	FS	FS	FS	FD	FS	FS	FS	FS	FS	FS	FS	FS	FD	FS	FS	FS	FS	FS
Aroclors																									
Aroclor-1016	12674-11-2	mg/kg	--	--	27	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1221	11104-28-2	mg/kg	--	--	0.83	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1232	11141-16-5	mg/kg	--	--	0.72	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1242	53469-21-9	mg/kg	--	--	0.95	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1248	12672-29-6	mg/kg	--	--	0.95	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1254	11097-69-1	mg/kg	--	--	0.97	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1260	11096-82-5	mg/kg	--	--	0.99	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1262	37324-23-5	mg/kg	--	--	--	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Aroclor-1268	11100-14-4	mg/kg	--	--	--	--	--	0.037 UJ	0.034 UJ	0.036 UJ	0.035 UJ	0.037 UJ	0.037 UJ	0.038 UJ	0.034 UJ	0.034 UJ	0.034 UJ	0.037 UJ	0.035 UJ	0.036 UJ	0.038 UJ	0.035 UJ	0.035 UJ	0.038 UJ	0.036 UJ
Metals																									
Aluminum	7429-90-5	mg/kg	6900	--	1100000	Varies	--	**7200**	**4300 J+**	**2200**	**1800**	**2500**	**5700**	**5000 J+**	**1400**	**2500**	**3100 J+**	**2800**	**2200**	**2300**	**13000 J+**	**5100 J+**	**2400**	**6900**	**2900**
Antimony	7440-36-0	mg/kg	4.3	94	470	NA	--	0.95 U	**0.28 J**	0.75 U	0.95 U	1 U	1.1 U	**0.25 J**	0.96 U	0.92 U	**0.24 J**	1.2 U	0.76 U	0.84 U	**0.32 J**	**0.27 J**	0.77 U	0.78 U	0.87 U
Arsenic	7440-38-2	mg/kg	4.6	4.6	3	22.8	--	**8.8**	**8.7 J-**	**4.7**	**5.9**	**7.1**	**7.8**	**5.4 J-**	**5.1**	**5.1**	**4.9 J-**	**7.5**	**6.1**	**6.1**	**8 J-**	**6.6 J-**	**5.3**	**6.5**	**5.9**
Barium	7440-39-3	mg/kg	1300	--	220000	75	--	**53**	**21**	**12 J**	**11 J**	**13 J**	**43**	**30**	**7.9 J**	**15 J**	**13 J**	**14 J**	**9.3 J**	**9.1 J**	**80**	**20 J**	**12 J**	**33**	**12 J**
Beryllium	7440-41-7	mg/kg	51	--	2300	NA	--	**0.58**	**0.26 J**	**0.22 J**	**0.2 J**	**0.25 J**	**0.5**	0.54 U	**0.14 J**	**0.24 J**	**0.2 J**	**0.25 J**	**0.22 J**	**0.22 J**	**0.69**	0.54 U	**0.27 J**	**0.58**	**0.29 J**
Cadmium	7440-43-9	mg/kg	6	--	100	1.2	--	**0.09 J**	**0.18 J**	**0.16 J**	**0.11 J**	**0.23 J**	**0.04 J**	**0.42 J**	0.36 U	**0.11 J**	**0.13 J**	**0.034 J**	**0.11 J**	**0.11 J**	**0.29 J**	**0.43 J**	**0.23 J**	**0.24 J**	**0.12 J**
Chromium	7440-47-3	mg/kg	1000000	--	1800000	18	--	**13**	**11 J+**	**5.2**	**6**	**5.2**	**11**	**10 J+**	**4.8**	**9.1**	**7 J+**	**11**	**6.6**	**5.6**	**21 J+**	**11 J+**	**5.9**	**14**	**7.9**
Cobalt	7440-48-4	mg/kg	0.8	2	350	17.9	--	**10**	**4.4 J+**	**3.4**	**3.8**	**4.6**	**11**	5.4 U	**4.5**	**3.6**	**3.5 J**	**5.6**	**4.1**	**4.3**	**9.5 J+**	5.4 U	**3.8**	**11**	**4.1**
Copper	7440-50-8	mg/kg	5.8	--	47000	32	--	**15**	**16 J+**	**11**	**9.7**	**13**	**14**	**14**	**8.9 J+**	**13 J+**	**11 J+**	**14 J+**	**13 J+**	**11 J+**	**18 J+**	**15**	**16 J+**	**22 J+**	**14 J+**
Cyanide	57-12-5	mg/kg	4	0.1	150	--	--	0.56 R	0.49 R	0.52 R	0.52 R	0.52 R	**0.28 J-**	0.55 R	0.51 R	0.5 R	0.48 R	0.61 R	0.5 R	0.52 R	0.49 R	0.53 UJ	**3.2 J-**	0.57 R	0.52 R
Iron	7439-89-6	mg/kg	12000	--	820000	20244	--	**16000**	**12000 J+**	**8300**	**7300**	**8600**	**15000**	**10000 J+**	**6100**	**9500**	**8600 J+**	**6900**	**8100**	**7700**	**19000 J+**	**10000 J+**	**10000**	**17000**	**10000**
Lead	7439-92-1	mg/kg	700	--	800	21	--	**7.3 J**	**6.8 J+**	**4.5 J**	**4.6 J**	**5.4 J**	**7 J**	**3.9 J+**	**3.1 J**	**12 J**	**4.9 J+**	**8.5 J**	**4.8 J**	**4.5 J**	**9 J+**	**4.5 J+**	**8.2 J**	**11 J**	**6.3 J**
Manganese	7439-96-5	mg/kg	440	--	26000	873	--	**320**	**320 J+**	**240**	**190**	**270**	**270**	**300 J+**	**220**	**350**	**310 J+**	**220**	**240**	**250**	**320 J+**	**290 J+**	**230**	**340**	**280**
Mercury	7439-97-6	mg/kg	1.7	0.05	46	0.13	--	**0.03 J**	**0.014 J**	**0.014 J**	**0.017 J**	**0.016 J**	**0.025 J**	**0.015 J**	0.095 U	**0.014 J**	**0.011 J**	**0.26**	**0.018 J**	**0.011 J**	**0.022 J**	**0.014 J**	**0.014 J**	**0.043 J**	**0.019 J**
Nickel	7440-02-0	mg/kg	100	--	22000	20	--	**29**	**13**	**12**	**11**	**14**	**23**	**14**	**7.8**	**12**	**9.1**	**9.8**	**13**	**14**	**25**	**14**	**19**	**33**	**17**
Selenium	7782-49-2	mg/kg	4	0.4	5800	1.2	--	2.4 U	**0.63 J-**	1.9 U	2.4 U	2.6 U	2.7 U	**0.61 J-**	2.4 U	2.3 U	**0.45 J-**	3 U	1.9 U	2.1 U	**1.3 J-**	2.7 UJ	1.9 U	2 U	2.2 U
Silver	7440-22-4	mg/kg	4.5	0.1	5800	NA	--	0.48 U	**0.014 J**	0.38 U	0.47 U	0.51 U	0.53 U	**0.0097 J**	0.48 U	0.46 U	**0.013 J**	0.59 U	0.38 U	0.42 U	0.56 U	**0.012 J**	0.39 U	0.39 U	0.44 U
Thallium	7440-28-0	mg/kg	2.3	4.2	12	16.6	--	**0.32 J**	0.49 U	**0.2 J**	**0.19 J**	**0.2 J**	**0.26 J**	0.54 U	**0.14 J**	**0.14 J**	0.47 U	**0.15 J**	**0.21 J**	**0.24 J**	0.56 U	0.54 U	**0.13 J**	**0.37 J**	**0.18 J**
Vanadium	7440-62-2	mg/kg	72	430	5800	89	--	**18**	**18 J+**	**8**	**7**	**8.7**	**17**	**18**	**5.4**	**8.5**	**12 J+**	**8.1**	**11**	**8.5**	**39 J+**	**20**	**9.3**	**18**	**11**
Zinc	7440-66-6	mg/kg	2400	--	350000	118	--	**46**	**48**	**33**	**30**	**44**	**38**	**43**	**23**	**34**	**39**	**34**	**38**	**37**	**62**	**43**	**50**	**58**	**43**

Notes:

Bold	The analyte was detected above the method detection limit.
Bold	The analyte concentration is above the applicable EGLE Soil Background Concentration and exceeds one or more regulatory criteria and/or screening benchmark.
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
J+	Result is biased high
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWPC	Drinking Water Protection Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
GSIPC	Groundwater Surface Water Interface Protection Criteria
mg/kg	milligram(s) per kilogram
RSL	Regional Screening Level
SIM	Selected Ion Monitoring
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

Table D3
Groundwater Analytical Results - Residential
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Date Type	[redacted] G-GWBK02 10/2/2022 FS	[redacted] G-GWBK03 10/4/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FD	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS
SVOCs													
1,1'-Biphenyl	92-52-4	ug/L	--	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	1300	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
1,4-Dioxane	123-91-1	ug/L	7.2	--	0.46	--	1.9 R	2 U	**0.97 J-**	2 R	**0.97 J-**	**1.3 J-**	2 R
1-Methylnaphthalene	90-12-0	ug/L	--	--	1.1	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,2'-Oxybis(1-chloropropane)	108-60-1	ug/L	--	--	710	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,4,5-Trichlorophenol	95-95-4	ug/L	730	--	1200	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,4,6-Trichlorophenol	88-06-2	ug/L	120	--	4.1	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,4-Dichlorophenol	120-83-2	ug/L	73	--	46	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,4-Dimethylphenol	105-67-9	ug/L	370	--	360	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,4-Dinitrophenol	51-28-5	ug/L	--	--	39	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
2,4-Dinitrotoluene	121-14-2	ug/L	7.7	--	0.24	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	0.049	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2-Chloronaphthalene	91-58-7	ug/L	1800	--	750	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2-Chlorophenol	95-57-8	ug/L	45	--	91	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2-Methylnaphthalene	91-57-6	ug/L	260	--	36	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2-Methylphenol	95-48-7	ug/L	370	--	930	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
2-Nitroaniline	88-74-4	ug/L	--	--	190	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
2-Nitrophenol	88-75-5	ug/L	20	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
3,3'-Dichlorobenzidine	91-94-1	ug/L	1.1	--	0.13	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
3-Nitroaniline	99-09-2	ug/L	--	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	20	--	1.5	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
4-Bromophenyl phenyl ether	101-55-3	ug/L	--	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
4-Chloro-3-methylphenol	59-50-7	ug/L	150	--	1400	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
4-Chloroaniline	106-47-8	ug/L	--	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
4-Chlorophenyl phenyl ether	7005-72-3	ug/L	--	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
4-Methylphenol	106-44-5	ug/L	--	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
4-Nitroaniline	100-01-6	ug/L	--	--	3.8	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
4-Nitrophenol	100-02-7	ug/L	--	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Acenaphthene	83-32-9	ug/L	1300	--	530	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Acenaphthylene	208-96-8	ug/L	52	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Acetophenone	98-86-2	ug/L	1500	--	1900	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Anthracene	120-12-7	ug/L	43	--	1800	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Atrazine	1912-24-9	ug/L	3	3	0.3	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Benzaldehyde	100-52-7	ug/L	--	--	19	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	0.03	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Benzo(a)pyrene	50-32-8	ug/L	5	--	0.025	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	0.25	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	2.5	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	--	59	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Bis(2-chloroethyl)ether	111-44-4	ug/L	2	--	0.014	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Bis(2-ethylhexyl) phthalate	117-81-7	ug/L	6	6	5.6	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Butyl benzyl phthalate	85-68-7	ug/L	1200	--	16	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Caprolactam	105-60-2	ug/L	5800	--	9900	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Carbazole	86-74-8	ug/L	85	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Chrysene	218-01-9	ug/L	1.6	--	25	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Dibenz(a,h)anthracene	53-70-3	ug/L	2	--	0.025	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Dibenzofuran	132-64-9	ug/L	--	--	7.9	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Diethyl phthalate	84-66-2	ug/L	5500	--	15000	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Dimethyl phthalate	131-11-3	ug/L	73000	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Di-n-butyl phthalate	84-74-2	ug/L	880	--	900	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Di-n-octyl phthalate	117-84-0	ug/L	130	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Fluoranthene	206-44-0	ug/L	210	--	800	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Fluorene	86-73-7	ug/L	880	--	290	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Hexachlorobenzene	118-74-1	ug/L	1	1	0.0098	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Hexachlorobutadiene	87-68-3	ug/L	15	--	0.14	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Hexachlorocyclopentadiene	77-47-4	ug/L	50	50	0.041	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Hexachloroethane	67-72-1	ug/L	7.3	--	0.33	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	0.25	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Isophorone	78-59-1	ug/L	770	--	78	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Naphthalene	91-20-3	ug/L	520	--	0.12	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Nitrobenzene	98-95-3	ug/L	3.4	--	0.14	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
N-Nitrosodi-n-propylamine	621-64-7	ug/L	5	--	0.011	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
N-Nitrosodiphenylamine	86-30-6	ug/L	270	--	12	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Phenanthrene	85-01-8	ug/L	52	--	--	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R
Phenol	108-95-2	ug/L	4400	--	5800	--	9.6 R	9.8 U	10 R	9.8 R	9.8 R	9.6 R	10 R
Pyrene	129-00-0	ug/L	140	--	120	--	4.8 R	4.9 U	5 R	4.9 R	4.9 R	4.8 R	5 R

Table D3
Groundwater Analytical Results - Residential
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Date Type	[redacted] G-GWBK02 10/2/2022 FS	[redacted] G-GWBK03 10/4/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FD	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS
SVOC SIM													
1,4-Dioxane	123-91-1	ug/L	7.2	--	0.46	--	0.19 R	0.2 R	**0.83 J-**	**1.2 J-**	**0.92 J-**	**1.3 J-**	**0.17 J-**
1-Methylnaphthalene	90-12-0	ug/L	--	--	1.1	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
2-Methylnaphthalene	91-57-6	ug/L	260	--	36	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Acenaphthene	83-32-9	ug/L	1300	--	530	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Acenaphthylene	208-96-8	ug/L	52	--	--	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Anthracene	120-12-7	ug/L	43	--	1800	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	0.03	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Benzo(a)pyrene	50-32-8	ug/L	5	--	0.025	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	0.25	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	2.5	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Chrysene	218-01-9	ug/L	1.6	--	25	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Dibenz(a,h)anthracene	53-70-3	ug/L	2	--	0.025	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Fluoranthene	206-44-0	ug/L	210	--	800	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Fluorene	86-73-7	ug/L	880	--	290	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	0.25	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Naphthalene	91-20-3	ug/L	520	--	0.12	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	0.19 R	0.2 UJ	0.2 R	0.2 R	0.2 R	0.19 R	0.2 R
Phenanthrene	85-01-8	ug/L	52	--	--	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Pyrene	129-00-0	ug/L	140	--	120	--	0.096 R	0.098 U	0.1 R	0.098 R	0.098 R	0.096 R	0.1 R
Trace VOCs													
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	0.2	0.2	0.00033	--	NA	NA	NA	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/L	0.05	0.05	0.0075	--	NA	NA	NA	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/L	5	5	0.49	--	NA	NA	NA	NA	NA	NA	NA
Vinyl chloride	75-01-4	ug/L	2	2	0.019	--	NA	NA	NA	NA	NA	NA	NA

Table D3
Groundwater Analytical Results - Residential
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Date Type	[redacted] G-GWBK02 10/2/2022 FS	[redacted] G-GWBK03 10/4/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FD	[redacted] G-GWRW[redacted] 10/2/2022 FS	[redacted] G-GWRW[redacted] 10/2/2022 FS
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/L	200	200	8000	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	8.5		0.076	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,1,2-Trichloroethane	79-00-5	ug/L	5	5	0.28	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,1-Dichloroethane	75-34-3	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,1-Dichloroethene	75-35-4	ug/L	7	7	280	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2,3-Trichlorobenzene	87-61-6	ug/L	--	--	7	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	70	1.2	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2,4-Trimethylbenzene	95-63-6	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2-Dibromo-3-Chloropropane	96-12-8	ug/L	0.2	0.2	0.00033	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2-Dibromoethane	106-93-4	ug/L	0.05	0.05	0.0075	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2-Dichlorobenzene	95-50-1	ug/L	600	600	300	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2-Dichloroethane	107-06-2	ug/L	5	5	0.17	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,2-Dichloropropane	78-87-5	ug/L	5	5	0.85	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,3,5-Trimethylbenzene	108-67-8	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,3-Dichlorobenzene	541-73-1	ug/L	6.6	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
1,4-Dichlorobenzene	106-46-7	ug/L	75	75	0.48	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
2-Butanone	78-93-3	ug/L	--	--	--	--	5 R	**3.7 J**	5 R	5 R	5 R	5 R	5 R
2-Hexanone	591-78-6	ug/L	1000	--	38	--	5 R	**0.65 J**	5 R	5 R	5 R	5 R	5 R
4-Methyl-2-pentanone	108-10-1	ug/L	1800	--	6300	--	5 R	5 R	5 R	5 R	5 R	5 R	5 R
Acetone	67-64-1	ug/L	--	--	--	--	5 R	5.8 R	5 R	5 R	5 R	5 R	5 R
Benzene	71-43-2	ug/L	5	5	0.46	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Bromochloromethane	74-97-5	ug/L	--	--		--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Bromodichloromethane	75-27-4	ug/L	80	80	0.13	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Bromoform	75-25-2	ug/L	80	80	3.3	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Bromomethane	74-83-9	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Carbon disulfide	75-15-0	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Carbon tetrachloride	56-23-5	ug/L	5	5	0.46	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Chlorobenzene	108-90-7	ug/L	100	100	78	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Chloroethane	75-00-3	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Chloroform	67-66-3	ug/L	80	80	0.22	--	0.5 R	0.5 R	0.5 R	0.5 R	**0.33 J**	0.5 R	**0.4 J**
Chloromethane	74-87-3	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
cis-1,2-Dichloroethene	156-59-2	ug/L	70	70	36	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
cis-1,3-Dichloropropene	10061-01-5	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Cyclohexane	110-82-7	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Dibromochloromethane	124-48-1	ug/L	80	80	0.87	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Dichlorodifluoromethane	75-71-8	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Ethylbenzene	100-41-4	ug/L	74	700	1.5	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Isopropylbenzene	98-82-8	ug/L	800	--	450	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
m,p-Xylene	179601-23-1	ug/L	280	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Methyl acetate	79-20-9	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Methyl tert-butyl ether	1634-04-4	ug/L	40	--	14	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Methylcyclohexane	108-87-2	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Methylene Chloride	75-09-2	ug/L	5	5	11	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
o-Xylene	95-47-6	ug/L	280	--	190	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Styrene	100-42-5	ug/L	100	100	1200	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Tetrachloroethene	127-18-4	ug/L	5	5	11	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Toluene	108-88-3	ug/L	790	1000	1100	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
trans-1,2-Dichloroethene	156-60-5	ug/L	100	100	360	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
trans-1,3-Dichloropropene	10061-02-6	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Trichloroethene	79-01-6	ug/L	5	5	0.49	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Trichlorofluoromethane	75-69-4	ug/L	--	--	--	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R
Vinyl chloride	75-01-4	ug/L	2	2	0.019	--	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R	0.5 R

Notes:

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more regulatory criteria and/or screening benchmark.
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWC	Drinking Water Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
MCL	Maximum Contaminant Level
NA	not analyzed
RSL	Regional Screening Level
µg/L	microgram(s) per liter
NA	not analyzed

Table D-4
Groundwater Analytical Results - C3 Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EGLE Residential Groundwater GSIC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Depth to GW Date Type	MW-127s G-GWBK-MW-127s 10.24-10.24 ft bgs 9/26/2022 FS	MW-28 G-GWBK-MW-28 26.86-26.86 ft bgs 10/4/2022 FS	5005 G-GWRW-5005 4.78-4.78 ft bgs 10/7/2022 FS	[redacted] G-GWRW-[redacted] 10.05-10.05 ft bgs 9/27/2022 FS	175 G-GWRW-175 54.11-54.11 ft bgs 10/3/2022 FS	MW-1 Replacement G-GWRS-MW-1R 33.64-33.64 ft bgs 9/29/2022 FS	MW-1 Replacement G-GWRS-MW-91R 33.64-33.64 ft bgs 9/29/2022 FD	MW-105s G-GWRS-MW-105s 25.55-25.55 ft bgs 9/27/2022 FS	NMW-2d G-GWRS-NMW-2d 4.02-4.02 ft bgs 9/29/2022 FS
SVOCs																
1,1'-Biphenyl	92-52-4	ug/L	--	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	1300	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
1,4-Dioxane	123-91-1	ug/L	7.2	--	--	0.46	--	**1 J- (10)**	1.9 U	**2.1**	**3.4 J-**	**670 J-**	**930**	**670**	**53**	**680**
1-Methylnaphthalene	90-12-0	ug/L	--	--	--	1.1	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2,2'-Oxybis(1-chloropropane)	108-60-1	ug/L	--	--	--	710	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 UJ	4.9 U	5 UJ
2,4,5-Trichlorophenol	95-95-4	ug/L	730	--	--	1200	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2,4,6-Trichlorophenol	88-06-2	ug/L	120	--	--	4.1	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2,4-Dichlorophenol	120-83-2	ug/L	73	--	--	46	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2,4-Dimethylphenol	105-67-9	ug/L	370	--	--	360	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2,4-Dinitrophenol	51-28-5	ug/L	--	--	--	39	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
2,4-Dinitrotoluene	121-14-2	ug/L	7.7	--	--	0.24	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	--	0.049	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2-Chloronaphthalene	91-58-7	ug/L	1800	--	--	750	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2-Chlorophenol	95-57-8	ug/L	45	--	--	91	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2-Methylnaphthalene	91-57-6	ug/L	260	--	--	36	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2-Methylphenol	95-48-7	ug/L	370	--	--	930	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
2-Nitroaniline	88-74-4	ug/L	--	--	--	190	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
2-Nitrophenol	88-75-5	ug/L	20	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	1.1	--	--	0.13	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
3-Nitroaniline	99-09-2	ug/L	--	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	20	--	--	1.5	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
4-Bromophenyl-phenylether	101-55-3	ug/L	--	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
4-Chloro-3-methylphenol	59-50-7	ug/L	150	--	--	1400	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
4-Chloroaniline	106-47-8	ug/L	--	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
4-Chlorophenyl-phenyl ether	7005-72-3	ug/L	--	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
4-Methylphenol	106-44-5	ug/L	--	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
4-Nitroaniline	100-01-6	ug/L	--	--	--	3.8	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
4-Nitrophenol	100-02-7	ug/L	--	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Acenaphthene	83-32-9	ug/L	1300	--	--	530	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Acenaphthylene	208-96-8	ug/L	52	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Acetophenone	98-86-2	ug/L	1500	--	--	1900	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Anthracene	120-12-7	ug/L	43	--	--	1800	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Atrazine	1912-24-9	ug/L	3	--	3	0.3	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Benzaldehyde	100-52-7	ug/L	--	--	--	19	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	--	0.03	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Benzo(a)pyrene	50-32-8	ug/L	5	--	--	0.025	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	--	0.25	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	--	2.5	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	--	--	59	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Bis(2-chloroethyl)ether	111-44-4	ug/L	2	--	--	0.014	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Bis(2-ethylhexyl)phthalate	117-81-7	ug/L	6	--	6	5.6	--	5 R	4.7 U	**11**	5 R	5 R	5 U	5 U	12 U	5 U
Butylbenzylphthalate	85-68-7	ug/L	1200	--	--	16	--	5 R	4.7 U	5.1 UJ	5 R	5 R	5 U	5 U	4.9 U	5 U
Caprolactam	105-60-2	ug/L	5800	--	--	9900	--	10 R	**13**	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Carbazole	86-74-8	ug/L	85	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Chrysene	218-01-9	ug/L	1.6	--	--	25	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Dibenzo(a,h)anthracene	53-70-3	ug/L	2	--	--	0.025	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Dibenzofuran	132-64-9	ug/L	--	--	--	7.9	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Diethylphthalate	84-66-2	ug/L	5500	--	--	15000	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Dimethylphthalate	131-11-3	ug/L	73000	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Di-n-butylphthalate	84-74-2	ug/L	880	--	--	900	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Di-n-octylphthalate	117-84-0	ug/L	130	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Fluoranthene	206-44-0	ug/L	210	--	--	800	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Fluorene	86-73-7	ug/L	880	--	--	290	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Hexachlorobenzene	118-74-1	ug/L	1	--	1	0.0098	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Hexachlorobutadiene	87-68-3	ug/L	15	--	--	0.14	--	5 R	4.7 U	5.1 UJ	5 R	5 R	5 U	5 U	4.9 U	5 U
Hexachlorocyclo-pentadiene	77-47-4	ug/L	50	--	50	0.041	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Hexachloroethane	67-72-1	ug/L	7.3	--	--	0.33	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	--	0.25	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Isophorone	78-59-1	ug/L	770	--	--	78	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Naphthalene	91-20-3	ug/L	520	--	--	0.12	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Nitrobenzene	98-95-3	ug/L	3.4	--	--	0.14	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
N-Nitroso-di-n propylamine	621-64-7	ug/L	5	--	--	0.011	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
N-Nitrosodiphenylamine	86-30-6	ug/L	270	--	--	12	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Phenanthrene	85-01-8	ug/L	52	--	--	--	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U
Phenol	108-95-2	ug/L	4400	--	--	5800	--	10 R	9.4 U	10 U	10 R	10 R	10 U	10 U	9.8 U	10 U
Pyrene	129-00-0	ug/L	140	--	--	120	--	5 R	4.7 U	5.1 U	5 R	5 R	5 U	5 U	4.9 U	5 U

Table D-4
Groundwater Analytical Results - C3 Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EGLE Residential Groundwater GSIC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Depth to GW Date Type	MW-127s G-GWBK-MW-127s 10.24-10.24 ft bgs 9/26/2022 FS	MW-28 G-GWBK-MW-28 26.86-26.86 ft bgs 10/4/2022 FS	5005 G-GWRW-5005 4.78-4.78 ft bgs 10/7/2022 FS	[redacted] G-GWRW-[redacted] 10.05-10.05 ft bgs 9/27/2022 FS	175 G-GWRW-175 54.11-54.11 ft bgs 10/3/2022 FS	MW-1 Replacement G-GWRS-MW-1R 33.64-33.64 ft bgs 9/29/2022 FS	MW-1 Replacement G-GWRS-MW-91R 33.64-33.64 ft bgs 9/29/2022 FD	MW-105s G-GWRS-MW-105s 25.55-25.55 ft bgs 9/27/2022 FS	NMW-2d G-GWRS-NMW-2d 4.02-4.02 ft bgs 9/29/2022 FS
SVOC SIM																
1,4-Dioxane	123-91-1	ug/L	7.2	--	--	0.46	--	**0.21 J-**	0.19 R	NA	NA	NA	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	ug/L	--	--	--	1.1	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
2-Methylnaphthalene	91-57-6	ug/L	260	--	--	36	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Acenaphthene	83-32-9	ug/L	1300	--	--	530	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Acenaphthylene	208-96-8	ug/L	52	--	--	--	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Anthracene	120-12-7	ug/L	43	--	--	1800	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	--	0.03	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Benzo(a)pyrene	50-32-8	ug/L	5	--	--	0.025	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	--	0.25	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	--	2.5	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Chrysene	218-01-9	ug/L	1.6	--	--	25	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	2	--	--	0.025	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Fluoranthene	206-44-0	ug/L	210	--	--	800	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Fluorene	86-73-7	ug/L	880	--	--	290	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	--	0.25	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Naphthalene	91-20-3	ug/L	520	--	--	0.12	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.059 U	0.1 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	--	0.2 R	0.19 UJ	0.2 U	0.2 R	0.2 R	0.2 R	0.2 R	0.2 UJ	0.2 R
Phenanthrene	85-01-8	ug/L	52	--	--	--	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
Pyrene	129-00-0	ug/L	140	--	--	120	--	0.1 R	0.094 U	0.1 U	0.1 R	0.1 R	0.1 R	0.1 R	0.098 U	0.1 R
VOC SIM																
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	--	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	NA	0.05 U
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	0.2	--	0.2	0.00033	--	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	NA	0.05 U
1,2-Dibromoethane	106-93-4	ug/L	0.05	5.7	0.05	0.0075	--	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	NA	0.05 U
Trichloroethene	79-01-6	ug/L	5	200	5	0.49	--	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	NA	0.05 U
Vinyl chloride	75-01-4	ug/L	2	13	2	0.019	--	NA	NA	0.05 U	NA	NA	0.05 U	0.05 U	NA	0.05 U

Table D-4
Groundwater Analytical Results - C3 Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EGLE Residential Groundwater GSIC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Depth to GW Date Type	MW-127s G-GWBK-MW-127s 10.24-10.24 ft bgs 9/26/2022 FS	MW-28 G-GWBK-MW-28 26.86-26.86 ft bgs 10/4/2022 FS	5005 G-GWRW-5005 4.78-4.78 ft bgs 10/7/2022 FS	[redacted] G-GWRW-[redacted] 10.05-10.05 ft bgs 9/27/2022 FS	175 G-GWRW-175 54.11-54.11 ft bgs 10/3/2022 FS	MW-1 Replacement G-GWRS-MW-1R 33.64-33.64 ft bgs 9/29/2022 FS	MW-1 Replacement G-GWRS-MW-91R 33.64-33.64 ft bgs 9/29/2022 FD	MW-105s G-GWRS-MW-105s 25.55-25.55 ft bgs 9/27/2022 FS	NMW-2d G-GWRS-NMW-2d 4.02-4.02 ft bgs 9/29/2022 FS
VOCs																
1,1,1-Trichloroethane	71-55-6	ug/L	200	89	200	8000	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	8.5	78		0.076	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,1,2-Trichloroethane	79-00-5	ug/L	5	330	5	0.28	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,1-Dichloroethane	75-34-3	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,1-Dichloroethene	75-35-4	ug/L	7	130	7	280	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2,3-Trichlorobenzene	87-61-6	ug/L	--	--	--	7	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	99	70	1.2	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2,4-Trimethylbenzene	95-63-6	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2-Dibromo-3-Chloropropane	96-12-8	ug/L	0.2	--	0.2	0.00033	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2-Dibromoethane	106-93-4	ug/L	0.05	5.7	0.05	0.0075	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2-Dichlorobenzene	95-50-1	ug/L	600	13	600	300	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2-Dichloroethane	107-06-2	ug/L	5	360	5	0.17	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,2-Dichloropropane	78-87-5	ug/L	5	230	5	0.85	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,3,5-Trimethylbenzene	108-67-8	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,3-Dichlorobenzene	541-73-1	ug/L	6.6	28	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
1,4-Dichlorobenzene	106-46-7	ug/L	75	17	75	0.48	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
2-Butanone	78-93-3	ug/L	--	--	--	--	--	5 U	5 U	NA	5 U	5 R	NA	NA	5 U	NA
2-Hexanone	591-78-6	ug/L	1000	--	--	38	--	5 U	5 U	NA	5 U	5 R	NA	NA	**3.3 J**	NA
4-Methyl-2-pentanone	108-10-1	ug/L	1800	--	--	6300	--	5 U	5 U	NA	5 U	5 R	NA	NA	5 U	NA
Acetone	67-64-1	ug/L	--	--	--	--	--	5 U	5 U	NA	5 U	5 R	NA	NA	5 U	NA
Benzene	71-43-2	ug/L	5	200	5	0.46	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Bromochloromethane	74-97-5	ug/L	--	--	--		--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Bromodichloromethane	75-27-4	ug/L	80	--	80	0.13	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Bromoform	75-25-2	ug/L	80	--	80	3.3	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Bromomethane	74-83-9	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Carbon disulfide	75-15-0	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Carbon tetrachloride	56-23-5	ug/L	5	38	5	0.46	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Chlorobenzene	108-90-7	ug/L	100	25	100	78	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Chloroethane	75-00-3	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Chloroform	67-66-3	ug/L	80	350	80	0.22	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Chloromethane	74-87-3	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	**0.19 J**	NA
cis-1,2-Dichloroethene	156-59-2	ug/L	70	620	70	36	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
cis-1,3-Dichloropropene	10061-01-5	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Cyclohexane	110-82-7	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Dibromochloromethane	124-48-1	ug/L	80	--	80	0.87	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Dichlorodifluoromethane	75-71-8	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Ethylbenzene	100-41-4	ug/L	74	18	700	1.5	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Isopropylbenzene	98-82-8	ug/L	800	28	--	450	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
m,p-Xylene	179601-23-1	ug/L	280	49	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Methyl acetate	79-20-9	ug/L	--	--	--	--	--	0.5 UJ	0.5 U	NA	0.5 UJ	0.5 R	NA	NA	0.5 UJ	NA
Methyl tert-butyl ether	1634-04-4	ug/L	40	7100	--	14	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Methylcyclohexane	108-87-2	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Methylene Chloride	75-09-2	ug/L	5	1500	5	11	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
o-Xylene	95-47-6	ug/L	280	49	--	190	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Styrene	100-42-5	ug/L	100	80	100	1200	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Tetrachloroethene	127-18-4	ug/L	5	60	5	11	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Toluene	108-88-3	ug/L	790	270	1000	1100	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
trans-1,2-Dichloroethene	156-60-5	ug/L	100	1500	100	360	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
trans-1,3-Dichloropropene	10061-02-6	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Trichloroethene	79-01-6	ug/L	5	200	5	0.49	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Trichlorofluoromethane	75-69-4	ug/L	--	--	--	--	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA
Vinyl chloride	75-01-4	ug/L	2	13	2	0.019	--	0.5 U	0.5 U	NA	0.5 U	0.5 R	NA	NA	0.5 U	NA

Notes:

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more regulatory criteria and/or screening benchmark.
Bold	The analyte concentration exceeds the regulatory criteria, screening benchmark, 3X background, and is significant to the Site.
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWC	Drinking Water Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
GSIC	Groundwater Surface Water Interface Criteria
MCL	Maximum Contaminant Level
NA	not analzyed
RSL	Regional Screening Level
µg/L	microgram(s) per liter
NA	not analyzed

Table D-5
Groundwater Analytical Results - D2 Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Depth to GW Date Type	MW-120s G-GWBK-MW-120s 52.91-52.91 ft bgs 9/26/2022 FS	MW-124s G-GWBK-MW-124s 54.24-54.24 ft bgs 9/28/2022 FS	110 G-GWRW-110 53.21-53.21 ft bgs 9/27/2022 FS	4141 G-GWRW-4141 55.74-55.74 ft bgs 9/27/2022 FS	MW-77 G-GWRS-MW-77 56.4-56.4 ft bgs 9/28/2022 FS	MW-77 G-GWRS-MW-977 56.4-56.4 ft bgs 9/28/2022 FD	MW-4d G-GWRS-MW-4d 32.87-32.87 ft bgs 9/28/2022 FS
SVOCs													
1,1'-Biphenyl	92-52-4	ug/L	--	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	1300	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
1,4-Dioxane	123-91-1	ug/L	7.2	--	0.46	--	2 R	2 R	**0.95 J-**	**1.1 J-**	**550**	**540 J-**	**220 J-**
1-Methylnaphthalene	90-12-0	ug/L	--	--	1.1	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,2'-oxybis(1-chloropropane)	108-60-1	ug/L	--	--	710	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,4,5-Trichlorophenol	95-95-4	ug/L	730	--	1200	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,4,6-Trichlorophenol	88-06-2	ug/L	120	--	4.1	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,4-Dichlorophenol	120-83-2	ug/L	73	--	46	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,4-Dimethylphenol	105-67-9	ug/L	370	--	360	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,4-Dinitrophenol	51-28-5	ug/L	--	--	39	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
2,4-Dinitrotoluene	121-14-2	ug/L	7.7	--	0.24	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	0.049	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2-Chloronaphthalene	91-58-7	ug/L	1800	--	750	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2-Chlorophenol	95-57-8	ug/L	45	--	91	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2-Methylnaphthalene	91-57-6	ug/L	260	--	36	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2-Methylphenol	95-48-7	ug/L	370	--	930	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
2-Nitroaniline	88-74-4	ug/L	--	--	190	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
2-Nitrophenol	88-75-5	ug/L	20	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
3,3'-Dichlorobenzidine	91-94-1	ug/L	1.1	--	0.13	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
3-Nitroaniline	99-09-2	ug/L	--	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	20	--	1.5	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
4-Bromophenyl-phenylether	101-55-3	ug/L	--	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
4-Chloro-3-methylphenol	59-50-7	ug/L	150	--	1400	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
4-Chloroaniline	106-47-8	ug/L	--	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
4-Chlorophenyl-phenyl ether	7005-72-3	ug/L	--	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
4-Methylphenol	106-44-5	ug/L	--	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
4-Nitroaniline	100-01-6	ug/L	--	--	3.8	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
4-Nitrophenol	100-02-7	ug/L	--	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Acenaphthene	83-32-9	ug/L	1300	--	530	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Acenaphthylene	208-96-8	ug/L	52	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Acetophenone	98-86-2	ug/L	1500	--	1900	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Anthracene	120-12-7	ug/L	43	--	1800	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Atrazine	1912-24-9	ug/L	3	3	0.3	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Benzaldehyde	100-52-7	ug/L	--	--	19	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	0.03	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Benzo(a)pyrene	50-32-8	ug/L	5	--	0.025	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	0.25	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	2.5	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	--	59	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Bis(2-chloroethyl)ether	111-44-4	ug/L	2	--	0.014	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Bis(2-ethylhexyl)phthalate	117-81-7	ug/L	6	6	5.6	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Butylbenzylphthalate	85-68-7	ug/L	1200	--	16	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Caprolactam	105-60-2	ug/L	5800	--	9900	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Carbazole	86-74-8	ug/L	85	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Chrysene	218-01-9	ug/L	1.6	--	25	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	2	--	0.025	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Dibenzofuran	132-64-9	ug/L	--	--	7.9	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Diethylphthalate	84-66-2	ug/L	5500	--	15000	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Dimethylphthalate	131-11-3	ug/L	73000	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Di-n-butylphthalate	84-74-2	ug/L	880	--	900	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Di-n-octylphthalate	117-84-0	ug/L	130	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Fluoranthene	206-44-0	ug/L	210	--	800	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Fluorene	86-73-7	ug/L	880	--	290	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Hexachlorobenzene	118-74-1	ug/L	1	1	0.0098	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Hexachlorobutadiene	87-68-3	ug/L	15	--	0.14	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Hexachlorocyclo-pentadiene	77-47-4	ug/L	50	50	0.041	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Hexachloroethane	67-72-1	ug/L	7.3	--	0.33	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	0.25	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Isophorone	78-59-1	ug/L	770	--	78	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Naphthalene	91-20-3	ug/L	520	--	0.12	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Nitrobenzene	98-95-3	ug/L	3.4	--	0.14	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
N-Nitroso-di-n propylamine	621-64-7	ug/L	5	--	0.011	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
N-Nitrosodiphenylamine	86-30-6	ug/L	270	--	12	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Phenanthrene	85-01-8	ug/L	52	--	--	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R
Phenol	108-95-2	ug/L	4400	--	5800	--	10 R	10 R	10 R	10 R	10 U	10 R	10 R
Pyrene	129-00-0	ug/L	140	--	120	--	5 R	5 R	5 R	5 R	5 U	5 R	5 R

Table D-5
Groundwater Analytical Results - D2 Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Depth to GW Date Type	MW-120s G-GWBK-MW-120s 52.91-52.91 ft bgs 9/26/2022 FS	MW-124s G-GWBK-MW-124s 54.24-54.24 ft bgs 9/28/2022 FS	110 G-GWRW-110 53.21-53.21 ft bgs 9/27/2022 FS	4141 G-GWRW-4141 55.74-55.74 ft bgs 9/27/2022 FS	MW-77 G-GWRS-MW-77 56.4-56.4 ft bgs 9/28/2022 FS	MW-77 G-GWRS-MW-977 56.4-56.4 ft bgs 9/28/2022 FD	MW-4d G-GWRS-MW-4d 32.87-32.87 ft bgs 9/28/2022 FS
SVOC SIM													
1,4-Dioxane	123-91-1	ug/L	7.2	--	0.46	--	**0.08 J-**	0.2 R	**0.87 J-**	**1 J-**	NA	NA	NA
1-Methylnaphthalene	90-12-0	ug/L	--	--	1.1	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
2-Methylnaphthalene	91-57-6	ug/L	260	--	36	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Acenaphthene	83-32-9	ug/L	1300	--	530	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Acenaphthylene	208-96-8	ug/L	52	--	--	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Anthracene	120-12-7	ug/L	43	--	1800	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	0.03	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Benzo(a)pyrene	50-32-8	ug/L	5	--	0.025	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	0.25	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	2.5	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Chrysene	218-01-9	ug/L	1.6	--	25	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	2	--	0.025	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Fluoranthene	206-44-0	ug/L	210	--	800	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Fluorene	86-73-7	ug/L	880	--	290	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	0.25	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Naphthalene	91-20-3	ug/L	520	--	0.12	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	0.2 R	0.2 R	0.2 R	0.2 R	0.2 R	0.2 R	0.2 R
Phenanthrene	85-01-8	ug/L	52	--	--	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
Pyrene	129-00-0	ug/L	140	--	120	--	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R	0.1 R
VOC SIM													
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	0.2	0.2	0.00033	--	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U
1,2-Dibromoethane	106-93-4	ug/L	0.05	0.05	0.0075	--	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U
Trichloroethene	79-01-6	ug/L	5	5	0.49	--	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U
Vinyl chloride	75-01-4	ug/L	2	2	0.019	--	NA	0.05 U	NA	NA	0.05 U	0.05 U	0.05 U

Table D-5
Groundwater Analytical Results - D2 Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Depth to GW Date Type	MW-120s G-GWBK-MW-120s 52.91-52.91 ft bgs 9/26/2022 FS	MW-124s G-GWBK-MW-124s 54.24-54.24 ft bgs 9/28/2022 FS	110 G-GWRW-110 53.21-53.21 ft bgs 9/27/2022 FS	4141 G-GWRW-4141 55.74-55.74 ft bgs 9/27/2022 FS	MW-77 G-GWRS-MW-77 56.4-56.4 ft bgs 9/28/2022 FS	MW-77 G-GWRS-MW-977 56.4-56.4 ft bgs 9/28/2022 FD	MW-4d G-GWRS-MW-4d 32.87-32.87 ft bgs 9/28/2022 FS
VOCs													
1,1,1-Trichloroethane	71-55-6	ug/L	200	200	8000	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	8.5		0.076	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,1,2-Trichloroethane	79-00-5	ug/L	5	5	0.28	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,1-Dichloroethane	75-34-3	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,1-Dichloroethene	75-35-4	ug/L	7	7	280	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2,3-Trichlorobenzene	87-61-6	ug/L	--	--	7	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	70	1.2	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2,4-Trimethylbenzene	95-63-6	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2-Dibromo-3-Chloropropane	96-12-8	ug/L	0.2	0.2	0.00033	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/L	0.05	0.05	0.0075	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2-Dichlorobenzene	95-50-1	ug/L	600	600	300	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2-Dichloroethane	107-06-2	ug/L	5	5	0.17	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,2-Dichloropropane	78-87-5	ug/L	5	5	0.85	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,3,5-Trimethylbenzene	108-67-8	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,3-Dichlorobenzene	541-73-1	ug/L	6.6	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
1,4-Dichlorobenzene	106-46-7	ug/L	75	75	0.48	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
2-Butanone	78-93-3	ug/L	--	--	--	--	5 U	NA	5 U	5 U	NA	NA	NA
2-Hexanone	591-78-6	ug/L	1000	--	38	--	5 U	NA	5 U	5 U	NA	NA	NA
4-Methyl-2-pentanone	108-10-1	ug/L	1800	--	6300	--	5 U	NA	5 U	5 U	NA	NA	NA
Acetone	67-64-1	ug/L	--	--	--	--	5 U	NA	5 U	5 U	NA	NA	NA
Benzene	71-43-2	ug/L	5	5	0.46	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Bromochloromethane	74-97-5	ug/L	--	--		--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Bromodichloromethane	75-27-4	ug/L	80	80	0.13	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Bromoform	75-25-2	ug/L	80	80	3.3	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Bromomethane	74-83-9	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Carbon disulfide	75-15-0	ug/L	--	--	--	--	0.5 U	NA	**0.095 J**	0.5 U	NA	NA	NA
Carbon tetrachloride	56-23-5	ug/L	5	5	0.46	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Chlorobenzene	108-90-7	ug/L	100	100	78	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Chloroethane	75-00-3	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Chloroform	67-66-3	ug/L	80	80	0.22	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Chloromethane	74-87-3	ug/L	--	--	--	--	0.5 U	NA	**0.14 J**	**0.14 J**	NA	NA	NA
cis-1,2-Dichloroethene	156-59-2	ug/L	70	70	36	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
cis-1,3-Dichloropropene	10061-01-5	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Cyclohexane	110-82-7	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Dibromochloromethane	124-48-1	ug/L	80	80	0.87	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Dichlorodifluoromethane	75-71-8	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Ethylbenzene	100-41-4	ug/L	74	700	1.5	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Isopropylbenzene	98-82-8	ug/L	800	--	450	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
m,p-Xylene	179601-23-1	ug/L	280	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Methyl acetate	79-20-9	ug/L	--	--	--	--	0.5 UJ	NA	0.5 UJ	0.5 UJ	NA	NA	NA
Methyl tert-butyl ether	1634-04-4	ug/L	40	--	14	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Methylcyclohexane	108-87-2	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Methylene Chloride	75-09-2	ug/L	5	5	11	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
o-Xylene	95-47-6	ug/L	280	--	190	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Styrene	100-42-5	ug/L	100	100	1200	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Tetrachloroethene	127-18-4	ug/L	5	5	11	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Toluene	108-88-3	ug/L	790	1000	1100	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
trans-1,2-Dichloroethene	156-60-5	ug/L	100	100	360	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
trans-1,3-Dichloropropene	10061-02-6	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Trichloroethene	79-01-6	ug/L	5	5	0.49	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Trichlorofluoromethane	75-69-4	ug/L	--	--	--	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA
Vinyl chloride	75-01-4	ug/L	2	2	0.019	--	0.5 U	NA	0.5 U	0.5 U	NA	NA	NA

Notes:

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more regulatory criteria and/or screening benchmark.
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWC	Drinking Water Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
MCL	Maximum Contaminant Level
NA	not analyzed
RSL	Regional Screening Level
µg/L	microgram(s) per liter
NA	not analyzed

Table D-6
Groundwater Analytical Results - E Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EPA Groundwater Primary MCL	Location Sample ID Depth to GW Date Type	MW-120d G-GWBK-MW-120d 55.69-55.69 ft bgs 9/27/2022 FS	MW-124d G-GWBK-MW-124d 54.82-54.82 ft bgs 9/28/2022 FS	MW-100 G-GWRS-MW-100 64.33-64.33 ft bgs 10/2/2022 FS	MW-100 G-GWRS-MW-190 64.33-64.33 ft bgs 10/2/2022 FD	MW-108d G-GWRS-MW-108d 33.39-33.39 ft bgs 10/3/2022 FS	MW-85 G-GWRS-MW-85 43.47-43.47 ft bgs 10/4/2022 FS
SVOCs										
1,1'-Biphenyl	92-52-4	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
1,4-Dioxane	123-91-1	ug/L	--	--	2 U	2 R	**1100 J-**	**1100 J-**	**310**	**370 J-**
1-Methylnaphthalene	90-12-0	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,2'-Oxybis(1-chloropropane)	108-60-1	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,4,5-Trichlorophenol	95-95-4	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,4,6-Trichlorophenol	88-06-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,4-Dichlorophenol	120-83-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,4-Dimethylphenol	105-67-9	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,4-Dinitrophenol	51-28-5	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
2,4-Dinitrotoluene	121-14-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2-Chloronaphthalene	91-58-7	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2-Chlorophenol	95-57-8	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2-Methylnaphthalene	91-57-6	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2-Methylphenol	95-48-7	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
2-Nitroaniline	88-74-4	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
2-Nitrophenol	88-75-5	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
3,3'-Dichlorobenzidine	91-94-1	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
3-Nitroaniline	99-09-2	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
4-Bromophenyl-phenylether	101-55-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
4-Chloro-3-methylphenol	59-50-7	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
4-Chloroaniline	106-47-8	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
4-Chlorophenyl-phenyl ether	7005-72-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
4-Methylphenol	106-44-5	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
4-Nitroaniline	100-01-6	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
4-Nitrophenol	100-02-7	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Acenaphthene	83-32-9	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Acenaphthylene	208-96-8	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Acetophenone	98-86-2	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Anthracene	120-12-7	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Atrazine	1912-24-9	ug/L	3	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Benzaldehyde	100-52-7	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Benzo(a)anthracene	56-55-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Benzo(a)pyrene	50-32-8	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Benzo(b)fluoranthene	205-99-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Benzo(g,h,i)perylene	191-24-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Benzo(k)fluoranthene	207-08-9	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Bis(2-chloroethyl)ether	111-44-4	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Bis(2-ethylhexyl)phthalate	117-81-7	ug/L	6	--	10 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Butylbenzylphthalate	85-68-7	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Caprolactam	105-60-2	ug/L	--	--	**2.8 J**	10 R	10 R	10 R	9.8 U	9.8 R
Carbazole	86-74-8	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Chrysene	218-01-9	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Dibenz(a,h)anthracene	53-70-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Dibenzofuran	132-64-9	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Diethylphthalate	84-66-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Dimethylphthalate	131-11-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Di-n-butylphthalate	84-74-2	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Di-n-octylphthalate	117-84-0	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Fluoranthene	206-44-0	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Fluorene	86-73-7	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Hexachlorobenzene	118-74-1	ug/L	1	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Hexachlorobutadiene	87-68-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Hexachlorocyclo-pentadiene	77-47-4	ug/L	50	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Hexachloroethane	67-72-1	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Isophorone	78-59-1	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Naphthalene	91-20-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Nitrobenzene	98-95-3	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
N-Nitrosodi-n-propylamine	621-64-7	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
N-Nitrosodiphenylamine	86-30-6	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Pentachlorophenol	87-86-5	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Phenanthrene	85-01-8	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R
Phenol	108-95-2	ug/L	--	--	9.9 U	10 R	10 R	10 R	9.8 U	9.8 R
Pyrene	129-00-0	ug/L	--	--	5 U	5 R	5.1 R	5.1 R	4.9 U	4.9 R

Table D-6
Groundwater Analytical Results - E Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EPA Groundwater Primary MCL	Location Sample ID Depth to GW Date Type	MW-120d G-GWBK-MW-120d 55.69-55.69 ft bgs 9/27/2022 FS	MW-124d G-GWBK-MW-124d 54.82-54.82 ft bgs 9/28/2022 FS	MW-100 G-GWRS-MW-100 64.33-64.33 ft bgs 10/2/2022 FS	MW-100 G-GWRS-MW-190 64.33-64.33 ft bgs 10/2/2022 FD	MW-108d G-GWRS-MW-108d 33.39-33.39 ft bgs 10/3/2022 FS	MW-85 G-GWRS-MW-85 43.47-43.47 ft bgs 10/4/2022 FS
SVOC SIM										
1,4-Dioxane	123-91-1	ug/L	--	--	0.2 R	0.2 R	NA	NA	NA	NA
1-Methylnaphthalene	90-12-0	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
2-Methylnaphthalene	91-57-6	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Acenaphthene	83-32-9	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Acenaphthylene	208-96-8	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Anthracene	120-12-7	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Benzo(a)anthracene	56-55-3	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Benzo(a)pyrene	50-32-8	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Benzo(b)fluoranthene	205-99-2	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Benzo(g,h,i)perylene	191-24-2	ug/L	--	--	**0.05 J**	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Benzo(k)fluoranthene	207-08-9	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Chrysene	218-01-9	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Dibenzo(a,h)anthracene	53-70-3	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Fluoranthene	206-44-0	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Fluorene	86-73-7	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Naphthalene	91-20-3	ug/L	--	--	0.059 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Pentachlorophenol	87-86-5	ug/L	--	--	0.2 UJ	0.2 R	0.2 R	0.2 R	0.2 UJ	0.19 UJ
Phenanthrene	85-01-8	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
Pyrene	129-00-0	ug/L	--	--	0.099 U	0.1 R	0.1 R	0.1 R	0.098 U	0.096 U
VOC SIM										
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	NA	0.05 U	NA	NA	NA	NA
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	0.2	--	NA	0.05 U	NA	NA	NA	NA
1,2-Dibromoethane	106-93-4	ug/L	0.05	--	NA	0.05 U	NA	NA	NA	NA
Trichloroethene	79-01-6	ug/L	5	--	NA	0.05 U	NA	NA	NA	NA
Vinyl chloride	75-01-4	ug/L	2	--	NA	0.05 U	NA	NA	NA	NA

Table D-6
Groundwater Analytical Results - E Aquifer
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EPA Groundwater Primary MCL	Location Sample ID Depth to GW Date Type	MW-120d G-GWBK-MW-120d 55.69-55.69 ft bgs 9/27/2022 FS	MW-124d G-GWBK-MW-124d 54.82-54.82 ft bgs 9/28/2022 FS	MW-100 G-GWRS-MW-100 64.33-64.33 ft bgs 10/2/2022 FS	MW-100 G-GWRS-MW-190 64.33-64.33 ft bgs 10/2/2022 FD	MW-108d G-GWRS-MW-108d 33.39-33.39 ft bgs 10/3/2022 FS	MW-85 G-GWRS-MW-85 43.47-43.47 ft bgs 10/4/2022 FS
VOCs										
1,1,1-Trichloroethane	71-55-6	ug/L	200	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,1,2-Trichloroethane	79-00-5	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,1-Dichloroethane	75-34-3	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,1-Dichloroethene	75-35-4	ug/L	7	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2,3-Trichlorobenzene	87-61-6	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	70	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2,4-Trimethylbenzene	95-63-6	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2-Dibromo-3-Chloropropane	96-12-8	ug/L	0.2	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2-Dibromoethane	106-93-4	ug/L	0.05	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2-Dichlorobenzene	95-50-1	ug/L	600	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2-Dichloroethane	107-06-2	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,2-Dichloropropane	78-87-5	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,3,5-Trimethylbenzene	108-67-8	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,3-Dichlorobenzene	541-73-1	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
1,4-Dichlorobenzene	106-46-7	ug/L	75	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
2-Butanone	78-93-3	ug/L	--	--	5 U	NA	5 R	5 R	5 R	**6.2**
2-Hexanone	591-78-6	ug/L	--	--	5 U	NA	5 R	5 R	5 R	5 U
4-Methyl-2-pentanone	108-10-1	ug/L	--	--	5 U	NA	5 R	5 R	5 R	5 U
Acetone	67-64-1	ug/L	--	--	5 U	NA	5 R	5 R	5 R	**6.1**
Benzene	71-43-2	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Bromochloromethane	74-97-5	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Bromodichloromethane	75-27-4	ug/L	80	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Bromoform	75-25-2	ug/L	80	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Bromomethane	74-83-9	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Carbon disulfide	75-15-0	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Carbon tetrachloride	56-23-5	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Chlorobenzene	108-90-7	ug/L	100	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Chloroethane	75-00-3	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Chloroform	67-66-3	ug/L	80	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Chloromethane	74-87-3	ug/L	--	--	**0.14 J**	NA	0.5 R	0.5 R	0.5 R	0.5 U
cis-1,2-Dichloroethene	156-59-2	ug/L	70	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Cyclohexane	110-82-7	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Dibromochloromethane	124-48-1	ug/L	80	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Dichlorodifluoromethane	75-71-8	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Ethylbenzene	100-41-4	ug/L	700	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Isopropylbenzene	98-82-8	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
m,p-Xylene	179601-23-1	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Methyl acetate	79-20-9	ug/L	--	--	0.5 UJ	NA	0.5 R	0.5 R	0.5 R	0.5 U
Methyl tert-butyl ether	1634-04-4	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Methylcyclohexane	108-87-2	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Methylene Chloride	75-09-2	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
o-Xylene	95-47-6	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Styrene	100-42-5	ug/L	100	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Tetrachloroethene	127-18-4	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Toluene	108-88-3	ug/L	1000	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
trans-1,2-Dichloroethene	156-60-5	ug/L	100	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
trans-1,3-Dichloropropene	10061-02-6	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Trichloroethene	79-01-6	ug/L	5	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Trichlorofluoromethane	75-69-4	ug/L	--	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U
Vinyl chloride	75-01-4	ug/L	2	--	0.5 U	NA	0.5 R	0.5 R	0.5 R	0.5 U

Notes:

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more regulatory criteria and/or screening benchmark.
Bold	The analyte concentration exceeds the regulatory criteria, screening benchmark, 3X background, and is significant to the Site.
J-	Result is biased low
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
EPA	United States Environmental Protection Agency
FD	field duplicate sample
FS	field sample
MCL	Maximum Contaminant Level
µg/L	microgram(s) per liter
NA	not analyzed

Table D-7
Groundwater Analytical Results - Water Supply
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Date Type	Steere Farm Well #25 G-GWPW-25 9/29/2022 FS	PW-1/Montgomery Well G-GWPW-01 9/29/2022 FS
SVOCs								
1,1'-Biphenyl	92-52-4	ug/L	--	--	--	--	5 U	5 U
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	1300	--	--	--	5 U	5 U
1,4-Dioxane	123-91-1	ug/L	7.2	--	0.46	--	2 U	**1.5 J**
1-Methylnaphthalene	90-12-0	ug/L	--	--	1.1	--	5 U	5 U
2,2'-oxybis(1-chloropropane)	108-60-1	ug/L	--	--	710	--	10 U	10 U
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	--	--	--	5 UJ	5 UJ
2,4,5-Trichlorophenol	95-95-4	ug/L	730	--	1200	--	5 U	5 U
2,4,6-Trichlorophenol	88-06-2	ug/L	120	--	4.1	--	5 U	5 U
2,4-Dichlorophenol	120-83-2	ug/L	73	--	46	--	5 U	5 U
2,4-Dimethylphenol	105-67-9	ug/L	370	--	360	--	5 U	5 U
2,4-Dinitrophenol	51-28-5	ug/L	--	--	39	--	10 U	10 U
2,4-Dinitrotoluene	121-14-2	ug/L	7.7	--	0.24	--	5 U	5 U
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	0.049	--	5 U	5 U
2-Chloronaphthalene	91-58-7	ug/L	1800	--	750	--	5 U	5 U
2-Chlorophenol	95-57-8	ug/L	45	--	91	--	5 U	5 U
2-Methylnaphthalene	91-57-6	ug/L	260	--	36	--	5 U	5 U
2-Methylphenol	95-48-7	ug/L	370	--	930	--	10 U	10 U
2-Nitroaniline	88-74-4	ug/L	--	--	190	--	5 U	5 U
2-Nitrophenol	88-75-5	ug/L	20	--	--	--	5 U	5 U
3,3'-Dichlorobenzidine	91-94-1	ug/L	1.1	--	0.13	--	10 U	10 U
3-Nitroaniline	99-09-2	ug/L	--	--	--	--	10 U	10 U
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	20	--	1.5	--	10 U	10 U
4-Bromophenyl-phenylether	101-55-3	ug/L	--	--		--	5 U	5 U
4-Chloro-3-methylphenol	59-50-7	ug/L	150	--	1400	--	5 U	5 U
4-Chloroaniline	106-47-8	ug/L	--	--	--	--	10 U	10 U
4-Chlorophenyl-phenyl ether	7005-72-3	ug/L	--	--	--	--	5 U	5 U
4-Methylphenol	106-44-5	ug/L	--	--	--	--	10 U	10 U
4-Nitroaniline	100-01-6	ug/L	--	--	3.8	--	10 U	10 U
4-Nitrophenol	100-02-7	ug/L	--	--		--	10 U	10 U
Acenaphthene	83-32-9	ug/L	1300	--	530	--	5 U	5 U
Acenaphthylene	208-96-8	ug/L	52	--	--	--	5 U	5 U
Acetophenone	98-86-2	ug/L	1500	--	1900	--	10 U	10 U
Anthracene	120-12-7	ug/L	43		1800	--	5 U	5 U
Atrazine	1912-24-9	ug/L	3	3	0.3	--	10 U	10 U
Benzaldehyde	100-52-7	ug/L		--	19	--	10 U	10 U
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	0.03	--	5 U	5 U
Benzo(a)pyrene	50-32-8	ug/L	5	--	0.025	--	5 U	5 U
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	0.25	--	5 U	5 U
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	5 U	5 U
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	2.5	--	5 U	5 U
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	--	59	--	5 U	5 U
Bis(2-chloroethyl)ether	111-44-4	ug/L	2	--	0.014	--	10 U	10 U
Bis(2-ethylhexyl)phthalate	117-81-7	ug/L	6	6	5.6	--	5 U	5 U
Butylbenzylphthalate	85-68-7	ug/L	1200	--	16	--	5 U	5 U
Caprolactam	105-60-2	ug/L	5800	--	9900	--	10 U	10 U
Carbazole	86-74-8	ug/L	85	--	--	--	10 U	10 U
Chrysene	218-01-9	ug/L	1.6	--	25	--	5 U	5 U
Dibenzo(a,h)anthracene	53-70-3	ug/L	2	--	0.025	--	5 U	5 U
Dibenzofuran	132-64-9	ug/L	--	--	7.9	--	5 U	5 U
Diethylphthalate	84-66-2	ug/L	5500	--	15000	--	5 U	5 U
Dimethylphthalate	131-11-3	ug/L	73000	--	--	--	5 U	5 U
Di-n-butylphthalate	84-74-2	ug/L	880	--	900	--	5 U	5 U
Di-n-octylphthalate	117-84-0	ug/L	130	--	--	--	10 U	10 U
Fluoranthene	206-44-0	ug/L	210	--	800	--	5 U	5 U
Fluorene	86-73-7	ug/L	880	--	290	--	5 U	5 U
Hexachlorobenzene	118-74-1	ug/L	1	1	0.0098	--	5 U	5 U
Hexachlorobutadiene	87-68-3	ug/L	15	--	0.14	--	5 U	5 U
Hexachlorocyclo-pentadiene	77-47-4	ug/L	50	50	0.041	--	10 U	10 U
Hexachloroethane	67-72-1	ug/L	7.3	--	0.33	--	5 U	5 U
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	0.25	--	5 U	5 U
Isophorone	78-59-1	ug/L	770	--	78	--	5 U	5 U
Naphthalene	91-20-3	ug/L	520	--	0.12	--	5 U	5 U
Nitrobenzene	98-95-3	ug/L	3.4	--	0.14	--	5 U	5 U
N-Nitroso-di-n propylamine	621-64-7	ug/L	5	--	0.011	--	5 U	5 U
N-Nitrosodiphenylamine	86-30-6	ug/L	270	--	12	--	5 U	5 U
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	10 U	10 U
Phenanthrene	85-01-8	ug/L	52	--	--	--	5 U	5 U
Phenol	108-95-2	ug/L	4400	--	5800	--	10 U	10 U
Pyrene	129-00-0	ug/L	140	--	120	--	5 U	5 U

Table D-7
Groundwater Analytical Results - Water Supply
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	EGLE Residential Groundwater DWC	EPA Groundwater Primary MCL	EPA Tapwater RSL	Location Sample ID Date Type	Steere Farm Well #25 G-GWPW-25 9/29/2022 FS	PW-1/Montgomery Well G-GWPW-01 9/29/2022 FS
SVOC SIM								
1,4-Dioxane	123-91-1	ug/L	7.2	--	0.46	--	0.2 R	**1.4 J-**
1-Methylnaphthalene	90-12-0	ug/L	--	--	1.1	--	0.1 R	0.1 R
2-Methylnaphthalene	91-57-6	ug/L	260	--	36	--	0.1 R	0.1 R
Acenaphthene	83-32-9	ug/L	1300	--	530	--	0.1 R	0.1 R
Acenaphthylene	208-96-8	ug/L	52	--	--	--	0.1 R	0.1 R
Anthracene	120-12-7	ug/L	43	--	1800	--	0.1 R	0.1 R
Benzo(a)anthracene	56-55-3	ug/L	2.1	--	0.03	--	0.1 R	0.1 R
Benzo(a)pyrene	50-32-8	ug/L	5	--	0.025	--	0.1 R	0.1 R
Benzo(b)fluoranthene	205-99-2	ug/L	1.5	--	0.25	--	0.1 R	0.1 R
Benzo(g,h,i)perylene	191-24-2	ug/L	1	--	--	--	0.1 R	0.1 R
Benzo(k)fluoranthene	207-08-9	ug/L	1	--	2.5	--	0.1 R	0.1 R
Chrysene	218-01-9	ug/L	1.6	--	25	--	0.1 R	0.1 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	2	--	0.025	--	0.1 R	0.1 R
Fluoranthene	206-44-0	ug/L	210	--	800	--	0.1 R	0.1 R
Fluorene	86-73-7	ug/L	880	--	290	--	0.1 R	0.1 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	2	--	0.25	--	0.1 R	0.1 R
Naphthalene	91-20-3	ug/L	520	--	0.12	--	0.1 R	0.1 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	--	0.2 R	0.2 R
Phenanthrene	85-01-8	ug/L	52	--	--	--	0.1 R	0.1 R
Pyrene	129-00-0	ug/L	140	--	120	--	0.1 R	0.1 R
VOC SIM								
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	--	0.05 U	0.05 U
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	0.2	0.2	0.00033	--	0.05 U	0.05 U
1,2-Dibromoethane	106-93-4	ug/L	0.05	0.05	0.0075	--	0.05 U	0.05 U
Trichloroethene	79-01-6	ug/L	5	5	0.49	--	0.05 U	0.05 U
Vinyl chloride	75-01-4	ug/L	2	2	0.019	--	0.05 U	0.05 U

Notes:

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more regulatory criteria and/or screening benchmark.
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWC	Drinking Water Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
FS	field sample
MCL	Maximum Contaminant Level
RSL	Regional Screening Level
µg/L	microgram(s) per liter

Table D-8
Wastewater Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Location Sample ID Depth Date Type	Pond 3 G-SWSS-01 0-12 inches 9/30/2022 FS	PPE 3 G-SWPPE-03 0-12 inches 9/30/2022 FS	PPE 3 G-SWPPE-93 0-12 inches 9/30/2022 FD
SVOCs						
1,1'-Biphenyl	92-52-4	ug/L	--	5 U	5.1 R	4.7 R
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	--	5 U	5.1 R	4.7 R
1,4-Dioxane	123-91-1	ug/L	--	**260**	2 R	**2.4 J-**
1-Methylnaphthalene	90-12-0	ug/L	--	5 U	5.1 R	4.7 R
2,2'-Oxybis(1-chloropropane)	108-60-1	ug/L	--	10 U	10 R	9.4 R
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	5 U	5.1 R	4.7 R
2,4,5-Trichlorophenol	95-95-4	ug/L	--	5 U	5.1 R	4.7 R
2,4,6-Trichlorophenol	88-06-2	ug/L	--	5 U	5.1 R	4.7 R
2,4-Dichlorophenol	120-83-2	ug/L	--	5 U	5.1 R	4.7 R
2,4-Dimethylphenol	105-67-9	ug/L	--	5 U	5.1 R	4.7 R
2,4-Dinitrophenol	51-28-5	ug/L	--	10 U	10 R	9.4 R
2,4-Dinitrotoluene	121-14-2	ug/L	--	5 U	5.1 R	4.7 R
2,6-Dinitrotoluene	606-20-2	ug/L	--	5 U	5.1 R	4.7 R
2-Chloronaphthalene	91-58-7	ug/L	--	5 U	5.1 R	4.7 R
2-Chlorophenol	95-57-8	ug/L	--	5 U	5.1 R	4.7 R
2-Methylnaphthalene	91-57-6	ug/L	--	5 U	5.1 R	4.7 R
2-Methylphenol	95-48-7	ug/L	--	10 U	10 R	9.4 R
2-Nitroaniline	88-74-4	ug/L	--	5 U	5.1 R	4.7 R
2-Nitrophenol	88-75-5	ug/L	--	5 U	5.1 R	4.7 R
3,3'-Dichlorobenzidine	91-94-1	ug/L	--	10 U	10 R	9.4 R
3-Nitroaniline	99-09-2	ug/L	--	10 U	10 R	9.4 R
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	--	10 U	10 R	9.4 R
4-Bromophenyl-phenylether	101-55-3	ug/L	--	5 U	5.1 R	4.7 R
4-Chloro-3-methylphenol	59-50-7	ug/L	--	5 U	5.1 R	4.7 R
4-Chloroaniline	106-47-8	ug/L	--	10 U	10 R	9.4 R
4-Chlorophenyl-phenyl ether	7005-72-3	ug/L	--	5 U	5.1 R	4.7 R
4-Methylphenol	106-44-5	ug/L	--	10 U	10 R	9.4 R
4-Nitroaniline	100-01-6	ug/L	--	10 U	10 R	9.4 R
4-Nitrophenol	100-02-7	ug/L	--	10 U	10 R	9.4 R
Acenaphthene	83-32-9	ug/L	--	5 U	5.1 R	4.7 R
Acenaphthylene	208-96-8	ug/L	--	5 U	5.1 R	4.7 R
Acetophenone	98-86-2	ug/L	--	10 U	10 R	9.4 R
Anthracene	120-12-7	ug/L	--	5 U	5.1 R	4.7 R
Atrazine	1912-24-9	ug/L	--	10 U	10 R	9.4 R
Benzaldehyde	100-52-7	ug/L	--	10 U	10 R	9.4 R
Benzo(a)anthracene	56-55-3	ug/L	--	5 U	5.1 R	4.7 R
Benzo(a)pyrene	50-32-8	ug/L	--	5 U	5.1 R	4.7 R
Benzo(b)fluoranthene	205-99-2	ug/L	--	5 U	5.1 R	4.7 R
Benzo(g,h,i)perylene	191-24-2	ug/L	--	5 U	5.1 R	4.7 R
Benzo(k)fluoranthene	207-08-9	ug/L	--	5 U	5.1 R	4.7 R
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	5 U	5.1 R	4.7 R
Bis(2-chloroethyl)ether	111-44-4	ug/L	--	10 U	10 R	9.4 R
Bis(2-ethylhexyl)phthalate	117-81-7	ug/L	--	5 U	8.7 J-	4.7 R
Butylbenzylphthalate	85-68-7	ug/L	--	5 U	5.1 R	4.7 R
Caprolactam	105-60-2	ug/L	--	10 U	2.4 J-	9.4 R
Carbazole	86-74-8	ug/L	--	10 U	10 R	9.4 R
Chrysene	218-01-9	ug/L	--	5 U	5.1 R	4.7 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	--	5 U	5.1 R	4.7 R
Dibenzofuran	132-64-9	ug/L	--	5 U	5.1 R	4.7 R
Diethylphthalate	84-66-2	ug/L	--	5 U	5.1 R	4.7 R
Dimethylphthalate	131-11-3	ug/L	--	5 U	5.1 R	4.7 R
Di-n-butylphthalate	84-74-2	ug/L	--	5 U	**3.3 J-**	4.7 R
Di-n-octyl phthalate	117-84-0	ug/L	--	10 U	10 R	9.4 R
Fluoranthene	206-44-0	ug/L	--	5 U	5.1 R	4.7 R
Fluorene	86-73-7	ug/L	--	5 U	5.1 R	4.7 R
Hexachlorobenzene	118-74-1	ug/L	--	5 U	5.1 R	4.7 R
Hexachlorobutadiene	87-68-3	ug/L	--	5 U	5.1 R	4.7 R
Hexachlorocyclo-pentadiene	77-47-4	ug/L	--	10 U	10 R	9.4 R
Hexachloroethane	67-72-1	ug/L	--	5 U	5.1 R	4.7 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	5 U	5.1 R	4.7 R
Isophorone	78-59-1	ug/L	--	5 U	5.1 R	4.7 R
Naphthalene	91-20-3	ug/L	--	5 U	5.1 R	4.7 R
Nitrobenzene	98-95-3	ug/L	--	5 U	5.1 R	4.7 R
N-Nitroso-di-n propylamine	621-64-7	ug/L	--	5 U	5.1 R	4.7 R
N-Nitrosodiphenylamine	86-30-6	ug/L	--	5 U	5.1 R	4.7 R
Pentachlorophenol	87-86-5	ug/L	--	10 U	10 R	9.4 R
Phenanthrene	85-01-8	ug/L	--	5 U	5.1 R	4.7 R
Phenol	108-95-2	ug/L	--	10 U	10 R	9.4 R
Pyrene	129-00-0	ug/L	--	5 U	5.1 R	4.7 R

Table D-8
Wastewater Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Location Sample ID Depth Date Type	Pond 3 G-SWSS-01 0-12 inches 9/30/2022 FS	PPE 3 G-SWPPE-03 0-12 inches 9/30/2022 FS	PPE 3 G-SWPPE-93 0-12 inches 9/30/2022 FD
SVOC SIM						
1,4-Dioxane	123-91-1	ug/L	--	NA	**1 J+**	NA
1-Methylnaphthalene	90-12-0	ug/L	--	0.1 U	0.1 R	0.094 R
2-Methylnaphthalene	91-57-6	ug/L	--	0.1 U	0.1 R	0.094 R
Acenaphthene	83-32-9	ug/L	--	0.1 U	0.1 R	0.094 R
Acenaphthylene	208-96-8	ug/L	--	0.1 U	0.1 R	0.094 R
Anthracene	120-12-7	ug/L	--	0.1 U	0.1 R	0.094 R
Benzo(a)anthracene	56-55-3	ug/L	--	0.1 U	0.1 R	0.094 R
Benzo(a)pyrene	50-32-8	ug/L	--	0.1 U	0.1 R	0.094 R
Benzo(b)fluoranthene	205-99-2	ug/L	--	0.1 U	0.1 R	0.094 R
Benzo(g,h,i)perylene	191-24-2	ug/L	--	0.1 U	0.1 R	0.094 R
Benzo(k)fluoranthene	207-08-9	ug/L	--	0.1 U	0.1 R	0.094 R
Chrysene	218-01-9	ug/L	--	0.1 U	0.1 R	0.094 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	--	0.1 U	0.1 R	0.094 R
Fluoranthene	206-44-0	ug/L	--	0.1 U	0.1 R	0.094 R
Fluorene	86-73-7	ug/L	--	0.1 U	0.1 R	0.094 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	0.1 U	0.1 R	0.094 R
Naphthalene	91-20-3	ug/L	--	0.1 U	0.1 R	0.094 R
Pentachlorophenol	87-86-5	ug/L	--	0.2 U	**0.1 J-**	0.19 R
Phenanthrene	85-01-8	ug/L	--	0.1 U	0.1 R	0.094 R
Pyrene	129-00-0	ug/L	--	0.1 U	0.1 R	0.094 R
VOCs						
1,1,1-Trichloroethane	71-55-6	ug/L	--	0.5 U	0.5 U	0.5 R
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	--	0.5 U	0.5 UJ	0.5 R
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	ug/L	--	0.5 U	0.5 U	0.5 R
1,1,2-Trichloroethane	79-00-5	ug/L	--	0.5 U	0.5 U	0.5 R
1,1-Dichloroethane	75-34-3	ug/L	--	0.5 U	0.5 U	0.5 R
1,1-Dichloroethene	75-35-4	ug/L	--	0.5 U	0.5 U	0.5 R
1,2,3-Trichlorobenzene	87-61-6	ug/L	--	0.5 U	0.5 U	0.5 R
1,2,3-Trichloropropane	96-18-4	ug/L	--	0.5 U	0.5 U	0.5 R
1,2,4-Trichlorobenzene	120-82-1	ug/L	--	0.5 U	0.5 U	0.5 R
1,2,4-Trimethylbenzene	95-63-6	ug/L	--	0.5 U	0.5 U	0.5 R
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	--	0.5 U	0.5 UJ	0.5 R
1,2-Dibromoethane	106-93-4	ug/L	--	0.5 U	0.5 U	0.5 R
1,2-Dichlorobenzene	95-50-1	ug/L	--	0.5 U	0.5 U	0.5 R
1,2-Dichloroethane	107-06-2	ug/L	--	0.5 U	0.5 U	0.5 R
1,2-Dichloropropane	78-87-5	ug/L	--	0.5 U	0.5 U	0.5 R
1,3,5-Trimethylbenzene	108-67-8	ug/L	--	0.5 U	0.5 U	0.5 R
1,3-Dichlorobenzene	541-73-1	ug/L	--	0.5 U	0.5 U	0.5 R
1,4-Dichlorobenzene	106-46-7	ug/L	--	0.5 U	0.5 U	0.5 R
2-Butanone	78-93-3	ug/L	--	5 U	5 U	5 R
2-Hexanone	591-78-6	ug/L	--	5 U	5 U	5 R
4-Methyl-2-pentanone	108-10-1	ug/L	--	5 U	5 U	5 R
Acetone	67-64-1	ug/L	--	5 U	5 U	**5.7 J**
Benzene	71-43-2	ug/L	--	0.5 U	0.5 U	0.5 R
Bromochloromethane	74-97-5	ug/L	--	0.5 U	0.5 U	0.5 R
Bromodichloromethane	75-27-4	ug/L	--	0.5 U	0.5 U	0.5 R
Bromoform	75-25-2	ug/L	--	0.5 U	0.5 U	0.5 R
Bromomethane	74-83-9	ug/L	--	0.5 U	0.5 U	0.5 R
Carbon disulfide	75-15-0	ug/L	--	0.5 U	0.5 U	0.5 R
Carbon tetrachloride	56-23-5	ug/L	--	0.5 U	0.5 U	0.5 R
Chlorobenzene	108-90-7	ug/L	--	0.5 U	0.5 U	0.5 R
Chloroethane	75-00-3	ug/L	--	0.5 U	0.5 U	0.5 R
Chloroform	67-66-3	ug/L	--	0.5 U	0.5 U	0.55 R
Chloromethane	74-87-3	ug/L	--	0.5 U	0.5 U	0.5 R
cis-1,2-Dichloroethene	156-59-2	ug/L	--	0.5 U	0.5 U	0.5 R
cis-1,3-Dichloropropene	10061-01-5	ug/L	--	0.5 U	0.5 U	0.5 R
Cyclohexane	110-82-7	ug/L	--	0.5 U	0.5 U	0.5 R
Dibromochloromethane	124-48-1	ug/L	--	0.5 U	0.5 U	0.5 R
Dichlorodifluoromethane	75-71-8	ug/L	--	0.5 U	0.5 U	0.5 R
Ethylbenzene	100-41-4	ug/L	--	0.5 U	0.5 U	0.5 R
Isopropylbenzene	98-82-8	ug/L	--	0.5 U	0.5 U	0.5 R
m,p-Xylene	179601-23-1	ug/L	--	0.5 U	0.5 U	0.5 R
Methyl acetate	79-20-9	ug/L	--	0.5 UJ	0.5 U	0.5 R
Methyl tert-butyl ether	1634-04-4	ug/L	--	0.5 U	0.5 U	0.5 R
Methylcyclohexane	108-87-2	ug/L	--	0.5 U	0.5 U	0.5 R
Methylene chloride	75-09-2	ug/L	--	0.5 U	0.5 U	0.5 R
o-Xylene	95-47-6	ug/L	--	0.5 U	0.5 U	0.5 R
Styrene	100-42-5	ug/L	--	0.5 U	0.5 U	0.5 R
Tetrachloroethene	127-18-4	ug/L	--	0.5 U	0.5 U	0.5 R
Toluene	108-88-3	ug/L	--	0.5 U	0.5 U	0.5 R
trans-1,2-Dichloroethene	156-60-5	ug/L	--	0.5 U	0.5 U	0.5 R
trans-1,3-Dichloropropene	10061-02-6	ug/L	--	0.5 U	0.5 U	0.5 R
Trichloroethene	79-01-6	ug/L	--	0.5 U	0.5 U	0.5 R
Trichlorofluoromethane	75-69-4	ug/L	--	0.5 U	0.5 UJ	0.5 R
Vinyl chloride	75-01-4	ug/L	--	0.5 U	0.5 U	0.5 R

Table D-8
Wastewater Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Location Sample ID Depth Date Type	Pond 3 G-SWSS-01 0-12 inches 9/30/2022 FS	PPE 3 G-SWPPE-03 0-12 inches 9/30/2022 FS	PPE 3 G-SWPPE-93 0-12 inches 9/30/2022 FD
Aroclors						
Aroclor-1016	12674-11-2	ug/L	--	1 U	1 U	1 U
Aroclor-1221	11104-28-2	ug/L	--	1 U	1 U	1 U
Aroclor-1232	11141-16-5	ug/L	--	1 U	1 U	1 U
Aroclor-1242	53469-21-9	ug/L	--	1 U	1 U	1 U
Aroclor-1248	12672-29-6	ug/L	--	1 UJ	1 U	1 U
Aroclor-1254	11097-69-1	ug/L	--	1 U	1 U	1 U
Aroclor-1260	11096-82-5	ug/L	--	1 U	1 U	1 U
Aroclor-1262	37324-23-5	ug/L	--	1 U	1 U	1 U
Aroclor-1268	11100-14-4	ug/L	--	1 U	1 U	1 U
Total Metals						
Aluminum	7429-90-5	ug/L	--	200 U	200 U	200 U
Antimony	7440-36-0	ug/L	--	2 U	2 U	2 U
Arsenic	7440-38-2	ug/L	--	**0.63 J**	**0.75 J**	**0.71 J**
Barium	7440-39-3	ug/L	--	**280**	**300**	**290**
Beryllium	7440-41-7	ug/L	--	5 U	5 U	5 U
Cadmium	7440-43-9	ug/L	--	5 U	5 U	5 U
Calcium	7440-70-2	ug/L	--	**140000 J-**	**150000 J**	**140000 J**
Chromium	7440-47-3	ug/L	--	10 U	10 U	10 U
Cobalt	7440-48-4	ug/L	--	1 U	**0.13 J**	**0.13 J**
Copper	7440-50-8	ug/L	--	25 U	25 U	25 U
Cyanide	57-12-5	ug/L	--	10 R	10 R	**3.1 J-**
Iron	7439-89-6	ug/L	--	**2000**	**2300**	**2300**
Lead	7439-92-1	ug/L	--	10 U	**5.9 J**	**6.3 J**
Magnesium	7439-95-4	ug/L	--	**38000 J+**	**37000**	**36000**
Manganese	7439-96-5	ug/L	--	**91**	**96**	**95**
Mercury	7439-97-6	ug/L	--	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	ug/L	--	40 U	40 U	40 U
Potassium	7440-09-7	ug/L	--	**2900**	**3700 J**	**3600 J**
Selenium	7782-49-2	ug/L	--	5 U	5 U	5 U
Silver	7440-22-4	ug/L	--	1 U	1 U	1 U
Sodium	7440-23-5	ug/L	--	**76000**	**110000**	**110000**
Thallium	7440-28-0	ug/L	--	1 U	1 U	1 U
Vanadium	7440-62-2	ug/L	--	50 U	50 U	50 U
Zinc	7440-66-6	ug/L	--	60 U	60 U	60 U
Dissolved Metals						
Aluminum	7429-90-5	ug/L	--	20 U	NA	NA
Antimony	7440-36-0	ug/L	--	2 U	2 U	2 U
Arsenic	7440-38-2	ug/L	--	**0.33 J**	**0.14 J**	**0.12 J**
Barium	7440-39-3	ug/L	--	**240 J+**	NA	NA
Beryllium	7440-41-7	ug/L	--	1 U	NA	NA
Cadmium	7440-43-9	ug/L	--	1 U	NA	NA
Calcium	7440-70-2	ug/L	--	**120000 J-**	**140000**	**140000**
Chromium	7440-47-3	ug/L	--	2 U	NA	NA
Cobalt	7440-48-4	ug/L	--	1 U	**0.13 J**	1 U
Copper	7440-50-8	ug/L	--	2 U	NA	NA
Iron	7439-89-6	ug/L	--	200 U	NA	NA
Lead	7439-92-1	ug/L	--	1 U	NA	NA
Magnesium	7439-95-4	ug/L	--	**38000 J+**	**36000**	**34000**
Manganese	7439-96-5	ug/L	--	**79 J+**	NA	NA
Mercury	7439-97-6	ug/L	--	0.2 U	0.2 U	0.2 U
Nickel	7440-02-0	ug/L	--	**0.29 J**	NA	NA
Potassium	9/7/7440	ug/L	--	**3000**	**3600**	**3500**
Selenium	7782-49-2	ug/L	--	5 U	5 U	5 U
Silver	7440-22-4	ug/L	--	1 U	1 U	1 U
Sodium	7440-23-5	ug/L	--	**78000**	**110000**	**110000**
Thallium	7440-28-0	ug/L	--	1 U	1 U	1 U
Vanadium	7440-62-2	ug/L	--	5 U	NA	NA
Zinc	7440-66-6	ug/L	--	5 U	NA	NA

Notes:

Bold	The analyte was detected above the method detection limit
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
J+	Result is biased high
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

CAS No.	Chemical Abstracts Service number
FD	field duplicate sample
FS	field sample
µg/L	microgram(s) per liter
NA	not analyzed
SIM	Selected Ion Monitoring
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

Table D-9
Surface Water Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Location Sample ID Depth Date Type	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	BK-01 G-SWBK-01 0-12 inches 10/3/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	SW01 G-SWSW-01 0-12 inches 10/1/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	SW01 G-SWSW-91 0-12 inches 10/1/2022 FD	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	PPE 1 G-SWPPE-01 0-12 inches 9/30/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	PPE 3 Wetland G-SWRS-03 0-12 inches 9/30/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	Honey Creek G-SWRS-01 0-12 inches 9/29/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	Barton Pond G-SWRS-02 0-12 inches 9/29/2022 FS
SVOCs																								
1,1'-Biphenyl	92-52-4	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
1,2,4,5-Tetrachlorobenzene	95-94-3	ug/L	--	3	46	4.8 R	3	46	4.7 R	3	46	4.7 R	3	46	5 U	3	46	5.1 R	3	46	5 R	3	46	5 R
1,4-Dioxane	123-91-1	ug/L	--	22000	390000	1.9 R	22000	390000	**0.87 J-**	22000	390000	**0.73 J-**	22000	390000	**18**	22000	390000	**2.4 J-**	22000	390000	**0.65 J-**	22000	390000	2 R
1-Methylnaphthalene	90-12-0	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
2,2'-Oxybis(1-chloropropane)	108-60-1	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
2,3,4,6-Tetrachlorophenol	58-90-2	ug/L	--	1.2	22	4.8 R	1.2	22	4.7 R	1.2	22	4.7 R	1.2	22	5 U	1.2	22	5.1 R	1.2	22	5 R	1.2	22	5 R
2,4,5-Trichlorophenol	95-95-4	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
2,4,6-Trichlorophenol	88-06-2	ug/L	--	5	79	4.8 R	5	79	4.7 R	5	79	4.7 R	5	79	5 U	5	79	5.1 R	5	79	5 R	5	79	5 R
2,4-Dichlorophenol	120-83-2	ug/L	--	11	180	4.8 R	11	180	4.7 R	11	180	4.7 R	11	180	5 U	11	180	5.1 R	11	180	5 R	11	180	5 R
2,4-Dimethylphenol	105-67-9	ug/L	--	380	2700	4.8 R	380	2700	4.7 R	380	2700	4.7 R	380	2700	5 U	380	2700	5.1 R	380	2700	5 R	380	2700	5 R
2,4-Dinitrophenol	51-28-5	ug/L	--	19	270	9.6 R	19	270	9.4 R	19	270	9.4 R	19	270	10 U	19	270	10 R	19	270	10 R	19	270	10 R
2,4-Dinitrotoluene	121-14-2	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
2,6-Dinitrotoluene	606-20-2	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
2-Chloronaphthalene	91-58-7	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
2-Chlorophenol	95-57-8	ug/L	--	18	320	4.8 R	18	320	4.7 R	18	320	4.7 R	18	320	5 U	18	320	5.1 R	18	320	5 R	18	320	5 R
2-Methylnaphthalene	91-57-6	ug/L	--	19	340	4.8 R	19	340	4.7 R	19	340	4.7 R	19	340	5 U	19	340	5.1 R	19	340	5 R	19	340	5 R
2-Methylphenol	95-48-7	ug/L	--	76	1400	9.6 R	76	1400	9.4 R	76	1400	9.4 R	76	1400	10 U	76	1400	10 R	76	1400	10 R	76	1400	10 R
2-Nitroaniline	88-74-4	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
2-Nitrophenol	88-75-5	ug/L	--	56	1000	4.8 R	56	1000	4.7 R	56	1000	4.7 R	56	1000	5 U	56	1000	5.1 R	56	1000	5 R	56	1000	5 R
3,3'-Dichlorobenzidine	91-94-1	ug/L	--	4.5	81	9.6 R	4.5	81	9.4 R	4.5	81	9.4 R	4.5	81	10 U	4.5	81	10 R	4.5	81	10 R	4.5	81	10 R
3-Nitroaniline	99-09-2	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
4,6-Dinitro-2-methylphenol	534-52-1	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
4-Bromophenyl-phenylether	101-55-3	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
4-Chloro-3-methylphenol	59-50-7	ug/L	--	7.4	130	4.8 R	7.4	130	4.7 R	7.4	130	4.7 R	7.4	130	5 U	7.4	130	5.1 R	7.4	130	5 R	7.4	130	5 R
4-Chloroaniline	106-47-8	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
4-Chlorophenyl-phenyl ether	7005-72-3	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
4-Methylphenol	106-44-5	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
4-Nitroaniline	100-01-6	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
4-Nitrophenol	100-02-7	ug/L	--	200	1900	9.6 R	200	1900	9.4 R	200	1900	9.4 R	200	1900	10 U	200	1900	10 R	200	1900	10 R	200	1900	10 R
Acenaphthene	83-32-9	ug/L	--	38	200	4.8 R	38	200	4.7 R	38	200	4.7 R	38	200	5 U	38	200	5.1 R	38	200	5 R	38	200	5 R
Acenaphthylene	208-96-8	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Acetophenone	98-86-2	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Anthracene	120-12-7	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Atrazine	1912-24-9	ug/L	--	7.3	100	9.6 R	7.3	100	9.4 R	7.3	100	9.4 R	7.3	100	10 U	7.3	100	10 R	7.3	100	10 R	7.3	100	10 R
Benzaldehyde	100-52-7	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Benzo(a)anthracene	56-55-3	ug/L	--	--	--	4.8 R	--	--	**0.58 J-**	--	--	**0.61 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Benzo(a)pyrene	50-32-8	ug/L	--	--	--	4.8 R	--	--	**1.2 J-**	--	--	**1.3 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Benzo(b)fluoranthene	205-99-2	ug/L	--	--	--	4.8 R	--	--	**1.6 J-**	--	--	**1.6 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Benzo(g,h,i)perylene	191-24-2	ug/L	--	--	--	4.8 R	--	--	**1.5 J-**	--	--	**1.3 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Benzo(k)fluoranthene	207-08-9	ug/L	--	--	--	4.8 R	--	--	**1.6 J-**	--	--	**1.9 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Bis(2-chloroethoxy)methane	111-91-1	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Bis(2-chloroethyl)ether	111-44-4	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Bis(2-ethylhexyl) phthalate	117-81-7	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	**10 J-**	--	--	5 R	--	--	5 R
Butylbenzylphthalate	85-68-7	ug/L	--	67	630	4.8 R	67	630	4.7 R	67	630	4.7 R	67	630	5 U	67	630	5.1 R	67	630	5 R	67	630	5 R
Caprolactam	105-60-2	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Carbazole	86-74-8	ug/L	--	4	72	9.6 R	4	72	9.4 R	4	72	9.4 R	4	72	10 U	4	72	10 R	4	72	10 R	4	72	10 R
Chrysene	218-01-9	ug/L	--	--	--	4.8 R	--	--	**1.8 J-**	--	--	**1.7 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Dibenzofuran	132-64-9	ug/L	--	4	72	4.8 R	4	72	4.7 R	4	72	4.7 R	4	72	5 U	4	72	5.1 R	4	72	5 R	4	72	5 R
Diethylphthalate	84-66-2	ug/L	--	110	2000	4.8 R	110	2000	4.7 R	110	2000	4.7 R	110	2000	5 U	110	2000	5.1 R	110	2000	5 R	110	2000	5 R
Dimethylphthalate	131-11-3	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Di-n-butylphthalate	84-74-2	ug/L	--	9.7	75	4.8 R	9.7	75	4.7 R	9.7	75	4.7 R	9.7	75	5 U	9.7	75	5.1 R	9.7	75	5 R	9.7	75	5 R
Di-n-octylphthalate	117-84-0	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Fluoranthene	206-44-0	ug/L	--	1.6	28	4.8 R	1.6	28	**2.6 J-**	1.6	28	**2.7 J-**	1.6	28	5 U	1.6	28	5.1 R	1.6	28	5 R	1.6	28	5 R
Fluorene	86-73-7	ug/L	--	12	220	4.8 R	12	220	4.7 R	12	220	4.7 R	12	220	5 U	12	220	5.1 R	12	220	5 R	12	220	5 R
Hexachlorobenzene	118-74-1	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Hexachlorobutadiene	87-68-3	ug/L	--	1	15	4.8 R	1	15	4.7 R	1	15	4.7 R	1	15	5 U	1	15	5.1 R	1	15	5 R	1	15	5 R
Hexachlorocyclopentadiene	77-47-4	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Hexachloroethane	67-72-1	ug/L	--	13	210	4.8 R	13	210	4.7 R	13	210	4.7 R	13	210	5 U	13	210	5.1 R	13	210	5 R	13	210	5 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Isophorone	78-59-1	ug/L	--	1300	9200	4.8 R	1300	9200	4.7 R	1300	9200	4.7 R	1300	9200	5 U	1300	9200	5.1 R	1300	9200	5 R	1300	9200	5 R
Naphthalene	91-20-3	ug/L	--	11	200	4.8 R	11	200	4.7 R	11	200	4.7 R	11	200	5 U	11	200	5.1 R	11	200	5 R	11	200	5 R
Nitrobenzene	98-95-3	ug/L	--	230	2100	4.8 R	230	2100	4.7 R	230	2100	4.7 R	230	2100	5 U	230	2100	5.1 R	230	2100	5 R	230	2100	5 R
N-Nitroso-di-n propylamine	621-64-7	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
N-Nitrosodiphenylamine	86-30-6	ug/L	--	--	--	4.8 R	--	--	4.7 R	--	--	4.7 R	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	9.6 R	--	--	9.4 R	--	--	9.4 R	--	--	10 U	--	--	10 R	--	--	10 R	--	--	10 R
Phenanthrene	85-01-8	ug/L	--	1.7	11	4.8 R	1.7	11	**0.73 J-**	1.7	11	**0.76 J-**	1.7	11	5 U	1.7	11	5.1 R	1.7	11	5 R	1.7	11	5 R
Phenol	108-95-2	ug/L	--	450	6800	9.6 R	450	6800	9.4 R	450	6800	9.4 R	450	6800	10 U	450	6800	10 R	450	6800	10 R	450	6800	10 R
Pyrene	129-00-0	ug/L	--	--	--	4.8 R	--	--	**2.3 J-**	--	--	**2.3 J-**	--	--	5 U	--	--	5.1 R	--	--	5 R	--	--	5 R

Table D-9
Surface Water Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Location Sample ID Depth Date Type	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	BK-01 G-SWBK-01 0-12 inches 10/3/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	SW01 G-SWSW-01 0-12 inches 10/1/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	SW01 G-SWSW-91 0-12 inches 10/1/2022 FD	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	PPE 1 G-SWPPE-01 0-12 inches 9/30/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	PPE 3 Wetland G-SWRS-03 0-12 inches 9/30/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	Honey Creek G-SWRS-01 0-12 inches 9/29/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	Barton Pond G-SWRS-02 0-12 inches 9/29/2022 FS
SVOC SIM																								
1,4-Dioxane	123-91-1	ug/L	--	22000	390000	0.19 R	22000	390000	NA	22000	390000	NA	22000	390000	NA	22000	390000	NA	22000	390000	NA	22000	390000	0.2 UJ
1-Methylnaphthalene	90-12-0	ug/L	--	--	--	0.096 R	--	--	0.094 R	--	--	0.094 R	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
2-Methylnaphthalene	91-57-6	ug/L	--	19	340	0.096 R	19	340	**0.0097 J-**	19	340	**0.0088 J-**	19	340	0.1 U	19	340	0.1 R	19	340	0.1 R	19	340	0.1 R
Acenaphthene	83-32-9	ug/L	--	38	200	0.096 R	38	200	**0.026 J-**	38	200	**0.028 J-**	38	200	0.1 U	38	200	0.1 R	38	200	0.1 R	38	200	0.1 R
Acenaphthylene	208-96-8	ug/L	--	--	--	0.096 R	--	--	0.094 R	--	--	**0.094 R**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Anthracene	120-12-7	ug/L	--	--	--	0.096 R	--	--	**0.045 J-**	--	--	**0.05 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Benzo(a)anthracene	56-55-3	ug/L	--	--	--	**0.02 J-**	--	--	**0.71 J-**	--	--	**0.76 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Benzo(a)pyrene	50-32-8	ug/L	--	--	--	**0.02 J-**	--	--	**1.2 J-**	--	--	**1.4 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Benzo(b)fluoranthene	205-99-2	ug/L	--	--	--	**0.043 J-**	--	--	**2.3 J-**	--	--	**2.6 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Benzo(g,h,i)perylene	191-24-2	ug/L	--	--	--	**0.016 J-**	--	--	**1.1 J-**	--	--	**0.82 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Benzo(k)fluoranthene	207-08-9	ug/L	--	--	--	**0.018 J-**	--	--	**1.1 J-**	--	--	**1.5 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Chrysene	218-01-9	ug/L	--	--	--	**0.03 J-**	--	--	**1.7 J-**	--	--	**1.8 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Dibenzo(a,h)anthracene	53-70-3	ug/L	--	--	--	0.096 R	--	--	0.094 R	--	--	0.094 R	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Fluoranthene	206-44-0	ug/L	--	1.6	28	**0.051 J-**	1.6	28	**1.9 J-**	1.6	28	**2.1 J-**	1.6	28	0.1 U	1.6	28	0.1 R	1.6	28	0.1 R	1.6	28	0.1 R
Fluorene	86-73-7	ug/L	--	12	220	**0.0073 J-**	12	220	**0.046 J-**	12	220	**0.046 J-**	12	220	0.1 U	12	220	0.1 R	12	220	0.1 R	12	220	0.1 R
Indeno(1,2,3-cd)pyrene	193-39-5	ug/L	--	--	--	**0.017 J-**	--	--	**1.2 J-**	--	--	**0.9 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
Naphthalene	91-20-3	ug/L	--	11	200	0.096 R	11	200	**0.021 J-**	11	200	**0.027 J-**	11	200	0.1 U	11	200	0.1 R	11	200	0.1 R	11	200	0.1 R
Pentachlorophenol	87-86-5	ug/L	--	--	--	0.19 R	--	--	0.19 R	--	--	0.19 R	--	--	0.2 U	--	--	0.2 R	--	--	0.2 R	--	--	0.2 R
Phenanthrene	85-01-8	ug/L	--	1.7	11	**0.026 J-**	1.7	11	**0.58 J-**	1.7	11	**0.59 J-**	1.7	11	0.1 U	1.7	11	0.1 R	1.7	11	0.1 R	1.7	11	0.1 R
Pyrene	129-00-0	ug/L	--	--	--	**0.062 J-**	--	--	**3.4 J-**	--	--	**3.2 J-**	--	--	0.1 U	--	--	0.1 R	--	--	0.1 R	--	--	0.1 R
VOCs																								
1,1,1-Trichloroethane	71-55-6	ug/L	--	89	1600	0.5 U	89	1600	0.5 R	89	1600	0.5 R	89	1600	0.5 U	89	1600	0.5 U	89	1600	0.5 U	89	1600	0.5 U
1,1,2,2-Tetrachloroethane	79-34-5	ug/L	--	200	1800	0.5 U	200	1800	0.5 R	200	1800	0.5 R	200	1800	0.5 U	200	1800	0.5 UJ	200	1800	0.5 U	200	1800	0.5 U
1,1,2-Trichloro-1,2,2-trifluoroethane	76-13-1	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
1,1,2-Trichloroethane	79-00-5	ug/L	--	730	6400	0.5 U	730	6400	0.5 R	730	6400	0.5 R	730	6400	0.5 U	730	6400	0.5 U	730	6400	0.5 U	730	6400	0.5 U
1,1-Dichloroethane	75-34-3	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
1,1-Dichloroethene	75-35-4	ug/L	--	130	2300	0.5 U	130	2300	0.5 R	130	2300	0.5 R	130	2300	0.5 U	130	2300	0.5 U	130	2300	0.5 U	130	2300	0.5 U
1,2,3-Trichlorobenzene	87-61-6	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
1,2,3-Trichloropropane	96-18-4	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
1,2,4-Trichlorobenzene	120-82-1	ug/L	--	130	850	0.5 U	130	850	0.5 R	130	850	0.5 R	130	850	0.5 U	130	850	0.5 U	130	850	0.5 U	130	850	0.5 U
1,2,4-Trimethylbenzene	95-63-6	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
1,2-Dibromo-3-chloropropane	96-12-8	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 UJ	--	--	0.5 U	--	--	0.5 U
1,2-Dibromoethane	106-93-4	ug/L	--	15	280	0.5 U	15	280	0.5 R	15	280	0.5 R	15	280	0.5 U	15	280	0.5 U	15	280	0.5 U	15	280	0.5 U
1,2-Dichlorobenzene	95-50-1	ug/L	--	13	240	0.5 U	13	240	0.5 R	13	240	0.5 R	13	240	0.5 U	13	240	0.5 U	13	240	0.5 U	13	240	0.5 U
1,2-Dichloroethane	107-06-2	ug/L	--	2000	16000	0.5 U	2000	16000	0.5 R	2000	16000	0.5 R	2000	16000	0.5 U	2000	16000	0.5 U	2000	16000	0.5 U	2000	16000	0.5 U
1,2-Dichloropropane	78-87-5	ug/L	--	230	4000	0.5 U	230	4000	0.5 R	230	4000	0.5 R	230	4000	0.5 U	230	4000	0.5 U	230	4000	0.5 U	230	4000	0.5 U
1,3,5-Trimethylbenzene	108-67-8	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
1,3-Dichlorobenzene	541-73-1	ug/L	--	28	200	0.5 U	28	200	0.5 R	28	200	0.5 R	28	200	0.5 U	28	200	0.5 U	28	200	0.5 U	28	200	0.5 U
1,4-Dichlorobenzene	106-46-7	ug/L	--	17	210	0.5 U	17	210	0.5 R	17	210	0.5 R	17	210	0.5 U	17	210	0.5 U	17	210	0.5 U	17	210	0.5 U
2-Butanone	78-93-3	ug/L	--	--	--	5 U	--	--	5 R	--	--	5 R	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U
2-Hexanone	591-78-6	ug/L	--	--	--	5 U	--	--	5 R	--	--	5 R	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U
4-Methyl-2-pentanone	108-10-1	ug/L	--	--	--	5 U	--	--	5 R	--	--	5 R	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Acetone	67-64-1	ug/L	--	--	--	5 R	--	--	5 R	--	--	**5.3 J**	--	--	6.6 U	--	--	5 U	--	--	5 U	--	--	5 U
Benzene	71-43-2	ug/L	--	200	1900	0.5 U	200	1900	0.5 R	200	1900	0.5 R	200	1900	0.5 U	200	1900	0.5 U	200	1900	0.5 U	200	1900	0.5 U
Bromochloromethane	74-97-5	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Bromodichloromethane	75-27-4	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Bromoform	75-25-2	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Bromomethane	74-83-9	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Carbon disulfide	75-15-0	ug/L	--	--	--	**0.13 J**	--	--	**0.17 J**	--	--	**0.19 J**	--	--	**0.12 J**	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Carbon tetrachloride	56-23-5	ug/L	--	77	1400	0.5 U	77	1400	0.5 R	77	1400	0.5 R	77	1400	0.5 U	77	1400	0.5 U	77	1400	0.5 U	77	1400	0.5 U
Chlorobenzene	108-90-7	ug/L	--	25	450	0.5 U	25	450	0.5 R	25	450	0.5 R	25	450	0.5 U	25	450	0.5 U	25	450	0.5 U	25	450	0.5 U
Chloroethane	75-00-3	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Chloroform	67-66-3	ug/L	--	630	11000	0.5 U	630	11000	0.5 R	630	11000	0.5 R	630	11000	0.5 U	630	11000	0.5 U	630	11000	0.5 U	630	11000	0.5 U
Chloromethane	74-87-3	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
cis-1,2-Dichloroethene	156-59-2	ug/L	--	150	2800	0.5 U	150	2800	0.5 R	150	2800	0.5 R	150	2800	0.5 U	150	2800	0.5 U	150	2800	0.5 U	150	2800	0.5 U
cis-1,3-Dichloropropene	10061-01-5	ug/L	--	9	160	0.5 U	9	160	0.5 R	9	160	0.5 R	9	160	0.5 U	9	160	0.5 U	9	160	0.5 U	9	160	0.5 U
Cyclohexane	110-82-7	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Dibromochloromethane	124-48-1	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Dichlorodifluoromethane	75-71-8	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Ethylbenzene	100-41-4	ug/L	--	21	370	0.5 U	21	370	0.5 R	21	370	0.5 R	21	370	0.5 U	21	370	0.5 U	21	370	0.5 U	21	370	0.5 U
Isopropylbenzene	98-82-8	ug/L	--	28	1700	0.5 U	28	1700	0.5 R	28	1700	0.5 R	28	1700	0.5 U	28	1700	0.5 U	28	1700	0.5 U	28	1700	0.5 U
m,p-Xylene	179601-23-1	ug/L	--	49	890	0.5 U	49	890	0.5 R	49	890	0.5 R	49	890	0.5 U	49	890	0.5 U	49	890	0.5 U	49	890	0.5 U
Methyl acetate	79-20-9	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 UJ	--	--	0.5 U	--	--	0.5 UJ	--	--	0.5 UJ
Methyl tert-butyl ether	1634-04-4	ug/L	--	32000	420000	0.5 U	32000	420000	0.5 R	32000	420000	0.5 R	32000	420000	0.5 U	32000	420000	0.5 U	32000	420000	0.5 U	32000	420000	0.5 U
Methylcyclohexane	108-87-2	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U	--	--	0.5 U
Methylene chloride	75-09-2	ug/L	--	1500	17000	0.5 U	1500	17000	0.5 R	1500	17000	0.5 R	1500	17000	0.5 U	1500	17000	0.5 U	1500	17000	0.5 U	1500	17000	0.5 U
o-Xylene	95-47-6	ug/L	--	49	890	0.5 U	49	890	0.5 R	49	890	0.5 R	49	890	0.5 U	49	890	0.5 U	49	890	0.5 U	49	890	0.5 U
Styrene	100-42-5	ug/L	--	160	2900	0.5 U	160	2900	0.5 R	160	2900	0.5 R	160	2900	0.5 U	160	2900	0.5 U	160	2900	0.5 U	160	2900	0.5 U
Tetrachloroethene	127-18-4	ug/L	--	190	2900	0.5 U	190	2900	0.5 R	190	2900	0.5 R	190	2900	0.5 U	190	2900	0.5 U	190	2900	0.5 U	190	2900	0.5 U
Toluene	108-88-3	ug/L	--	270	2600	0.5 R	270	2600	0.5 R	270	2600	0.5 R	270	2600	**0.83**	270	2600	0.5 U	270	2600	0.5 U	270	2600	0.5 U
trans-1,2-Dichloroethene	156-60-5	ug/L	--	150	2800	0.5 U	150	2800	0.5 R	150	2800	0.5 R	150	2800	0.5 U	150	2800	0.5 U	150	2800	0.5 U	150	2800	0.5 U
trans-1,3-Dichloropropene	10061-02-6	ug/L	--	9	160	0.5 U	9	160	0.5 R	9	160	0.5 R	9	160	0.5 U	9	160	0.5 U	9	160	0.5 U	9	160	0.5 U
Trichloroethene	79-01-6	ug/L	--	200	3500	0.5 U	200	3500	0.5 R	200	3500	0.5 R	200	3500	0.5 U	200	3500	0.5 U	200	3500	0.5 U	200	3500	0.5 U
Trichlorofluoromethane	75-69-4	ug/L	--	--	--	0.5 U	--	--	0.5 R	--	--	0.5 R	--	--	0.5 U	--	--	0.5 UJ	--	--	0.5 U	--	--	0.5 U
Vinyl chloride	75-01-4	ug/L	--	930	1700	0.5 U	930	1700	0.5 R	930	1700	0.5 R	930	1700	0.5 U	930	1700	0.5 U	930	1700	0.5 U	930	1700	0.5 U

Table D-9
Surface Water Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Location Sample ID Depth Date Type	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	BK-01 G-SWBK-01 0-12 inches 10/3/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	SW01 G-SWSW-01 0-12 inches 10/1/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	SW01 G-SWSW-91 0-12 inches 10/1/2022 FD	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	PPE 1 G-SWPPE-01 0-12 inches 9/30/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	PPE 3 Wetland G-SWRS-03 0-12 inches 9/30/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	Honey Creek G-SWRS-01 0-12 inches 9/29/2022 FS	EGLE Rule 57 Surface Water Quality FCV	EGLE Rule 57 Surface Water Quality FAV	Barton Pond G-SWRS-02 0-12 inches 9/29/2022 FS
Aroclors																								
Aroclor-1016	12674-11-2	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1221	11104-28-2	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1232	11141-16-5	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1242	53469-21-9	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1248	12672-29-6	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 UJ	--	--	1 U	--	--	1 UJ	--	--	1 UJ
Aroclor-1254	11097-69-1	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1260	11096-82-5	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1262	37324-23-5	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Aroclor-1268	11100-14-4	ug/L	--	--	--	1 U	--	--	1 U	--	--	0.98 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
General Chemistry																								
Hardness	NA	mg/L as $CaCO_3$	--	140	140	140	257	257	257	557	557	557	706	706	706	242	242	242	402	402	402	261	261	261
Total Metals																								
Aluminum	7429-90-5	ug/L	--	--	--	**1300**	--	--	**730**	--	--	**5400**	--	--	**22000**	--	--	**7300**	--		200 U	--	--	**34 J**
Antimony	7440-36-0	ug/L	--	240	2300	2 U	240	2300	2 U	240	2300	2 U	240	2300	**0.53 J**	240	2300	2 U	240	2300	2 U	240	2300	2 U
Arsenic	7440-38-2	ug/L	--	150	680	**3.7**	150	680	**6.1**	150	680	**18**	150	680	**44**	150	680	**18**	150	680	**0.87 J**	150	680	**1.9**
Barium	7440-39-3	ug/L	--	629.72	3570.90	**40 J (50)**	1201.00	6810.45	**95 J**	2732.73	15496.27	**190 J (152)**	3515.77	19936.65	**630**	1126.64	6388.74	**190 J (152)**	1933.90	10966.45	**170 J**	1221.56	6927.03	**87 J**
Beryllium	7440-41-7	ug/L	--	11.75	211.46	5 U	32.67	588.10	5 U	120.19	2163.25	**0.67 J**	179.15	3224.51	**3.9 J**	29.53	531.46	**0.81 J**	69.50	1250.88	5 U	33.56	604.12	5 U
Cadmium	7440-43-9	ug/L	--	--	--	5 U	--	--	5 U	--	--	5 U	--	--	**6.7**	--	--	**0.88 J**	--	--	5 U	--	--	5 U
Calcium	7440-70-2	ug/L	--	--	--	**38000 J**	--	--	**83000 J**	--	--	**190000 J**	--	--	**240000 J-**	--	--	**74000 J**	--	--	**110000 J-**	--	--	**65000 J-**
Chromium	7440-47-3	ug/L	--	--	--	**5 J**	--	--	**2.6 J**	--	--	**13**	--	--	10 U	--	--	**11**	--	--	10 U	--	--	10 U
Cobalt	7440-48-4	ug/L	--	100	740	**1.4**	100	740	**1.9**	100	740	**7.1**	100	740	**16 J+**	100	740	**10**	100	740	**5 J+**	100	740	**5 J+**
Copper	7440-50-8	ug/L	--	--	--	25 U	--	--	25 U	--	--	**40 J+**	--	--	**6.1 J**	--	--	**46 J+**	--	--	25 U	--	--	25 U
Cyanide	57-12-5	ug/L	--	5.2	44	10 R	5.2	44	10 R	5.2	44	10 R	5.2	44	10 R	5.2	44	10 R	5.2	44	10 R	5.2	44	10 R
Iron	7439-89-6	ug/L	--	--	--	**2700**	--	--	**13000**	--	--	**43000**	--	--	**120000**	--	--	**44000**	--	--	**180**	--	--	**170**
Lead	7439-92-1	ug/L	--	--	--	**5.9 J (7.7)**	--	--	**7.5 J**	--	--	**24**	--	--	**56 J+**	--	--	**44**	--	--	10 U	--	--	10 U
Magnesium	7439-95-4	ug/L	--	--	--	**11000**	--	--	**12000**	--	--	**20000**	--	--	**26000 J+**	--	--	**14000**	--	--	**31000 J+**	--	--	**24000 J+**
Manganese	7439-96-5	ug/L	--	2641.86	11399.66	**45**	4504.39	19436.51	**850**	8886.08	38343.54	**1300**	10943.12	47219.68	**1400**	4272.62	18436.41	**590**	6677.51	28813.52	**25**	4568.02	19711.07	**29**
Mercury	7439-97-6	ug/L	--	--	--	0.2 U	--	--	0.2 U	--	--	**0.063 J**	--	--	**0.37**	--	--	**0.18 J**	--	--	0.2 U	--	--	0.2 U
Nickel	7440-02-0	ug/L	--	--	--	**4.1 J (5.29)**	--	--	**4.5 J**	--	--	**21 J (16.3)**	--	--	**57**	--	--	**23 J**	--	--	40 U	--	--	40 U
Potassium	7440-09-7	ug/L	--	--	--	**4200 J**	--	--	**2900 J**	--	--	**3200 J**	--	--	**1600**	--	--	**2300 J**	--	--	**3000**	--	--	**2800**
Selenium	7782-49-2	ug/L	--	5	120	5 U	5	120	5 U	5	120	5 U	5	120	**1.4 J**	5	120	**1.8 J**	5	120	5 U	5	120	5 U
Silver	7440-22-4	ug/L	--	0.06	1.1	1 U	0.06	1.1	1 U	0.06	1.1	1 U	0.06	1.1	1 U	0.06	1.1	1 U	0.06	1.1	1 U	0.06	1.1	1 U
Sodium	7440-23-5	ug/L	--	--	--	**87000**	--	--	**72000**	--	--	**93000**	--	--	**120000**	--	--	**84000**	--	--	**92000**	--	--	**56000**
Thallium	7440-28-0	ug/L	--	7.2	94	1 U	7.2	94	1 U	7.2	94	**0.34 J**	7.2	94	1 U	7.2	94	**0.41 J**	7.2	94	1 U	7.2	94	1 U
Vanadium	7440-62-2	ug/L	--	27	160	**6.1 J (7.6)**	27	160	**6.9 J**	27	160	**26 J (20.8)**	27	160	**56**	27	160	**32 J (25.6)**	27	160	50 U	27	160	50 U
Zinc	7440-66-6	ug/L	--	--	--	**39 J (50.31)**	--	--	**82**	--	--	**350**	--	--	**600**	--	--	**320**	--	--	60 U	--	--	60 U
General Chemistry																								
Hardness	NA	mg/L as $CaCO_3$	--	147	147	147	200	200	200	240	240	240	201	201	201	170	170	170	398	398	398	255	255	255
Dissolved Metals																								
Aluminum	7429-90-5	ug/L	--	--	--	NA	--	--	NA	--	--	NA	--	--	**160 J+**	--	--	NA	--	--	20 U	--	--	**20 U**
Antimony	7440-36-0	ug/L	--	--	--	2 U	--	--	2 U	--	--	2 U	--	--	**0.22 J**	--	--	2 U	--	--	2 U	--	--	2 U
Arsenic	7440-38-2	ug/L	--	150	--	**1.1**	150	--	**3.3**	150	--	**3.2**	150	--	**9.9**	150	--	**1.5**	150	--	**0.76 J**	150	--	**1.8**
Barium	7440-39-3	ug/L	--	--	--	NA	--	--	NA	--	--	NA	--	--	**33 J+**	--	--	NA	--	--	**150 J+**	--	--	**74 J+**
Beryllium	7440-41-7	ug/L	--	--	--	NA	--	--	NA	--	--	NA	--	--	1 U	--	--	NA	--	--	1 U	--	--	1 U
Cadmium	7440-43-9	ug/L	--	3.33	13.95	NA	4.24	19.75	NA	4.90	24.25	NA	4.26	19.86	1 U	3.73	16.44	NA	7.28	42.91	1 U	5.13	25.97	1 U
Calcium	7440-70-2	ug/L	--	--	--	**39000**	--	--	**65000**	--	--	**78000**	--	--	**59000 J-**	--	--	**50000**	--	--	**110000 J-**	--	--	**64000 J-**
Chromium	7440-47-3	ug/L	--	101.61	1562.28	NA	130.75	2010.33	NA	151.81	2334.09	NA	131.29	2018.56	0.54 J	114.46	1759.80	NA	229.72	3532.07	2 U	159.54	2452.91	2 U
Cobalt	7440-48-4	ug/L	--	--	--	1 U	--	--	**0.62 J**	--	--	**0.65 J**	--	--	**1.1**	--	--	**0.34 J**	--	--	**0.046 J**	--	--	**0.044 J**
Copper	7440-50-8	ug/L	--	12.45	38.64	NA	16.19	51.65	NA	18.92	61.32	NA	16.26	51.89	2 U	14.09	44.31	NA	29.15	98.77	2 U	19.93	64.93	2 U
Iron	7439-89-6	ug/L	--	--	--	NA	--	--	NA	--	--	NA	--	--	13000 J+	--	--	NA	--	--	200 U	--	--	200 U
Lead	7439-92-1	ug/L	--	45.76	446.91	NA	61.99	605.41	NA	74.19	724.63	NA	62.29	608.40	**0.41 J**	52.81	515.78	NA	122.16	1193.14	1 U	78.76	769.26	1 U
Magnesium	7439-95-4	ug/L	--	--	--	**12000**	--	--	**9200**	--	--	**11000**	--	--	**13000 J+**	--	--	**11000**	--	--	30000 J+	--	--	23000 J+
Manganese	7439-96-5	ug/L	--	--	--	NA	--	--	NA	--	--	NA	--	--	**280 J+**	--	--	NA	--	--	**21 J+**	--	--	**18 J+**
Mercury	7439-97-6	ug/L	--	0.77	2.80	0.2 U	0.77	2.80	0.2 U	0.77	2.80	0.2 U	0.77	2.80	0.2 U	0.77	2.80	0.2 U	0.77	2.80	0.2 U	0.77	2.80	0.2 U
Nickel	7440-02-0	ug/L	--	72.05	1297.31	NA	93.48	1683.32	NA	109.07	1964.05	NA	93.88	1690.43	**2.7**	81.47	1467.08	NA	167.32	3012.98	0.47 J	114.81	2067.41	0.7 J
Potassium	7440-09-7	ug/L	--	--	--	**4100**	--	--	**1800**	--	--	**2100**	--	--	**200 J**	--	--	**440 J**	--	--	3000	--	--	2700
Selenium	7782-49-2	ug/L	--	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U	--	--	5 U
Silver	7440-22-4	ug/L	--	--	--	0.14 J	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Sodium	7440-23-5	ug/L	--	--	--	91000	--	--	67000	--	--	93000	--	--	120000	--	--	88000	--	--	93000	--	--	54000
Thallium	7440-28-0	ug/L	--	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U	--	--	1 U
Vanadium	7440-62-2	ug/L	--	--	--	NA	--	--	NA	--	--	NA	--	--	1.5 J	--	--	NA	--	--	0.1 J	--	--	0.13 J
Zinc	7440-66-6	ug/L	--	163.74	324.83	NA	212.55	421.65	NA	248.05	492.08	NA	213.45	423.43	**7.3 J+**	185.20	367.40	NA	380.78	755.38	5 U	261.13	518.02	5 U

Notes:

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more regulatory criteria and/or screening benchmark.
Bold	The analyte concentration exceeds 3X background and is significant to the Site
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
J+	Result is biased high
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.
R	The data are unusable. The sample results are rejected due to serious deficiencies in the ability to analyze the sample and to meet quality control criteria. The presence or absence of the analyte cannot be verified.

Abbreviations:

$CaCO_3$	calcium carbonate
CAS No.	Chemical Abstracts Service number
DWPC	Drinking Water Protection Criteria
EGLE	Michigan Department of Environment, Great Lakes, and Energy
EPA	United States Environmental Protection Agency
ID	identification
FAV	Final Acute Value
FCV	Final Chronic Value
FD	field duplicate sample
FS	field sample
µg/L	microgram(s) per liter
mg/L	milligram(s) per liter
NA	not analyzed
PPE	Probable Point of Entry
SIM	Selected Ion Monitoring
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

Table D-10
Sediment Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Non-Narcotic Mode of Action: Fresh ESV[1]	Non-Narcotic Mode of Action: Fresh RSV[2]	Narcotic Mode of Action: Fresh ESV[1]	Narcotic Mode of Action: Fresh RSV[2]	Location Sample ID Depth Date Type	Background G-SEBK-01 0-6 inches 10/3/2022 FS	SW01 G-SESW-01 0-6 inches 10/1/2022 FS	SW01 G-SESW-91 0-6 inches 10/1/2022 FD	PPE 1 G-SEPPE-01 0-6 inches 9/30/2022 FS	SS14 G-SS14-0002 0-2 feet 9/29/2022 FS	SS14 G-SS94-0002 0-2 feet 9/29/2022 FD	RS03 G-SERS-03 0-6 inches 9/30/2022 FS	RS02 G-SERS-02 0-6 inches 9/29/2022 FS	RS01 G-SERS-01 0-6 inches 9/29/2022 FS	Background G-SEBK-02 0-6 inches 9/30/2022 FS	PPE 2 G-SEPPE-02 0-6 inches 9/30/2022 FS	RS04 G-SERS-04 0-6 inches 10/3/2022 FS
SVOCs																			
1,1'-Biphenyl	92-52-4	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
1,2,4,5-Tetrachlorobenzene	95-94-3	mg/kg	--	--	0.187	0.135	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
1,4-Dioxane	123-91-1	mg/kg	--	--	--	--	--	0.11 UJ	0.15 UJ	0.14 UJ	0.24 UJ	0.14 UJ	0.17 UJ	0.4 UJ	0.1 UJ	0.19 UJ	0.12 UJ	0.12 UJ	0.13 UJ
1-Methylnaphthalene	90-12-0	mg/kg	--	--	0.141	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,2'-Oxybis(1-chloropropane)	108-60-1	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
2,3,4,6-Tetrachlorophenol	58-90-2	mg/kg	--	--	0.03	0.948	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,4,5-Trichlorophenol	95-95-4	mg/kg	0.034	1.964	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,4,6-Trichlorophenol	88-06-2	mg/kg	0.089	1.964	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,4-Dichlorophenol	120-83-2	mg/kg	--	--	0.057	1.886	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,4-Dimethylphenol	105-67-9	mg/kg	0.039	1.437	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,4-Dinitrophenol	51-28-5	mg/kg	0.223	2.961	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
2,4-Dinitrotoluene	121-14-2	mg/kg	0.29	2.9	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2,6-Dinitrotoluene	606-20-2	mg/kg	0.296	0.131	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2-Chloronaphthalene	91-58-7	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2-Chlorophenol	95-57-8	mg/kg	0.055	0.55	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2-Methylnaphthalene	91-57-6	mg/kg	--	--	0.0202	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2-Methylphenol	95-48-7	mg/kg	0.119	1.773	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
2-Nitroaniline	88-74-4	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
2-Nitrophenol	88-75-5	mg/kg	0.168	3.589	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
3,3'-Dichlorobenzidine	91-94-1	mg/kg	0.031	0.09	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
3-Nitroaniline	99-09-2	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
4,6-Dinitro-2-methylphenol	534-52-1	mg/kg	1.477	2.304	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
4-Bromophenyl-phenylether	101-55-3	mg/kg	--	--	0.047	0.062	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
4-Chloro-3-methylphenol	59-50-7	mg/kg	0.005	2.035	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
4-Chloroaniline	106-47-8	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
4-Chlorophenyl-phenyl ether	7005-72-3	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
4-Methylphenol	106-44-5	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
4-Nitroaniline	100-01-6	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
4-Nitrophenol	100-02-7	mg/kg	0.153	4.105	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Acenaphthene	83-32-9	mg/kg	--	--	0.0067	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Acenaphthylene	208-96-8	mg/kg	--	--	0.0059	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Acetophenone	98-86-2	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Anthracene	120-12-7	mg/kg	--	--	0.057	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Atrazine	1912-24-9	mg/kg	0.0003	0.089	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Benzaldehyde	100-52-7	mg/kg	0.059	0.58	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Benzo(a)anthracene	56-55-3	mg/kg	--	--	0.108	--	--	0.29 UJ	**0.53 J**	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Benzo(a)pyrene	50-32-8	mg/kg	--	--	0.15	--	--	0.29 UJ	**1.1 J**	**0.45 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.33 J**	0.3 UJ	**0.5 J**
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	0.19	--	--	0.29 UJ	**2 J**	**0.83 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.56 J**	0.3 UJ	**1 J**
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	0.17	--	--	0.29 UJ	**1.2 J**	**0.51 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.31 J**	0.3 UJ	**0.92 J**
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	0.24	--	--	0.29 UJ	**0.55 J**	**0.25 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	**0.25 J**
Bis(2-chloroethoxy)methane	111-91-1	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Bis(2-chloroethyl)ether	111-44-4	mg/kg	--	8.163	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Bis(2-ethylhexyl)phthalate	117-81-7	mg/kg	--	--	0.18	2.6	--	**0.23 J**	**0.66 J**	**0.41 J**	0.6 UJ	0.36 UJ	**0.4 J**	**0.97 J**	0.26 UJ	**0.45 J**	**0.34 J**	**0.3 J**	**0.47 J**
Butylbenzylphthalate	85-68-7	mg/kg	--	--	0.1	0.481	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Caprolactam	105-60-2	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Carbazole	86-74-8	mg/kg	--	--	0.069	4.561	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Chrysene	218-01-9	mg/kg	--	--	0.166	--	--	0.29 UJ	**0.95 J**	**0.38 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.26 J**	0.3 UJ	**0.38 J**
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	0.033	--	--	0.29 UJ	**0.22 J**	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Dibenzofuran	132-64-9	mg/kg	--	--	0.51	2.313	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Diethylphthalate	84-66-2	mg/kg	--	--	0.63	1.105	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Dimethylphthalate	131-11-3	mg/kg	--	--	0.678	2.031	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Di-n-butylphthalate	84-74-2	mg/kg	--	--	0.011	0.319	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Di-n-octylphthalate	117-84-0	mg/kg	--	--	0.039	1.1	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Fluoranthene	206-44-0	mg/kg	--	--	0.423	--	--	0.29 UJ	**1.4 J**	**0.57 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.35 J**	0.3 UJ	**0.49 J**
Fluorene	86-73-7	mg/kg	--	--	0.077	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Hexachlorobenzene	118-74-1	mg/kg	0.02	0.24	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Hexachlorobutadiene	87-68-3	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Hexachlorocyclo-pentadiene	77-47-4	mg/kg	0.069	0.81	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Hexachloroethane	67-72-1	mg/kg	--	--	0.027	0.075	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	0.2		--	0.29 UJ	**1 J**	**0.43 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.28 J**	0.3 UJ	**0.69 J**
Isophorone	78-59-1	mg/kg	--	--	0.876	0.948	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Naphthalene	91-20-3	mg/kg	--	--	0.176	3.85	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Nitrobenzene	98-95-3	mg/kg	--	--	0.407	9.007	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
N-Nitroso-di-n propylamine	621-64-7	mg/kg	--	--	--	--	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
N-Nitrosodiphenylamine	86-30-6	mg/kg	--	--	0.11	0.37	--	0.29 UJ	0.39 UJ	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Phenanthrene	85-01-8	mg/kg	--	--	0.204	5.96	--	0.29 UJ	**0.37 J**	0.35 UJ	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	0.3 UJ	0.3 UJ	0.33 UJ
Phenol	108-95-2	mg/kg	0.175	0.21	--	--	--	0.55 UJ	0.76 UJ	0.67 UJ	1.2 UJ	0.69 UJ	0.86 UJ	2 UJ	0.5 UJ	0.94 UJ	0.58 UJ	0.58 UJ	0.63 UJ
Pyrene	129-00-0	mg/kg	--	--	0.195	--	--	0.29 UJ	**1.2 J**	**0.49 J**	0.6 UJ	0.36 UJ	0.44 UJ	1 UJ	0.26 UJ	0.49 UJ	**0.32 J**	0.3 UJ	**0.45 J**

Table D-10
Sediment Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Non-Narcotic Mode of Action: Fresh ESV[1]	Non-Narcotic Mode of Action: Fresh RSV[2]	Narcotic Mode of Action: Fresh ESV[1]	Narcotic Mode of Action: Fresh RSV[2]	Location Sample ID Depth Date Type	Background G-SEBK-01 0-6 inches 10/3/2022 FS	SW01 G-SESW-01 0-6 inches 10/1/2022 FS	SW01 G-SESW-91 0-6 inches 10/1/2022 FD	PPE 1 G-SEPPE-01 0-6 inches 9/30/2022 FS	SS14 G-SS14-0002 0-2 feet 9/29/2022 FS	SS14 G-SS94-0002 0-2 feet 9/29/2022 FD	RS03 G-SERS-03 0-6 inches 9/30/2022 FS	RS02 G-SERS-02 0-6 inches 9/29/2022 FS	RS01 G-SERS-01 0-6 inches 9/29/2022 FS	Background G-SEBK-02 0-6 inches 9/30/2022 FS	PPE 2 G-SEPPE-02 0-6 inches 9/30/2022 FS	RS04 G-SERS-04 0-6 inches 10/3/2022 FS
SVOC SIM																			
1-Methylnaphthalene	90-12-0	mg/kg	--	--	0.141	--	--	0.0055 UJ	0.0075 UJ	0.0067 UJ	0.012 UJ	0.0069 UJ	0.0086 UJ	0.02 UJ	0.005 UJ	0.0095 UJ	0.0056 UJ	0.0058 UJ	0.0063 UJ
2-Methylnaphthalene	91-57-6	mg/kg	--	--	0.0202	--	--	0.0055 UJ	0.0075 UJ	0.0067 UJ	0.012 UJ	0.0069 UJ	0.0086 UJ	0.02 UJ	0.005 UJ	0.0095 UJ	0.0056 UJ	0.0058 UJ	0.0063 UJ
Acenaphthene	83-32-9	mg/kg	--	--	0.0067	--	--	0.0055 UJ	**0.0059 J**	0.0067 UJ	0.012 UJ	0.0069 UJ	0.0086 UJ	0.02 UJ	0.005 UJ	0.0095 UJ	0.0056 UJ	0.0058 UJ	0.0063 UJ
Acenaphthylene	208-96-8	mg/kg	--	--	0.0059	--	--	0.0055 UJ	**0.011 J**	**0.0043 J**	0.012 UJ	0.0069 UJ	0.0086 UJ	0.02 UJ	0.005 UJ	0.0095 UJ	0.0056 UJ	0.0058 UJ	**0.01 J**
Anthracene	120-12-7	mg/kg	--	--	0.057	--	--	0.0055 UJ	**0.043 J**	**0.018 J**	0.012 UJ	0.0069 UJ	0.0086 UJ	**0.016 J**	0.005 UJ	**0.0055 J**	**0.012 J**	0.0058 UJ	**0.024 J**
Benzo(a)anthracene	56-55-3	mg/kg	--	--	0.108	--	--	**0.0072 J**	**0.39 J+**	**0.16 J**	**0.028 J**	**0.0047 J**	**0.0069 J**	**0.082 J**	**0.0071 J**	**0.032 J**	**0.1 J**	**0.0032 J**	**0.12 J**
Benzo(a)pyrene	50-32-8	mg/kg	--	--	0.15	--	--	**0.0078 J**	**0.58 J+**	**0.24 J**	**0.033 J**	**0.0044 J**	**0.0067 J**	**0.14 J**	**0.0071 J**	**0.039 J**	**0.14 J**	**0.0045 J**	**0.27 J**
Benzo(b)fluoranthene	205-99-2	mg/kg	--	--	0.19	--	--	**0.007 J**	**0.58 J+**	**0.24 J**	**0.025 J**	**0.0076 J**	0.0086 UJ	**0.14 J**	**0.0066 J**	**0.038 J**	**0.13 J**	**0.0051 J**	**0.35 J**
Benzo(g,h,i)perylene	191-24-2	mg/kg	--	--	0.17	--	--	**0.0045 J**	**0.37 J+**	**0.16 J**	**0.018 J**	0.0069 UJ	0.0086 UJ	**0.1 J**	**0.0053 J**	**0.026 J**	**0.081 J**	**0.0044 J**	**0.29 J**
Benzo(k)fluoranthene	207-08-9	mg/kg	--	--	0.24	--	--	**0.0039 J**	**0.27 J+**	**0.098 J**	**0.014 J**	0.0069 UJ	0.0086 UJ	**0.08 J**	**0.0028 J**	**0.02 J**	**0.073 J**	0.0058 UJ	**0.095 J**
Chrysene	218-01-9	mg/kg	--	--	0.166	--	--	**0.0082 J**	**0.58 J+**	**0.25 J**	**0.032 J**	**0.0062 J**	**0.014 J**	**0.14 J**	**0.0071 J**	**0.043 J**	**0.13 J**	**0.0047 J**	**0.24 J**
Dibenzo(a,h)anthracene	53-70-3	mg/kg	--	--	0.033	--	--	0.0055 UJ	**0.064 J**	**0.027 J**	0.012 UJ	0.0069 UJ	0.0086 UJ	**0.018 J**	0.005 UJ	0.0095 UJ	**0.017 J**	0.0058 UJ	**0.035 J**
Fluoranthene	206-44-0	mg/kg	--	--	0.423	--	--	**0.013 J**	**1.1 J+**	**0.46 J**	**0.057 J**	**0.01 J**	**0.017 J**	**0.22 J**	**0.014 J**	**0.08 J**	**0.25 J**	**0.0079 J**	**0.4 J**
Fluorene	86-73-7	mg/kg	--	--	0.077	--	--	0.0055 UJ	**0.0086 J**	0.0067 UJ	0.012 UJ	0.0069 UJ	0.0086 UJ	0.02 UJ	0.005 UJ	0.0095 UJ	0.0056 UJ	0.0058 UJ	0.0063 UJ
Indeno(1,2,3-cd)pyrene	193-39-5	mg/kg	--	--	0.2	--	--	**0.005 J**	**0.39 J+**	**0.17 J**	**0.02 J**	0.0069 UJ	0.0086 UJ	**0.11 J**	**0.0046 J**	**0.027 J**	**0.089 J**	**0.0041 J**	**0.27 J**
Naphthalene	91-20-3	mg/kg	--	--	0.176	3.85	--	0.0055 UJ	0.0075 UJ	0.0067 UJ	0.012 UJ	0.0069 UJ	0.0086 UJ	0.02 UJ	0.005 UJ	0.0095 UJ	0.0056 UJ	0.0058 UJ	0.0063 UJ
Pentachlorophenol	87-86-5	mg/kg	--	--	--	--	--	0.011 UJ	0.015 UJ	0.014 UJ	0.024 UJ	**0.044 J**	**0.068 J**	0.04 UJ	0.01 UJ	0.019 UJ	0.011 UJ	0.012 UJ	0.013 UJ
Phenanthrene	85-01-8	mg/kg	--	--	0.204	5.96	--	**0.0036 J**	**0.23 J**	**0.08 J**	**0.016 J**	0.0069 UJ	**0.016 J**	**0.04 J**	**0.0046 J**	**0.021 J**	**0.048 J**	0.0058 UJ	**0.079 J**
Pyrene	129-00-0	mg/kg	--	--	0.195	--	--	**0.01 J**	**0.8 J+**	**0.37 J**	**0.043 J**	**0.0076 J**	**0.024 J**	**0.16 J**	**0.01 J**	**0.057 J**	**0.21 J**	**0.0061 J**	**0.34 J**
VOCs																			
1,1,1-Trichloroethane	71-55-6	mg/kg	--	--	0.07	0.367	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,1,2,2-Tetrachloroethane	79-34-5	mg/kg	--	--	0.25	2.23	--	0.0087 UJ	0.033 UJ	0.03 UJ	0.096 UJ	0.0093 UJ	0.024 UJ	0.1 UJ	0.011 UJ	0.013 UJ	0.01 UJ	0.013 UJ	NA
1,1,2-Trichloro- 1,2,2-trifluoroethane	76-13-1	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,1,2-Trichloroethane	79-00-5	mg/kg	--	--	0.538	1.545	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,1-Dichloroethane	75-34-3	mg/kg	--	--	0.02	1.666	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,1-Dichloroethene	75-35-4	mg/kg	--	--	0.1	0.753	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2,3-Trichlorobenzene	87-61-6	mg/kg	--	--	0.113	0.495	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2,3-Trichloropropane	96-18-4	mg/kg	--	--	--		--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2,4-Trichlorobenzene	120-82-1	mg/kg	--	--	0.011	0.485	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2,4-Trimethylbenzene	95-63-6	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2-Dibromo-3-chloropropane	96-12-8	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2-Dibromoethane	106-93-4	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2-Dichlorobenzene	95-50-1	mg/kg	--	--	0.095	0.477	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2-Dichloroethane	107-06-2	mg/kg	--	--	0.986	1.131	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,2-Dichloropropane	78-87-5	mg/kg	--	--	0.428	0.876	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,3,5-Trimethylbenzene	108-67-8	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,3-Dichlorobenzene	541-73-1	mg/kg	--	--	0.089	0.468	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
1,4-Dichlorobenzene	106-46-7	mg/kg	--	--	0.03	0.468	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
2-Butanone	78-93-3	mg/kg	--	--	7.604	22.707	--	0.017 U	0.065 U	0.06 U	0.19 U	**0.03 J+**	0.048 U	**0.21**	**0.029**	0.026 U	0.021 U	0.025 U	NA
2-Hexanone	591-78-6	mg/kg	--	--	0.045	7.598	--	0.017 U	0.065 U	0.06 U	0.19 U	0.019 U	0.048 U	0.21 U	**0.016 J**	**0.02 J**	**0.014 J**	**0.019 J**	NA
4-Methyl-2-pentanone	108-10-1	mg/kg	--	--	0.073	8.165	--	0.017 U	0.065 U	0.06 U	0.19 U	0.019 U	0.048 U	0.21 U	0.021 U	0.026 U	0.021 U	0.025 U	NA
Acetone	67-64-1	mg/kg	--	--	0.065	38.133	--	**0.055**	**0.19**	**0.17**	0.19 U	**0.08**	0.048 U	**0.54**	**0.049**	0.026 U	**0.053**	0.025 U	NA
Benzene	71-43-2	mg/kg	--	--	0.01	2.185	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Bromochloromethane	74-97-5	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Bromodichloromethane	75-27-4	mg/kg	0.21	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Bromoform	75-25-2	mg/kg	0.142	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Bromomethane	74-83-9	mg/kg	0.0065	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Carbon disulfide	75-15-0	mg/kg	--	--	0.0078	1.58	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Carbon tetrachloride	56-23-5	mg/kg	--	--	0.057	0.706	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Chlorobenzene	108-90-7	mg/kg	--	--	0.03	0.939	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Chloroethane	75-00-3	mg/kg	--	--	--	--	--	0.0087 UJ	0.033 UJ	0.03 UJ	0.096 UJ	0.0093 UJ	0.024 UJ	0.1 UJ	0.011 UJ	0.013 UJ	0.01 UJ	0.013 UJ	NA
Chloroform	67-66-3	mg/kg	--	--	0.087	3.352	--	0.0087 U	**0.033**	**0.027 J**	0.096 U	0.0093 U	**0.021 J**	**0.086 J**	**0.0075 J**	**0.0076 J**	**0.0055 J**	**0.0098 J**	NA
Chloromethane	74-87-3	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
cis-1,2-Dichloroethene	156-59-2	mg/kg	--	--	0.432	1.135	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
cis-1,3-Dichloropropene	10061-01-5	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Cyclohexane	110-82-7	mg/kg	--	0.278	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Dibromochloromethane	124-48-1	mg/kg	0.198	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Dichlorodifluoromethane	75-71-8	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Ethylbenzene	100-41-4	mg/kg	--	--	0.29	1.467	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Isopropylbenzene	98-82-8	mg/kg	--	--	0.035	0.713	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
m,p-Xylene	179601-23-1	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Methyl acetate	79-20-9	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Methyl tert-butyl ether	1634-04-4	mg/kg	--	--	0.304	4.433	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Methylcyclohexane	108-87-2	mg/kg		--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Methylene chloride	75-09-2	mg/kg	0.018	2.404	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
o-Xylene	95-47-6	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Styrene	100-42-5	mg/kg	--	--	0.126	1.621	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Tetrachloroethene	127-18-4	mg/kg	--	--	0.002	0.415	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Toluene	108-88-3	mg/kg	--	--	0.01	2.074	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
trans-1,2-Dichloroethene	156-60-5	mg/kg	--	--	0.389	1.135	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
trans-1,3-Dichloropropene	10061-02-6	mg/kg	--	--	--	--	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Trichloroethene	79-01-6	mg/kg	--	--	0.078	0.692	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA
Trichlorofluoromethane	75-69-4	mg/kg	--	--	--	--	--	0.0087 UJ	0.033 U	0.03 UJ	0.096 UJ	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 UJ	0.013 U	NA
Vinyl chloride	75-01-4	mg/kg	--	--	0.482	1.178	--	0.0087 U	0.033 U	0.03 U	0.096 U	0.0093 U	0.024 U	0.1 U	0.011 U	0.013 U	0.01 U	0.013 U	NA

Table D-10
Sediment Analytical Results
Gelman Site Inspection
EPA Region 5

Analyte	CAS.NO	Units	Non-Narcotic Mode of Action: Fresh ESV[1]	Non-Narcotic Mode of Action: Fresh RSV[2]	Narcotic Mode of Action: Fresh ESV[1]	Narcotic Mode of Action: Fresh RSV[2]	Location Sample ID Depth Date Type	Background G-SEBK-01 0-6 inches 10/3/2022 FS	SW01 G-SESW-01 0-6 inches 10/1/2022 FS	SW01 G-SESW-91 0-6 inches 10/1/2022 FD	PPE 1 G-SEPPE-01 0-6 inches 9/30/2022 FS	SS14 G-SS14-0002 0-2 feet 9/29/2022 FS	SS14 G-SS94-0002 0-2 feet 9/29/2022 FD	RS03 G-SERS-03 0-6 inches 9/30/2022 FS	RS02 G-SERS-02 0-6 inches 9/29/2022 FS	RS01 G-SERS-01 0-6 inches 9/29/2022 FS	Background G-SEBK-02 0-6 inches 9/30/2022 FS	PPE 2 G-SEPPE-02 0-6 inches 9/30/2022 FS	RS04 G-SERS-04 0-6 inches 10/3/2022 FS
Aroclors																			
Aroclor-1016	12674-11-2	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1221	11104-28-2	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1232	11141-16-5	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1242	53469-21-9	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1248	12672-29-6	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1254	11097-69-1	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1260	11096-82-5	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1262	37324-23-5	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Aroclor-1268	11100-14-4	mg/kg	--	--	--	--	--	0.056 UJ	0.076 UJ	0.067 UJ	0.12 UJ	0.069 UJ	0.086 UJ	0.2 UJ	0.05 UJ	0.094 UJ	0.058 UJ	0.058 UJ	0.064 UJ
Metals																			
Aluminum	7429-90-5	mg/kg	25000	58000	--	--	--	**6200**	**4500**	**4900**	**7100**	**7700**	**8900**	**12000**	**2500 J+**	**8400 J+**	**16000 J+**	**16000 J+**	**24000 J+**
Antimony	7440-36-0	mg/kg	2	25	--	--	--	1.4 U	0.93 U	2.1 U	0.88 U	1.8 U	1.9 U	**0.7 J**	**0.077 J**	**0.32 J**	**0.46 J**	**0.46 J**	**0.8 J**
Arsenic	7440-38-2	mg/kg	9.8	33	--	--	--	**4.8**	**9.2**	**7.3**	**12**	**8.1**	**7.8**	**16 J-**	**2.6 J-**	**13 J-**	**15 J-**	**11 J-**	**23 J-**
Barium	7440-39-3	mg/kg	20	60	--	--	--	**44**	**44**	**45**	**97**	**59**	**71**	**100**	**27**	**170**	**94**	**110**	**190**
Beryllium	7440-41-7	mg/kg	--	--	--	--	--	**0.54 J**	**0.42 J**	**0.48 J**	**0.79**	**0.66 J**	**0.77 J**	**0.27 J**	**0.16 J**	**0.42 J**	**0.75 J**	**0.74 J**	**1.2 J**
Cadmium	7440-43-9	mg/kg	1	5	--	--	--	**0.27 J (0.38)**	**0.69**	**0.48 J**	**0.63**	**0.25 J**	**0.32 J**	**1.3**	**0.21 J**	**0.49 J**	**0.51 J**	**0.53 J**	**1.2 J**
Chromium	7440-47-3	mg/kg	43.4	111	--	--	--	**13**	**10**	**12**	**9.2**	**13**	**16**	**20**	**4.9 J+**	**14 J+**	**22 J+**	**23 J+**	**41 J+**
Cobalt	7440-48-4	mg/kg	50	--	--	--	--	**9.6**	**5.6**	**4.5**	**3.1**	**8**	**7.8**	**7.5 J**	**1.9 J**	**6.1 J**	**8.5 J**	**7.3 J**	**15 J**
Copper	7440-50-8	mg/kg	31.6	149	--	--	--	**18 J+**	**22 J+**	**23**	**24 J+**	**22 J+**	**26 J+**	**42**	**5.8 J+**	**14 J+**	**23 J+**	**21 J+**	**59 J+**
Cyanide	57-12-5	mg/kg	--	--	--	--	--	0.75 U	0.35 U	1.6 U	0.35 U	**6.1 J-**	1.1 R	**0.44 J-**	**0.58 R**	**1.2 R**	0.92 R	**0.46 J-**	**0.95 J**
Iron	7439-89-6	mg/kg	20000	40000	--	--	--	**10000**	**11000**	**11000**	**24000**	**17000**	**20000**	**32000 J+**	**6600 J+**	**26000 J+**	**25000 J+**	**26000 J+**	**47000 J+**
Lead	7439-92-1	mg/kg	35.8	128	--	--	--	**24 J**	**16 J**	**16 J**	**50 J**	**14 J**	**18 J**	**31**	**4.2 J+**	**16 J+**	**28 J+**	**25 J+**	**63 J+**
Manganese	7439-96-5	mg/kg	460	1100	--	--	--	**96**	**110**	**120**	**190**	**210**	**330**	**200 J+**	**290 J+**	**950 J+**	**240 J+**	**830 J+**	**1900 J+**
Mercury	7439-97-6	mg/kg	0.17	0.17	--	--	--	**0.061 J (0.112)**	**0.023 J**	**0.096 J**	**0.077 J**	**0.11 J**	**0.11 J**	**0.15**	**0.015 J**	**0.063 J**	**0.069 J**	**0.082 J**	**0.13 J**
Nickel	7440-02-0	mg/kg	22.7	48.6	--	--	--	**18**	**15**	**15**	**17**	4.6 U	4.8 U	**23**	**4.4 J**	**13**	**23**	**24**	**48**
Selenium	7782-49-2	mg/kg	0.72	2.9	--	--	--	3.5 U	**0.65 J**	5.3 U	**2 J**	0.91 U	0.95 U	**2 J-**	3.2 UJ	6.7 UJ	**0.93 J-**	**1.3 J-**	**1.8 J-**
Silver	7440-22-4	mg/kg	1	2.2	--	--	--	0.71 U	0.47 U	1.1 U	0.44 U	**0.32 J**	**0.33 J**	**0.094 J**	**0.023 J**	**0.83 J**	**0.035 J**	**0.053 J**	**0.08 J**
Thallium	7440-28-0	mg/kg	--	--	--	--	--	**0.26 J**	**0.2 J**	1.1 U	0.44 U	**23**	**26**	0.48 U	0.63 U	1.3 U	0.92 U	0.93 U	1.3 U
Vanadium	7440-62-2	mg/kg	--	--	--	--	--	**22**	**18**	**17**	**23**	**22**	**27**	**33**	**8.4 J+**	**21 J+**	**40 J+**	**40 J+**	**69 J+**
Zinc	7440-66-6	mg/kg	121	459	--	--	--	**69**	**220**	**200**	**77**	**97**	**130**	**210**	**24**	**93**	**150**	**100**	**670**

Notes:

Benchamrks are EPA Region 4 Ecological Risk Assessment Supplemental Guidance Sediment Screening Values for Hazardous Waste Sites (March 2018).

[1] ESVs are based on conservative endpoints and sensitive ecological effects data, they represent a preliminary screening of site chemical concentrations to determine if there is a need to conduct further investigations at the site. ESVs are not recommended as remediation levels.

[2] RSVs are screening values that are generally derived from other sources or site-specific information. The RSVs presented herein are based on less conservative values or lowest observed adverse effect level-based effects.

Bold	The analyte was detected above the method detection limit
Bold	The analyte concentration exceeds one or more screening benchmark.
Bold	The analyte concentration exceeds 3X background and is significant to the Site
--	None Established
J	The associated value is an estimated quantity.
J-	Result is biased low
J+	Result is biased high
U	The material was analyzed for, but was not detected above the level of the associated value. The associated value is either the sample quantitation limit or the sample detection limit.
UJ	The analyte was not deemed above the reported sample quantitation limit. However, the reported quantitation limit is approximate and may or may not represent the actual limit of quantitation necessary to accurately and precisely measure the analyte in the sample.

Abbreviations:

CAS No.	Chemical Abstracts Service number
DWPC	Drinking Water Protection Criteria
EPA	United States Environmental Protection Agency
ESV	Ecological Screening Value
FD	field duplicate sample
FS	field sample
mg/kg	milligram(s) per kilogram
NA	not analyzed
SIM	Selected Ion Monitoring
SVOC	Semi-volatile organic compound
VOC	Volatile organic compound

APPENDIX E
DATA VALIDATION REPORTS

Region 5 ICF-ESAT Document Control Number: 00870
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Analytical Resources, LLC
Contact Person's Name:	Natalie Quiet
Contact email address:	natalie.quiet@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYB30

Number and Type of Samples: 4 Waters (SVOA, SVSIM, ARO)

Sample Numbers: EYB30-EYB32, EYB37

Laboratory: Analytical Resources, LLC, MI (ARI)

The following are our findings:

Case: 50221 SDG: EYB30
Site: Gelman Sciences Inc, MI Laboratory: ARI

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Four (4) water samples, numbered EYB30-EYB32, EYB37, were collected on 09/29/2022-09/30/2022. The lab, Analytical Resources, LLC located in Stevensville, MI, received the samples on 10/05/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB30	G-SWRS-01	22J0049-01	09/29/2022 14:30	4.4°C	SVOA, SVSIM, ARO
EYB31	G-SWRS-02	22J0049-02	09/29/2022 16:30	4.4°C, 3.3°C, 4.2°C	SVOA, SVSIM, ARO
EYB32	G-SWSS-01	22J0049-03	09/30/2022 16:06	3.5°C	SVOA, SVSIM, ARO
EYB37	G-SWPPE-01	22J0049-04	09/30/2022 15:15	4.1°C	SVOA, SVSIM, ARO

All samples were analyzed for SVOA, SVSIM, and ARO. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB31 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Sample EYB46 from outside of this SDG was identified as the sample duplicate of EYB30 within this SDG.
Sample EYB47 from outside of this SDG was identified as the sample duplicate of EYB31 within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221 SDG: EYB30
Site: Gelman Sciences Inc, MI Laboratory: ARI

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB30, EYB31, EYB31MS, EYB31MSD

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB30, EYB31, EYB31MS, EYB31MSD

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Aroclors

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

ABLKW1, ALCSW1, EYB30, EYB31, EYB31MS, EYB31MSD, EYB32, EYB37
Aroclor-1248

4. BLANKS:

Method: Semivolatiles by SIM

EXES-1104
The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB30, EYB31, EYB32, EYB37
Naphthalene

EXES-1105
Samples have non-common laboratory contaminant analyte results reported greater than or equal to the CRQLs. The associated Method Blank (MB) results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB31MS, EYB31MSD
Naphthalene, 2-Methylnaphthalene

Due to holding time criteria the following analytes in the associated samples will be flagged R regardless of associated blank detection.

EYB30, EYB31
Naphthalene

5. DMC_SURROGATE:

Method: Semivolatiles by SIM

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+.

EYB31MSD, SLCSB02
Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

6. MATRIX SPIKE:

Method: Semivolatiles

EXES-974
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB31MS, EYB31MSD
4-Nitrophenol, 2,4-Dinitrotoluene, Pentachlorophenol

Method: Semivolatiles by SIM

EXES-559
The relative percent difference (RPD) between the following matrix spike and matrix spike duplicate recoveries is outside criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB31MS, EYB31MSD
Pentachlorophenol

EXES-974
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB31MS, EYB31MSD
Pentachlorophenol

Method: Aroclors

EXES-975
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB31MS, EYB31MSD
Aroclor-1016

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB30
1,4-Dioxane

The following samples have analyte results that exceeded the quantitation limit (CRQL) and as a result have been diluted.

EYB32
1,4-Dioxane

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

SBLKB02
Naphthalene, 2-Methylnaphthalene

11. FIELD QC SAMPLES:

Sample EYB46 from outside of this SDG was identified as the sample duplicate of EYB30 within this SDG. Sample EYB46 was not analyzed for SVOA, SVOA-SIM, and ARO.

Sample EYB30 had a target analyte detect for 1,4-Dioxane (0.65 J). Sample EYB30 had no target analyte detects for SVOA-SIM and ARO.

Sample EYB47 from outside of this SDG was identified as the sample duplicate of EYB31 within this SDG. Sample EYB47 was not analyzed for SVOA, SVOA-SIM, and ARO. Sample EYB31 had no target analyte detects for SVOA, SVOA-SIM, and ARO.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Sampling dates were 9/28/2022-9/29/2022. The lab received the samples five or six days later. When the lab received the samples on 10/05/2022, they had one day to prepare. The lab prepped the samples on 10/07/2022 outside of the seven day preparation holding time.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB46 and EYB30. Sample EYB46 is in SDG EYB43. Sample EYB46 was not analyzed for ARO, SVOA, or SVOA-SIM and cannot be compared.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB47 and EYB31. Sample EYB47 is in SDG EYB43. Sample EYB47 was not analyzed for ARO, SVOA, or SVOA-SIM and cannot be compared.

Case: 50221 SDG: EYB30
Site: Gelman Sciences Inc, MI Laboratory: ARI

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00869
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on ___10/20/22__

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston_____
Contact Person's Name: Natalie Quiet_
Contact email address: Nataie.quiet@westonsolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz_
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: __Gelman Sciences Ann Arbor MI_____

CASE NUMBER: __50221_____ SDG NUMBER: __EYB30_____

Number and Type of Samples: __6 waters /Cyanide_____

Sample Numbers: __ EYB30, EYB31, EYB32, EYB37, EYBC2 and EYBF4____

Laboratory: __Bonner Analytical_____

The following are our findings:

Case: 50221
Site: Gelman Sciences MI

SDG: EYB30
Laboratory: Bonner Analytical

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Six (6) water samples, numbered EYB30, EYB31, EYB32, EYB37, EYBC2 and EYBF4 were collected on 09/29, 30/22 and 10/01/22. The lab Bonner Analytical Testing, Hattiesburg, MS received the samples on 10/08/22 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB30	G-SWRS-01/Barton Pond	2210162-01	09/29/22 14:30	Cyanide
EYB31	G-SWRS-02/Barton Pond	2210162-02	09/29/22 16:30	Cyanide
EYB32	G-SWSS-01/Source Sample	2210162.03	09/30/22 16:06	Cyanide
EYB37	G-SWPPE-01/PPE 1	2210162-04	09/30/22 15:15	Cyanide
EYBC2	G-EB-02/Equipment Blank	2210162-09	09/30/22 08:00	Cyanide
EYBF4	G-EB-07/Equipment Blank	2210162-11	10/01/22 12:00	Cyanide

All samples were analyzed for Cyanide. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYBC2 and EYBF4 were identified as Equipment Blanks.

Samples EYB30 has a duplicate, sample EYB46 (SDG EYB43) and samples EYB31 has a duplicate EYB47 (SDG EYB43). Also, samples EYB32 has a duplicate samples EYB450 (SDG EYB43) and sample EYB37 has it’s duplicate sample EYB43 (SDG EYB43).

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

Case: 50221
SDG: EYB30
Site: Gelman Sciences MI
Laboratory: Bonner Analytical

1. HOLDING TIMES AND PRESERVATION:

Method: Cyanide

EXES-463
The following aqueous samples exceeded technical holding time. Detects are qualified as J-. Nondetects are qualified as R.

EYB30, EYB31, EYB31D, EYB31S, EYB32, EYB37, EYBC2, EYBF4

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

NONE FOUND

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

NONE FOUND

11. DUPLICATES:

NONE FOUND.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG. However, according to COC No:5-100722-062937-0054 there are two equipment blanks, EYBC2 and EYBF4. Neither sample reported detects for Cyanide.

12. DOCUMENTATION:

No discrepancies found.

Case: 50221
Site: Gelman Sciences MI

SDG: EYB30
Laboratory: Bonner Analytical

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

Region 5 ICF-ESAT Document Control Number: 00965
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: **Data User:** **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: natalie.quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYB31

Number and Type of Samples: 15 Waters (5 samples TVOA and 10 samples TVSIM)

Sample Numbers: EYB30-EYB32, EYB37, EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1, EYBG7

Laboratory: Analytical Resources, LLC, MI (ARI)

The following are our findings:

Case: 50221 SDG: EYB31
Site: Gelman Sciences Inc, MI Laboratory: ARI

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Fifteen (15) water samples, numbered EYB30-EYB32, EYB37, EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1, and EYBG7, were collected on 09/28/2022-09/30/2022 and 10/02/2022. The lab, Analytical Resources, LLC located in Stevensville, MI, received the samples on 10/08/2022 intact and in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	pH	Analyses
EYB30	G-SWRS-01	22J0131-01	09/29/2022 14:30	<2	TVOA
EYB31	G-SWRS-02	22J0131-02	09/29/2022 16:30	<2	TVOA
EYB32	G-SWSS-01	22J0131-03	09/30/2022 16:06	<2	TVOA
EYB37	G-SWPPE-01	22J0131-04	09/30/2022 15:15	<2	TVOA
EYB61	G-GWRS-MW-91R	22J0131-05	09/29/2022 12:10	<2	TVSIM
EYB63	G-GWRS-MW-4d	22J0131-06	09/28/2022 14:45	<2	TVSIM
EYB75	G-GWBK-MW-124d	22J0131-07	09/28/2022 10:55	<2	TVSIM
EYB76	G-GWBK-MW-124s	22J0131-08	09/28/2022 09:45	<2	TVSIM
EYB78	G-GWPW-01	22J0131-09	09/29/2022 09:05	<2	TVSIM
EYB79	G-GWPW-25	22J0131-10	09/29/2022 10:10	<2	TVSIM
EYB82	G-GWRS-MW-977	22J0131-11	09/28/2022 17:50	<2	TVSIM
EYB98	G-GWRS-NMW-2d	22J0131-12	09/29/2022 18:15	<2	TVSIM
EYBA0	G-GWRS-MW-77	22J0131-13	09/29/2022 17:50	<2	TVSIM
EYBA1	G-GWRS-MW-1R	22J0131-14	09/29/2022 12:10	<2	TVSIM
EYBG7	G-TB06	22J0131-15	10/02/2022 08:10	<2	TVOA

Samples EYB30-EYB32, EYB37, and EYBG7 were analyzed for TVOA and samples EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, and EYBA1 were analyzed for TVSIM. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Samples EYB31 and EYB76 were designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Sample EYBG7 was identified as a trip blank.
Sample EYBF1 and EYBF8 were identified as equipment blanks outside of this SDG with associated samples within this SDG.
Sample EYB82 was determined to be the duplicate of sample EYBA0. Sample EYB61 was determined to be the duplicate of sample EYBA1. Sample EYB46 from outside this SDG was determined to be the duplicate of sample EYB30 within this SDG. Sample EYB47 from outside this SDG was determined to be the duplicate of sample EYB31 within this SDG. Sample EYB450 from outside this SDG was determined to be the duplicate of sample EYB32 within this SDG. Sample

EYB43 from outside this SDG was determined to be the duplicate of sample EYB37 within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221 SDG: EYB31
Site: Gelman Sciences Inc, MI Laboratory: ARI

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Trace Volatiles

EXES-989
The following samples are associated with an initial calibration with relative response factors (RRFs) outside criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

EYB30, EYB31, EYB31MS, EYB31MSD, EYB32, EYB37, EYBG7, VBLKT44, VHBLK10
Methyl acetate

4. BLANKS:

Method: Trace Volatiles

EXES-1111
The following samples have analyte results reported less than CRQLs. The associated storage blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB30
Chloromethane, Acetone

EXES-1161
The following samples have analyte results reported greater than or equal to CRQLs. The associated storage blank results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB31MS, EYB31MSD
Chloromethane

EXES-1162
The following samples have analyte results reported greater than or equal to 2x Blank Results. The associated storage blank results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB31MS, EYB31MSD, EYB37, EYBG7
Acetone

Samples have common laboratory contaminant analyte results greater than the CRQLs. The associated trip blank (EYBG7) results are greater than CRQLs. Detects are qualified as U.

EYB37
Acetone

5. DMC_SURROGATE:

NONE FOUND.

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

VHBLK10
Chloromethane, Acetone

EYB37
Carbon disulfide

11. FIELD QC SAMPLES:

Sample EYBG7 was identified as the trip blank.

Trip Blank	EYBG7
Shipping Date	10/02/2022
TVOA	µg/L
Acetone	9
Associated samples	EYB30, EYB31, EYB32, EBY37, EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1

Trip blank EYBG7 had the target analyte detect for acetone but acetone was not a target analyte run for TVSIM samples EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, and EYBA1.

Sample EYBF1 was identified as an equipment blank outside of this SDG with associated samples within this SDG.

Equipment Blank	EYBF1[Reanalysis-01]
Collection Date	09/29/2022
TVOA	µg/L
Acetone	5.8
2-Butanone	1.9 J
Chloroform	0.49 J
Bromodichloromethane	0.13 J
Associated Samples	EYB75, EYB76, EYBA0, EYB82

Equipment blank EYBF1 had the target analyte detects for acetone, 2-butanone, chloroform, and bromodichloromethane but none of these analytes were a target analyte run for TVSIM samples EYB75, EYB76, EYB82, and EYBA0.

Sample EYBF8 was identified as an equipment blank outside of this SDG with the following associated samples (EYBA1, EYB61, EYB98) within this SDG. Sample EYBF8 has no target analytes detected for TVOA.

Sample EYB82 was determined to be the duplicate of sample EYBA0. Sample EYB82 was sampled on 09/28/2022 and EYBA0 was sampled on a different day 09/29/2022. Both samples had no target analyte detects.
Sample EYB61 was determined to be the duplicate of sample EYBA1. Both samples had no target analyte detects for TVSIM.
Sample EYB46 from outside this SDG was determined to be the duplicate of sample EYB30 within this SDG. Sample EYB46 was not analyzed for TVOA and cannot be compared.

Sample EYB47 from outside this SDG was determined to be the duplicate of sample EYB31 within this SDG. Sample EYB47 was not analyzed for TVOA and cannot be compared.
Sample EYB450 from outside this SDG was determined to be the duplicate of sample EYB32 within this SDG. Sample EYB450 was not analyzed for TVOA and cannot be compared.
Sample EYB43 from outside this SDG was determined to be the duplicate of sample EYB37 within this SDG. Sample EYB43 was not analyzed for TVOA and cannot be compared.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

The laboratory created the holding blank the following Monday after receiving the samples because their lab protocol prevents the person that received the samples from working with open volatile containers after they had pumped gasoline.

The laboratory reported that samples EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1, and VHBLK10 were noted to have a pH of 7. The samples being unpreserved then have a holding time of seven days.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) outside of this SDG is associated with samples EYB75, EYB76, EYBA0, and EYB82 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) collected on 09/29/2022 is associated with the samples collected on 09/28/2022 and 09/29/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) was analyzed as TVOA but the associated samples (EYB75, EYB76, EYBA0, EYB82) were analyzed as TVSIM.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) outside of this SDG is associated with samples EYBA1, EYB61, and EYB98 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) collected on 10/02/2022 is associated with the samples collected on 09/29/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) was analyzed as TVOA but the associated samples (EYBA1, EYB61, EYB98) were analyzed as TVSIM.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG7) is associated with the samples taken on 09/28/2022-09/30/2022 but was shipped to the lab on

10/07/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG7) was analyzed as TVOA but the associated samples (EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1) were analyzed as TVSIM.

According to the COC charts the following samples were run for TVOA and their associated duplicates were not run for TVOA. Sample EYB46 from outside this SDG was determined to be the duplicate of sample EYB30 within this SDG. Sample EYB47 from outside this SDG was determined to be the duplicate of sample EYB31 within this SDG. Sample EYB450 from outside this SDG was determined to be the duplicate of sample EYB32 within this SDG. Sample EYB43 from outside this SDG was determined to be the duplicate of sample EYB37 within this SDG.

Case: 50221 SDG: EYB31
Site: Gelman Sciences Inc, MI Laboratory: ARI

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00992
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: **Data User:** **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: natalie.quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYB31

Number and Type of Samples: 15 Waters (5 samples TVOA and 10 samples TVSIM)

Sample Numbers: EYB30-EYB32, EYB37, EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1, EYBG7

Laboratory: Analytical Resources, LLC, MI (ARI)

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Fifteen (15) water samples, numbered EYB30-EYB32, EYB37, EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1, and EYBG7, were collected on 09/28/2022-09/30/2022 and 10/02/2022. The lab, Analytical Resources, LLC located in Stevensville, MI, received the samples on 10/08/2022 intact and in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	pH	Analyses
EYB30	G-SWRS-01	22J0131-01	09/29/2022 14:30	<2	TVOA
EYB31	G-SWRS-02	22J0131-02	09/29/2022 16:30	<2	TVOA
EYB32	G-SWSS-01	22J0131-03	09/30/2022 16:06	<2	TVOA
EYB37	G-SWPPE-01	22J0131-04	09/30/2022 15:15	<2	TVOA
EYB61	G-GWRS-MW-91R	22J0131-05	09/29/2022 12:10	<2	TVSIM
EYB63	G-GWRS-MW-4d	22J0131-06	09/28/2022 14:45	<2	TVSIM
EYB75	G-GWBK-MW-124d	22J0131-07	09/28/2022 10:55	<2	TVSIM
EYB76	G-GWBK-MW-124s	22J0131-08	09/28/2022 09:45	<2	TVSIM
EYB78	G-GWPW-01	22J0131-09	09/29/2022 09:05	<2	TVSIM
EYB79	G-GWPW-25	22J0131-10	09/29/2022 10:10	<2	TVSIM
EYB82	G-GWRS-MW-977	22J0131-11	09/28/2022 17:50	<2	TVSIM
EYB98	G-GWRS-NMW-2d	22J0131-12	09/29/2022 18:15	<2	TVSIM
EYBA0	G-GWRS-MW-77	22J0131-13	09/29/2022 17:50	<2	TVSIM
EYBA1	G-GWRS-MW-1R	22J0131-14	09/29/2022 12:10	<2	TVSIM
EYBG7	G-TB06	22J0131-15	10/02/2022 08:10	<2	TVOA

Samples EYB30-EYB32, EYB37, and EYBG7 were analyzed for TVOA and samples EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, and EYBA1 were analyzed for TVSIM. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Samples EYB31 and EYB76 were designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Sample EYBG7 was identified as a trip blank.
Sample EYBF1 and EYBF8 were identified as equipment blanks outside of this SDG with associated samples within this SDG. Sample EYB82 was determined to be the duplicate of sample EYBA0. Sample EYB61 was determined to be the duplicate of sample EYBA1. Sample EYB46 from outside this SDG was determined to be the duplicate of sample EYB30 within this SDG. Sample EYB47 from outside this SDG was determined to be the duplicate of sample EYB31 within this SDG. Sample EYB450 from outside this SDG was determined to be the duplicate of sample EYB32 within this SDG. Sample EYB43 from outside this SDG was determined to be the duplicate

of sample EYB37 within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Trace Volatiles

EXES-989
The following samples are associated with an initial calibration with relative response factors (RRFs) outside criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

EYB30, EYB31, EYB31MS, EYB31MSD, EYB32, EYB37, EYBG7, VBLKT44, VHBLK10
Methyl acetate

4. BLANKS:

Method: Trace Volatiles

EXES-1111
The following samples have analyte results reported less than CRQLs. The associated storage blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB30
Chloromethane, Acetone

EXES-1161
The following samples have analyte results reported greater than or equal to CRQLs. The associated storage blank results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB31MS, EYB31MSD
Chloromethane

EXES-1162
The following samples have analyte results reported greater than or equal to 2x Blank Results. The associated storage blank results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB31MS, EYB31MSD, EYB37, EYBG7
Acetone

Samples have common laboratory contaminant analyte results greater than the CRQLs. The associated trip blank (EYBG7) results are greater than CRQLs. Detects are qualified as U.

EYB37
Acetone

5. DMC_SURROGATE:

NONE FOUND.

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

VHBLK10
Chloromethane, Acetone

EYB37
Carbon disulfide

11. FIELD QC SAMPLES:

Sample EYBG7 was identified as the trip blank.

Trip Blank	EYBG7
Shipping Date	10/02/2022
TVOA	µg/L
Acetone	9
Associated samples	EYB30, EYB31, EYB32, EBY37, EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1

Trip blank EYBG7 had the target analyte detect for acetone but acetone was not a target analyte run for TVSIM samples EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, and EYBA1.

Sample EYBF1 was identified as an equipment blank outside of this SDG with associated samples within this SDG.

Equipment Blank	EYBF1[Reanalysis-01]
Collection Date	09/29/2022
TVOA	µg/L
Acetone	5.8
2-Butanone	1.9 J
Chloroform	0.49 J
Bromodichloromethane	0.13 J
Associated Samples	EYB75, EYB76, EYBA0, EYB82

Equipment blank EYBF1 had the target analyte detects for acetone, 2-butanone, chloroform, and bromodichloromethane but none of these analytes were a target analyte run for TVSIM samples EYB75, EYB76, EYB82, and EYBA0.

Sample EYBF8 was identified as an equipment blank outside of this SDG with the following associated samples (EYBA1, EYB61, EYB98) within this SDG. Sample EYBF8 has no target analytes detected for TVOA.

Sample EYB82 was determined to be the duplicate of sample EYBA0. Sample EYB82 was sampled on 09/28/2022 and EYBA0 was sampled on a different day 09/29/2022. Both samples had no target analyte detects.
Sample EYB61 was determined to be the duplicate of sample EYBA1. Both samples had no target analyte detects for TVSIM.
Sample EYB46 from outside this SDG was determined to be the duplicate of sample EYB30 within this SDG. Sample EYB46 was not analyzed for TVOA and cannot be compared.
Sample EYB47 from outside this SDG was determined to be the duplicate of sample EYB31 within this SDG. Sample EYB47 was not analyzed for TVOA and cannot be compared.
Sample EYB450 from outside this SDG was determined to be the duplicate of sample EYB32 within this SDG. Sample EYB450 was not analyzed for TVOA and cannot be compared.
Sample EYB43 from outside this SDG was determined to be the duplicate of sample EYB37 within this SDG. Sample EYB43 was not analyzed for TVOA and cannot be compared.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

The laboratory created the holding blank the following Monday after receiving the samples because their lab protocol prevents the person that received the samples from working with open volatile containers after they had pumped gasoline.

The laboratory reported that samples EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1, and VHBLK10 were noted to have a pH of 7. The Preparation Benchsheet for the noted samples was corrected by the laboratory on 2/23/2023 to reflect a pH of 2.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) outside of this SDG is associated with samples EYB75, EYB76, EYBA0, and EYB82 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) collected on 09/29/2022 is associated with the samples collected on 09/28/2022 and 09/29/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) was analyzed as TVOA but the associated samples (EYB75, EYB76, EYBA0, EYB82) were analyzed as TVSIM.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) outside of this SDG is associated with samples EYBA1, EYB61, and EYB98 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) collected on 10/02/2022 is associated with the samples collected on 09/29/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) was analyzed as TVOA but the associated samples (EYBA1, EYB61, EYB98) were analyzed as TVSIM.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG7) is associated with the samples taken on 09/28/2022-09/30/2022 but was shipped to the lab on 10/07/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG7) was analyzed as TVOA but the associated samples (EYB61, EYB63, EYB75, EYB76, EYB78, EYB79, EYB82, EYB98, EYBA0, EYBA1) were analyzed as TVSIM.

According to the COC charts the following samples were run for TVOA and their associated

duplicates were not run for TVOA. Sample EYB46 from outside this SDG was determined to be the duplicate of sample EYB30 within this SDG. Sample EYB47 from outside this SDG was determined to be the duplicate of sample EYB31 within this SDG. Sample EYB450 from outside this SDG was determined to be the duplicate of sample EYB32 within this SDG. Sample EYB43 from outside this SDG was determined to be the duplicate of sample EYB37 within this SDG.

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00871
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on ____10/20/22_____

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: **Data User:** **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.quiet@westonsolutions.com

EPA Data User: USEPA SFD_____
Contact Person's Name: Nuria Muniz__
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: __Gelman Sciences Inc__MI_____

CASE NUMBER: ____50221_____ SDG NUMBER: ___EYB31_____

Number and Type of Samples: _____6 waters (ICP-AES, ICP-MS, Hg)_____

Sample Numbers: __ EYB30, EYB31, EYB32, EYB37, EBYC2 and EYBF4_____

Laboratory: __Bonner_____

The following are our findings:

Case: 50221
Site: Gelman Science Inc, MI

SDG: EYB31
Laboratory: Bonner

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Six (6) water samples, numbered EYB30, EYB31, EYB32, EYB37, EBYC2 and EYBF4, were collected on 09/29/22, 09/30/22 and 10/01/22. The Bonner Analytical Testing, located in Hattiesburg, MS received the samples on 10/08/22 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)/Location	Lab ID Number	Collection Date/Time	Analyses
EYB30	G-SWRS-01/Barton Pond	2210167-01	09/29/22 14:30	ICP-AES, ICP-MS, Hg
EYB31	G-SWRS-02/Barton Pond	2210167-02	09/29/22 16:30	ICP-AES, ICP-MS, Hg
EYB32	G-SWSS-01/Source Sample	2210167-03	09/30/22 16:06	ICP-AES, ICP-MS, Hg
EYB37	G-SWPPE-01/PPE 1	2210167-04	09/30/22 15:15	ICP-AES, ICP-MS, Hg
EYBC2	G-EB-02/EQUIPMENT BLK	2210167-05	09/30/22 08:00	ICP-AES, ICP-MS, Hg
EYBF4	G-EB-07/EQUIPMENT BLK	2210167-06	10/01/22 12:00	ICP-AES, ICP-MS, Hg

All samples were analyzed for ICP-AES, ICP-MS, and Hg. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Site Assessment Technical Support Sampling and Analysis Plan SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYBC2 and EYBF4 are listed as Equipment blanks.

Samples EYB30 has a duplicate, sample EYB46 (SDG EYB43) and samples EYB31 has a duplicate EYB47 (SDG EYB43). Also, samples EYB32 has a duplicate samples EYB450 (SDG EYB43) and sample EYB37 has it’s duplicate sample EYB43 (SDG EYB43).

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 1/29/23

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND

4. BLANKS:

Method: Metals by ICP-AES

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Chromium
EYB31D, EYB37

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Lead
EYBF4

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Lead
EYB31S, EYB37, LCS01

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Chromium
EYB31S, LCS01

Method: Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB31L, EYB37

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB31L, EYB37

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB31L, EYB37

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYB31S, LCS01

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYB31S, LCS01

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYB31S, LCS01

The following samples have analytes results less than CRQLs and greater than MDL. The associated equipment blank analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Cobalt
EYB30, EYB31

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Cobalt
EYB37

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-AES

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB30
Barium

EYB31
Aluminum, Barium

EYB31D
Aluminum, Barium, Nickel

EYB31L
Aluminum, Barium, Manganese

EYB37
Beryllium, Copper

EYBC2
Iron

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB30
Arsenic

EYB31D, EYBC2, EYBF4
Cobalt

EYB31L
Antimony, Arsenic

EYB32
Arsenic

EYB37
Antimony, Selenium

11. DUPLICATES:

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB30 and EBY46. Sample EYB46 is in SDG EYB43

	EYB30			EYB46			
ANALYTE	CONC	Q	SDG	CONC	Q	SDG	RPDs
Iron	180		EBY31	ND			200.0%
Arsenic	0.87	J	EYB31	0.76	J	EYB43	13.5%
Barium	170	J	EYB31	150	J+	EYB43	12.5%
Calcium	110000		EYB32	110000	J-	EYB46 EYB43	0.0%
Cobalt	ND		EYB31	0.046	J	EYB43	200.0%
Magnesium	3100		EYB32	30000	J+	EYB46 EYB43	3.3%
Manganese	25		EBY31	21	J+	EYB43	17.4
Potassium	3000		EYB32	3000	J	EYB46 EYB43	0.0%
Sodium	92000		EYB32	93000	J	EYB46 EYB43	1.1%
Vanadium	ND			0.1	J	EYB43	200.0%

Sample EYB46 was analyzed for metals by only ICP-MS.

	EYB31			EYB47			RPDs
Aluminum	34	J	EBY31	ND			200.0%
Arsenic	1.9		EBY31	1.8		EYB43	5.4%
Barium	87	J	EBY31	74	J +	EYB43	16.1%
Iron	170		EBY31	ND			200.0%
Calcium	65000		EYB32	64000	J-	EYB46 EYB43	1.6%
Cobalt	ND		EBY31	0.044	J	EYB43	200.0%
Magnesium	24000		EYB32	23000	J+	EYB46 EYB43	4.3%
Manganese	29		EBY31	18	J +	EYB43	46.8%
Nickel	ND			0.70	J	EYB43	200.0%
Potassium	2800		EYB32	2700	J	EYB46 EYB43	3.6%
Sodium	56000		EYB32	54000	J	EYB46 EYB43	2.6%
Vanadium	ND		EBY31	0.13	J	EYB43	200.0%

EYB31 was analyzed for Barium, Calcium, Magnesium, Manganese, Potassium, Sodium, or Vanadium in SDG EYB32.

12. QAPP COMPLIANCE:

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB30 and EBY46. Sample EYB46 is in SDG EYB43.

Also, EYB47 is a Duplicate of EYB31, based on the collection date and time, and Sample identifier. Weston failed to identify this second duplicate.

According to the Gelman Site Assessment Technical Support Sampling and Analysis Plan (Sampling and Analysis Plan) dated June 29, 2022, page 73/297, the Overall Accuracy includes Equipment Blank for Metals and Mercury.

12. DOCUMENTATION:

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG. However, according to COC No:5-100722-062937-0054 there are two equipment blanks, EYBC2 and EYBF4.

The COC listed analysis as ICP-AES, ICP-MS and Cyanide, but the SMO sampling schedule had ICP-AES, ICP-MS and Hg. The COC did not identify if samples were filtered.

According to the Weston DV Field QC Samples chart the following Equipment Blank, EYBC2, is associated with samples EYB66, EYB70 and EYB73 (SDG EYB52), and EYB68 and EYB72 (SDG EYB68).

According to the Weston DV Field QC Samples chart the following Equipment Blank, EYBF4, is associated with samples EYBD7 (SDG EYB52), and EYBD9 (SDG EYB68).

Equipment Blanks	EYBC2		EYBF4	
ICP-AES				
Iron	49	J	ND	
ICP-MS				
Cobalt	0.24	J	0.063	J
Calcium	240		50	J

Case: 50221
SDG: EYB31
Site: Gelman Science Inc, MI
Laboratory: Bonner

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 1/29/23

Region 5 ICF-ESAT Document Control Number: 00872
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on __12/09/22_____

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston_____
Contact Person's Name: Natalie Quiet_
Contact email address: Natalie.Quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division____
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: _____Gelman Sciences INC_MI_____

CASE NUMBER: _50221_____ SDG NUMBER: ___EYB32_____

Number and Type of Samples: __6 waters_(ICP-MS)_____

Sample Numbers: _____ EYB30-EYB32, EYB37, EYBC2, EYBF4_____

Laboratory: _Bonner_(BON)_____

The following are our findings:

Case: 50221
Site: Gelman Science

SDG: EYB32
Laboratory: Bonner

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Six (6) water samples, numbered EYB30-EYB32, EYB37, EYBC2 and EYBF4, were collected on 9/29-10/01/22. The lab Bonner analytical Testing Hattiesburg, MS received the samples on 10/08/22 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)/ Location	Lab ID Number	Collection Date/Time	Analyses
EYB30	G-SWRS-01/Barton Pond	2212130-01	09/29/22 14:30	ICP-MS
EYB31	G-SWRS-02/Barton Pond	2212130-02	09/29/22 16:30	ICP-MS
EYB32	G-SWSS-01/Source	2212130-03	09/30/22 16:06	ICP-MS
EYB37	G-SWPPE-01/PPE 1	2212130-04	09/30/22 15:15	ICP-MS
EYBC2	G-EB-02/Equip Blank	2212130-05	09/30/22 08:00	ICP-MS
EYBF4	G-EB-07/Equip Blank	2212130-06	10/01/22 12:00	ICP-MS

All samples were analyzed for metals by ICP-MS. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Site Assessment Plan), July 2022 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Samples EYBC2 and EYBF4 were identified as equipment blanks. Samples EYB30 and EYB46 are field duplicates. Samples EYB31 and EYB47 are field duplicates.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/6/23

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Magnesium
EYBC2

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Magnesium
EYB30, EYB31, EYB31D, EYB31L, EYB32, EYB37, LCS01

EXES-0174
The following samples are associated with ICB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Calcium
EYB32[Dilution-01], EYB37[Dilution-01]

EXES-0175
The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Calcium
EYB30, EYB31, EYB31D, EYB31L, EYB32[Dilution-01], EYB37[Dilution-01], EYBC2, EYBF4, LCS01, PBW01

EXES-0176

The following samples are associated with preparation blank (PB) that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Calcium
EYB30, EYB31, EYB31D, EYB31L, EYB32[Dilution-01], EYB37[Dilution-01], EYBC2, EYBF4

ICP-MS

Equipment Blanks:

According to the Weston DV Field QC Samples chart Equipment Blank, EYBC2, is not associated with any of the samples within this sdg, EYB32.

According to the Weston DV Field QC Samples chart Equipment Blank, EYBC2, is associated with samples outside of this sdg, EYB66, EYB68, EYB70, EYB71, EYB72, and EYB73.

EYBC2

Equipment Blank	EYBC2
Collection Date	09/30/2022
ICP-MS	µg/L
Calcium	240 J-
Magnesium	ND
Associated Samples	EYB66, EYB68, EYB70, EYB71, EYB72, EYB73

EYBF4

According to the Weston DV Field QC Samples chart Equipment Blank, EYBF4, is not associated with any of the samples within this sdg, EYB32.

According to the Weston DV Field QC Samples chart Equipment Blank, EYBF4, is associated with samples outside of this sdg, EYBD5, EYBE3, EYBD7, EYBD9, EYBD8, EYBE0, EYBE1, EYBE2, EYBD6, and EYBE4.

Equipment Blank	EYBF4
Collection Date	10/01/2022
ICP-MS	µg/L
Calcium	50 J-
Associated Samples	EYBD5, EYBE3, EYBD7, EYBD9, EYBD8, EYBE0, EYBE1, EYBE2, EYBD6, EYBE4

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Calcium
EYBC2, EYBF4, PBW01

11. DUPLICATES:

Samples EYB30 and EYB46 are field duplicates. Samples EYB31 and EYB47 are field duplicates.

	EYB30			EYB46			
ANALYTE	CONC	Q	SDG	CONC	Q	SDG	RPDs
ICP-MS							%
Calcium	110000	J-	EYB32	11000	J-	EYB43	163.6
Magnesium	31000	J+	EYB32	30000	J+	EYB43	3.3
Potassium	3000		EYB32	3000		EYB43	0.0
Sodium	92000		EYB32	93000		EYB43	37.4

	EYB31			EYB47			
ANALYTE	CONC	Q	SDG	CONC	Q	SDG	RPDs
							%
Arsenic	1.9		EYB32	1.8		EYB43	5.4
Barium			EYB32	74	J +	EYB43	200.0
Calcium			EYB32	11000	J-	EYB43	200.0
Cobalt	0.059	J-	EYB32	0.044	J	EYB43	29.1
Magnesium			EYB32	23000	J+	EYB43	200.0
Manganese			EYB32	18	J +	EYB43	200.0
Potassium			EYB32	27000		EYB43	200.0
Sodium			EYB32	54000		EYB43	200.0
Vanadium			EYB32	0.13	J	EYB43	200.0

EYB31 was not analyzed for Barium, Calcium, Magnesium, Manganese, Potassium, Sodium, or Vanadium in this SDG.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston SDG Sample association chart samples EYB30, EYB31, EYB32, EYB37, EYBC2 and EYBF4 were also analyzed for metals by ICP-MS in SDG EYB31.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB30 and EYB46. Sample EYB31 is in SDG EYB47.

According to the Weston DV Field QC Samples chart the Equipment Blanks (EYBC2 and EYBF4) are not associated with any of the samples within this sdg EYB32.

According to the Weston DV Field QC Samples chart the Equipment Blank, EYBC2, is associated with samples outside of this sdg EYB66, EYB68, EYB70, EYB71, EYB72, and EYB73.

According to the Weston DV Field QC Samples chart the following Equipment Blank, EYBF4, is associated with samples outside of this sdg, EYBD5, EYBD6, EYBD7, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, and EYBE4.

12. DOCUMENTATION:

No discrepancies found.

Case: 50221
Site: Gelman Science

SDG: EYB32
Laboratory: Bonner

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/6/23

Region 5 ICF-ESAT Document Control Number: 00874
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: **Data User:** **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYB33

Number and Type of Samples: 8 Waters (SVOA, SVSIM, ARO)

Sample Numbers: EYB33, EYB35, EYB93, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4

Laboratory: Chemtex (CHX)

The following are our findings:

Case: 50221 SDG: EYB33
Site: Gelman Sciences Inc, MI Laboratory: CHX

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eight (8) water samples, numbered EYB33, EYB35, EYB93, EYBF8, EYBF9, EYBG0, EYBG1, and EYBG4, were collected on 09/30/2022, 10/02/2022-10/04/2022, and 10/07/2022. The lab, Chemtex, located in Wilmington, NC, received the samples on 10/06/2022 and 10/08/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB33	G-SWPPE-03	0003264-01	09/30/2022 11:10	3.7°C	SVOA, SVSIM, ARO
EYB35	G-SWRS-03	0003264-02	09/30/2022 13:00	3.1°C	SVOA, SVSIM, ARO
EYB93	G-GWRW-5005	0003285-06	10/07/2022 14:45	5.1°C	SVOA, SVSIM
EYBF8	G-EB-08	0003285-01	10/02/2022 08:00	5.4°C, 5.3°C	SVOA, SVSIM
EYBF9	G-EB-09	0003285-05	10/03/2022 07:30	5.3°C	SVOA, SVSIM
EYBG0	G-EB-10	0003285-02	10/03/2022 20:08	5.4°C, 5.3°C	SVOA, SVSIM
EYBG1	G-EB-11	0003285-03	10/04/2022 20:15	5.0°C	SVOA, SVSIM
EYBG4	G-WS02	0003285-04	10/04/2022 19:45	5.0°C	SVOA, SVSIM

All samples were analyzed for SVOA and SVSIM. Samples EYB33 and EYB35 had additional analyses for ARO. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB33 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Samples EYBF8, EYBF9, EYBG0 and EYBG1 were identified as equipment blanks. Sample EYBC8 from outside of this SDG was identified as a sample duplicate of EYB33 from within this SDG. Sample EYB48 from outside of this SDG was identified as a sample duplicate of EYB35 from within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221 SDG: EYB33
Site: Gelman Sciences Inc, MI Laboratory: CHX

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB33, EYB33MS, EYB33MSD, EYB35

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB33, EYB33MS, EYB33MSD, EYB35

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

EYB33, EYB33MS, EYB33MSD, EYB35, EYB93, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4, SBLKB35, SLCSB35
4-Methylphenol

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB93, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4
Hexachlorobutadiene, Butylbenzylphthalate

Method: Semivolatiles by SIM

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB33, EYB33MS, EYB33MSD, EYB35, SBLKB16, SLCSB16
Pentachlorophenol

4. BLANKS:

Method: Semivolatiles by SIM

The following samples have laboratory contaminant analyte results reported less than the CRQLs. The associated equipment blank (EB – EYBG0) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB93
Naphthalene, Pyrene

5. DMC_SURROGATE:

Method: Semivolatiles

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+.

EYBF8
1,4-Dioxane

6. MATRIX SPIKE:

Method: Semivolatiles

EXES-1221
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than or equal to the expanded minimum criteria but less than the primary minimum criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB33MS, EYB33MSD
N-Nitroso-di-n propylamine, Acenaphthene

Method: Semivolatiles by SIM

EXES-974
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB33MS, EYB33MSD
Pentachlorophenol

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB33
Caprolactam, Di-n-butylphthalate

EYBF9
Diethylphthalate

SLCSB35
1,4-Dioxane

The following samples have analyte results that exceeded the quantitation limit (CRQL) and as a result have been diluted.

EYBG4
1,4-Dioxane

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB33
Pentachlorophenol

EYBF9, EYBG0, EYBG1, EYBG4
Naphthalene, Pyrene

EYBF8
Naphthalene, Fluoranthene

Method: Aroclors

EXES-1509
The following samples have a result difference between the two columns greater than 25%. Detects are qualified as estimated J.

EYB33MS, EYB33MSD
Aroclor-1016

11. FIELD QC SAMPLES:

Samples EYBF8, EYBF9, EYBG0 and EYBG1 were identified as equipment blanks. Equipment blanks EYBF8, EYBF9, and EYBG1 have no associated samples within this SDG. Equipment blanks EYBF8, EYBF9, EYBG0 and EYBG1 have no target analyte detects for ARO analysis. Equipment blank EYBG0 is associated with sample EYB93.

Equipment Blank	EYBF8	EYBG0	EYBG1
Collection Date	10/02/2022	10/03/2022	10/04/2022
SVOA	µg/L	µg/L	µg/L
bis(2-ethylhexyl)phthalate	9	10	11
SVSIM	µg/L	µg/L	µg/L
Naphthalene	0.059 J	0.082 J	0.070 J
Fluoranthene	0.059 J	ND	ND
Pyrene	0.12	0.082 J	0.070 J
Associated samples	None	EYB93	None

Equipment Blank	EYBF9
Collection Date	10/03/2022
SVOA	µg/L
Diethylphthalate	3.7 J
bis(2-ethylhexyl)phthalate	9.9
Naphthalene	0.059 J
Pentachlorophenol	0.27
Pyrene	0.059 J
Associated samples	None

Sample EYBC8 from outside of this SDG was identified as a sample duplicate of EYB33 from within this SDG. Both samples have no target analyte detects for ARO.

Sample	EYB33	EYBC8	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	ND	2.4	200%
Caprolactam	2.4 J	ND	200%
Di-n-butylphthalate	3.3 J	ND	200%
bis(2-ethylhexyl)phthalate	8.7	ND	200%
SVOA-SIM	µg/L	µg/L	%R
Pentachlorophenol	0.10 J	ND	200%

Sample EYB48 from outside of this SDG was identified as a sample duplicate of EYB35 from within this SDG. Sample EYB35 had no target analyte detects for ARO and SVOA-SIM. Sample EYB35 had a target analyte detect for 1,4 Dioxane (2.4 µg/L J) and bis(2-ethylhexyl)phthalate (10 µg/L) for SVOA. Sample EYB48 was not analyzed for ARO, SVOA, and SVOA-SIM. Duplicate cannot be compared.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

The laboratory reported a reduced amount of sample was taken for the samples EBY33MS and EBY3MSD due to insufficient sample, 500mL instead of 1000mL was used and the spiking solutions and final volumes were adjusted accordingly.

The laboratory received the samples, EYB33 and EYB35, with one day to prep them on 10/06/2022. They prepped these samples outside of the holding time on 10/08/2022 which is more than 7 days according to their SAP for SVOA from when it was initially sampled on 09/30/2022.

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBF8, EYBF9, and EYBG1) are not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) is associated with sample EYB93 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) collected on 10/03/2022 is associated with the samples collected on 10/07/2022 according to the COC.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB33 and EYBC8. Sample EYBC8 is in SDG EYBC2.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB35 and EYB48. Sample EYB48 was not analyzed for SVOA, SVOA-SIM, and ARO. The sample duplicates cannot be compared.

Case: 50221 SDG: EYB33
Site: Gelman Sciences Inc, MI Laboratory: CHX

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00873
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Natalie Quiet
Contact email address:	Natalie.quiet@westonsolutions.com
EPA Data User:	EPA SFD
Contact Person's Name:	Nuria Muniz
Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc., MI

CASE NUMBER: 50221 SDG NUMBER: EYB33

Number and Type of Samples: 8 Waters (ICP-AES, ICP-MS, Hg, CN)

Sample Numbers: EYB33, EYB35, EYB36, EYB39, EYBC4, EYBC8, EYBF2, EYBF3

Laboratory: Chemtech Consulting Group (CHM)

The following are our findings:

Case: EYB33 SDG: 50221
Site: Gelman Sciences Inc. Laboratory: Chemtech

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eight (08) water samples, numbered below, were collected on 09/30/2022, 10/01/2022 and 10/03/2022. The lab, Chemtech Consulting Group located in Mountainside, NJ received the samples on 10/08/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB33	G-SWPPE-03	N5084-01	09/30/2022 11:10	2.5°C	ICP-AES, ICP-MS, Hg, CN
EYB35	G-SWRS-03	N5084-02	09/30/2022 13:00	2.5°C	ICP-AES, ICP-MS, Hg, CN
EYB36	G-SWSW-01	N5084-03	10/01/2022 08:00	2.5°C	ICP-AES, ICP-MS, Hg, CN
EYB39	G-SWBK-01	N5084-04	10/03/2022 16:00	2.5°C	ICP-AES, ICP-MS, Hg, CN
EYBC4	G-SWSW-91	N5084-05	10/01/2022 08:10	2.6°C	ICP-AES, ICP-MS, Hg, CN
EYBC8	G-SWPPE-93	N5084-06	09/30/2022 11:20	2.6°C	ICP-AES, ICP-MS, Hg, CN
EYBF2	G-EB-05	N5084-07	10/01/2022 10:00	2.6°C	ICP-AES, ICP-MS, Hg, CN
EYBF3	G-EB-06	N5084-08	10/01/2022 11:00	2.6°C	ICP-AES, ICP-MS, Hg, CN

All samples were analyzed for metals ICP-AES, ICP-MS, Hg, and CN. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Site Assessment Plan), July 2022 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYBF2 and EYBF3 are identified as equipment blanks.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB33 and EYBC8.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB36 and EYBC4.

The client did not designate any samples for laboratory QC. The laboratory chose sample EYBC8 for laboratory QC analyses.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: EYB33 SDG: 50221
Site: Gelman Sciences Inc. Laboratory: Chemtech

1. HOLDING TIMES AND PRESERVATION:

Method: Cyanide

EXES-0194
The following aqueous samples are received unpreserved or SPLP leachate samples with pH less than or equal to 10. Detects are qualified as estimated J. Nondetects are qualified as unusable R.

Cyanide
EYB33, EYB35, EYB36, EYB39, EYBC4, EYBC8, EYBC8D, EYBC8S, EYBF2, EYBF3

EXES-463
The following aqueous samples exceeded technical holding time. Detects are qualified as J-. Nondetects are qualified as R.

Cyanide
EYBC8, EYBC8D, EYBC8S

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method: Metals by ICP-AES

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Copper
EYB39

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Copper
EYB35, EYBC4

Method: Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony
EYB35, EYB36, EYB39, EYBC4

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony
EYB35, EYB36, EYB39, EYBC4

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Antimony
EYBC8S, LCS353

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Antimony
EYBC8S, LCS353

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-AES

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Barium
EYB35, EYB36, EYB39, EYBC4, EYBC8L

Beryllium
EYB35, EYBC4

Cadmium
EYB35

Chromium
EYB36, EYB39, EYBC8D

Lead
EYB33, EYB36, EYB39, EYBC8, EYBC8D

Manganese
EYBF3

Nickel
EYB35, EYB36, EYB39, EYBC4

Vanadium
EYB35, EYB36, EYB39, EYBC4

Zinc
EYB39

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Arsenic
EYB33, EYBC8, EYBC8D, EYBC8L

Cobalt
EYB33, EYBC8, EYBC8D, EYBF2

Selenium
EYB35

Thallium
EYB35, EYBC4

Method: Mercury by Cold Vapor

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Mercury
EYB35, EYBC4

Method: Cyanide

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Cyanide
EYBC8

11. DUPLICATES:

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB33 and EYBC8

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB36 and EYBC4.

	EYB33			EYBC8		RPDs
Arsenic	0.75	J		0.71	J	5.5%
Cobalt	0.13	J		0.13	J	0.0%
Barium	300			290		3.4%
Iron	2300			2300		0.0%
Lead	5.9	J		6.3	J	6.6%
Manganese	96			95		1.0%
Cyanide	10	U		3.1	J	200%

	EYB36			EYBC4		RPDs
Aluminum				5400		
Barium				190	J	
Beryllium				0.67	J	
Chromium	2.6	J		13		133.3%
Copper				40	J+	
Iron	13000			43000		107.1%
Lead	7.5	J		24		104.8%
Manganese	850			1300		41.9%
Nickel	4.5	J		21	J	129.4%
Vanadium	6.9	J		26	J	116.1%
Zinc				350		
Arsenic	6.1			18		98.8%
Cobalt	1.9			7.1		115.6%
Thallium				0.34	J	

Sample EYB36 was not analyzed for Aluminum, Barium, Beryllium, Copper, and Thallium.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB36 and EYBC4. Sample EYB36 was collected at 08:00 and sample EYBC4 was collected at 08:10.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates

EYB33 and EYBC8. Sample EYB33 was collected at 11:10 and sample EYBC8 was collected at 11:20.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF2 was associated with samples EYB66, EYB70, EYB68, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9 and EYBB0, which were analyzed in SDGs EYB52, and EYB68.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF3 was associated with samples EYBC0, EYBB3, EYBB2, EYBB8, EYBB7, EYBB9, EYBD2, EYBD3 and EYBD4 which was analyzed in SDGs EYB52, EYB59 and EYB68.

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG.

12. DOCUMENTATION:

The COC listed different analytes to be analyzed by ICP-MS than was scheduled. Per region 5, those samples were analyzed according to what was listed on the COC and noted in the SDG Narrative.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB36 and EYBC4. Sample EYB36 was collected at 08:00 and sample EYBC4 was collected at 08:10.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB33 and EYBC8. Sample EYB33 was collected at 11:10 and sample EYBC8 was collected at 11:20.

Case: EYB33
Site: Gelman Sciences Inc.

SDG: 50221
Laboratory: Chemtech

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

Region 5 ICF-ESAT Document Control Number: 00875
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division
Contact Person's Name: Nuria Muniz
Contact email address: Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME Gelman Sciences Inc.

CASE NUMBER: 50221 SDG NUMBER: EYB35

Number and Type of Samples: 8 waters (ICP-MS)

Sample Numbers: EYB33, EYB35, EYB36, EYB39, EYBC4, EYBC8, EYBF2, EYBF3

Laboratory: Chemtech Consulting Group (CHM)

The following are our findings:

Case: 50221
SDG: EYB35
Site: Gelman Sciences Inc.
Laboratory: Chemtech

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eight (08) water samples, properly preserved, numbered below, were collected on 09/30/2022, 10/01/2022 and 10/03/2022. The lab, Chemtech Consulting Group located in Mountainside, NJ received the samples on 10/08/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB33	G-SWPPE-03	N5873-01	09/30/2022 11:10	2.5°C	ICP-MS
EYB35	G-SWRS-03	N5873-02	09/30/2022 13:00	2.5°C	ICP-MS
EYB36	G-SWSW-01	N5873-03	10/01/2022 08:00	2.5°C	ICP-MS
EYB39	G-SWBK-01	N5873-04	10/03/2022 16:00	2.5°C	ICP-MS
EYBC4	G-SWSW-91	N5873-06	10/01/2022 08:10	2.6°C	ICP-MS
EYBC8	G-SWPPE-93	N5873-05	09/30/2022 11:20	2.6°C	ICP-MS
EYBF2	G-EB-05	N5873-09	10/01/2022 10:00	2.6°C	ICP-MS
EYBF3	G-EB-06	N5873-10	10/01/2022 11:00	2.6°C	ICP-MS

All samples were analyzed for ICP-MS. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sampling Plan), Rev 5/21/21, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYBF2 and EYBF3 were identified as Equipment Blanks.

According to the Weston DV Field QC Samples chart the following Equipment Blanks EYBF2 and EYBF3 are not associated with any of the samples within this SDG.

According to Weston DV Field QC Samples chart, the sample EYBC8 is a duplicate of the sample EYB33 and sample EYBC4 is a duplicate of EYB36.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

NONE FOUND.

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Calcium
EYBF2

Sodium
EYBF2, EYBF3

11. DUPLICATES:

Metals by ICP-MS

EXES-601
The following samples are associated with a Duplicate sample that has analyte results are greater than or equal to 5xCRQL in both Duplicate and original samples and RPD is greater than 20. Detects are qualified as J. Nondetects are qualified as UJ.

Calcium
EYB33, EYB35, EYB36, EYB39, EYBC4, EYBC8

Potassium
EYB33, EYB35, EYB36, EYB39, EYBC4, EYBC8

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB36 and EYBC4.

	EYB36		EYBC4		
ANALYTE	CONC	Units	CONC	Units	RPD
ICP-MS					
Calcium	83000 J	ug/L	190000 J	ug/L	56.32%
Magnesium	12000	ug/L	20000	ug/L	40%
Potassium	2900 J	ug/L	3200 J	ug/L	9.37%
Sodium	72000	ug/L	93000	ug/L	22.58%

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB33 and EYBC8.

	EYB33		EYBC8		
ANALYTE	CONC	Units	CONC	Units	RPD
ICP-MS					
Calcium	150000 J	ug/L	140000 J	ug/L	6.7%
Magnesium	37000	ug/L	36000	ug/L	2.7%
Potassium	3700 J	ug/L	3600 J	ug/L	2.7%
Sodium	110000	ug/L	110000	ug/L	0%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) is associated with the following samples EYB66, EYB70, EYB68, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0 outside of the SDG EYB35

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3) is associated with the following samples, EYBC0, EYBB3, EYBB2, EYBB8, EYBB7, EYBB9, EYBD2, EYBD3, EYBD4 outside of the SDG EYB35.

According to Weston DV Field QC Samples chart, the sample EYBC8 is a duplicate of the sample EYB33 and sample EYBC4 is a duplicate of EYB36, within the same SDG. Sample EYB33 was collected on 9/30/22 and it's duplicate EYBC8 was collected on 9/30/22. Also, sample EYB36 was collected on 10/01/22 and sample EYB4 was also collected on 10/01/22.

12. DOCUMENTATION:

The laboratory received water samples in which the attached COC contained sample identifiers that have "-D" at the end. All samples that contained that identifier were not listed for Dissolved metals analysis. Per Region 5, the laboratory was instructed to assume all the samples with the identifiers are dissolved and note the issue in the SDG narrative and proceed with the scheduled analysis.

Case: 50221
Site: Gelman Sciences Inc.

SDG: EYB35
Laboratory: Chemtech

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

Region 5 ICF-ESAT Document Control Number: 00876
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division
Contact Person's Name: Nuria Muniz
Contact email address: Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, MI

CASE NUMBER: 50221 MA No: N/A SOW: SFAM01.1 SDG NUMBER: EYB39

Number and Type of Samples: 20 Water Samples (TVOA)

Sample Numbers: EYB36, EYB39, EYB74, EYB77, EYB80, EYB81, EYB83, EYB86-EYB90, EYB99, EYBC2, EYBC4, EYBC8, EYBF0, EYBF1, EYBF4, and EYBG5

Laboratory: Eurofins Burlington (ETB)

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Twenty (20) water samples, EYB36, EYB39, EYB74, EYB77, EYB80-EYB81, EYB83, EYB86-EYB90, EYB99, EYBC2, EYBC4, EYBC8, EYBF0-EYBF1, EYBF4, and EYBG5, were collected on 09/29/2022-10/04/2022. The lab, Eurofins Burlington, located in South Burlington, VT, received the samples on 10/08/2022 intact, and in good condition (4.6°C and 4.8°C).

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Anal. Date	Analyses
EYB36	G-SWSW-01/ SW01	200-65309-13	10/01/2022 08:00	10/20/22	TVOA
EYB39	G-SWBK-01/ Background	200-65309-1	10/03/2022 16:00	10/17/22	TVOA
EYB74	G-GWBK02/ 572 Lakeview Ave	200-65309-14	10/02/2022 17:00	10/20/22	TVOA
EYB77	G-GWBK-MW-28/ MW-28	200-65309-2	10/04/2022 12:50	10/17/22	TVOA
EYB80	G-GWRS-MW-100/ MW-100-Bladder Pump	200-65309-15	10/02/2022 11:58	10/18/22	TVOA
EYB81	G-GWRS-MW-108d/ MW-108d- Bladder Pump	200-65309-16	10/03/2022 19:07	10/20/22	TVOA
EYB83	G-GWRS-MW-85/ MW-85	200-65309-3	10/04/2022 13:18	10/17/22	TVOA
EYB86	G-GWRW-175/ 175 Jackson Plaza Lot 15	200-65309-4	10/03/2022 10:05	10/17/22	TVOA
EYB87	G-GWRW-3550/ 3550 Elizabeth Rd	200-65309-17	10/02/2022 15:07	10/20/22	TVOA
EYB88	G-GWRW-93563/ 3563 Elizabeth Rd	200-65309-18	10/02/2022 15:55	10/20/22	TVOA
EYB89	G-GWRW-3573/ 3573 Elizabeth Rd	200-65309-5	10/02/2022 16:21	10/17/22	TVOA
EYB90	G-GWRW-3574/ 3574 Elizabeth Rd	200-65309-19	10/02/2022 15:45	10/18/22	TVOA
EYB99	G-GWRW-3563/ 3563 Elizabeth Rd	200-65309-6	10/02/2022 15:43	10/17/22	TVOA
EYBC2	G-EB-02/ Equipment Blank	200-65309-7	09/30/2022 08:00	10/18/22	TVOA
EYBC4	G-SWSW-91/ SW01	200-65309-20	10/01/2022 08:10	10/18/22	TVOA
EYBC8	G-SWPPE-93/ PPE 3	200-65309-8	09/30/2022 11:20	10/20/22	TVOA
EYBF0	G-EB-03/ Equipment Blank	200-65309-9	09/29/2022 07:30	10/18/22	TVOA
EYBF1	G-EB-04/ Equipment Blank	200-65309-10	09/29/2022 08:00	10/20/22	TVOA
EYBF4	G-EB-07/ Equipment Blank	200-65309-11	10/01/2022 12:00	10/20/22	TVOA
EYBG5	G-TB04/ Blank	200-65309-12	09/30/2022 09:30	10/20/22	TVOA

Twenty (20) water samples were analyzed for TVOA analysis. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sampling and Analysis Plan), November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB74 was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Sample EYBG5 was identified as a trip blank. Sample EYBG6 was identified as a trip blank outside of this SDG with associated samples within this SDG. Samples EYBC2, EYBF0, EYBF1, and EYBF4 were identified as equipment blanks but have no associated samples within this SDG. Samples EYBF9, EYBG0 and EYBG1 were identified as equipment blanks outside of this SDG with associated samples within this SDG. Sample EYBC8 was identified as a field duplicate for sample EYB33 that is outside of this SDG. Sample EYBC4 was identified as a field duplicate for EYB36. Sample EYB41 that is outside of this SDG was identified as a field duplicate for sample EYB39. Sample EYB88 was identified as a field duplicate for EYB99.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method- Trace Volatiles

EXES-0133
The following aqueous samples are properly cooled and preserved, and analysis is outside the technical holding time. Detects are qualified as estimated J. Nondetects are qualified as unusable R.

EYB36[Reanalysis-01], EYB39, EYB74[Reanalysis-01], EYB74MS, EYB74MSD, EYB80, EYB81[Reanalysis-01], EYB86, EYB87[Reanalysis-01], EYB88[Reanalysis-01], EYB89, EYB90, EYB99, EYBC2, EYBC4, EYBC8[Reanalysis-01], EYBF0, EYBF1[Reanalysis-01], EYBF4[Reanalysis-01], EYBG5[Reanalysis-01]

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method- Trace Volatiles

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

EYB39, EYB74MS, EYB74MSD, EYB77, EYB80, EYB83, EYB86, EYB89, EYB90, EYB99, EYBC2, EYBC4, EYBF0, VBLKDB1, VBLKDB2
Styrene, 1,2,4-Trimethylbenzene

EXES-208
ICV is not performed from alternate source or different lot than the ICAL standards. Detects are qualified as estimated J. Nondetects are not qualified.

EYB36[Reanalysis-01], EYB39, EYB74[Reanalysis-01], EYB74MS, EYB74MSD, EYB77, EYB80, EYB81[Reanalysis-01], EYB83, EYB86, EYB87[Reanalysis-01], EYB88[Reanalysis-01], EYB89, EYB90, EYB99, EYBC2, EYBC4, EYBC8[Reanalysis-01], EYBF0, EYBF1[Reanalysis-01], EYBF4[Reanalysis-01], EYBG5[Reanalysis-01], VBLKAX2, VBLKDB1, VBLKDB2, VBLKFE1, VHBLK01
Dichlorodifluoromethane, Chloromethane, Vinyl chloride, Bromomethane, Chloroethane, Trichlorofluoromethane

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

VBLKDB2
Bromomethane

4. BLANKS:

Method- Trace Volatiles

Samples have non-common laboratory contaminant analyte results reported less than the CRQLs. The associated trip blank (TB – EYBG5) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB39
Toluene

EYB99, EYBC8, EYBF0
Chloroform

EYBF1[Reanalysis-01], EYBF4[Reanalysis-01]
Chloroform, Bromodichloromethane

Samples have common laboratory contaminant analyte results reported less than the CRQLs. The associated trip blank (TB – EYBG5) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB39
Acetone

Samples have non-common laboratory contaminant analyte results reported less than the CRQLs. The associated trip blank (TB – EYBG6) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB36[Reanalysis-01], EYBC4
Toluene

Samples have common laboratory contaminant analyte results reported less than the CRQLs. The associated trip blank (TB – EYBG6) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB36[Reanalysis-01], EYB81[Reanalysis-01]
Acetone

5. DMC_SURROGATE:

Method- Trace Volatiles

EXES-792
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

VHBLK01
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EXES-973
The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified.

VBLKDB2
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

EYB77, EYB80, EYB89, EYB90, EYB99, EYBC2, EYBC4
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method- Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB36[Reanalysis-01], EYB39, EYBC4
Carbon disulfide

EYB88[Reanalysis-01], EYB90
Chloroform

EYBC2
Toluene

EYBF0, EYBF1[Reanalysis-01], EYBF4[Reanalysis-01]
2-Butanone

EYBG5[Reanalysis-01]
1,1-Dichloroethene, 2-Butanone, Bromodichloromethane, Toluene, Dibromochloromethane

11. FIELD QC SAMPLES:

Sample EYBG5 and EYBG6 were identified as Trip Blanks

Trip Blank	EYBG5[Reanalysis-01]
Shipping Date	10/07/2022
TVOA	µg/L
1,1-Dichloroethene	0.11 J
Acetone	5.5
2-Butanone	1.3 J
Chloroform	1.6
Bromodichloromethane	0.48 J
Toluene	0.13 J
Dibromochloromethane	0.23 J
Associated samples	EYB39, EYB77, EYB83, EYB86, EYB89, EYB99, EYBC2, EYBC8[Reanalysis-01], EYBF0, EYBF1[Reanalysis-01], EYBF4[Reanalysis-01]

Trip Blank	EYBG6
Shipping Date	10/07/2022
TVOA	µg/L
Acetone	7.9
Methyl acetate	0.46 J

2-Butanone	1.1 J
Cyclohexane	0.045 J
Toluene	0.40 J
Associated samples	EYB36[Reanalysis-01], EYB74[Reanalysis-01], EYB74MS, EYB74MSD, EYB80, EYB81[Reanalysis-01], EYB87[Reanalysis-01], EYB88[Reanalysis-01], EYB90, EYBC4

Samples EYBC2, EYBF0, EYBF1, and EYBF4 were identified as Equipment Blanks with no associated samples within this SDG.

Equipment Blanks	EYBC2	EYBF1 [Reanalysis-01]	EYBF0	EYBF4 [Reanalysis-01]
Collection Dates	09/30/2022	09/29/2022	09/29/2022	10/01/2022
TVOA	µg/L	µg/L	µg/L	µg/L
Acetone	7.7	5.8	5.6	6.0
Methyl acetate	1.1			
2-Butanone		1.9 J	1.6 J	1.4 J
Chloroform		0.49 J	0.54	0.54
Toluene	0.22 J			
Bromodichloromethane		0.13 J		0.13 J
Associated Samples	None	None	None	None

Samples EYBF9, EYBG0 and EYBG1 were identified as equipment blanks outside of this SDG with associated samples within this SDG.
Sample EYBF9 is associated with sample EYB80 but had no analytes detected.

Blank Type:	Field Blank		SDG
EPA Sample:	EYBG0		
Sample Identifier:	G-EB-10		
Collection Date/Time:	10/03/2022 20:08		
Laboratory Receipt Date:	10/08/2022		
TVOA Analytes µg/L:	Chloroform	0.48 J	EYB54-CHX
Associated Samples:	EYB81 [Reanalysis-01], EYB83, EYB86		

Blank Type:	Field Blank		SDG
EPA Sample:	EYBG1		
Sample Identifier:	G-EB-11		
Collection Date/Time:	10/04/2022 20:15		
Laboratory Receipt Date:	10/08/2022		
TVOA Analytes µg/L:	Toluene	0.20 J	EYB54-CHX
Associated Samples:	EYB77		

Equipment blanks EYBG0 and EYBG1 are found in SDG EYB54-CHX (TVOA) and SDG EYB33-CHX (SVOA, SVSIM).

Sample EYBC8 was identified as a field duplicate for sample EYB33 that is outside of this SDG.

Sample	EYBC8	EYB33	RPD
TVOA	µg/L	µg/L	%R
Acetone	5.7	ND	200%
Chloroform	0.55	ND	200%

Sample EYBC4 was identified as a field duplicate for EYB36.

Sample	EYBC4	EYB33	RPDs
TVOA	µg/L	µg/L	%D
Acetone	5.3	4.6 J	14%
Carbon disulfide	0.19 J	0.17 J	11%
Chloroform	0.23 J	ND	200%

Sample EYB41 that is outside of this SDG was identified as a field duplicate for sample EYB39 but sample EYB41 was not analyzed for TVOA.
Sample EYB88 was identified as a field duplicate for EYB99. Both samples had no detected analytes.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Shipping Discrepancies and/or QC issues:

Eurofins lab noticed that the COC requested analysis for TVOA SIM but did not mention if TVOA analysis was necessary. Lab contacted region 5 on the issue who informed them to run TVOA analysis on all VOCs and that the SIM was a labeling error.

Sample EYB97 was received with a label for TVOA, however this sample was not listed on the COC. The lab also noted that they did not receive a container for sampler EYBF1. Region 5 was contacted, and they informed the lab that EYBF1 should be sample identifier G-EB-04 and EYB97 should be sample identifier G-EB-01. Both samples are equipment blanks.

TVOA was listed on the COC for sample EYB39, however, labels for 2 of 6 vials indicate TVOA and 4 of 6 vials indicate VOA. Region 5 was contacted about the issue and informed the lab that all VOCs should be run as TVOA.

TVOA SIM was listed on the COC for sample EYB80, however, labels for 4 of 6 vials indicate TVOA SIM and 2 of 6 vials indicate PAH. Region 5 was contacted about the issue and informed the lab that all VOCs should be run as TVOA.

The lab received 13 samples for TVOA SIM analysis, but they were only supposed to receive 4 samples. Region 5 was contacted and informed the lab that these 13 samples should be run as TVOA.

The COC did not indicate any sample to be used as the QC MS/MSD for TVOA SIM analysis, but additional volume was received for sample EYB74. Region 5 instructed lab to use sample EYB74 for MS/MSD and to exclude TVOA SIM.

According to the Westin DV Field QC Samples chart the following Trip Blank (EYBG6) outside of the SDG (in SDG EYBE7) is associated with samples EYB36[Reanalysis-01], EYB74[Reanalysis-01], EYB74MS, EYB74MSD, EYB80, EYB81[Reanalysis-01], EYB87[Reanalysis-01], EYB88[Reanalysis-01], EYB90, and EYBC4 within this SDG.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG5, EYBG6) is associated with the VOCs on 09/30/2022-10/04/2022 but was shipped to the lab on 10/07/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBC2, EYBF0, EYBF1, EYBF4) are not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF9) outside of the SDG (in SDG EYB54) is associated with sample EYB80 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF9) collected on 10/03/2022 is associated with the samples collected on 10/02/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) outside of the SDG (in SDG EYB54) is associated with sample EYB81 [Reanalysis-01], EYB83, and EYB86 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) collected on 10/03/2022 is associated with the samples collected on 10/03/2022 and 10/04/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG1) outside of the SDG (in SDG EYB54) is associated with sample EYB77 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG1) collected on 10/04/2022 is associated with the samples collected on 10/04/2022 according to the COC.

Case: 50221
SDG: EYB39
Site: Gelman Science Inc
Laboratory: Eurofins

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed.

Region 5 ICF-ESAT Document Control Number: 00877
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	**Weston**
Contact Person's Name:	Natalie Quiet
Contact email address:	Natalie.quiet@westonsolutions.com
EPA Data User:	USEPA SFD
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc., MI

CASE NUMBER: 50221 SDG NUMBER: EYB41

Number and Type of Samples: 8 Waters (ICP-MS, Hg)

Sample Numbers: EYB41, EYB45, EYB451, EYB48, EYBC5, EYBC9, EYBF5, EYBF6

Laboratory: Chemtech, (CHM)

The following are our findings:

Case: 50221
SDG: EYB41
Site: Gelman Sciences Inc.
Laboratory: Chemtech

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eight (08) Water, dissolved, samples, numbered below, were collected on 09/30/2022, 10/01/2022 and 10/03/2022. The lab, Chemtech located in Mountainside, NJ received the samples on 10/08/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB41	G-SWBK-01-D	N5085-01	10/03/2022 16:00	2.5°C	ICP-MS, Hg
EYB45	G-SWPPE-03-D	N5085-02	09/30/2022 11:10	2.5°C	ICP-MS, Hg
EYB451	G-SWSW-01-D	N5085-03	10/01/2022 08:00	2.5°C	ICP-MS, Hg
EYB48	G-SWRS-03-D	N5085-04	09/30/2022 13:00	2.5°C	ICP-MS, Hg
EYBC5	G-SWSW-91-D	N5085-05	10/01/2022 08:10	2.6°C	ICP-MS, Hg
EYBC9	G-SWPPE-93-D	N5085-06	09/30/2022 11:20	2.6°C	ICP-MS, Hg
EYBF5	G-EB-05-D	N5085-07	10/01/2022 10:00	2.6°C	ICP-MS, Hg
EYBF6	G-EB-06-D	N5085-08	10/01/2022 11:00	2.6°C	ICP-MS, Hg

All samples were analyzed for ICP-MS metals and Mercury. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences SAP (Site Assessment Plan), July 2022 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYBF5 and EYBF6 were identified as Equipment Blanks.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB45 and EYBC9. Also, samples EYB451 and EYBC5 are Field Duplicates.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method: Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony
EYB451, EYB48, EYBC5

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony
EYB451, EYB48, EYBC5

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Antimony
EYBC9S, LCS353

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Antimony
EYBC9S, LCS353

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Arsenic
EYB45, EYBC9, EYBC9D

Cobalt
EYB45, EYB451, EYB48, EYBC5, EYBF5

Silver
EYB41

11. DUPLICATES:

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB45 and EYBC9.

	EYB45			EYBC9		
ANALYTE	CONC	Q	SDG	CONC	Q	RPD
ICP-MS						
Arsenic	0.14 ug/L	J	EYB41	0.12 ug/L	J	14.29%
Cobalt	0.13 ug/L	J	EYB41	ND	U	200.0%

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB451 and EYBC5.

	EYB451			EYBC5		
ANALYTE	CONC	Q	SDG	CONC	Q	RPD
ICP-MS						
Arsenic	3.3 ug/L		EYB41	3.2 ug/L		3.1%
Cobalt	0.62 ug/L	J	EYB41	0.65 ug/L		4.7%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB45 and EYBC9, also, sample EYB451 and EYBC5. Samples EYB45 was collected on 09/30/22 and sample EYBC9 was collected on 09/30/22. Also, samples EYB451 was collected on 10/01/22 and its duplicate sample EYBC5 was collected on 10/01/22.

13. DOCUMENTATION:

The COC listed different analytes to be analyzed by ICP-MS than was scheduled. Per region 5, those samples were analyzed according to what was listed on the COC and noted in the SDG Narrative.

Samples EYB41, EYB45, EYB451, EYBC5 and EYBC9 were also analyzed for metals by ICP-MS in SDG EYB45.

According to the Weston DV Field QC Samples chart the following Equipment blank, EYBF5, is associated with sample EYBF1 (SDG EYB59).

According to the Weston DV Field QC Samples chart the following Equipment blank, EYBF6, is associated with samples EYBB2, EYBB7, EYBB8, EYBC9, EYBD2, and EYBD3 (SDG EYB59).

Case: 50221
SDG: EYB41
Site: Gelman Sciences Inc.
Laboratory: Chemtech

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/2023

Region 5 ICF-ESAT Document Control Number: 00950
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on __10/20/22_____

FROM: Thomas Sedlacek ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: **Data User:** **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.quiet@westonsolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz
Contact email address: __muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: ___Gelman Science, Ann Arbor, MI_____

CASE NUMBER: __50221_____ SDG NUMBER: __EYB43_____

Number and Type of Samples: _6 waters /ICP-MS, Hg_____

Sample Numbers: _____EYB43, EYB46, EYB47, EYB450, EYBC3, EYBF7_____

Laboratory: __Bonner Analytical Testing_____

The following are our findings:

Case: 50221
SDG: EYB43
Site: Gelman Science, Ann Arbor, MI
Laboratory: Bonner

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Six (6) water samples, numbered EYB43, EYB46, EYB47, EYB450, EYBC3 and EYBF7, were collected on 9/29/22, 09/30/22 and 10/1/22. The lab, Bonner Analytical Testing Company, located in Hattiesburg, MS received the samples on 10/8/22 in good condition.

EPA Sample IDs	Sample Identifier/Location (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB43	G-SWPPE-01-D/PPE 1	2210166-01	09/30/22 15:15	ICP-MS, Hg
EYB46	G-SWRS-01-D/Barton Pond	2210166-02	09/29/22 14:30	ICP-MS, Hg
EYB47	G-SWRS-02-D/Barton Pond	2210166-03	09/29/22 16:30	ICP-MS, Hg
EYB450	G-SWSS-01-D/Source Sample	2210166-04	09/30/22 16:06	ICP-MS, Hg
EYBC3	G-EB-02/equipment blank	2210166-05	10/01/22 08:00	ICP-MS, Hg
EYBF7	G-EB-07-D/equipment blank	2210166-06	10/01/22 12:00	ICP-MS, Hg

All samples were analyzed for ICP-MS and Hg by CVAA. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC3 is not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF7 is not associated with any of the samples within the this SDG.

No sample was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

According to Weston DV Field QC Samples chart no field blanks or field duplicates were associated with these samples.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/08/23

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method: Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Beryllium
EYB43

Iron
EYB450, EYB46, EYB47D, EYB47L

Aluminum, Iron
EYB47

Iron, Magnesium, Manganese
EYBC3

Iron, Manganese
EYBF7

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Beryllium
EYB43

Iron
EYB450, EYB46, EYB47D, EYB47L, EYBC3, EYBF7

Aluminum, Iron
EYB47

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Beryllium
EYB43

EXES-0153
The following samples have analyte results less than CRQLs. The associated PB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Copper
EYB43

Iron
EYB450, EYB47L

Iron, Zinc
EYB46

Aluminum, Copper, Iron, Zinc
EYB47

Copper, Iron, Zinc
EYB47D

Iron, Manganese, Zinc
EYBC3, EYBF7

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Beryllium, Thallium
EYB47S, LCS01

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Aluminum, Iron
EYB43

Beryllium, Thallium
EYB47S

Aluminum, Beryllium, Iron, Thallium
LCS01

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Aluminum, Barium, Iron, Magnesium, Manganese
EYB43

Barium, Magnesium, Manganese
EYB450, EYB46, EYB47, EYB47D, EYB47L

Barium, Beryllium, Cadmium, Manganese, Thallium
EYB47S

Aluminum, Barium, Beryllium, Cadmium, Iron, Magnesium, Manganese, Thallium
LCS01

EXES-0176
The following samples are associated with preparation blank (PB) that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Calcium
EYB43, EYB450[Dilution-01], EYB46, EYB47, EYB47D, EYB47L, EYBC3, EYBF7

EXES-1105
Samples have analyte results reported greater than or equal to the CRQLs. The associated Preparation Blank (PB) results are less than CRQLs. Detects are qualified as estimated J+.

Aluminum, Iron, Manganese, Zinc
EYB43

Manganese
EYB450, EYB46, EYB47, EYB47D, EYB47L

Copper, Manganese, Zinc
EYB47S

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Antimony, Chromium, Lead, Potassium, Vanadium
EYB43

Arsenic, Nickel
EYB450

Arsenic, Cobalt, Nickel, Vanadium
EYB46

Cobalt, Nickel, Vanadium
EYB47

Chromium, Cobalt, Nickel, Vanadium
EYB47D

Calcium, Chromium, Cobalt
EYBC3

Chromium, Cobalt
EYBF7

Aluminum. Calcium, Copper, Iron, Manganese, Zinc
PBW01

11. DUPLICATES:

NONE FOUND.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC3 is associated with samples EYB66, EYB70 and EYB73 located in SDG EYB52-BON, sample EYB68 and EYB72 located in SDG EYB68-BON and sample EYB71 located in SDG EYB59-BON.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF7 is associated with EYBD5, EYBD6, EYBD8, and EYBE0 thru EYBE4 located in SDG EYB59-CHM, EYBD7 located in SDG EYB52-BON, and sample EYBD9 located in SDG EYB68-BON.

EPA Samples	EYBC3	EYBF7
Sample Identifier	G-EB-02/equipment blank	G-EB-07-D/equipment blank
Units	µg/L	µg/L
Mercury	ND	ND
Calcium	130 J	ND
Chromium	0.25 J	0.21 J
Cobalt	0.19 J	0.072 J

J = concentration is below the CRQL/RL.

12. DOCUMENTATION:

No discrepancies found.

Case: 50221
SDG: EYB43
Site: Gelman Science, Ann Arbor, MI
Laboratory: Bonner

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/08/23

Region 5 ICF-ESAT Document Control Number: 00879
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:	**Data User:**	**Weston**
	Contact Person's Name:	Natalie Quiet
	Contact email address:	Natalie.quiet@westonsolutions.com
	EPA Data User:	USEPA Superfund Division
	Contact Person's Name:	Nuria Muniz
	Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc.

CASE NUMBER: 50221 SDG NUMBER: EYB45

Number and Type of Samples: 8 waters (ICP-MS)

Sample Numbers: EYB41, EYB45, EYB451, EYB48, EYBC5, EYBC9, EYBF5, EYBF6

Laboratory: Chemtech Consulting Group (CHM)

The following are our findings:

Case: 50221
Site: Gelman Sciences Inc.

SDG: EYB45
Laboratory: Chemtech

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eight (08) water samples, dissolved, properly preserved, numbered below, were collected on 09/30/2022 and 10/01/2022. The lab, Chemtech Consulting Group located in Mountainside, NJ received the samples on 10/08/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB41	G-SWBK-01-D	N5874-01	10/03/2022 16:00	2.5°C	ICP-MS
EYB45	G-SWPPE-03-D	N5874-02	09/30/2022 11:10	2.5°C	ICP-MS
EYB451	G-SWSW-01-D	N5874-03	10/01/2022 08:00	2.5°C	ICP-MS
EYB48	G-SWRS-03-D	N5874-04	09/30/2022 13:00	2.5°C	ICP-MS
EYBC5	G-SWSW-91-D	N5874-05	10/01/2022 08:10	2.6°C	ICP-MS
EYBC9	G-SWPPE-93-D	N5874-06	09/30/2022 11:20	2.6°C	ICP-MS
EYBF5	G-EB-05-D	N5874-09	10/01/2022 10:00	2.6°C	ICP-MS
EYBF6	G-EB-06-D	N5874-10	10/01/2022 11:00	2.6°C	ICP-MS

All samples were analyzed for ICP-MS metals. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Science Inc. SAP (Sampling Plan), Rev 5/21/21, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Samples EYBF5 and EYBF6 were identified as Equipment Blanks.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB45 and EYBC9. Also, EYB451 and EYBC5 are Field Duplicates.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/06/2023

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

NONE FOUND.

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Calcium
EYBF5, EYBF6

Potassium
EYB48

Sodium
EYBF5, EYBF6

11. DUPLICATES:

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB45 and EYBC9.

	EYB45			EYBC9			
ANALYTE	CONC	Q	SDG	CONC	Q	SDG	RPD
ICP-MS							
Calcium	140000 ug/L		EYB45	140000 ug/L		EYB45	0.0%
Magnesium	36000 ug/L		EYB45	34000 ug/L		EYB45	5.6%
Potassium	3600 ug/L		EYB45	3500 ug/L		EYB45	2.8%
Sodium	110000 ug/L		EYB45	110000 ug/L		EYB45	0.0%

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB451 and EYBC5.

	EYB451			EYBC5			
ANALYTE	CONC	Q	SDG	CONC	Q	SDG	RPD
ICP-MS							
Calcium	65000 ug/L		EYB45	78000 ug/L		EYB45	16.7%
Magnesium	9200 ug/L		EYB45	11000 ug/L		EYB45	16.36%
Potassium	1800 ug/L		EYB45	2100 ug/L		EYB45	14.28%
Sodium	67000 ug/L		EYB45	93000 ug/L		EYB45	27.96%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

12. DOCUMENTATION:

The laboratory received water samples in which the attached COC contained sample identifiers that have “-D” at the end. All samples that contained that identifier were not listed for Dissolved metals analysis. Per Region 5, the laboratory was instructed to assume all the samples with the identifiers

are dissolved and note the issue in the SDG narrative and proceed with the scheduled analysis.

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG.

Case: 50221
Site: Gelman Sciences Inc.

SDG: EYB45
Laboratory: Chemtech

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/06/2023

Region 5 ICF-ESAT Document Control Number: 00883
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on __10/29/22__

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Natalie Quiet
Contact email address:	Natalie.quiet@westonsolutions.com
EPA Data User:	USEPA Superfund Division__
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: ____Gelman Sciences INC_MI_____

CASE NUMBER: __50221_____ SDG NUMBER: ___EYB46_____

Number and Type of Samples: __6 waters (ICP-MS)_____

Sample Numbers: ___ EYB43, EYB46, EYB47, EYB450, EYBC3, EYBF7 _____

Laboratory: _Bonner Analytical Testing (BON)

The following are our findings:

Case: 50221
SDG: EYB46
Site: Gelman Sciences MI
Laboratory: Bonner

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Six (6) dissolved water samples, numbered EYB43, EYB46, EYB47, EYB450, EYBC3, EYBF7 were collected on 09/29-10/01/22. The lab Bonner Analytical Testing in Hattiesburg, MS received the samples on 10/08/22 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)/Location	Lab ID Number	Collection Date/Time	Analyses
EYB43	G-SWPPE-01-D/PPE 1	2212129-01	09/30/22 15:15	ICP-MS
EYB46	G-SWRS-01-D/Barton Pond	2212129-02	09/29/22 14:30	ICP-MS
EYB47	G-SWRS-02-D/Barton Pond	2212129-03	09/29/22 16:30	ICP-MS
EYB450	G-SWSS-01-D/Source sample	2212129-04	09/30/22 16:06	ICP-MS
EYBC3	G-EB-02-D/Equip Blank	2212129-05	09/30/22 08:00	ICP-MS
EYBF7	G-EB-07-D/Equip Blank	2212129-06	10/01/22 12:00	ICP-MS

All samples were analyzed for metals by ICP-MS. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Site Assessment Plan), July 2022 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYBC3 and EYBF7 were identified as Equipment Blank.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/23

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Magnesium
EYBC3

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Magnesium
EYB43, EYB450, EYB46, EYB47, EYB47D, EYB47L, LCS01.

EXES-0176
The following samples are associated with preparation blank (PB) that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Calcium
EYB43, EYB450[Dilution-01], EYB46, EYB47, EYB47D, EYB47L, EYBC3, EYBF7

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

EXES-165
The following samples are not associated with Matrix Spike sample. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB43, EYB450, EYB46, EYB47, EYBC3, EYBF7.

8. SERIAL DILUTION:

NONE FOUND

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Calcium
EYBC3, PBW01

Potassium
EYB43

11. DUPLICATES:

NONE FOUND

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with the samples in this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC3 is associated with samples EYB66, EYB70, and EYB73 located in SDG EYB52-BON, sample EYB71 located in SDG EYB59-BON, and samples EYB68 and EYB72 located in SDG EYB68-BON.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF7 is associated with sample EYBD7 located in SDG EYB52-BON, samples EYBD5, EYBD6, EYBD8, and EYBE0 thru EYBE4 located in SDG EYB59-CHM and sample EYBD9 located in SDG EYB68-BON.

12. DOCUMENTATION:

Issue #1: The COC lists ICP-AES, ICP-MS and CN for the water samples, but according to the scheduling, the water samples were supposed to be analyzed for Mercury and ICP-MS only.
Resolution #1: Region 5 advised to proceed with ICP-MS, ICP-AES and CN for water samples. The filtered water samples should be run by ICP-MS only and not CN.

Issue #2: Samples EYB46 and EYB47 are identified in the COC, in the sample identifier column with letter “-D” at the end, but it was indication if these were field filtered samples.
Resolution #2: Region 5 confirmed that both samples were filtered samples.

Case: 50221
SDG: EYB46
Site: Gelman Sciences MI
Laboratory: Bonner

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/7/23

Region 5 ICF-ESAT Document Control Number: 00884
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/22

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston
Contact Person's Name: Kara Epple
Contact email address: kara.epple@westonsolutions.com

EPA Data User: SFD
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, MI

CASE NUMBER: 50221 SDG NUMBER: EYB52

Number and Type of Samples: 20 soils (SVOA, SVOA-SIM, ARO)

Sample Numbers: EBY52, EYB54-56, EYB58, EYB59, EYB67, EYB69, EYBB1-B3, EYBB7, EYBB8, EYBCO, EYBC1, EYBD1, EYBD2, EYBD4, EYBD7, EYBD9

Laboratory: Chemtex

The following are our findings:

Case: 50221
Site: Gelman Sciences MI

SDG: EYB52
Laboratory: Chemtex

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Twenty (20) soil samples, numbered EBY52, EYB54-56, EYB58, EYB59, EYB67, EYB69, EYBB1-B3, EYBB7, EYBB8, EYBCO, EYBC1, EYBD1, EYBD2, EYBD4, EYBD7, EYBD9, were collected on 09/28 – 30/22 and 10/1/22. The lab Chemtex located in Port Arthur TX received the samples on 10/7/22 in okay condition. Samples were received at temperatures ≥6°C.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EBY52	G-SEPPE-02/PPE 2	0003271-01	09/30/22 18:35	8.3°C	SVOA, SVOA-SIM, ARO
EYB54	G-SERS-01/RS01	0003271-02	09/29/22 14:50	8.3°C	SVOA, SVOA-SIM, ARO
EBY55	G-SERS-02/RS02	0003271-03	09/29/22 17:30	8.3°C	SVOA, SVOA-SIM, ARO
EYB56	G-SERS-04/RS04	0003271-04	10/03/22 19:15	8.3°C	SVOA, SVOA-SIM, ARO
EYB58	G-SERS-03/RS03	0003271-05	09/30/22 13:15	8.3°C	SVOA, SVOA-SIM, ARO
EYB59	G-SESW-01/SW01	0003271-06	10/01/22 08:25	8.3°C	SVOA, SVOA-SIM, ARO
EYB67	G-SEBK-02/ Background	0003271-07	09/30/22 09:10	8.3°C	SVOA, SVOA-SIM, ARO
EYB69	G-SEPPE-01/PPE 1	0003271-08	09/30/22 15:20	8.3°C	SVOA, SVOA-SIM, ARO
EYBB1	G-SS98-3233/SS08	0003271-15	09/28/22 11:18	7.2°C	SVOA, SVOA-SIM, ARO
EYBB2	G-SS08-3233/SS08	0003271-16	09/28/22 11:15	7.2°C	SVOA, SVOA-SIM, ARO
EYBB3	G-SS08-1920/SS08	0003271-09	09/28/22 11:10	8.3°C	SVOA, SVOA-SIM, ARO
EYBB7	G-SS09-1213/SS09	0003271-17	09/28/22 14:20	7.2°C	SVOA, SVOA-SIM, ARO
EYBB8	G-SS09-0708/SS09	0003271-18	09/28/22 14:15	7.2°C	SVOA, SVOA-SIM, ARO
EYBC0	G-SS08-0506/SS08	0003271-19	09/28/22 11:00	7.2°C	SVOA, SVOA-SIM, ARO
EYBC1	G-SEBK-01/ Background	0003271-10	10/03/22 18:00	8.3°C	SVOA, SVOA-SIM, ARO
EYBD1	G-SESW-91/SW01	0003271-11	10/01/22 08:30	8.3°C	SVOA, SVOA-SIM, ARO
EYBD2	G-SS10-0607/SS10	0003271-20	09/28/22 18:10	7.2°C	SVOA, SVOA-SIM, ARO
EYBD4	G-SS10-1819/SS10	0003271-12	09/28/22 18:20	8.3°C	SVOA, SVOA-SIM, ARO
EYBD7	G-SS12-0708/SS12	0003271-13	09/29/22 15:10	8.3°C	SVOA, SVOA-SIM, ARO
EYBD9	G-SS12-1415/SS12	0003271-14	09/29/22 15:15	8.3°C	SVOA, SVOA-SIM, ARO

All samples were analyzed for SVOA, SVOA-SIM, and ARO. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB55 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Reviewed by: Martin Sarmiento/ICF-ESAT
Date: 02/02/2023

Samples EYBF3 and EYBF4 were identified as equipment blanks outside of this SDG with associated samples within this SDG.

Samples EYB59, EYBD1, EYBB7, EYBB8, EYBD8, and EYBD9 were determined to be sample duplicates.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221
Site: Gelman Sciences MI

SDG: EYB52
Laboratory: Chemtex

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-349
The following samples are received at temperatures > 6°C. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB56, EYB58, EYB59, EYB67, EYB69, EYBB1, EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBC1, EYBD1, EYBD2, EYBD4, EYBD7, EYBD9

Method: Semivolatiles by SIM

EXES-349
The following samples are received at temperatures > 6°C. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB56, EYB58, EYB59, EYB67, EYB69, EYBB1, EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBC1, EYBD1, EYBD2, EYBD4, EYBD7, EYBD9.

Method: Aroclors

EXES-349
The following samples are received at temperatures > 6°C. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB56, EYB58, EYB59, EYB67, EYB69, EYBB1, EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBC1, EYBD1, EYBD2, EYBD4, EYBD7, EYBD9

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB56, EYB58, EYB59, EYB67, EYB69, EYBB1, EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBC1, EYBD1, EYBD2, EYBD4, EYBD7, EYBD9, SBLKB40, SLCSB40
4-Methylphenol

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB52, EYB54, EYB56, EYB58, EYB59, EYB67, EYBB1, EYBD1
2,3,4,6-Tetrachlorophenol

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ. <50%

EYB52, EYB54, EYB56, EYB58, EYB59, EYB67, EYBB1, EYBD1
Hexachlorocyclo-pentadiene, 2,4-Dinitrophenol, Pentachlorophenol

Method: Semivolatiles by SIM

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB54, EYB56DL [Dilution-01], EYB58, EYB59DL [Dilution-01],
EYB67, EYBC0, EYBD1DL [Dilution-01], EYBD2
Benzo(g,h,i)perylene

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB54, EYB56, EYB58, EYB59, EYB67, EYBC0, EYBD1, EYBD2
Pentachlorophenol

4. BLANKS:

NONE FOUND.

5. DMC_SURROGATE:

Method: Semivolatiles

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

EYB67, EYB69
1,4-Dioxane

Method: Semivolatiles by SIM

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

EYB59 [Dilution-01]
Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b) fluoranthene, Benzo(k) fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

Method: Aroclors

EXES-1350
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYBB8
Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

EXES-971
The following samples have surrogate percent recoveries greater than the primary maximum criteria but are less than or equal to the expanded maximum criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

EYBC1, EYB67
Aroclor-1016, Aroclor-1221, Aroclor-1232, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260, Aroclor-1262, Aroclor-1268

6. MATRIX SPIKE:

Method: Semivolatiles by SIM

EXES-974
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects in the unspiked sample are qualified as estimated J. Nondetects are not qualified.

EYB55
Pentachlorophenol

Method: Aroclors

EXES-546
The relative percent difference (RPD) between the following matrix spike and matrix spike duplicate recoveries is outside criteria. Detects in the unspiked sample are qualified as estimated J. Nondetects are not qualified.

EYB55
Aroclor-1016, Aroclor-1260

EXES-975
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects in the unspiked sample are qualified as estimated J. Nondetects are not qualified.

EYB55
Aroclor-1016, Aroclor-1260

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB54, EYB58, EYBB7, EYBC0, EYBC1, EYBD2, EYBD4, EYBD7, EYBD9
Bis(2-ethylhexyl) phthalate

EYB56, EYBB1
Benzo(k)fluoranthene

EYB59
Phenanthrene, Dibenzo(a,h)anthracene

EYB67
Chrysene, Indeno(1,2,3-cd) pyrene

EYBD1
Benzo(k)fluoranthene

EXES-796
The following soil samples have percent solids greater than or equal to 10% but less than or equal to 30%. Detects are not qualified. Nondetects are not qualified.

EYB58, EYB59, EYB69, EYBD1

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB52
Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

EYB54
Anthracene

EYB55
Phenanthrene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene

EYB58
Anthracene, Dibenzo(a,h)anthracene

EYB59
Acenaphthene

EYBB3
Phenanthrene, Chrysene

EYBB7
Phenanthrene

EYBC1
Phenanthrene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

EYBD1
Acenaphthylene

EXES-796
The following soil samples have percent solids greater than or equal to 10% but less than or equal to 30%. Detects are not qualified. Nondetects are not qualified.

EYB58, EYB59, EYB69, EYBD1

Method: Aroclors

EXES-1509
The following samples have result difference between the two columns greater than 25%. Detects are qualified as estimated J.

EYB55MSD
Aroclor-1260

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

ALCSB41
Aroclor1016

The following soil samples have percent solids greater than or equal to 10% but less than or equal to 30%. Detects are not qualified. Nondetects are not qualified.

EYB58, EYB59, EYB69, EYBD1

11. FIELD QC SAMPLES:

Equipment blanks EYBF3 (from SDG EYB80) and EYBF4 (from SDG EYB80) were identified as equipment blanks outside of this SDG with associated samples within this SDG.

Equipment blanks EYBF4 and EYBF3 were analyzed as water samples (reported in µg/L) and the associated samples within this SDG were analyzed as soil samples (reported in µg/kg). Because of this the target analyte detected in the equipment blank cannot be compared to the target analytes detected in the samples.

Equipment blank EYBF3 is associated with samples EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBD2, and EYBD4 within this SDG.

Equipment Blank	EYBF3
Collection Date	10/01/2022
SVOA	µg/L
1,4-Dioxane	0.65 J
SVOA-SIM	µg/L
Naphthalene	0.11 J
ARO	µg/L
Aroclor-1254	1.5
Associated Samples	EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBD2, EYBD4

Equipment blank EYBF4 had no target analyte detects for SVOA, SVOA-SIM, and ARO. Equipment blank EYBF4 is associated with samples EYBD7 and EYBD9 within this SDG.

Sample EYB59 and EYBD1 were determined to be sample duplicates. Both samples did not have any target analyte detects for ARO.

Sample	EYB59	EYBD1	RPD
SVOA	µg/kg	µg/kg	%D
Phenanthrene	370 J	ND	200%
Fluoranthene	1400	570	84%
Pyrene	1200	490	84%
Benzo(a)anthracene	530	ND	200%
Chrysene	950	380	86%
bis(2-ethylhexyl)phthalate	660	410	47%
Benzo(b)fluoranthene	2000	830	83%
Benzo(k)fluoranthene	550	250 J	75%

Benzo(a)pyrene	1100	450	84%
Indeno(1,2,3-cd)pyrene	1000	430	80%
Dibenzo(a,h)anthracene	220 J	ND	200%
Benzo(g,h,i)perylene	1200	510	81%

Sample	EYB59	EYBD1	RPD
SVOA-SIM	µg/kg	µg/kg	%R
Acenaphthylene	11	4.3 J	88%
Acenaphthene	5.9 J	ND	200%
Fluorene	8.6	ND	200%
Phenanthrene	230	80	97%
Anthracene	43	18	82%
Fluoranthene	1100	460	82%
Pyrene	800	370	74%
Benzo(a)anthracene	390	160	84%
Chrysene	580	250	80%
Benzo(b)fluoranthene	580	240	83%
Benzo(k)fluoranthene	270	98	93%
Benzo(a)pyrene	580	240	83%
Indeno1,2,3-cd)pyrene	390	170	79%
Dibenzo(a,h)anthracene	64	27	81%
Benzo(g,h,i)perylene	370	160	79%

Sample EYBD7 and EYBD9 were determined to be sample duplicates. Both samples did not have any target analyte detects for SVOA-SIM and ARO.

Sample	EYBD7	EYBD9	RPD%
SVOA	µg/kg	µg/kg	%D
Bis(2-ethlhexyl) phthalate	140 J	160 J	13%

Sample EYBB7 and EYBB8 were determined to be sample duplicates. Both samples did not have any target analyte detects for ARO.

Sample	EYBB7	EYBB8	RPD%
SVOA	µg/kg	µg/kg	%D
Bis(2-ethlhexyl) phthalate	160 J	ND	200%
SVOA-SIM	µg/kg	µg/kg	%D
Phenanthrene	2.0 J	ND	200%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3) outside of this SDG (in SDG EYB80) is associated with samples EYBB2, EYBB3, EYBB7, EYBB8, EYBC0, EYBD2, and EYBD4 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3) collected on 10/01/2022 is associated with the samples collected on 09/28/2022 according to the COC.

According to the Weston DV Field QC Sample chart the following Equipment Blank (EYBF3) was analyzed as a water sample (reported in µg/L) and the associated samples within this SDG were analyzed as soil samples (reported in µg/kg). The associated samples had no target detects for the target analytes detected in the blank.

According to the Weston DV Field QC Sample chart the following Equipment Blank (EYBF4) outside of this SDG (in SDG EYB80) is associated with sample EYBD7 and EYBD9 within this SDG.

According to the Weston DV Field QC Sample chart the following Equipment Blank (EYBF4) collected on 10/01/2022 is associated with the samples collected on 09/29/2022 according to the COC.

According to the Weston DV Field QC Sample chart the following Equipment Blank (EYBF4) was analyzed as a water sample (reported in µg/L) and the associated samples within this SDG were analyzed as soil samples (reported in µg/kg).

Case: 50221
SDG: EYB52
Site: Gelman Sciences MI
Laboratory: Chemtex

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Martin Sarmiento/ICF-ESAT
Date: 02/02/2023

Region 5 ICF-ESAT Document Control Number: 00885
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on ___10/20/22__

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: **Data User:** **Weston**
Contact Person's Name: Natalie Quiet
Contact email address: natalie.quiet@westonsolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz __
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: __Gelman Sciences Ann Arbor, MI_____

CASE NUMBER: __50221_____ SDG NUMBER: __EYB52_____

Number and Type of Samples: ___16 soils/ ICP-AES, ICP-MS, Hg, CN_____

Sample Numbers: ___ EYB52, EYB54-B56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3-A5, EYBB3, EYBD4, EYBD7_

Laboratory: __Bonner Analytical Testing_____

The following are our findings:

Case: 50221
Site: Gelman Sciences Ann Arbor MI

SDG: EYB52
Laboratory: Bonner

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Sixteen (16) soils samples, numbered EYB52, EYB54-B56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3-A5, EYBB3, EYBD4 and EYBD7, were collected on 09/26-30/22 and 10/03/22. The lab, Bonner Analytical, located in Hattiesburg, MS received the samples on 10/07/22 in good condition.

EPA Sample IDs	Sample Identifier /Location (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB52	G-SEPPE-02/ PPE 2	2210137-01	09/30/22 18:35	ICP-AES, ICP-MS, Hg, CN
EYB54	G-SERS-01/ RS01	2210137-02	09/29/22 14:50	ICP-AES, ICP-MS, Hg, CN
EYB55 (MS/MSD)	G-SERS-02/ RS02	2210137-03	09/28/22 17:30	ICP-AES, ICP-MS, Hg, CN
EYB56	G-SERS-04/ RS04	2210137-04	10/03/22 19:15	ICP-AES, ICP-MS, Hg, CN
EYB58	G-SERS-03/ RS03	2210137-05	09/30/22 13:15	ICP-AES, ICP-MS, Hg, CN
EYB66	G-SS01-1213/ SS01	2210137-06	09/26/22 11:45	ICP-AES, ICP-MS, Hg, CN
EYB67	G-SEBK-02/ Background	2210137-07	09/30/22 09:10	ICP-AES, ICP-MS, Hg, CN
EYB70	G-SS01-2930/ SS01	2210137-08	09/26/22 11:52	ICP-AES, ICP-MS, Hg, CN
EYB73	G-SS03-1718/ SS03	2210137-09	09/26/22 16:00	ICP-AES, ICP-MS, Hg, CN
EYB96	G-SS05-0002/ SS05	2210137-10	09/27/22 11:32	ICP-AES, ICP-MS, Hg, CN
EYBA3	G-SS05-3031/ SS05	2210137-11	09/27/22 11:50	ICP-AES, ICP-MS, Hg, CN
EYBA4	G-SS95-3031/ SS05	2210137-12	09/27/22 11:55	ICP-AES, ICP-MS, Hg, CN
EYBA5	G-SS06-0506/ SS06	2210137-13	09/27/22 15:40	ICP-AES, ICP-MS, Hg, CN
EYBB3	G-SS08-1920/ SS08	2210137-14	09/28/22 11:10	ICP-AES, ICP-MS, Hg, CN
EYBD4	G-SS10-1819/ SS10	2210137-15	09/28/22 18:20	ICP-AES, ICP-MS, Hg, CN
EYBD7	G-SS12-0708/ SS12	2210137-16	09/29/22 15:10	ICP-AES, ICP-MS, Hg, CN

All samples were analyzed for ICP-AES, ICP-MS, Hg, and CN. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Samples EYB55 has been designated by the sampler as laboratory QC (e.g. MS, MSD), based on the Chain of Custody No: 5-100622-070643-0043, present in this SDG. However, Weston DV Field QC Samples chart, failed to identify it.

No samples were identified as field duplicated. No field blank or equipment blank were detected in this SDG.

According to the Weston DV Field QC Samples chart, samples in this SDG are associated with Equipment blanks located in different SDGs.

Samples EYB66, EYB70, EYB73, EYB96, EYBA3, EYBA4 and EYBA5 are associated with Equipment blank EYBF2 (located in SDG EYB33) for all analyses.

Samples EYBB3 and EYBD4 are associated with Equipment Blank EYBF3 (located SDG EYB33) for all analysis.

Sample EYBD7 is associated with Equipment Blank EYBF4 (located in SDG EYB31 for ICP-MS, ICP-AES and Hg, and SDG EYB30 for CN).

Samples EYB66, EYB70 and EYB73 are associated with Equipment blank EYBC2 (located SDG EYB31 for ICP-MS, ICP-AES and Hg, and SDG EYB30 for CN).

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method: Cyanide

EXES-465
The following non-aqueous samples exceeded technical holding time. Detects are qualified as J-. Nondetects are qualified as R.

EYB52, EYB54, EYB55, EYB55D, EYB55S, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method: Metals by ICP-AES

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Chromium, Copper, Lead, Vanadium
EYB55L

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Copper
EYB55L

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Copper
EYB52, EYB54, EYB55, EYB55D, EYB55S, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Aluminum, Iron
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01

Chromium, Copper, Lead Vanadium
EYB52, EYB54, EYB55, EYB55D, EYB55S, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01

Manganese
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB55S, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Aluminum
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01

Iron
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01, LCS02

Manganese
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB55S, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01, LCS02

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank (ETBF3) analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Manganese
EYBB3, EYBD7

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank (ETBC2) analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Iron
EYB66, EYB70, EYB73

Method: Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

EXES-0153
The following samples have analyte results less than CRQLs. The associated PB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYB55S, LCS01, LCS02

EXES-0166

The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYB55S, LCS01, LCS02

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYB55S, LCS01, LCS02

EXES-0175
The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Selenium
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB55S, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, LCS01, LCS02, PBS01, PBS02

EXES-0176
The following samples are associated with preparation blank (PB) that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Arsenic
EYB52, EYB54, EYB55, EYB55A, EYB55D, EYB55L, EYB55S, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

Selenium
EYB52, EYB54, EYB55, EYB55D, EYB55L, EYB55S, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

EXES-1105
Samples have analyte results reported greater than or equal to the CRQLs. The associated Preparation Blank (PB) results are less than CRQLs. Detects are qualified as estimated J+.

Thallium
EYB55S

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank (EYBC2) analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Cobalt
EYB66, EYB70, EYB73

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank (ETBF4) analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Cobalt
EYBD7

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank (ETBF2) analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Cobalt
EYB66, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5

The following samples have analyte results greater than or equal to the CRQLs. The associated Equipment Blank (ETBF3) analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Cobalt
EYBB3, EYBD7

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2 (located in SDG EYB3) is associated with samples EYB66, EYB70 and EYB73within this SDG.

EQUIPMENT BLANKS:

EYBC2

Associated Samples EYB66, EYB70, EYB73

Equipment Blank	EYBC2 (SDG EYB31)
Collection Date	09/30/2022
ICP-MS	µg/L
Cobalt	0.24 J
Associated Samples	EYB66, EYB70, EYB73

Associated Samples EYB66, EYB70, EYB73

Equipment Blank	EYBC2 (SDG EYB31)
Collection Date	09/30/2022
ICP-AES	µg/L
Iron	49 J
Associated Samples	EYB66, EYB70, EYB73

No detects for Hg were reported for EYBC2 (located in SDG EYB31).

Sample EYBC2 was analyzed outside of the Holding time for CN (located in SDG EYB30).

EYBF2

Associated Samples EYB66, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5

Equipment Blank	EYBF2 (SDG EYB33)
Collection Date	09/30/2022
Cobalt	0.13 J
Associated Samples	EYB66, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5

ICP-AES - No detects were reported for this Equipment Blank. This equipment Blank is located in SDG EYB33. Associated Samples are EYB66, EYB70, EYB73, EYB96, EYBA3, EYBA4 and EYBA5

Mercury - No detects for Hg were reported for EYBF2 (located in SDG EYB33).

CN- Sample was analyzed outside of the Holding time for CN (located in SDG EYB33).

EYBF3

ICPM-MS- No detects for this Equipment Blank were reported. This equipment Blank is located in SDG EYB33. Associated Samples EYBB3 and EYBD4.

Associated Samples EYBB3, EYBD4

Equipment Blank	EYBF2 (SDG EYB33)
Collection Date	09/30/2022
ICP-AES	
Manganese	1.6 J
Associated Samples	EYBB3, EYBD4

Mercury - No detects for Hg were reported for EYBF3 (located in SDG EYB33).

CN- Sample was analyzed outside of the Holding time for CN (located in SDG EYB33).

EYBF4

Associated Samples EYBD7

Equipment Blank	EYBF4 (SDG EYB31)
Collection Date	10/01/2022
ICPMS	µg/L
Cobalt	0.063 J
Associated Samples	EYBD7

Associated Samples EYBD7

Equipment Blank	EYBF4 (SDG EYB31)
Collection Date	10/01/2022
ICP-AES	µg/L
Lead	10 U
Associated Samples	EYBD7

Mercury - No detects for Hg were reported for EYBF4 (located in SDG EYB31).
CN- Sample was analyzed outside of the Holding time for CN (located in SDG EYB31).

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

Method: Metals by ICP-MS

EXES-594
The following samples are associated with Matrix Spike sample that has spike analyte %R greater than 125% and Post-digestion spike analyte %R less than or equal to 125%. Detects are qualified as J. Nondetects are not qualified.

Arsenic
EYB52, EYB54, EYB55, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

Method: Cyanide

EXES-1355
The following samples are associated with Matrix Spike sample that has spike analyte %R within 30 - 74% and Post-digestion spike analyte %R greater than or equal to 75%. Detects are qualified as J. Nondetects are qualified as UJ.

Cyanide
EYB52, EYB54, EYB55, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

8. SERIAL DILUTION:

Method: Metals by ICP-MS

EXES-0344
The following samples are associated to the Serial Dilution sample with analyte %D >20% and the original sample result is > 50xMDL. Detects are qualified as estimated J. Non-detects are not qualified.

Arsenic, Cobalt
EYB52, EYB54, EYB55, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-AES

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Barium
EYB55D, EYB55L, EYB66, EYB70, EYBD4

Beryllium
EYB52, EYB54, EYB55, EYB55D, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73,

EYB96, EYBA3, EYBA4, EYBB3, EYBD4

Cadmium
EYB52, EYB54, EYB55, EYB55D, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

Nickel
EYB55, EYB55D, EYB55L

Zinc
EYB55L

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Antimony
EYB52, EYB54, EYB55, EYB55D, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

Arsenic
EYB55L, PBS01, PBS02

Cobalt
EYB55L

Selenium
EYB52, EYB56, EYB58, EYB67, EYB70, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7, PBS01, PBS02

Silver
EYB52, EYB54, EYB55, EYB55D, EYB56, EYB58, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBB3, EYBD4

Thallium
PBS01

Method: Mercury by Cold Vapor

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Mercury
EYB52, EYB54, EYB55, EYB55D, EYB56, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7

Method: Cyanide

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Cyanide
EYB52, EYB56, EYB58, EYBA4

11. DUPLICATES:

Method: Metals by ICP-AES

EXES-601
The following samples are associated with a Duplicate sample that has analyte results are greater than or equal to 5xCRQL in both Duplicate and original samples and RPD is greater than 20. Detects are qualified as J. Nondetects are qualified as UJ.

Manganese
EYB52, EYB54, EYB55, EYB56, EYB58, EYB66, EYB67, EYB70, EYB73, EYB96, EYBA3, EYBA4, EYBA5, EYBB3, EYBD4, EYBD7.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

12. DOCUMENTATION:

Samples EYB55 has been designated by the sampler as laboratory QC (e.g. MS/MSD), based on the Chain of Custody No: 5-100622-070643-0043, present in this SDG. However, Weston DV Field QC Samples chart, failed to identify it.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2 is associated with samples EYB66, EYB70, and EYB73 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF4 is associated with samples EYBD7 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF2 is associated with samples EYB66, EYB70, EYB73, EYB96, EYBA3, EYBA4 and EYBA5 located within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF3 is associated with samples EYBB3 and EYBD4 located within this SDG.

Case: 50221
SDG: EYB52
Site: Gelman Sciences Ann Arbor MI
Laboratory: Bonner

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/06/2023

Region 5 ICF-ESAT Document Control Number: 00809
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Kara Epple
Contact email address:	kara.epple@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, MI

CASE NUMBER: 50221MA No: N/A SOW: SFAM01.0 SDG NUMBER: EYB54

Number and Type of Samples: 10 Water/ 9 Soil Samples (TVOA/TVSIM/VOA)

Sample Numbers: EYB33, EYB35, EYB52, EYB54, EYB55, EYB58, EYB59, EYB67, EYB69, EYB93, EYBC1, EYBD1, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4, EYBG8, EYBG9

Laboratory: Chemtex (CHX)

The following are our findings:

Case: 50221 SDG: EYB54
Site: Gelman Sciences Inc Laboratory: Chemtex

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Ten (10) water samples and nine (9) soil samples, EYB33, EYB35, EYB52, EYB54, EYB55, EYB58, EYB59, EYB67, EYB69, EYB93, EYBC1, EYBD1, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4, EYBG8, and EYBG9, were collected on 09/30/2022, 10/01/2022-10/04/2022, and 10/07/2022. The lab, Chemtex, located in Wilmington, NC, received the samples on 10/08/2022 intact, and in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB33	G-SWPPE-03/ PPE 3	0003283-10	09/30/2022 11:10	5.0°C	TVOA, Water
EYB35	G-SWRS-03/ Source Sample	0003283-11	09/30/2022 13:00	5.0°C	TVOA, Water
EYB52	G-SEPPE-02/ PPE 2	0003283-01	09/30/2022 18:35	5.2°C	VOA, Soil
EYB54	G-SERS-01/ RS01	0003283-02	09/29/2022 14:50	5.2°C	VOA, Soil
EYB55	G-SERS-02/ RS02 MS/MSD	0003283-03	09/29/2022 17:30	5.2°C	VOA, Soil
EYB58	G-SERS-03/ RS03	0003283-04	09/30/2022 13:15	5.2°C	VOA, Soil
EYB59	G-SESW-01/ SW01	0003283-05	10/01/2022 08:25	5.2°C	VOA, Soil
EYB67	G-SEBK-02/ Background	0003283-06	09/30/2022 09:10	5.2°C	VOA
EYB69	G-SEPPE-01/ PPE1	0003283-07	09/30/2022 15:20	5.2°C	VOA, Soil
EYB93	G-GWRW-5005/ 5005 Jackson Rd	0003283-12	10/07/2022 14:45	5.0°C	TVSIM, Water
EYBC1	G-SEBK-01/ Background	0003283-08	10/03/2022 18:00	5.2°C	VOA, Soil
EYBD1	G-SESW-91/ SW01	0003283-09	10/01/2022 08:30	5.2°C	VOA, Soil
EYBF8	G-EB-08/ Equipment Blank	0003283-13	10/02/2022 08:00	5.0°C	TVOA, Water
EYBF9	G-EB-09/ Equipment Blank	0003283-14	10/03/2022 07:30	5.0°C	TVOA, Water
EYBG0	G-EB-10/ Equipment Blank	0003283-15	10/03/2022 20:08	5.0°C	TVOA, Water
EYBG1	G-EB-11/ Equipment Blank	0003283-16	10/04/2022 20:15	5.0°C	TVOA, Water
EYBG4	G-WS02/ Gelman Staging Area	0003283-17	10/04/2022 19:45	5.0°C	TVOA, Water
EYBG8	G-FB01/ Blank	0003283-18	09/30/2022 09:30	5.0°C	TVOA, Water
EYBG9	G-TB07/ Blank	0003283-19	10/07/2022 11:40	5.0°C	TVOA, Water

Nine (9) water samples were analyzed for TVOA analysis. One (1) water sample was analyzed for TVSIM analysis. Nine (9) soil samples were analyzed for VOA analysis. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sampling and Analysis Plan), November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB55 was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Sample EYBG9 was identified as a trip blank.
Sample EYBG8 was identified as a field blank.
Samples EYBF8, EYBF9, EYBG0, and EYBG1 were identified as equipment blanks.
Sample EYBC8 was identified as a field duplicate outside of this SDG with sample EYB33 within this SDG. Sample EYB48 was identified as a field duplicate outside of this SDG for sample EYB35 within this SDG. Sample EYBD1 was identified as a field duplicate sample of EYB59.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method- Trace Volatiles

EXES-66
The following samples are associated with an ICV with target analyte % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB33, EYB33MS, EYB33MSD, EYB35, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4, EYBG8, EYBG9, VBLKC03, VBLKC10, VHBLK169
Trichlorofluoromethane

Method- Volatile Organics

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB58, EYB59, EYB67, EYB69, EYBC1, EYBD1, VBLKC06, VBLKC08, VHBLK170
1,1,2,2-Tetrachloroethane

EXES-66
The following samples are associated with an ICV with target analyte % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB58, EYB59, EYB67, EYB69, EYBC1, EYBD1, VBLKC06, VBLKC08, VHBLK170
Chloroethane, 1,1,2,2-Tetrachloroethane

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB52, EYB54, EYB55, EYB55MS, EYB55MSD, EYB58, EYB59, VBLKC06
Chloroethane

EYB67, EYB69, EYBC1, EYBD1, VBLKC08, VHBLK170
Trichlorofluoromethane

4. BLANKS:

NONE FOUND.

5. DMC_SURROGATE:

Method- Trace Volatiles

EXES-792
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYB33, EYB35, EYBF8, EYBF9, EYBG0, EYBG1, EYBG8, EYBG9
1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-chlororopane

EYB33MS, EYB33MSD
Trichlorofluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane, Methyl acetate, Methylene chloride, Methyl tert-butyl ether, 1,1,1-Trichloroethane, Carbon tetrachloride, 1,2-Dichloroethane, 1,2-Dibromoethane, 1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-chloropropane

EYBG4
Dichlorodifluoromethane, Chloromethane. Bromomethane, Chloroethane, Carbon disulfide

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+. Use professional judgment to qualify nondetects.

EYBG4
1,1-Dichloroethene, trans-1,2-Dichloroethene, cis-1,2-Dichloroethene

Method- Trace Volatiles by SIM

EXES-792
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYB93MS
1,1,2,2-Tetrachloroethane, 1,2-Dibromo-3-chloropropane

6. MATRIX SPIKE:

Method- Volatile Organics

EXES-559
The relative percent difference (RPD) between the following matrix spike and matrix spike duplicate recoveries is outside criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB55MS, EYB55MSD
1,1-Dichloroethene, Benzene, Trichloroethene, Toluene, Chlorobenzene

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method- Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBG0
Chloroform

EYBG1
Toluene

EYBG4
2-Hexanone

EYBG8
Bromodichloromethane

EYBG9
Acetone

Method- Volatile Organics

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB52, EYB54, EYB55, EYB67
Chloroform, 2-Hexanone

EYB58, EYBD1
Chloroform

EXES-796
The following soil samples have percent solids greater than or equal to 10% but less than or equal to 30%. Detects are not qualified. Nondetects are not qualified.

EYB58, EYB59, EYB69, EYBD1

11. FIELD QC SAMPLES:

Sample EYBG9 was identified as a trip blank.

Trip Blank	EYBG9
Shipping Date	10/07/2022
TVOA	µg/L
Acetone	3.3 J
Associated samples	EYB33, EYB35, EYB93, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4, EYBG8

Sample EYBG8 was identified as a field blank.

Field Blank	EYBG8
Collection Date	09/30/2022
TVOA	µg/L
Acetone	6.6
2-Butanone	6.3
Chloroform	1.3
Bromodichloromethane	0.33 J
2-Hexanone	10
Associated Sample	EYB52, EYB58, EYB67, EYB69

Samples EYBF8, EYBF9, EYBG0, and EYBG1 were identified as equipment blanks. No analytes were detected for samples EYBF8 and EYBF9. EYBF8, EYBF9, and EYBG1 had no associated analytes in this SDG.

Equipment Blank	EYBG0
Collection Date	10/03/2022
TVOA	µg/L
Chloroform	0.48 J
Associated Sample	EYB93

Equipment Blank	EYBG1
Collection Date	10/04/2022
TVOA	µg/L
Toluene	0.20 J
Associated Sample	None

Sample EYBC8 was identified as a field duplicate outside of this SDG (in SDG EYB39) with sample EYB33 within this SDG.

Sample	EYB33	EYBC8	RPDs
TVOA	µg/L	µg/L	%D
Acetone	ND	5.7	200%
Chloroform	ND	0.55	200%

Sample EYB48 was identified as a field duplicate outside of this SDG for sample EYB35 within this SDG. Sample EYB48 was not analyzed for TVOA and cannot be compared to sample EYB35.

Sample EYBD1 was identified as a field duplicate of sample EYB59.

Sample	EYB59	EYBD1/MEYBD1	RPDs
L/M VOA	µg/L	µg/L	%D
Acetone	190	170	11%
Chloroform	22	27	20%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG9) is associated with the samples taken on 09/30/2022-10/04/2022 and 10/07/2022 but was shipped to the lab on 10/07/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG9) is only associated with samples EYB33, EYB35, EYB93, EYBF8, EYBF9, EYBG0, EYBG1, EYBG4, and EYBG8 within this SDG.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG9) was analyzed as TVOA but the associated sample (EYB93) was analyzed as TVOA-SIM and nondetects and detects less than the TVOA reporting limit cannot be evaluated.

According to the Weston DV Field QC Samples chart the following Field Blank (EYBG8) is only associated with samples EYB52, EYB58, EYB67, and EYB69 within this SDG.

According to the Weston DV Field QC Samples chart the following Field Blank (EYBG8) was analyzed as TVOA but the associated samples (EYB52, EYB58, EYB67, EYB69) were analyzed as L/M VOA.

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBF8, EYBF9, EYBG1) are not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) is associated with sample EYB93 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) collected on 10/03/2022 is associated with the samples collected on 10/07/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) was analyzed as TVOA but the associated sample (EYB93) was analyzed as TVSIM.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYBC8 and EYB33. Sample EYBC8 is in SDG EYB39.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB48 and EYB35. Sample EYB48 is in SDG EYB41 and was not analyzed as TVOA.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYB59 and EYBD1.

Case: 50221 SDG: EYB54
Site: Gelman Sciences Inc Laboratory: Chemtex

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on _10/21/2022_____

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	**Weston**
Contact Person's Name:	Natalie Quiet
Contact email address:	natalie.quiet@westonsolutions.com
EPA Data User:	EPA SFD
Contact Person's Name:	Nuria Muniz
Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc., MI

CASE NUMBER: 50221 SDG NUMBER: EYB59

Number and Type of Samples: 20 Soils (ICP-AES, ICP-MS, Hg, CN)

Sample Numbers: EYB59, EYB69, EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0 - EYBE4, MEYBD1

Laboratory: Chemtech Consulting Group (CHM)

The following are our findings:

Case: 50221
SDG: EYB59
Site: Gelman Sciences Inc.
Laboratory: Chemtech

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Twenty (20) soil samples, numbered below, were collected on 09/26/2022, 09/28/2022, 09/29/2022, 10/1/2022 and 10/3/2022. The lab, Chemtech Consulting Group located in Mountainside, NJ received the samples on 10/07/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)/Location	Lab ID Number	Collection Date/Time	Analyses
EYB59	N/A	N5063-17	10/1/2022 08:25	ICP-MS, ICP-AES, Hg, CN
EYB69	N/A	N5063-18	9/30/2022 15:20	ICP-MS, ICP-AES, Hg, CN
EYB71	G-SS02-2425/ SS02	N5063-01	09/26/2022 15:10	ICP-MS, ICP-AES, Hg, CN
EYBB1	G-SS98-3233/ SS08	N5063-02	09/28/2022 11:18	ICP-MS, ICP-AES, Hg, CN
EYBB2	G-SS08-3233/ SS08	N5063-03	09/28/2022 11:15	ICP-MS, ICP-AES, Hg, CN
EYBB7	G-SS09-1213/ SS09	N5063-04	09/28/2022 14:20	ICP-MS, ICP-AES, Hg, CN
EYBB8	G-SS09-0708/ SS09	N5063-05	09/28/2022 14:15	ICP-MS, ICP-AES, Hg, CN
EYBC0	G-SS08-0506/ SS08	N5063-06	09/28/2022 11:00	ICP-MS, ICP-AES, Hg, CN
EYBC1	N/A	N5063-19	10/03/2022 18:00	ICP-MS, ICP-AES, Hg, CN
EYBD2	G-SS10-0607/ SS10	N5063-07	09/28/2022 18:10	ICP-MS, ICP-AES, Hg, CN
EYBD3	G-SS10-1314/ SS10	N5063-08	09/28/2022 18:15	ICP-MS, ICP-AES, Hg, CN
EYBD5	G-SS11-1213/ SS11	N5063-09	09/29/2022 10:15	ICP-MS, ICP-AES, Hg, CN
EYBD6	G-SS91-1819/ SS11	N5063-10	09/29/2022 10:22	ICP-MS, ICP-AES, Hg, CN
EYBD8	G-SS12-1920/ SS12	N5063-11	09/29/2022 15:20	ICP-MS, ICP-AES, Hg, CN
EYBE0	G-SS13-0506/ SS13	N5063-12	09/29/2022 17:20	ICP-MS, ICP-AES, Hg, CN
EYBE1	G-SS13-1011/ SS13	N5063-13	09/29/2022 17:25	ICP-MS, ICP-AES, Hg, CN
EYBE2	G-SS14-0002/ SS14	N5063-14	09/29/2022 18:15	ICP-MS, ICP-AES, Hg, CN
EYBE3	G-SS11-1819/ SS11	N5063-15	09/29/2022 10:20	ICP-MS, ICP-AES, Hg, CN
EYBE4	G-SS94-0002/ SS14	N5063-16	09/29/2022 18:15	ICP-MS, ICP-AES, Hg, CN
MEYBD1	N/A	N5063-20	10/01/2022 8:30	ICP-MS, ICP-AES, Hg, CN

All samples were analyzed for TCLP ICP-AES metals, ICP-MS metals, Mercury TCLP and Cyanide TCLP. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sampling and Analysis Plan), June 2022 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

No samples were designated by the sampler for laboratory QC (e.g., MS, MSD).

According to Weston DV Field QC Samples chart the following samples are Field Duplicates; EYB59 and MEYBD1, EYBD6 and EYBE3, EYBE2 and EYBE4.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2

outside of this SDG (in SDG EYB31) is associated with sample EYB71 within this SDG.

According to Weston DV Field QC Samples chart the following Equipment Blank EYBF3 outside of this SDG (in SDG EYB35 and EYB33) is associated with sample EYBB2, EYBB7, EYBB8, EYBC0, EYBD2, and EYBD3 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF4 outside of this SDG (in SDG EYB31 and EYB32) is associated with sample EYBD5, EYBD6, EYBD8, EYBE1, EYBE2, EYBE3, and EYBE4 within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method-Cyanide

EXES-465
The following non-aqueous samples exceeded technical holding time. Detects are qualified as J-. Nondetects are qualified as R.

EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4

2. TUNE:

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method-Metals by ICP-AES

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Copper
EYB59, EYB69, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4

The following samples have analyte results greater than or equal to the CRQLs. The associated equipment blank (EYBC3 SDG EIB43) analyte results are less than the CRQLs. Detects are not qualified

Chromium
EYB71

Method-Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony
EYB59, EYB69, EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1, MEYBD1D

Silver
EYBD5

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Antimony
EYB59, EYB69, EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1, MEYBD1D, MEYBD1L

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs
.

Antimony
EYB59, EYB69, EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1, MEYBD1D, MEYBD1L

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Antimony
LCS316, MEYBD1S

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no qualification.

Antimony, Silver
MEYBD1S

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+ or no

qualification.

Antimony
LCS316

The following samples have analyte results greater than or equal to the CRQLs. The associated equipment blank (EYBC3 SDG EIB43) analyte results are less than the CRQLs. Detects are not qualified

Cobalt
EYB71

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2 outside of this SDG (in SDG EYB30, EYB31 SDG EYB32) is associated with sample EYB71 within this SDG.

Equipment Blank	EYBC2	
ICP-AES		
Iron	49 J	(SDG EYB31)
ICP-MS		
Cobalt	0.24 J	(SDG EYB31)
Calcium	240 J-	(SDG EYB32)
Magnesium	500 U	(SDG EYB32)
Associated Samples EYB71		

Neither Iron nor Cobalt were detected in EYB71. Therefore, no action is needed.
Sample EYBC2 located in SDG EYB30, was analyzed for CN outside of holding time.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF3 outside of this SDG (in SDG EYB35 and EYB33) is associated with sample EYBB2, EYBB7, EYBB8, EYBC0, EYBD2, and EYBD3 within this SDG.

Sodium was not detected in any of the associated samples.

The sample analyte concentrations were above the CRQL, and the equipment blank concentration was below the CRQL. The detected results are not quantified.

Sample EYBF3 located in SDG EYB33 has been analyzed for CN outside of the holding time.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF4 outside of this SDG (in SDG EYB30, EYB31 and EYB32) is associated with sample EYBD5, EYBD6, EYBD8, EYBE1, EYBE2, EYBE3, EYBE4 within this SDG.

Equipment Blank	EYBF4	
ICP-MS		
Cobalt	0.063 J	SDG EYB31
Calcium	50 J-	SDG EYB32
ICP-AES		
Lead	10 U	
Associated Samples		
EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4		

The analytes Calcium and Cobalt were non-detects in all associated samples; therefore, no action is needed.

Sample EYBF4 located in SDG EYB30 has been analyzed for CN outside of the holding time.

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

Method-Metals by ICP-AES

EXES-592
The following samples are associated with Matrix Spike sample that has spike analyte %R within 30 - 74% and post-digestion spike analyte %R greater than or equal to 75%. Detects are qualified as J. Nondetects are qualified as UJ.

Lead
EYB59, EYB69, EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method-Metals by ICP-AES

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Barium
EYBB1, EYBB2, EYBB8, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE1, EYBE3, MEYBD1L

Beryllium
EYB59, EYB71, EYBB1, EYBB2, EYBB8, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1, MEYBD1D, MEYBD1L

Cadmium
EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1, MEYBD1D, MEYBD1L

Copper, Nickel, Vanadium
MEYBD1L

Method-Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Cobalt
MEYBD1L

Selenium
EYB59, EYB69

Thallium
EYB59, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD2, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4

Method-Mercury by Cold Vapor

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Mercury
EYB59, EYB69, EYB71, EYBB1, EYBB2, EYBB7, EYBB8, EYBC0, EYBC1, EYBD3, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, MEYBD1, MEYBD1D

Method-Cyanide

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J
.

Cyanide
EYBB7

11. DUPLICATES:

According to Weston DV Field QC Samples chart the following samples are Field Duplicates; EYB59 and MEYBD1, EYBD6 and EYBE3, EYBE2 and EYBE4.

	EYB59		MEYBD1		RPDs
	mg/Kg	Q	mg/Kg	Q	%
ICP-MS					
Antimony		U		U	
Arsenic	9.2		7.3		20.65
Cobalt	5.6		4.5		17.86
Selenium	0.65	J		U	200
Silver		U		U	
Thallium	0.20	J		U	200
ICP-AES					
Aluminum	4500		4900		8.5
Barium	44		45		2.2
Beryllium	0.42	J	0.48	J	13.3
Cadmium	0.69		0.48	J	35.9
Chromium	10		12		18.2
Copper	22	J+	23		4.4
Iron	11000		11000		0.0
Lead	16	J	16		0.0
Manganese	110		120		8.7
Nickel	15		15		0.0
Vanadium	18		17		5.7
Zinc	220		200		9.5
Mercury	0.023	J	0.091	J	74.73

Cyanide	0.35	U	1.5	U	

	EYBD6		EYBE3		RPDs
	mg/kg	Q	mg/kg	Q	%
Cyanide		R		R	
Mercury	0.011	J	0.018	J	48.3
ICP-AES					
Aluminum	2300		2200		4.4
Barium	9.1	J	9.3	J	2.2
Beryllium	0.22	J	0.22	J	0.0
Cadmium	0.11	J	0.11	J	0.0
Chromium	5.6		6.6		16.4
Copper	11	J+	13	J+	16.7
Iron	7700		8100		5.1
Lead	4.5	J	4.8	J	6.5
Manganese	250		240		4.1
Nickel	14		13		7.4
Vanadium	8.5		11		25.6
Zinc	37		38		2.7
ICP-MS					
Antimony		U		U	
Arsenic	6.1		6.1		0.0
Cobalt	4.3		4.1		4.8
Selenium		U		U	
Silver		U		U	
Thallium	0.24	J	0.21	J	13.3

	EYBE2		EYBE4		RPDs
	mg/kg	Q	mg/kg		%
Cyanide	6.1	J-		U	200
Mercury	0.11	J	0.11	J	0
ICP-AES					
Aluminum	7700		8900		14.5
Barium	59		71		18.5
Beryllium	0.66	J	0.77	J	15.4
Cadmium	0.25	J	0.32	J	24.6
Chromium	13		16		20.7
Copper	22	J+	26	J+	16.7
Iron	17000		20000		16.2
Lead	14	J	18	J	25
Manganese	210		330		44.4
Nickel	23		26		12.2

Vanadium	22		27		20.4
Zinc	97		130		29.1
ICP-MS					
Antimony		U		U	
Arsenic	8.1		7.8		3.8
Cobalt	8.0		7.8		2.5
Selenium		U		U	
Silver		U		U	
Thallium	0.32	J	0.33	J	3.1

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

The equipment blank (EYBC3 in SDG EYB43) associated with sample EYB71 analyzed for calcium and laboratory did not analyze the sample for calcium.

12. DOCUMENTATION:

The laboratory received soil samples EYBC1, EYB59, EYB69, and MEYBD1 for ICP-MS, ICPAES, Hg and CN analysis, but those sample numbers were not listed on the COC. Per Region 5, the laboratory was instructed to note the discrepancy in the SDG Narrative and proceed with the analysis of the samples.

(I was unable to locate a revised COC or any communication logs that lists the missing sample ID’s and sampling times, however, sampling times are given on Analytical Sample Report Form. Leila Barber, ICF-ESAT)

Case: 50221
SDG: EYB59
Site: Gelman Sciences Inc.
Laboratory: Chemtech

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 2/10/2023

Region 5 ICF-ESAT Document Control Number: 00844
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston
Contact Person's Name: Natalie Quiet
Contact email address: natalie.quiet@westonsolutions.com

EPA Data User: USEPA Superfund Division
Contact Person's Name: Nuria Muniz
Contact email address: Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, MI

CASE NUMBER: 50221 SOW: SFAM01.1 SDG NUMBER: EYB60

Number and Type of Samples: 8 Water Samples (TVOA) / 9 Soil Samples (L/M VOA)

Sample Numbers: EYB60, EYB62, EYB64-EYB66, EYB68, EYB70-EYB73, EYB85, EYB91, EYB92, EYB94-EYB97

Laboratory: Analytical Resources, LLC

The following are our findings:

Case: 50221 SDG: EYB60
Site: Gelman Sciences Inc Laboratory: Analytical Resources, LLC

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eight (8) water samples and nine (9) soil samples, EYB60, EYB62, EYB64-EYB66, EYB68, EYB70-EYB73, EYB85, EYB91-EYB92, and EYB94-EYB97, were collected on 09/26/2022 and 09/27/2022. The lab, Analytical Resources, LLC, located in Tukwila, WA, received the samples on 09/29/20222 in good condition. Samples EYB60, EYB64-EYB65, EYB85, EYB91-EYB92, and EYB97 contained some air bubbles in the sample. For samples EYB71 and EYB94 the encore was not sealed.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Matrix	Analyses
EYB60	G-GWBK-MW-127s/ MW-127s/	22I0465-01	09/26/2022 13:30	Water	TVOA
EYB62	G-GWBK-MW-120d/ MW-120d/	22I0465-02	09/27/2022 13:05	Water	TVOA
EYB64	G-GWRS-MW-105s/ MW-105s/	22I0465-03	09/27/2022 13:50	Water	TVOA
EYB65	G-GWBK-MW-120s/ MW-120s/	22I0465-04	09/26/2022 18:35	Water	TVOA
EYB66	G-SS01-1213/ SS01	22I0465-05	09/26/2022 11:45	Soil	L/M VOA
EYB68	G-SS02-0910/ SS02	22I0465-06	09/26/2022 15:05	Soil	L/M VOA
EYB70	G-SS01-2930/ SS01/ DUP05	22I0465-07	09/26/2022 11:52	Soil	L/M VOA
EYB71	G-SS02-2425/ SS02/ DUP06	22I0465-08	09/26/2022 15:10	Soil	L/M VOA
EYB72	G-SS03-0405/ SS03	22I0465-09	09/26/2022 16:00	Soil	L/M VOA
EYB73	G-SS03-1718/ SS03/ DUP09	22I0465-10	09/26/2022 16:00	Soil	L/M VOA
EYB85	G-GWRW-110/ 110 Parkland Plaza/	22I0465-11	09/27/2022 19:05	Water	TVOA
EYB91	G-GWRW-4141/ 4141 Jackson Rd/	22I0465-12	09/27/2022 18:25	Water	TVOA
EYB92	G-GWRW-4742/ 4742 Park Rd/	22I0465-13	09/27/2022 16:30	Water	TVOA
EYB94	G-SS04-1213/ SS04	22I0465-14	09/27/2022 08:35	Soil	L/M VOA
EYB95	G-SS04-1718/ SS04/ DUP14	22I0465-15	09/27/2022 08:40	Soil	L/M VOA
EYB96	G-SS05-0002/ SS05	22I0465-16	09/27/2022 11:32	Soil	L/M VOA
EYB97	G-EB-01/ Equipment Blank	22I0465-17	09/27/2022 07:30	Water	TVOA

Eight (8) water samples were analyzed for TVOA analysis and nine (9) soil samples were analyzed for L/M VOA analysis. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sampling and Analysis Plan), November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Samples EYB60 and EYB66 were designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

No samples were identified as trip blanks within this SDG. Trip blanks were identified outside of this SDG as samples EYBB4, EYBB5, and EYBB6. Sample EYB97 was identified as an equipment blank. Samples EYBC2, EYBF0, EYBF2, and EYBG1 were identified as equipment blanks associated with samples in this SDG. Samples EYB70, EYB71, EYB73, and EYB95 were identified as field duplicates.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method- Trace Volatiles

EXES-989
The following samples are associated with an initial calibration with relative response factors (RRFs) outside criteria. Detects are qualified as estimated J+. Nondetects are not qualified.

EYB60, EYB60MS, EYB60MSD, EYB62, EYB64, EYB65, EYB85, EYB91, EYB92, EYB97, VBLKT40, VHBLKW2
Methyl Acetate

Method- Volatile Organics

EXES-66
The following samples are associated with an ICV with target analyte % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EBY66, EYB66MS, EYB66MSD, EYB68, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96, VBLKS01, VBLKS02, VHBLKS2
Cyclohexane

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EBY66, EYB66MS, EYB66MSD, EYB96, VBLKS02, VHBLKS2
1,3-Dichlorobenzene, 1,2-Dichlorobenzene

4. BLANKS:

Method- Trace Volatiles

EXES-1105
Samples have non-common laboratory contaminant analyte results reported greater than or equal to the CRQLs. The associated Method Blank (MB) results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB60MS, EYB60MSD
trans-1,3-Dichloropropene

Samples have a non-common laboratory contaminant analyte result reported less than the CRQLs. The associated trip blank (TB – EYBB6) results are more than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB62
Toluene

Samples have a non-common laboratory contaminant analyte result reported less than the CRQLs. The associated equipment blank (EB – EYBG1) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB62
Toluene

Method- Volatile Organics

EXES-1166
The following samples have common laboratory contaminant analyte results reported greater than or equal to CRQLs and greater than or equal to 2x the storage blank results. The associated storage blank results are greater than or equal to CRQLs. Detects are qualified as estimated J+ or no qualification.

EBY66, EYB66MS, EYB66MSD, EYB68, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96
Acetone

Samples have a common laboratory contaminant analyte result reported less than the CRQLs. The associated equipment blank (EB – EYBG1) results are more than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB71
2-Butanone

5. DMC_SURROGATE:

Method- Volatile Organics

EXES-1350
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EBY66MS, EYB66MSD, EYB70
Trichlorofluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane, Methyl acetate, Methylene chloride, Methyl tert-butyl ether, 1,1,1-Trichloroethane, Cyclohexane, Carbon tetrachloride, 1,2-Dichloroethane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane, 1,2-Dibromoethane, Chlorobenzene, 1,2,3-Trichloropropane, 1,1,2,2-Tetrachloroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chlororopane, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EYB66, EYB68, EYB71, EYB72, EYB73, EYB94, EYB95
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

6. MATRIX SPIKE:

Method- Volatile Organics

EXES-1216
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than or equal to the expanded minimum criteria but less than the primary minimum criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EBY66MS, EYB66MSD
Benzene, Trichloroethene, Toluene, Chlorobenzene

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method- Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB62, EYB91, EYB97
Chloromethane

EYB64
2-Hexanone, Chloromethane

EYB85
Carbon disulfide, Chloromethane

VBLKT40
trans-1,3-Dichloropropene

Method-Volatile Organics

EXES-790
The following samples have analyte results greater than or equal to the detection limit (MDL) and below the quantitation limit (CRQL). Detects are qualified as estimated J.

EYB72
Methylene chloride, Toluene

EYB73
Benzene, Toluene

EYB94, EYB95
Toluene

11. FIELD QC SAMPLES:

Samples EYB97, EYB6C2, EYBF0, EYBF2, and EYBG1 were identified as equipment blanks.

Blank Type:	Field Blank		SDG
EPA Sample:	EYB97		
Sample Identifier:	G-EB-01		
Collection Date/ Time:	9/27/2022 7:30		
Laboratory Receipt Date:	9/29/2022		
TVOA Analytes µg/L:	Acetone	7.2	EYB60-ARI
	Chloromethane	0.13 J	EYB60-ARI
	Toluene	0.69	EYB60-ARI
Associated Samples:	EYB60, EYB65		

Case: 50221 SDG: EYB60
Site: Gelman Sciences Inc Laboratory: Analytical Resources, LLC

Blank Type:	Field Blank		SDG
EPA Sample:	EYBC2		
Sample Identifier:	G-EB-02		
Collection Date/ Time:	9/30/2022 8:00		
Laboratory Receipt Date:	10/8/2022		
TVOA Analytes µg/L:	Acetone	7.7	EYB39-ETB
	Methyl acetate	1.1	EYB39-ETB
	Toluene	0.22 J	EYB39-ETB
Associated Samples:	EYB66, EYB68, EYB70, EYB71, EYB72, EYB73		

Blank Type:	Field Blank		SDG
EPA Sample:	EYBF0		
Sample Identifier:	G-EB-03		
Collection Date/ Time:	9/29/2022 7:30		
Laboratory Receipt Date:	10/08/2022		
TVOA Analytes µg/L:	Acetone	5.6	EYB39-ETB
	2-Butanone	1.6 J	EYB39-ETB
	Chloroform	0.54	EYB39-ETB
Associated Samples:	EYB64, EYB85, EYB91, EYB92		

Blank Type:	Field Blank		SDG
EPA Sample:	EYBF2		
Sample Identifier:	G-EB-05		
Collection Date/ Time:	10/01/2022		
Laboratory Receipt Date:	10/07/2022		
TVOA Analytes µg/L:	2-Butanone	14	EYBE7-ETB
	Chloroform	0.63	EYBE7-ETB
	Bromodichloromethane	0.11 J	EYBE7-ETB
	Toluene	0.047 J	EYBE7-ETB
	2- Hexanone	1.6 J	EYBE7-ETB
	Dibromochloromethane	0.038 J	EYBE7-ETB
	Styrene	0.066 J	EYBE7-ETB
Associated Samples:	EYB66, EYB68, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96		

Blank Type:	Field Blank		SDG
EPA Sample:	EYBG1		
Sample Identifier:	G-EB-11		
Collection Date/Time:	10/04/2022 20:15		
Laboratory Receipt Date:	10/08/2022		
TVOA Analytes µg/L:	Toluene	0.20 J	EYB54-CHX
Associated Samples:	EYB62, EYB77		

Analytical results for equipment blank EYB97 are in SDG EYB62-Chemtex (SVOA, SVSIM) and SDG EYB60-ARI (TVOA).

Reviewed by: Martin Sarmiento/ICF-ESAT
Date: 01/26/2023

Analytical results for equipment blank EYBC2 are in SDG EYB30-BON (CN, Ca, Mg, K, Na), SDG EYB31-BON (Hg, ICP-AES, ICP-MS), SDG EYB39-ETB (TVOA) and EYBC2-ETB (SVOA, SVSIM).
Analytical results for Equipment blank EYBF0 are in SDG EYB39-ETB (TVOA) and SDG EYBC2-ETB (SVOA, SVSIM).
Analytical results for Equipment blank EYBF2 are in SDG EYB33-CHM (CN, Hg, ICP-AES, ICP-MS), EYB35-CHM (Ca, Mg, K, Na), SDG EYB39-ETB (TVOA) and EYBC2-ETB (SVOA, SVSIM).
Analytical results for Equipment blank EYBG1 are in SDG EYB54-CHX (TVOA) and SDG EYB33-CHX (SVOA, SVSIM).

Sample EYB70 is a field duplicate of sample EYB66. No analytes were detected for both samples.

Sample EYB71 is a field duplicate of sample EYB68. No analytes were detected for both samples.

Sample EYB73 is a field duplicate of sample EYB72.

Field Duplicate	EYB72	EYB73	
L/M VOA	µg/L	µg/L	%RPDs
Methylene Chloride	5.0 J	U	200
Benzene	1.4 J	0.58 J	41.41
Toluene	U	0.99 J	200

Sample EYB95 is a field duplicate of sample EYB94.

Field Duplicate	EYB94	EYB95	
L/M VOA	µg/L	µg/L	%RPDs
Toluene	1.8 J	1.2 J	20

Sample EYBB4, EYBB5, and EYBB6 were identified as trip blanks.

Blank Type:	Trip Blank		
EPA Sample:	EYBB4	EYBB5	EYBB6
Sample Identifier:	G-TB01	G-TB03	G-TB02
Collection Date/ Time:	9/26/2022 11:00	9/28/2022 7:30	9/27/2022 7:30
Laboratory Receipt Date:	9/29/2022	9/29/2022	9/29/2022
Deliverable SDG:	EYBA2	EYBA2	EYBA2
CLP Laboratory:	ARI	ARI	ARI
TVOA Analytes µg/L:			
Acetone	7.4	6	6.9
Methyl acetate	ND	1.1	ND
Toluene	0.75	0.35 J	0.75
Associated Samples:	EYB60, EYB62, EYB64, EYB65, EYB66, EYB68, EYB70, EYB71, EYB72, EYB73, EYB85, EYB91, EYB92, EYB94, EYB95, EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYB0		

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Shipping Discrepancies and/or QC Issues:

Some samples were received without sample tags, and some were not listed on the TR/COC. These samples were noted in the SDG narrative.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYB97) is associated with samples EYB60 and EYB65 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYB97) collected on 09/27/2022 is associated with the samples collected on 09/26/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBC2) outside of the SDG (in SDG EYB39) is associated with sample EYB66, EYB68, EYB70, EYB71, EYB72, EYB73 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBC2) collected on 09/30/2022 is associated with the samples collected on 09/26/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBC2) was analyzed as TVOA but the associated samples (EYB66, EYB68, EYB70, EYB71, EYB72, EYB73) were analyzed as L/M VOA.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF0) outside of the SDG (in SDG EYB39) is associated with sample EYB64, EYB85, EYB91, EYB92 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF0) collected on 09/29/2022 is associated with the samples collected on 09/27/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) outside of the SDG (in SDG EYBE7) is associated with sample EYB66, EYB68, EYB70, EYB71, EB72, EYB73, EYB94, EYB95, EYB96 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) collected on 10/01/2022 is associated with the samples collected on 09/26/2022 and 09/27/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) was analyzed as TVOA but the associated samples (EYB66, EYB68, EYB70, EYB71, EB72, EYB73, EYB94, EYB95, EYB96) were analyzed as L/M VOA.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG1) outside of the SDG (in SDG EYB54) is associated with sample EYB62 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG1) collected on 10/04/2022 is associated with the samples collected on 09/27/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBC2, EYBF2) have associated samples (EYB66, EYB68, EYB70, EYB71, EYB72, EYB73) that are associated with more than one Equipment Blank.

According to the Weston DV Field QC Samples chart the following Trip Blanks (EYBB4, EYBB5, EYBB6) outside of the EYB60 SDG (in SDG EYBA2) are associated with samples within this SDG.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBB4) is associated with the VOCs on 09/26/2022 but was shipped to the lab on 09/28/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBB5) is associated with the VOCs on 09/27/2022 but was shipped to the lab on 09/28/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBB5) was analyzed as TVOA but the associated samples (EYB66, EYB68, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96) were analyzed as L/M VOA.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBB6) is associated with the VOCs on 09/28/2022 and was shipped to the lab on 09/28/2022 according to the COC.

Case: 50221 SDG: EYB60
Site: Gelman Sciences Inc Laboratory: Analytical Resources, LLC

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00845
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston Solutions
Contact Person's Name:	Natalie Quiet
Contact email address:	natalie.quiet@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYB61

Number and Type of Samples: 15 Waters (SVOA, SVSIM)

Sample Numbers: EYB60, EYB61, EYB63, EYB65, EYB75, EYB76, EYB78, EYB79, EYB82, EYB85, EYB91, EYB92, EYB98, EYBA0, EYBA1

Laboratory: Analytical Resources, LLC, WA

The following are our findings:

Case: 50221 SDG: EYB61
Site: Gelman Sciences Inc, MI Laboratory: ARI

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Fifteen (15) water samples, numbered EYB60, EYB61, EYB63, EYB65, EYB75, EYB76, EYB78, EYB79, EYB82, EYB85, EYB91, EYB92, EYB98, EYBA0, and EYBA1, were collected on 09/26/2022-09/29/2022. The lab, Analytical Services, LLC located in Tukwila, WA, received the samples on 10/01/2022 in good condition and at temperatures <6°C and >0°C.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	SVOA Analysis Date	SVSIM Analysis Date	Analyses
EYB60	G-GWBK-MW-127s	22J0010-01	09/26/2022 13:30	10/08/2022	10/15/2022	SVOA, SVSIM
EYB61	G-GWRS-MW-91R	22J0010-02	09/29/2022 12:10	10/08/2022 10/13/2022 [DL]	10/15/2022	SVOA, SVSIM
EYB63	G-GWRS-MW-4d	22J0010-03	09/28/2022 14:45	10/08/2022 10/13/2022 [DL]	10/15/2022	SVOA, SVSIM
EYB65	G-GWBK-MW-120s	22J0010-04	09/26/2022 18:35	10/08/2022	10/15/2022	SVOA, SVSIM
EYB75	G-GWBK-MW-124d	22J0010-05	09/28/2022 10:55	10/08/2022	10/15/2022	SVOA, SVSIM
EYB76	G-GWBK-MW-124s	22J0010-06	09/28/2022 09:45	10/08/2022	10/15/2022	SVOA, SVSIM
EYB78	G-GWPW-01	22J0010-07	09/29/2022 09:05	10/08/2022	10/15/2022	SVOA, SVSIM
EYB79	G-GWPW-25	22J0010-08	09/29/2022 10:10	10/08/2022	10/15/2022	SVOA, SVSIM
EYB82	G-GWRS-MW-977	22J0010-09	09/28/2022 17:50	10/08/2022 10/12/2022 [DL]	10/15/2022	SVOA, SVSIM
EYB85	G-GWRW-110	22J0010-15	09/27/2022 19:05	10/09/2022	10/15/2022	SVOA, SVSIM
EYB91	G-GWRW-4141	22J0010-10	09/27/2022 18:25	10/08/2022	10/15/2022	SVOA, SVSIM
EYB92	G-GWRW-4742	22J0010-11	09/27/2022 16:30	10/08/2022	10/15/2022	SVOA, SVSIM
EYB98	G-GWRS-NMW-2d	22J0010-12	09/29/2022 18:15	10/08/2022 10/13/2022 [DL]	10/15/2022	SVOA, SVSIM
EYBA0	G-GWRW-MW-77	22J0010-13	09/29/2022 17:50	10/09/2022 10/12/2022 [DL]	10/15/2022 [RE]	SVOA, SVSIM
EYBA1	G-GWRS-MW-1R	22J0010-14	09/29/2022 12:10	10/09/2022	10/15/2022 [RE]	SVOA, SVSIM

				10/12/2022 [DL]		

All samples were analyzed for SVOA and SVSIM. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB79 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Sample EYB97, EYBF0, EYBF1, and EYBF8 were determined to be equipment blanks found outside of this SDG with associated samples within this SDG. Sample EYB61 was identified as a field duplicate for EYBA1. Sample EYB82 was identified as a field duplicate of EYBA0.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB60, EYB63, EYB63[Dilution-01], EYB65, EYB75, EYB76, EYB82, EYB82[Dilution-01], EYB85, EYB91, EYB92

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB60[Reanalysis-01], EYB61[Reinjection-02], EYB63[Reinjection-02], EYB65[Reinjection-02], EYB75[Reinjection-02], EYB76[Reinjection-02], EYB78[Reanalysis-01], EYB79[Reanalysis-01], EYB79MS, EYB79MSD, EYB82[Reanalysis-01], EYB85[Reanalysis-01], EYB91[Reanalysis-01], EYB92[Reanalysis-01], EYB98[Reanalysis-01], EYBA0[Reanalysis-01], EYBA1[Reanalysis-01]

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB60, EYB61, EYB63, EYB65, EYB75, EYB76, EYB78, EYB79, EYB79MS, EYB79MSD, EYB82, EYB91, EYB92, EYB98, SBLKB01, SLCSB01
2,3,4,6-Tetrachlorophenol

4. BLANKS:

Method: Semivolatiles

EXES-1105
Samples have non-common laboratory contaminant analyte results reported greater than or equal to the CRQLs. The associated Method Blank (MB) results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB79MS, EYB79MSD
Bis(2-ethylhexyl)phthalate

Method: Semivolatiles by SIM

EXES-1104
The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB60[Reanalysis-01], EYB61[Reinjection-02], EYB63[Reinjection-02], EYB65[Reinjection-02], EYB75[Reinjection-02], EYB76[Reinjection-02], EYB78[Reanalysis-01], EYB79[Reanalysis-01], EYB82[Reanalysis-01], EYB85[Reanalysis-01], EYB91[Reanalysis-01], EYB92[Reanalysis-01], EYB98[Reanalysis-01], EYBA0[Reanalysis-01], EYBA1[Reanalysis-01]
Naphthalene

EXES-1105
Samples have non-common laboratory contaminant analyte results reported greater than or equal to the CRQLs. The associated Method Blank (MB) results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB79MS, EYB79MSD
Naphthalene

Samples have non-common laboratory contaminant analyte results reported greater than the CRQLs. The associated equipment blank (EB-EBY97) results are less than CRQLs. Detects are not qualified.

EYB79MS, EYB79MSD
Naphthalene

5. DMC_SURROGATE:

Method: Semivolatiles

EXES-228
The following diluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are not qualified. Nondetects are not qualified.

EYB61[Dilution-01], EYB63[Dilution-01], EYB82[Dilution-01], EYB98[Dilution-01],

EYBA0[Dilution-01], EYBA1[Dilution-01]
2-Nitroaniline, 3-Nitroaniline, 2,4-Dinitrophenol, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol

Method: Semivolatiles by SIM

EXES-225
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

SLCSB02
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

EXES-973
The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified.

SBLKB02, SBLKR02, SBLKR03
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+.

EYB60[Reanalysis-01]
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

EYB61[Reinjection-02], EYB63[Reinjection-02], EYB65[Reinjection-02], EYB75[Reinjection-02], EYB76[Reinjection-02], EYB78[Reanalysis-01], EYB79[Reanalysis-01], EYB79MS, EYB79MSD, EYB82[Reanalysis-01], EYB85[Reanalysis-01], EYB91[Reanalysis-01], EYB92[Reanalysis-01], EYB98[Reanalysis-01], EYBA0[Reanalysis-01], EYBA1[Reanalysis-01]
Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

6. MATRIX SPIKE:

Method: Semivolatiles

EXES-974
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB79MSD
2,4-Dinitrotoluene

Method: Semivolatiles by SIM

EXES-974
The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB79MS, EYB79MSD
Pentachlorophenol

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

Method: Semivolatiles by SIM

EXES-1524
The following samples have internal standard area response greater than maximum criteria. Detected compounds are qualified estimated J-. Nondetects are not qualified.

EYB61[Reinjection-02], EYB63[Reinjection-02], EYB65[Reinjection-02], EYB75[Reinjection-02], EYB76[Reinjection-02]
Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

SBLKM03
Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

SLCSB03
Acenaphthylene, Acenaphthene, Fluorene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB60, EYB78, EYB85, EYB91
1,4-Dioxane

SBLKB01
Bis(2-ethylhexyl)phthalate

The following samples have analyte results that exceeded the quantitation limit (CRQL) and as a result have been diluted.

EYB61, EYB63, EYB82, EYB98, EYBA0, EYBA1
1,4-Dioxane

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

SBLKB02
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene

SBLKM03
Naphthalene

SBLKR02, SBLKR03
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthene

The following samples have analyte results that exceeded the quantitation limit (CRQL) and have not been diluted. Detects are qualified J.

SLCSB02
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene,

Fluorene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

11. FIELD QC SAMPLES:

Sample EYB97 (from SDG EYB62), EYBF0 (from SDG EYBC2), EYBF1 (from SDG EYBC2), and EYBF8 (from SDG EYB33) were determined to be equipment blanks found outside of this SDG with associated samples within this SDG.

Equipment Blank	EYB97
Collection Date	09/27/2022
SVOA	µg/L
bis(2-ethylhexyl)phthalate	13
Associated samples	EYB60, EYB65

Equipment Blank	EYB97
Collection Date	09/27/2022
SVSIM	µg/L
Naphthalene	0.069 J
Associated samples	EYB60, EYB65

Equipment blank EYBF0 had no target analyte detects for SVOA and SVSIM and was associated with samples EYB85, EYB91, and EYB92.

Equipment blank EYBF1 had no target analyte detects for SVSIM and was associated with samples EYB75, EYB76, EYB82, and EYBA0.

Equipment Blank	EYBF1
Collection Date	09/29/2022
SVOA	µg/L
Diethylphthalate	1 J
Associated samples	EYB75, EYB76, EYB82, EYBA0

Equipment Blank	EYBF8
Collection Date	10/02/2022
SVOA	µg/L
bis(2-ethylhexyl)phthalate	9
Associated samples	EYB61, EYB98, EYBA1

Equipment Blank	EYBF8
Collection Date	10/02/2022
SVSIM	µg/L
Naphthalene	0.059 J
Fluoranthene	0.059 J
Pyrene	0.12
Associated samples	EYB61, EYB98, EYBA1

Sample EYB61 was identified as a field duplicate for EYBA1. Both samples had no target analyte detects for SVSIM.

Sample	EYB61	EYBA1	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	670	930	33%

Sample EYB82 was identified as a field duplicate of EYBA0. Both samples had no target analyte detects for SVSIM.

Sample	EYB82	EYBA0	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	540	550	1.8%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Samples EYB60, EYB63, EYB65, EYB75, EYB76, EYB82, EYB85, EYB91, and EYB92 were extracted outside of the 7-day holding time for SVOA groundwater.

Samples EYB60, EYB61, EYB63, EYB65, EYB75, EYB76, EYB78, EYB79, EYB79MS, EYB79MSD, EYB82, EYB85, EYB91, EYB92, EYB98, EYBA0, and EYBA1 were extracted outside of the 7-day holding time for SVSIM groundwater.

Sample EYB61 was identified as a field duplicate for MW-1 replacement, EYBA1.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYB97) outside of this SDG (in SDG EYB62) is associated with sample EYB60 and EYB65 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYB97) collected on 09/27/2022 is associated with the samples collected on 09/26/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF0) outside of this SDG (in SDG EYBC2) is associated with sample EYB85, EYB91, and EYB92 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF0) collected on 09/29/2022 is associated with the samples collected on 09/27/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) outside of this SDG (in SDG EYBC2) is associated with sample EYB75, EYB76, EYB82, and EYBA0 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF1) collected on 09/29/2022 is associated with the samples collected on 09/28/2022 and 09/29/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) outside of this SDG (in SDG EYB33) is associated with sample EYB61, EYB98, and EYBA1 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF8) collected on 10/02/2022 is associated with the samples collected on 09/29/2022 according to the COC.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB82 and EYBA0. Sample EYB82 was collected on 09/28/2022 and sample EYBA0 was collected on a different day of 09/29/2022.

Case: 50221 SDG: EYB61
Site: Gelman Sciences Inc, MI Laboratory: ARI

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00887
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Kara Epple
Contact email address:	kara.epple@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc., Ann Arbor, MI

CASE NUMBER: 50221 SOW: SFAM01.1 SDG NUMBER: EYB62

Number and Type of Samples: 3 Water Samples (SVOA/SVSIM)

Sample Numbers: EYB62, EYB64, and EYB97

Laboratory: Chemtex (CHX)

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Three (3) water samples, EYB62, EYB64, and EYB97, were collected on 09/27/2022. The lab, Chemtex, located in Wilmington, NC, received the samples on 09/28/2022 intact, and in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB62	G-GWBK-MW-120d/ MW-120d	0003237-01	09/27/2022 13:05	5.7°C	SVOA/SVSIM
EYB64	G-GWRS-MW-105s/ MW-105s	0003237-02	09/27/2022 13:50	5.7°C	SVOA/SVSIM
EYB97	G-EB-01/ Equipment Blank	0003237-03	09/27/2022 07:30	5.5°C	SVOA/SVSIM

Three (3) water samples were analyzed for SVOA/ SVSIM analysis. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. QAPP (Quality Assurance Project Plan), November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Sample EYB97 was identified as an equipment blank.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method- Semivolatiles

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J.

EYB62, EYB62MS, EYB62MSD, EYB64, EYB97, SBLKB32, SLCSB32
4-Methylphenol

Method- Semivolatiles by SIM

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB62, EYB62MS, EYB62MSD, EYB64, EYB97, SBLKB14, SLCSB14
Pentachlorophenol

4. BLANKS:

Method- Semivolatiles

The following samples have analyte results reported as greater than or equal to CRQLs but less than blank results in the associated equipment blank (EB-EBY97). The associated equipment blank (EB-EBY97) results are greater than CRQL (13 ug/L). Detects are qualified U. Sample results have been reported.

EYB62, EYB64
Bis(2-ethylheyxl) phthalate

Method- Semivolatiles By SIM

Samples have analyte results reported less than the CRQLs. The associated equipment blank (EB-EBY97) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB62, EYB64
Naphthalene

Samples have analyte results reported greater than the CRQLs. The associated equipment blank (EB-EBY97) results are less than CRQLs. Detects are not qualified.

Naphthalene
EYB62MS, EYB62MSD

5. DMC_SURROGATE:

NONE FOUND.

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method- Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB62
Caprolactam

The following samples reported one or more analytes that exceeded the calibration range. The samples were re-analyzed at dilution. The final results are reported from the re-analyses. Results are not qualified.

EYB64

1,4-Dioxane

Method- Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB62
Benzo (g,h,i) perylene

EYB97
Naphthalene

11. FIELD QC SAMPLES:

Sample EYB97 was identified as an equipment blank.

Equipment Blank	EYB97	
SVOA		
Bis(2-ethylhexyl)phthalate	13	
SVSIM	µg/L	
Naphthalene	0.069	J

According to the Weston DV Field QC Samples chart the following Equipment Blank EYB97 is not associated with samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF0 outside of this SDG (in SDG EYBC2) is associated with sample EYB64 within this SDG. The equipment blank did not contain any analytes

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBG1 outside of this SDG (in SDG EYB33) is associated with sample EYB62 within this SDG. Sample EYBG1 contained Naphthalene and Pyrene below the CRQL. These analytes were not present in sample EYB62.

	EYBG1	SDG	EYB62	SDG
Naphthalene	0.070 J	EYB33	ND	EYB62
Pyrene	0.07 J	EYB33	ND	EYB62

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

No discrepancies found.

Case: 50221
SDG: EYB62
Site: Gelman Sciences Inc.
Laboratory: Chemtex

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Thomas Sedlacek/ICF-ESAT
Date: 02/03/2023

Region 5 ICF-ESAT Document Control Number: 00963
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on ____10/20/22____

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston_____
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.Quiet@WestonSolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: ___Gelman Sciences Ann Arbor, MI_____

CASE NUMBER: ___50221_____ SDG NUMBER: ___EYB65_____

Number and Type of Samples: __NINE WATERS/ SVOA-SIM _____

Sample Numbers: EYB31, EYB60, EYB65, EYB75, EYB76, EYB78, EYB79, EYB85, EYB91

Laboratory: __Analytical Resources (ARI)_____

The following are our findings:

Case: 50221 SDG: EYB65
Site: Gelman Sciences Inc, MI Laboratory: ARI

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Nine (9) waters samples, numbered EYB31, EYB60, EYB65, EYB75, EYB76, EYB78, EYB79, EYB85, and EYB91, were collected on 09/26, 27, 29/22. The lab received the samples on 10/05/22 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB31	G-SWRS-02	23B0292-01	09/29/22 16:30	SVOA-SIM
EYB60	G-GWBK-MW-127s	23B0294-01	09/26/22 13:30	SVOA-SIM
EYB65	G-GWBK-MW-120s	23B0294-02	09/26/22 18:35	SVOA-SIM
EYB75	G-GWBK-MW-124d	23B0294-03	09/28/22 10:55	SVOA-SIM
EYB76	G-GWBK-MW-124s	23B0294-04	09/28/22 09:45	SVOA-SIM
EYB78	G-GWPW-01	23B0294-05	09/29/22 09:05	SVOA-SIM
EYB79	G-GWPW-25	23B0294-06	09/29/22 10:10	SVOA-SIM
EYB85	G-GWRW-110	23B0294-08	09/27/22 19:05	SVOA-SIM
EYB91	G-GWRW-4141	23B0294-07	09/27/22 18:25	SVOA-SIM

All samples were analyzed for 1,4-Dioxane. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

No MS/MSD analyses were requested for this SDG.

No samples were identified as trip blanks, field blanks or field duplicates.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek/ICF-ESAT
Date: 02/24/23

Case: 50221 SDG: EYB65
Site: Gelman Sciences Inc, MI Laboratory: ARI

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB31, EYB60, EYB65, EYB75, EYB76, EYB78, EYB79, EYB85, EYB91

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method: Semivolatiles by SIM

EXES-1104
The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB31
1,4-Dioxane

5. DMC_SURROGATE:

Method: Semivolatiles by SIM

EXES-113
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYB60
1,4-Dioxane

EXES-973
The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified.

SBLKB20
1,4-Dioxane

6. MATRIX SPIKE:

Method: Semivolatiles by SIM

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYB31, EYB60, EYB65, EYB75, EYB76, EYB78, EYB79, EYB85, EYB91
1,4-Dioxane

EXES-58
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYB31, EYB60, EYB65, EYB75, EYB76, EYB78, EYB79, EYB85, EYB91
1,4-Dioxane

7. LABORATORY CONTROL SAMPLE:

Method: Semivolatiles by SIM

EXES-512
The following samples have no associated laboratory control sample (LCS). Detects are not qualified. Nondetects are not qualified.

EYB31, EYB60, EYB65, EYB75, EYB76, EYB78, EYB79, EYB85, EYB91

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles by SIM

EXES-790

The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J-.

EYB65, SBLKB21
1,4-Dioxane

.

11. FIELD QC SAMPLES:

NONE FOUND.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Sample EBY60 was noted on the CoC to have four containers but only two were shipped.

Case: 50221 SDG: EYB65
Site: Gelman Sciences Inc, MI Laboratory: ARI

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Thomas Sedlacek/ICF-ESAT
Date: 02/24/23

Region 5 ICF-ESAT Document Control Number: 00967
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Natalie Quiet
Contact email address:	Natalie.quiet@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYB66

Number and Type of Samples: 18 Soils (SVOA, SVSIM, ARO)

Sample Numbers: EYB66, EYB68, EYB70-EYB73, EYB94-EYB96, EYBA2-EYBA9, EYBB0

Laboratory: Analytical Resources, LLC, WA

The following are our findings:

Case: 50221 SDG: EYB66
Site: Gelman Sciences Inc, MI Laboratory: ARI

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eighteen (18) soil samples, numbered EYB66, EYB68, EYB70-EYB73, EYB94-EYB96, EYBA2-EYBA9, and EYBB0, were collected on 09/26-27/2022. The lab, Analytical Services, LLC located in Tukwila, WA, received the samples on 10/01/2022 intact and in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYB66	G-SS01-1213	22J0020-01	09/26/2022 11:45	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB68	G-SS02-0910	22J0020-02	09/26/2022 15:05	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB70	G-SS01-2930	22J0020-03	09/26/2022 11:52	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB71	G-SS02-2425	22J0020-04	09/26/2022 15:10	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB72	G-SS03-0405	22J0020-05	09/26/2022 16:00	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB73	G-SS03-1718	22J0020-06	09/26/2022 16:00	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB94	G-SS04-1213	22J0020-07	09/27/2022 08:35	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB95	G-SS04-1718	22J0020-08	09/27/2022 08:40	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYB96	G-SS05-0002	22J0020-09	09/27/2022 11:32	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBA2	G-SS05-1213	22J0020-10	09/27/2022 11:40	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBA3	G-SS05-3031	22J0020-11	09/27/2022 11:50	5.3°C, 5.5°C	SVOA, SVSIM, ARO
EYBA4	G-SS95-3031	22J0020-12	09/27/2022 11:55	5.3°C, 5.5°C	SVOA, SVSIM, ARO
EYBA5	G-SS06-0506	22J0020-13	09/27/2022 15:40	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBA6	G-SS06-1011	22J0020-14	09/27/2022 15:50	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBA7	G-SS06-1415	22J0020-15	09/27/2022 16:00	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBA8	G-SS07-0002	22J0020-16	09/27/2022 17:00	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBA9	G-SS07-2223	22J0020-17	09/27/2022 18:40	4.7°C, 5.3°C	SVOA, SVSIM, ARO
EYBB0	G-SS07-3031	22J0020-18	09/27/2022 18:50	4.7°C, 5.3°C	SVOA, SVSIM, ARO

All samples were analyzed for SVOA, SVSIM, and ARO. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB66, EYB68, and EYB71 are designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses. Sample EYB66 is used for SVOA. Sample EYB68 is used for ARO. Sample EYB71 is used for SVSIM.

Weston DV Field QC Samples identify EYBA3 and EYBA4 as field duplicates.

Weston DV Field QC Samples identify EYBF2 and EYBC2 as equipment blanks

Sample EYB73 is most likely a duplicate of the sample EYB72 based on the collection date, time and location. No samples were identified as trip blanks.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-85
The following non-aqueous samples are properly cooled, the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Qualify detects as estimated J-. Qualify nondetects as unusable R.

EYB66, EYB70

Method: Semivolatiles by SIM

EXES-85
The following non-aqueous samples are properly cooled, the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Qualify detects as estimated J-. Qualify nondetects as unusable R.

EYB66, EYB70

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB66, EYB68, EYB68MS, EYB68MSD, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96, EYBA2, SBLKB01, SLCSB01
2,4-Dinitrophenol, Benzo(g,h,i)perylene

EYB72DL, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, SBLKM01
2,4-Dinitrophenol

Method: Semivolatiles by SIM

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB66, EYB68, EYB70, EYB71, EYB71MS, EYB71MSD, EYB72, EYB73, EYB94, EYB95, EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, SBLKB02, SLCSB02
Benzo(g,h,i)perylene

Method: Aroclors

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

ABLKS1, ALCSS1, EYB66, EYB66MS, EYB66MSD, EYB68, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95
Aroclor-1242, Aroclor-1248, Aroclor-1254

EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0
Aroclor-1016, Aroclor-1242, Aroclor-1248, Aroclor-1254, Aroclor-1260

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

ABLKS1, ALCSS1, EYB66, EYB66MS, EYB66MSD, EYB68, EYB70, EYB71, EYB72, EYB73, EYB94, EYB95
Aroclor-1242

EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0
Aroclor-1016, Aroclor-1242, Aroclor-1248

4. BLANKS:

Method: Semivolatiles by SIM

EXES-1101
The following samples have analyte results reported less than CRQLs. The associated method blank results are greater than or equal to CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB70, EYB94, EYBA5
Benzo(b)fluoranthene

EYB71, EYB95, EYBA7
Benzo(g,h,i)perylene

EYBA8
Indeno(1,2,3-cd)pyrene

EXES-1104
The following samples have analyte results reported less than CRQLs. The associated method blank results are less than CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYB66, EYB68, EYB70, EYB94, EYB95, EYBA8, EYBA9
Chrysene

EYBA8
Indeno(1,2,3-cd)pyrene

EXES-1105
Samples have non-common laboratory contaminant analyte results reported greater than or equal to the CRQLs. The associated Method Blank (MB) results are less than CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB71, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBB0
Chrysene

EYB71MS, EYB71MSD, EYB72, EYB73, EYB96
Chrysene, Indeno(1,2,3-cd)pyrene

EXES-1123
The following samples have analyte results reported greater than or equal to CRQLs and greater than or equal to the method blank results. The associated method blank results are greater than or equal to CRQLs. Detects are qualified as estimated J+ or no qualification.

EYB68, EYBA4, EYBB0
Benzo(b)fluoranthene, Benzo(g,h,i)perylene

EYB70, EYBA3
Benzo(g,h,i)perylene

EYB71MS, EYB71MSD, EYB72, EYB96
Benzo(b)fluoranthene, Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

EYB73
Benzo(k)fluoranthene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

EYB73[Dilution-01], EYBA6, EYBA7, EYBA8
Benzo(b)fluoranthene

EXES-1126
The following samples have analyte results reported greater than or equal to CRQLs and less than the method blank results. The associated method blank results are greater than or equal to CRQLs. Detects are qualified U. Report at the sample analyte results.

EYBA2, EYBA3
Benzo(b)fluoranthene

The following samples an analyte results reported less than or equal to CRQLs. The associated equipment blank results are less than or equal to CRQLs. Detects are raised to the CRQL and qualified U

Naphthalene
EYBA2, EYBA5, EYBA6, EYBA7

The following samples an analyte results reported greater than or equal to CRQLs. The associated storage blank results are less than or equal to CRQLs. Detects are qualified as estimated J+ .

Naphthalene
EYBA3, EYBA4, EYBB0

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF2 is associated with samples EYB68, EYB72, EYB94, EYB95, EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8. EYBA9, and EYBB0 within this SDG.

The following samples an analyte results reported less than or equal to CRQLs. The associated equipment blank results are less than or equal to CRQLs. Detects are raised to the CRQL and qualified U.

Naphthalene
EYB68, EYB94, EYB95, EYBA2

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2 is associated with samples EYB66, EYB70, EYB68, EYB71, EYB72, and EYB73 within this SDG.

The following samples an analyte results reported less than or equal to CRQLs. The associated equipment blank results are less than or equal to CRQLs. Detects are raised to the CRQL and qualified U.

Naphthalene
EYB66

Method: Semivolatiles
According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2 is associated with samples EYB66, EYB70, EYB68, EYB71, EYB72, and EYB73 within this SDG.

The following samples an analyte results reported less than or equal to CRQLs. The associated equipment blank results are less than or equal to CRQLs. Detects are raised to the CRQL and qualified U.

Phenol
EYB66

5. DMC_SURROGATE:

Method: Semivolatiles

EXES-230
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYB72, EYBA3, EYBA4, EYBB0
4-Chloroaniline

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

Method: Semivolatiles

EXES-1523
The following samples have internal standard area response greater than or equal to expanded minimum criteria and less than primary minimum criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

EYB72
Di-n-octylphthalate, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

Method: Semivolatiles by SIM

EXES-1523
The following samples have internal standard area response greater than or equal to expanded minimum criteria and less than primary minimum criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

SBLKB02, SBLKM04
Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB66
Acetophenone

EYB68, EYB70
Acetophenone

EYB68MS, EYB68MSD
4-Chloroaniline

EYB72
1-Methylnaphthalene, 2-Methylnaphthalene, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene

EYB73
Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene

EYBA3, EYBA4
Acetophenone, 1-Methylnaphthalene, 2-Methylnaphthalene, Phenanthrene

EYBB0
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Phenanthrene

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB68
1-Methylnaphthalene, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Benzo(a)pyrene

EYB70
1-Methylnaphthalene, 2-Methylnaphthalene, Phenanthrene

EYB71
1-Methylnaphthalene, 2-Methylnaphthalene, Phenanthrene, Pyrene

EYB72
Acenaphthylene, Acenaphthene, Fluorene

EYB73
1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene

EYB94
Naphthalene, 1-Methylnaphthalene, Phenanthrene

EYB95, EYBA2, EYBA5
Naphthalene, 1-Methylnaphthalene, Phenanthrene

EYB96
Naphthalene, 1-Methylnaphthalene, Fluorene, Anthracene

EYBA3
Acenaphthene, Fluorene, Fluoranthene, Benzo(a)anthracene, Benzo(a)pyrene

EYBA4
Acenaphthylene, Fluorene, Fluoranthene, Benzo(a)anthracene, Benzo(a)pyrene

EYBA6
1-Methylnaphthalene, Phenanthrene, Fluoranthene, Pyrene

EYBA7
1-Methylnaphthalene, 2-Methylnaphthalene, Fluoranthene

EYBA8
Phenanthrene, Benzo(a)anthracene, Benzo(a)pyrene

EYBB0
Acenaphthylene, Fluorene, Fluoranthene, Benzo(a)anthracene, Benzo(a)pyrene

SBLKB02
Chrysene, Indeno(1,2,3-cd)pyrene

SBLKM04
Chrysene

SLCSB02
Pentachlorophenol

The following samples have analyte results that exceeded the quantitation limit (CRQL) and as a result have been diluted.

EYB73
Fluoranthene, Pyrene, Benzo(b)fluoranthene

EYBB0
1-Methylnaphthalene, 2-Methylnaphthalene

Method: Aroclors

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB66MS, EYB66MSD
Aroclor-1260

11. FIELD QC SAMPLES:

Weston DV Field QC Samples identify EYBA3 and EYBA4 as field duplicates.

EPA Samples	**EYBA3**	**EYBA4**	RPDs
Sample Identifier	G-SS05-3031	G-SS95-3031	
Units	ug/Kg	ug/Kg	%
SVOA			
Acetophenone	42 J	39 J	7.4
1-Methylnaphthalene	25 J	29 J	14.8
2-Methylnaphthalene	31 J	36 J	14.9
Phenanthrene	27 J	29 J	7.1
SVOA by SIM			
Naphthalene	12 J+	19 J+	45.2
1-Methylnaphthalene	28	42	40
2-Methylnaphthalene	39	56	35.8
Acenaphthylene	ND	1.7 J	200
Acenaphthene	3.5 J	4.9	71.4
Fluorene	2.2 J	3.0 J	30.8
Phenanthrene	27	37	31.3
Fluoranthene	2.5 J	3.6 J	36.1
Pyrene	7.8	9.2	16.5
Benzo(a)anthracene	1.9 J	2.5 J	27.3

Chrysene	5.8 J+	9.1 J+	44.3
Benzo(a)pyrene	2.3 J	3.5 J	41.4
Benzo(g,h,i)perylene	6.5 J+	9.5 J+	37.5

Field Duplicates	**EYB72**	**EYB73**	RPD
Sample Identifier	G-SS03-0405	G-SS03-1718	
Units	ug/Kg	ug/Kg	%
SVOA			
1-Methylnaphthalene	36 J	ND	200
2-Methylnaphthalene	45 J	ND	200
Phenanthrene	98 J	53 J	59.6
Fluoranthene	150 J	100 J	40
Pyrene	150 J	85 J	55.3
Benzo (a) anthracene	85 J	57 J	39.4
Chrysene	120 J	59 J	68.2
Benzo (b) fluoranthene	190 J+	96 J	65.7
Benzo (k) fluoranthene	84 J+	43 J	64.6
Benzo (a) pyrene	94 J+	53 J	55.8
SVOA by SIM			
Naphthalene	12 J	1.2 J	163.6
1-Methylnaphthalene	60	0.81 J	194.7
2-Methylnaphthalene	82	1.2 J	194.2
Acenaphthylene	12 J	1.7 J	150.4
Acenaphthene	12 J	1.3 J	106.9
Fluorene	14 J	1.8 J	154.4
Phenanthrene	200	33	143.5
Anthracene	34	4.8	150.5
Fluoranthene	290	67	124.9
Pyrene	290	57	124.3
Benzo(a)anthracene	190	39	131.9
Chrysene	190 J+	41 J+	129
Benzo (b) fluoranthene	270 J+	61 J+	126.3
Benzo (k) fluoranthene	85 J+	21 J+	120.8
Benzo(a)pyrene	190	39	131.9
Indeno (1,2,3-cd) pyrene	72 J+	19 J+	116.5
Dibenzo(a,h)anthracene	23	4.5	134.5
Benzo (g,h,i) perylene	95 J+	20 J+	130.4

Field Blank	**EYBC2**	
ANALYTE	CONC	Q
SVOA		
Phenol	3.4	J
SVOA-SIM		
Naphthalene	0.015	J
Associated Samples		
EYB66, EYB70, EYB68, EYB71, EYB72, EYB73		

Field Blank	**EYBF2**	
ANALYTE	CONC	Q
SVOA		
1,4-Dioxane	1.3	J
SVOA-SIM		
Naphthalene	0.010	J-
Associated Samples		
EYB66, EYB70, EYB68, EYB71, EYB72, EYB73, EYB94, EYB95, EYB96, EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0		

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) located in a different SDG (EYB80) is associated with samples (EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, and EYBB0).

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBC2 have associated samples EYB68 and EYB74 that are associated with more than one Equipment Blank.

Weston DV Field QC Samples chart does not list the sample EYB73 as a duplicate, however based on the chain of custody No: 5-093022-125534-0016, sample EYB73 is most likely a duplicate of the sample EYB72 based on the collection date, time and location.

13. DOCUMENTATION:

Samples EYB66 and EYB70 were prepped outside of the 14 days hold time according to the SAP. Sampled on 09/26/2022 11:45 and 09/26/2022 11:52 respectively the two samples were then prepped on 10/10/2022 14:42.

Case: 50221 SDG: EYB66
Site: Gelman Sciences Inc, MI Laboratory: ARI

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00889
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on __10/20/22____

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston_____
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.Quiet@WestonSolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz__
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: ___Gelman Sciences Ann Arbor, MI_____

CASE NUMBER: ___50221_____ SDG NUMBER: ___EYB68_____

Number and Type of Samples: 12 soil samples_(ICP-AES, ICP-MS, Hg, CN)_____

Sample Numbers: EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6 - EYBA9, EYBB0, EYBB9, EYBD9

Laboratory: _____Bonner Analytical_____

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Twelve (12) soil samples, numbered EYB68, EYB72, EYB94, EYB95, EYBA2. EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9 and EYBD9 were collected on 09/26 - 29/22. The lab, Bonner Analytical Testing, Hattiesburg, MS received the samples on 10/07/22 in good condition and temperatures of 1°C and 3.4°C.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB68	G-SS02-0910	2210134-01	09/26/22 15:05	ICP-AES, ICP-MS, Hg, CN
EYB72	G-SS03-0405	2210134-02	09/26/22 16:00	ICP-AES, ICP-MS, Hg, CN
EYB94	G-SS04-1213	2210134-03	09/27/22 08:35	ICP-AES, ICP-MS, Hg, CN
EYB95	G-SS04-1718	2210134-04	09/27/22 08:40	ICP-AES, ICP-MS, Hg, CN
EYBA2	G-SS05-1213	2210134-05	09/27/22 11:40	ICP-AES, ICP-MS, Hg, CN
EYBA6	G-SS06-1011	2210134-06	09/27/22 15:50	ICP-AES, ICP-MS, Hg, CN
EYBA7	G-SS06-1415	2210134-07	09/27/22 16:00	ICP-AES, ICP-MS, Hg, CN
EYBA8	G-SS07-0002	2210134-08	09/27/22 17:00	ICP-AES, ICP-MS, Hg, CN
EYBA9	G-SS07-2223	2210134-09	09/27/22 18:40	ICP-AES, ICP-MS, Hg, CN
EYBB0	G-SS07-3031	2210134-10	09/27/22 18:50	ICP-AES, ICP-MS, Hg, CN
EYBB9	G-SS09-1819	2210134-11	09/28/22 14:25	ICP-AES, ICP-MS, Hg, CN
EYBD9	G-SS12-1415	2210134-12	09/29/22 15:15	ICP-AES, ICP-MS, Hg, CN

All samples were analyzed for ICP-AES, ICP-MS, Hg, and CN. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022 November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

The samplers have designated sample G-SS09-1819 (EYBB9) and sample G-SS12-1415 (EYBD9) to be used for laboratory QC.

No field blanks or field duplicates were identified for this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method: Cyanide

EXES-465
The following non-aqueous samples exceeded technical holding time. Detects are qualified as J-. Nondetects are qualified as R.

EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9

2. TUNE:

NONE FOUND

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

Method: Metals by ICP-AES

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Lead
EYBD9L

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Lead
EYBD9L

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+

Lead
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9S, LCS01

Lead, Manganese
EYBD9A

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Aluminum, Iron, Lead
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L, LCS01

Chromium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L, EYBD9S, LCS01

Manganese
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9A, EYBD9D, EYBD9L, EYBD9S, LCS01

Method: Metals by ICP-MS

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L

EXES-0153
The following samples have analyte results less than CRQLs. The associated PB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Thallium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYBD9S, LCS01

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYBD9S, LCS01

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Thallium
EYBD9S, LCS01

EXES-0175
The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Selenium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L, EYBD9S, LCS01, PBS01

EXES-0176
The following samples are associated with preparation blank (PB) that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

Arsenic, Selenium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L, EYBD9S

EXES-1105
Samples have analyte results reported greater than or equal to the CRQLs. The associated Preparation Blank (PB) results are less than CRQLs. Detects are qualified as estimated J+ .

Thallium
EYBD9S

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBC2 sampled 09/27/2022 SDG EYB31) is associated with samples EYB68, and EYB72, within this SDG.

The sample results were below the CRQL, and the equipment blank, EYBC2, has a result below the CRQL. The sample results are raised to the CRQL and qualified U.

Cobalt
EYB68, EYB72

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2 sampled 10/1/22 SDG EYB33) is associated with samples EYB66, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, and EYBA9 within this SDG.

The sample results were below the CRQL, and the equipment blank, EYBF2, has a result below the CRQL. The sample results are raised to the CRQL and qualified U.

Cobalt
EYB68, EYB72, EYB95, EYBA8, EYBA9

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3 sampled 09/29/2022 SDG EYB35) is associated with sample EYBB9 within this SDG.

The sample results were below the CRQL, and the equipment blank, EYBF3, has a result below the CRQL. The sample results are raised to the CRQL and qualified U.

Cobalt
EYBB9

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF4 sampled 09/30/2022 SDG EYB31) is associated with sample EYBD9 within this SDG.

The sample results were below the CRQL and the equipment blank, EYBF4, has a result below the CRQL. The sample results are raised to the CRQL and qualified U.

Cobalt
EYBD9

Method: Cyanide

EXES-0174
The following samples are associated with ICB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J-.
Nondetects are qualified as estimated UJ.

EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9S, PBS01
Cyanide

EXES-0175
The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9S, PBS01
Cyanide

EXES-0176
The following samples are associated with preparation blank (PB) that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9S
Cyanide

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

Method: Metals by ICP-AES

EXES-594
The following samples are associated with Matrix Spike sample that has spike analyte %R greater than 125% and Post-digestion spike analyte %R less than or equal to 125%. Detects are qualified as J. Nondetects are not qualified.

Lead, Manganese
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9

8. SERIAL DILUTION:

Method: Metals by ICP-MS

EXES-0344
The following samples are associated to the Serial Dilution sample with analyte %D >20% and the original sample result is > 50xMDL. Detects are qualified as estimated J. Non-detects are not qualified.

Cobalt
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-AES

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Barium
EYBA9, EYBD9, EYBD9D, EYBD9L

Beryllium
EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBB0

Cadmium
EYB68, EYB72, EYB94, EYB95, EYBA7, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D

Nickel, Vanadium

EYBD9L

The following samples have analyte results greater than or equal to the CRQLs. The associated equipment blank (EYBC3 SDG EIB43) analyte results are less than the CRQLs. Detects are not qualified

Iron
EYB68, EYB72

Method: Metals by ICP-MS

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Antimony
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D, EYBD9L

Arsenic
PBS01

Selenium
EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBB0, EYBB9, EYBD9D, PBS01

Silver
EYB68, EYB72, EYBA2, EYBA6, EYBA7, EYBB0, EYBB9, EYBD9, EYBD9D

Thallium
PBS01

Method: Mercury by Cold Vapor

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, EYBB9, EYBD9, EYBD9D
Mercury

Method: Cyanide

EXES-790

The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

PBS01
Cyanide

11. DUPLICATES:

NONE FOUND.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF2 is associated with samples EYB68, EYB72, EYB94, EYB95, EYBA2, EYBA6, EYBA7, EYBA8, EYBA9, and EYBB0 found within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF3 is associated with sample EYBB8 found within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBF4 is associated with sample EYBD9 found within this SDG.

12. DOCUMENTATION:

No discrepancies found.

Case: 50221
SDG: EYB68
Site: Gelman Sciences, Ann Arbor MI
Laboratory: Bonner

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/03/2023

.Region 5 ICF-ESAT Document Control Number: 00890
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/22

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston
Contact Person's Name: Natalie Quiet
Contact email address: natalie.quiet@westonsolutions.com

EPA Data User: SFD
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: __Gelman Sciences, Ann Arbor, MI_____

CASE NUMBER: _50221____ SDG NUMBER: _EYB80_____

Number and Type of Samples: ___5 waters (SVOA, SVOA-SIM, ARO)_____

Sample Numbers: EYB80, EYBE7, EYBF2, EYBF3, EYBF4

Laboratory: Eurofins Environmental Testing

The following are our findings:

Case: 50221 SDG: EYB80
Site: Gelman Sciences, Ann Arbor MI Laboratory: Eurofins

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Five (5) water samples, numbered EYB80, EYBE7, EYBF2, EYBF3, EYBF4, were collected on 10/01 - 02/22. The lab ,Eurofins Environmental Testing, South Burlington, VT, received the samples on 10/07/22 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB80	G-GWRS-MW-100	200-65226-1	10/02/22 11:58	SVOA, SVOA-SIM
EYBE7	G-GWRS-MW-190	200-65226-2	10/02/22 12:15	SVOA, SVOA-SIM
EYBF2	G-EB-05/Equipment Blank	200-65226-3	10/01/22 10:00	SVOA, SVOA-SIM, ARO
EYBF3	G-EB-06/Equipment Blank	200-65226-4	10/01/22 11:00	SVOA, SVOA-SIM, ARO
EYBF4	G-EB-07/ Equipment Blank	200-65226-5	10/01/22 12:00	SVOA, SVOA-SIM, ARO

All samples were analyzed for SVOA and SVOA-SIM. Samples EYBF2, EYBF3 and EYBF4 were also analyzed for Aroclors. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

No sample was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Samples EYBF2, EYBF3 and EYBF4 were identified as equipment blanks.
Sample EYBF9 was identified as an equipment blank outside of this SDG with associated samples within this SDG.
Sample EYBE7 was identified as the sample duplicate of EYB80.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Martin Sarmiento
Date: 02/07/2023

Case: 50221 SDG: EYB80
Site: Gelman Sciences, Ann Arbor MI Laboratory: Eurofins

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Non-detects are qualified as unusable R.

EYB80, EYBE7, EYBF2, EYBF3, EYBF4
EYB80, EYB80[Dilution-01], EYBE7[Dilution-01], EYBE7, EYBF2, EYBF3, EYBF4

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Non-detects are qualified as unusable R.

EYB80, EYBE7, EYBF2, EYBF3, EYBF4

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Non-detects are qualified as estimated UJ.

EYB80, EYBE7, EYBF2, EYBF3, EYBF4, SBLKG7, SLCSG7
Benzo(k)fluoranthene

Test Name: EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Non-detects are qualified as estimated UJ.

EYB80, EYBE7
Di-n-octyl phthalate

Method: Semivolatiles by SIM

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Non-detects are qualified as estimated UJ.

EYB80, EYBE7, EYBF2, EYBF3, EYBF4, SBLKG7, SLCSG7
Pentachlorophenol

4. BLANKS:

NONE FOUND

5. DMC_SURROGATE:

NONE FOUND

6. MATRIX SPIKE:

Method: Semivolatiles

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Non-detects are not qualified.

EYB80, EYBE7.

EXES-58
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Non-detects are not qualified.

EYB80, EYBE7

Method: Semivolatiles by SIM

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Non-detects are not qualified.

EYB80, EYBE7

EXES-58
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Non-detects are not qualified.

EYB80, EYBE7

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBF2, EYBF3
1,4-Dioxane

SLCSG7
Benzaldehyde, Hexachlorocyclopentadiene, 4-Nitroaniline

The following samples had analyte concentrations which exceeded the calibration range. The reportable concentration is taken from the appropriate dilution.

1,4-Dioxane
EYB80, EYBE7

Method: Semivolatiles by SIM.

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBF2, EYBF3
Naphthalene

11. FIELD QC SAMPLES:

Samples EYBF2, EYBF3 and EYBF4 were identified as equipment blanks. Samples EYBF2, EYBF3 and EYBF4 were determined to have no associated sample within this SDG. EYBF2 had no

target analyte detects for ARO. EYBF4 had no target analyte detects for SVOA, SVOA-SIM, and ARO.

Equipment Blank	EYBF2	EYBF3
Collection Date	10/01/2022	10/01/2022
SVOA	µg/L	µg/L
1,4-Dioxane	1.3 J	0.65 J
SVOA-SIM	µg/L	µg/L
Naphthalene	0.10 J	0.65 J
Associated Samples	None	None

Equipment Blank	EYBF3
Collection Date	10/01/2022
ARO	µg/L
Aroclor-1254	1.5
Associated Samples	None

Sample EYBF9 was identified as an equipment blank outside of this SDG with associated samples within this SDG.

Equipment Blank	EYBF9
Collection Date	10/03/2022
SVOA	µg/L
Diethylphthalate	3.7 J
bis(2-ethylhexyl)phthalate	9.9
SVOA-SIM	µg/L
Naphthalene	0.059 J
Pentachlorophenol	0.27
Pyrene	0.059 J
Associated samples	EYB80, EYBE7

Sample EYBE7 was identified as the sample duplicate of EYB80. Both samples had no target analyte detects for SVOA-SIM.

Sample	EYBE7	EYB80	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	1100	1100	0%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBF2, EYBF3, EYBF4) are not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF9) outside of this SDG (in SDG EYB33) is associated with sample EYB80 and EYBE7 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF9) collected on 10/03/2022 is associated with the samples collected on 10/02/2022 according to the COC.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates, EYBE7 and EYB80.

Case: 50221 SDG: EYB80
Site: Gelman Sciences, Ann Arbor MI Laboratory: Eurofins

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Martin Sarmiento
Date: 02/07/2023

Region 5 ICF-ESAT Document Control Number: 00964
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on ____10/20/2022_____

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston_____
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.Quiet@WestonSolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz
Contact email address: muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: ___Gelman Sciences Ann Arbor, MI_____

CASE NUMBER: ___50221_____ SDG NUMBER: ___EYB97_____

Number and Type of Samples: __Seven water/SVOA-SIM_____

Sample Numbers: EYB33, EYB62, EYB97, EYBF8, EYBF9, EYBG0 EYBG1

Laboratory: __Chemtex_____

The following are our findings:

Case: 50221 SDG: EYB97
Site: Gelman Science Inc, MI Laboratory: Chemtex

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Seven (7) water samples, numbered EYB33, EYB62, EYB97, EYBF8, EYBF9, EYBG0 and EYBG1, were collected on 09/27/22, 09/30/22, 10/02 to 10/04/22. The lab Chemtex located in Port Arthur TX, received the samples on 02/23/23 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB33	G-SWPPE-03	0003553-01	09/30/22 11:10	SVOA-SIM
EYB62	G-GWBK-MW-120d	0003553-02	09/27/22 13:05	SVOA-SIM
EYB97	G-EB-01	0003553-03	09/27/22 07:30	SVOA-SIM
EYBF8	G-EB-08	0003553-04	10/02/22 08:00	SVOA-SIM
EYBF9	G-EB-09	0003553-05	10/03/22 07:30	SVOA-SIM
EYBG0	G-EB-10	0003553-06	10/03/22 20:08	SVOA-SIM
EYBG1	G-EB-11	0003553-07	10/04/22 20:15	SVOA-SIM

All samples were listed to be analyzed for SVOA-SIM. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022 November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

Five samples EYB97, EYBF8, EYBF9, EYBG0, and EYBG1were identified as equipment blanks.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek/ICF-ESAT
Date: 02/23/23

Case: 50221 SDG: EYB97
Site: Gelman Science Inc, MI Laboratory: Chemtex

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB33, EYB33MS, EYB33MSD, EYB62, EYB97, EYBF8, EYBF9, EYBG0, EYBG1

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

NONE FOUND.

5. DMC_SURROGATE:

Method: Semivolatiles by SIM

EXES-973
The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified.

SBLKC22
1,4-Dioxane

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+.

EYB33, EYB33MS, EYB33MSD
1,4-Dioxane

6. MATRIX SPIKE:

Method: Semivolatiles by SIM

EXES-974

Case: 50221 SDG: EYB97
Site: Gelman Science Inc, MI Laboratory: Chemtex

The following matrix spike/matrix spike duplicate samples have percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB33
1,4-Dioxane

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

NONE FOUND.

11. FIELD QC SAMPLES:

Samples EYB97, EYBF8, EYBF9, EYBG0, EYBG1were identified as equipment blanks.

According to the Weston DV Field QC Samples chart the following Equipment Blanks EYB97, EYBF8, EYBF9 and EYBG0 are not associated with any of the samples within the SDG.

Field Blank	EYB97	
ANALYTE	CONC	Q
Associated Samples		
EYB60, EBY65		

Field Blank	EYBF8	
ANALYTE	CONC	Q
Associated Samples		
EYBA1, EYB61, EYB98		

Field Blank	EYBF9	
ANALYTE	CONC	Q
Associated Samples		
EYB80, EYBE7		

Case: 50221 SDG: EYB97
Site: Gelman Science Inc, MI Laboratory: Chemtex

Field Blank	EYBG0	
ANALYTE	CONC	Q
Associated Samples		
EYB81, EYB83, EYB86, EYB93		

According to the Weston DV Field QC Samples chart the following Equipment Blank EYBG1 is associated with samples within this SDG.

Field Blank	EYBG1	
ANALYTE	CONC	Q
Associated Samples		
EEYB62, EYB77		

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

No deficiencies found. Samples were analyzed as per SFAM01.1 SOW instructions and Re-analysis request.

Case: 50221 SDG: EYB97
Site: Gelman Science Inc, MI Laboratory: Chemtex

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Thomas Sedlacek/ICF-ESAT
Date: 02/23/23

Region 5 ICF-ESAT Document Control Number: 00810
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Analytical Resources, LLC
Contact Person's Name:	Kara Epple
Contact email address:	kara.epple@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYBA2

Number and Type of Samples: 9 Soils, 3 Waters (TVOA, L/M VOA)

Sample Numbers: EYBA2-EYBA9, EYBB0, EYBB4-EYBB6

Laboratory: Analytical Resources, LLC, MI (ARI)

The following are our findings:

Case: 50221 SDG: EYBA2
Site: Gelman Sciences Inc, MI Laboratory: ARI

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Nine (9) soil samples and three (3) water samples, numbered EYBA2-EYBA9, EYBB0, EYBB4-EYBB6, were collected on 09/26/2022-09/28/2022. The lab, Analytical Resources, LLC located in Stevensville, MI, received the samples on 09/29/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp, Matrix	Analyses
EYBA2	G-SS05-1213	22I0469-01	09/27/2022 11:40	1.3°C, soil	L/M VOA
EYBA3	G-SS05-3031	22I0469-02	09/27/2022 11:50	1.3°C, soil	L/M VOA
EYBA4	G-SS95-3031	22I0469-03	09/27/2022 11:55	1.3°C, soil	L/M VOA
EYBA5	G-SS06-0506	22I0469-04	09/27/2022 15:40	1.3°C, soil	L/M VOA
EYBA6	G-SS06-1011	22I0469-05	09/27/2022 15:50	1.3°C, soil	L/M VOA
EYBA7	G-SS06-14/15	22I0469-06	09/27/2022 16:00	1.3°C, soil	L/M VOA
EYBA8	G-SS07-0002	22I0469-07	09/27/2022 17:00	1.3°C, soil	L/M VOA
EYBA9	G-SS07-2223	22I0469-08	09/27/2022 18:40	1.3°C, soil	L/M VOA
EYBB0	G-SS07-3031	22I0469-09	09/27/2022 18:50	1.3°C, soil	L/M VOA
EYBB4	G-TB01	22I0469-10	09/26/2022 11:00	1.3°C, water	TVOA
EYBB5	G-TB03	22I0469-11	09/28/2022 07:33	1.3°C, water	TVOA
EYBB6	G-TB02	22I0469-12	09/27/2022 07:30	1.3°C, water	TVOA

Samples EYBA2-EYBA9 and EYBB0 were analyzed for L/M VOA, EYBB4-EYBB6 were analyzed for TVOA. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site QAPP (Quality Assurance Project Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYBA2 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Samples EYBB4-EYBB6 were identified as trip blanks. Only trip blank EYBB5 had associated samples in this SDG. Sample EYBF2 (sdg EYBE7) was identified as an equipment blank with associated samples in this SDG but was sent along with other samples to Test America Laboratories, South Burlington. Sample EYBA4 was identified as a duplicate of EYBA3.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221 SDG: EYBA2
Site: Gelman Sciences Inc, MI Laboratory: ARI

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Trace Volatiles

EXES-989
The following samples are associated with an initial calibration with relative response factors (RRFs) outside criteria. Detects are qualified as estimated J+. Nondetects are qualified as estimated UJ.

EYBB4, EYBB5, EYBB6, VBLKT40, VHBLK29
Methyl acetate

Method: Volatile Organics

EXES-66
The following samples are associated with an ICV with target analyte % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYBA2, EYBA3[Reanalysis-01], EYBA3MS, EYBA3MSD, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0, VBLKS01, VBLKS02, VBLKS03, VHBLKS9
Cyclohexane

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYBA3[Reanalysis-01], EYBA3MS, EYBA3MSD, EYBB0, VBLKS02
1,3-Dichlorobenzene, 1,2-Dichlorobenzene

4. BLANKS:

Method: Volatile Organics

EXES-1163
The following samples have analyte results reported less than CRQLs. The associated storage blank results are greater than or equal to CRQLs. Detects are qualified U. Sample results have been reported at CRQLs.

EYBA7
Acetone

EXES-1166
The following samples have common laboratory contaminant analyte results reported greater than or equal to CRQLs and greater than or equal to 2x the storage blank results. The associated storage blank results are greater than or equal to CRQLs. Detects are qualified as estimated J+ or no qualification.

EYBA2, EYBA3MS, EYBA3MSD, EYBA4, EYBA5
Acetone

5. DMC_SURROGATE:

Method: Volatile Organics

EXES-1350
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYBA2
Cyclohexane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane, Chlorobenzene, 1,2,3-Trichloropropane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EYBA3[Reanalysis-01], EYBA3MS, EYBA3MSD, EYBA5, EYBA6, EYBB0
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EYBA4
Trichlorofluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane, Methyl acetate Methylene chloride, Methyl tert-butyl ether, 1,1,1-Trichloroethane, Cyclohexane, Carbon tetrachloride, 1,2-Dichloroethane, Methylcyclohexane, 1,2-Dichloropropane, Bromodichloromethane, 1,2-Dibromoethane, Chlorobenzene, 1,2,3-Trichloropropane, 1,1,2,2-Tetrachloroethane, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2-Dibromo-3-chloropropane, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+.

EYBA7, EYBA8, EYBA9, VHBLKS9

Acetone, 2-Butanone

6. MATRIX SPIKE:

Method: Trace Volatiles

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYBB4, EYBB5, EYBB6

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYBB4, EYBB5, EYBB6

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBB5
Toluene

VBLKT40
trans-1,3-Dichloropropene

Method: Volatile Organics

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBA3[Reanalysis-01]
Methylene chloride

EYBB0
Carbon disulfide

11. FIELD QC SAMPLES:

The trip blanks for EYBB4 and EYBB6 had no associated samples in this SDG. Trip blank EYBB5 had the following target analyte results.

Trip Blank	EYBB5
Shipping Date	09/28/2022
TVOA	µg/L
Acetone	6
Methyl Acetate	1.1 J+
Toluene	0.35 J
Associated samples:	EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0

The equipment blank EYBF2 had the following target analytes.

Equipment Blank	EYBF2 (sdg EYBE7)
Collection Date	10/01/2022
TVOA	µg/L
2-Butanone	14 J
Chloroform	0.63J
Bromodichloromethane	0.11 J
Toluene	0.5 R
2-Hexanone	1.6 J
Dibromochloromethane	0.038 J
Styrene	0.066 J
Associated Samples	EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0

NOTE: The Equipment Blank EYBF2 (present in the sdg EYBE7) received an “R” flag for Toluene because it was analyzed outside of the holding time.

Sample EYBA4 was identified as a duplicate of EYBA3.

Sample	EYBA3	EYBA4	RPDs
L/M VOA	µg/L	µg/L	%R
Acetone	19	30	57.9%
Methylene Chloride	4.9 J	ND	200%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36). TVOA analysis had no MS/MSD.

13. DOCUMENTATION:

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) outside of the EYBA2 SDG (present in SDG EYBE7) is associated with sample EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF2) was analyzed as TVOA but the associated samples (EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0) were analyzed as L/M VOA.

According to the Weston DV Field QC Samples chart the following Trip Blanks (EYBB4, EYBB6) are not associated with any of the samples within the EYBA2 SDG.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBB5) is associated with the VOCs on 09/27/2022 but was shipped to the lab on 09/28/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBB5) was analyzed as TVOA but the associated samples (EYBA2, EYBA3, EYBA4, EYBA5, EYBA6, EYBA7, EYBA8, EYBA9, EYBB0) were analyzed as L/M VOA.

Case: 50221 SDG: EYBA2
Site: Gelman Sciences Inc, MI Laboratory: ARI

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00968
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Natalie Quiet
Contact email address:	Natalie.quiet@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, MI

CASE NUMBER: 50221 MA No: N/A SOW: SFAM01.1 SDG NUMBER: EYBB1

Number and Type of Samples: 20 Soil Samples (VOA)

Sample Numbers: EYBB1-EYBB3, EYBB7-EYBB9, EYBC0, EYBD2-EYBD9, EYBE0-EYBE4

Laboratory: Chemtex (CHX)

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Twenty (20) soil samples, EYBB1-EYBB3, EYBB7-EYBB9, EYBC0, EYBD2-EYBD9, and EYBE0-EYBE4, were collected on 09/28/2022 and 09/29/2022. The lab, Chemtex, located in Wilmington, NC, received the samples on 10/08/2022 intact, and in good condition. It was noted on the COC that VOA samples were frozen upon collection.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYBB1	G-SS98-3233/ SS08	0003282-01	09/28/2022 11:18	5.2°C	VOA
EYBB2	G-SS08-3233/ SS08	0003282-02	09/28/2022 11:15	5.2°C	VOA
EYBB3	G-SS08-1920/ SS08	0003282-03	09/28/2022 11:10	5.2°C	VOA
EYBB7	G-SS09-1213/ SS09	0003282-04	09/28/2022 14:20	5.2°C	VOA
EYBB8	G-SS09-0708/ SS09	0003282-05	09/28/2022 14:15	5.2°C	VOA
EYBB9	G-SS09-1819/ SS09	0003282-06	09/28/2022 14:25	5.2°C	VOA
EYBC0	G-SS08-0506/ SS08	0003282-07	09/28/2022 11:00	5.2°C	VOA
EYBD2	G-SS10-0607/ SS10	0003282-08	09/28/2022 18:10	5.2°C	VOA
EYBD3	G-SS10-1314/ SS10	0003282-09	09/28/2022 18:15	5.2°C	VOA
EYBD4	G-SS10-1819/ SS10	0003282-10	09/28/2022 18:20	5.2°C	VOA
EYBD5	G-SS11-1213/ SS11	0003282-11	09/29/2022 10:15	5.2°C	VOA
EYBD6	G-SS91-1819/ SS11	0003282-12	09/29/2022 10:22	5.2°C	VOA
EYBD7	G-SS12-0708/ SS12	0003282-13	09/29/2022 15:10	5.2°C	VOA
EYBD8	G-SS12-1920/ SS12	0003282-14	09/29/2022 15:20	5.2°C	VOA
EYBD9	G-SS12-1415/ SS12	0003282-15	09/29/2022 15:15	5.2°C	VOA
EYBE0	G-SS13-0506/ SS13	0003282-16	09/29/2022 17:20	5.2°C	VOA
EYBE1	G-SS13-1011/ SS13	0003282-17	09/29/2022 17:25	5.2°C	VOA
EYBE2	G-SS14-0002/ SS14	0003282-18	09/29/2022 18:15	5.2°C	VOA
EYBE3	G-SS11-1819/ SS11	0003282-19	09/29/2022 10:20	5.2°C	VOA
EYBE4	G-SS94-0002/ SS14	0003282-20	09/29/2022 18:15	5.2°C	VOA

Twenty (20) soil samples were analyzed for VOA analysis. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sampling and Analysis Plan), November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYBB9 was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Sample EYBF3 was identified as an equipment blank outside of this SDG (in SDG EYBE7) with associated samples within this SDG. Sample EYBF4 was identified as an equipment blank outside of this SDG (in SDG: EYB39) with associated samples within this SDG.

Weston DV Field QC Samples table identify samples EYBE3 and EYBD6 as Field Duplicates

Weston DV Field QC Samples table identify samples EYBE2 and EYBE4 as Field Duplicates

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method- Volatile Organics

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

> EYBB1, EYBB2, EYBB3, EYBB7, EYBB8, EYBB9, EYBB9MS, EYBB9MSD, EYBC0, EYBD2, EYBD3, EYBD4, EYBD5, EYBD6, EYBD7, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, VBLKC05, VBLKC06, VBLKC12, VHBLK168
> 1,1,2,2-Tetrachloroethane

EXES-66
The following samples are associated with an ICV with target analyte % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

> EYBB1, EYBB2, EYBB3, EYBB7, EYBB8, EYBB9, EYBB9MS, EYBB9MSD, EYBC0, EYBD2, EYBD3, EYBD4, EYBD5, EYBD6, EYBD7, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, VBLKC05, VBLKC06, VBLKC12, VHBLK168
> Chloroethane, 1,1,2,2-Tetrachloroethane

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

> EYBB1, EYBB2, EYBD3, EYBD4, EYBD5, EYBD6, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, VBLKC06
> Chloroethane

4. BLANKS:

Sample EYBF3 was identified as an equipment blank outside of this SDG (in SDG EYBE7) with associated samples within this SDG.

Sample EYBF4 was identified as an equipment blank outside of this SDG (in SDG EYB39) with associated samples within this SDG.

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with sample EYBB1 in this SDG.

Equipment Blanks	EYBF3	SDG: EYBE7-ETB	EYBF4	SDG: EYB39-ETB
Collection Date	10/01/2022		10/01/2022	
TVOA	µg/L		µg/L	
Acetone	ND		6.0 J	
2-Butanone	1.9 J		1.4 J	
Chloroform	0.67 J		ND	
Styrene	0.070 J		ND	
Associated Samples:	EYBB2, EYBB3, EYBB7, EYBB8, EYBB9, EYBC0, EYBD2, EYBD3, EYBD4		EYBD5, EYBD6, EYBD7, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4	

The samples had common laboratory contaminate results above the CRQL. The associated equipment blank EYBF4 located in SDG EYB39 were below the CRQL. Detects are qualified J+.

EYBD5, EYBD7
Acetone

EYBE2
2-Butanone

5. DMC_SURROGATE:

Method- Volatile Organics

EXES-1350
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYBD2
Trichlorofluoromethane, 1,1,2-Trichloro-1,2,2-trifluoroethane, Methyl acetate, Methylene chloride, Methyl tert-butyl ether, 1,1,1-Trichloroethane, Carbon tetrachloride, 1,2-Dichloroethane, 1,2-Dibromoethane

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method- Volatile Organics

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBD7, EYBD8, EYBE3, EYBE4
Chloroform

EYBB7
Methylene chloride

EYBD9
1,1,1-Trichloroethane

EYBE0
Chloroform, 1,1,1-Trichloroethane, 1,1,2-Trichloroethane

EYBE1
Chloroform, 2-Hexanone

11. FIELD QC SAMPLES:

Sample EYBF3 was identified as an equipment blank outside of this SDG with associated samples within this SDG.

Sample EYBF4 was identified as an equipment blank outside of this SDG with associated samples within this SDG.

According to the Weston DV Field QC Samples chart, there is no Equipment Blank associated with sample EYBB1 in this SDG.

Equipment Blanks	EYBF3	SDG: EYBE7-ETB	EYBF4	SDG: EYB39-ETB
Collection Date	10/01/2022		10/01/2022	
TVOA	µg/L		µg/L	
Acetone	ND		6.0 J	
2-Butanone	1.9 J		1.4 J	
Chloroform	0.67 J		ND	
Styrene	0.070 J		ND	
Associated Samples:	EYBB2, EYBB3, EYBB7, EYBB8, EYBB9, EYBC0, EYBD2, EYBD3, EYBD4		EYBD5, EYBD6, EYBD7, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4	

Field Duplicates	EYBE2		EYBE4		
ANALYTE	CONC	Q	CONC	Q	RPD
-	-	-	-	-	-
Acetone	80			U	200%
2-Butanone	30	J+		U	200%
Chloroform		U	21	J	200%

	EYBE3		EYBD6		
ANALYTE	CONC	Q	CONC	Q	RPD
Chlorform	2.8	J		U	200.0%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Shipping Discrepancies and/or QC Issues:

The lab received soil samples for VOA analysis without any weight tables for the encore containers. Chemtex contacted region 5 about the issue who informed the lab to note the issue in the SDG narrative and to proceed with the analysis of the samples.

According to the Weston DV Field QC sample chart the following Equipment Blank (EYBF3) outside of this SDG (located in SDG EYBE7) is associated with samples EYBB2, EYBB3, EYBB7, EYBB8, EYBB9, EYBC0, EYBD2, EYBD3, and EYBD4 within this SDG.

According to the Weston DV Field QC sample chart the following Equipment Blank (EYBF3) collected on 10/01/2022 is associated with samples collected on 09/28/2022 according to the COC.

According to the Weston DV Field QC sample chart the following Equipment Blank (EYBF4) outside of this SDG (located in SDG EYBE7) is associated with samples EYBD5, EYBD6, EYBD7, EYBD8, EYBD9, EYBE0, EYBE1, EYBE2, EYBE3, and EYBE4.

According to the Weston DV Field QC sample the following Equipment Blank (EYBF4) collected on 10/01/2022 is associated with samples collected on 09/29/2022 according to the COC.

Case: 50221
SDG: EYBB1
Site: Gelman Science Inc
Laboratory: Chemtex

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Thomas Sedlacek/ICF-ESAT
Date: 03/16/23

Region 5 ICF-ESAT Document Control Number: 00892
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	WESTON
Contact Person's Name:	Natalie Quiet
Contact email address:	natalie.quiet@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYBB9

Number and Type of Samples: 10 Soils (SVOA, SVSIM, ARO)

Sample Numbers: EYBB9, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0-EYBE4

Laboratory: Chemtex (CHX)

The following are our findings:

Case: 50221 SDG: EYBB9
Site: Gelman Sciences Inc, MI Laboratory: CHX

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Ten (10) soil samples, numbered EYBB9, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0-EYBE4, were collected on 09/28/2022 and 09/29/2022. The lab Chemtex, located in Wilmington, NC, received the samples on 10/07/2022 intact but at a temperature ≥ 6.0°C.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYBB9	G-SS09-1819	0003276-01	09/28/2022 14:25	7.3°C	SVOA, SVSIM, ARO
EYBD3	G-SS10-1314	0003276-02	09/28/2022 18:15	7.3°C	SVOA, SVSIM, ARO
EYBD5	G-SS11-1213	0003276-03	09/29/2022 10:15	7.3°C	SVOA, SVSIM, ARO
EYBD6	G-SS91-1819	0003276-04	09/29/2022 10:22	7.3°C	SVOA, SVSIM, ARO
EYBD8	G-SS12-1920	0003276-05	09/29/2022 15:20	7.3°C	SVOA, SVSIM, ARO
EYBE0	G-SS13-0506	0003276-06	09/29/2022 17:20	7.3°C	SVOA, SVSIM, ARO
EYBE1	G-SS13-1011	0003276-07	09/29/2022 17:25	7.3°C	SVOA, SVSIM, ARO
EYBE2	G-SS14-0002	0003276-08	09/29/2022 18:15	7.3°C	SVOA, SVSIM, ARO
EYBE3	G-SS11-1819	0003276-09	09/29/2022 10:20	7.3°C	SVOA, SVSIM, ARO
EYBE4	G-SS94-0002	0003276-10	09/29/2022 18:15	7.3°C	SVOA, SVSIM, ARO

All samples were analyzed for SVOA, SVSIM, and ARO. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYBB9 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Sample EYBF3 and EYBF4 were identified as equipment blanks outside of this SDG with associated samples within this SDG.

Sample EYBD6 was determined to be the sample duplicate of EYBE3.

Sample EYBE4 was determined to be the sample duplicate of EYBE2.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221 SDG: EYBB9
Site: Gelman Sciences Inc, MI Laboratory: CHX

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-349
The following samples are received at temperatures > 6°C. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYBB9, EYBB9MS, EYBB9MSD, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4

Method: Semivolatiles by SIM

EXES-349
The following samples are received at temperatures > 6°C. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYBB9, EYBB9MS, EYBB9MSD, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4

Method: Aroclors

EXES-349
The following samples are received at temperatures > 6°C. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYBB9, EYBB9MS, EYBB9MSD, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

EYBB9, EYBB9MS, EYBB9MSD, EYBD3, EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBE2, EYBE3, EYBE4, SBLKB39, SLCSB39
4-Methylphenol

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYBD3, EYBD8, SBLKB39, SLCSB39
Di-n-butylphthalate

4. BLANKS:

NONE FOUND.

5. DMC_SURROGATE:

NONE FOUND.

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBE4
Bis(2-ethylhexyl)phthalate

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBD5
Acenaphthene

EYBE2
Benzo(a)anthracene, Chrysene, Benzo(a)pyrene

EYBE4
Benzo(a)anthracene, Benzo(a)pyrene

11. FIELD QC SAMPLES:

Sample EYBF3 and EYBF4 were identified as equipment blanks outside of this SDG with associated samples within this SDG. EYBF4 has no target analyte detects for SVOA, SVOA-SIM and ARO. EYBF4 is associated with EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBD2, EYBE3, and EYBE4 Equipment blanks were sampled and analyzed as waters and the associated samples were sampled and analyzed as soils.

Equipment Blank	EYBF3
Collection Date	10/01/2022
SVOA	µg/L
1,4-Dioxane	0.65 J
SVOA-SIM	µg/L
Naphthalene	0.011 J
ARO	µg/L
Aroclor-1254	1.5
Associated Samples	EYBB9, EYBD3

Sample EYBD6 was determined to be the sample duplicate of EYBE3. Both samples have no target analyte detects for SVOA-SIM and ARO.

Sample	EYBE3	EYBD6	RPD
SVOA	µg/kg	µg/kg	%R
bis(2-ethylhexyl)phthalate	180	ND	200%

Sample EYBE4 was determined to be the sample duplicate of EYBE2. Both samples have no target analyte detects for ARO.

Sample	EYBE2	EYBE4	RPD
SVOA	µg/kg	µg/kg	%R
bis(2-ethylhexyl)phthalate	ND	400 J	200%
SVOA-SIM	µg/kg	µg/kg	%R
Pentachlorophenol	44	68	43%
Phenanthrene	ND	16	200%
Fluoranthene	10	17	52%
Pyrene	7.6	24	104%
Benzo(a)anthracene	4.7 J	6.9 J	38%
Chrysene	6.2 J	14	77%
Benzo(b)fluoranthene	7.6	ND	200%
Benzo(a)pyrene	4.4 J	6.7 J	41%

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3) outside of this SDG (in SDG EYB80) is associated with samples EYBB9 and EYBD3 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3) collected on 10/01/2022 is associated with the samples collected on 09/28/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF3) was analyzed as a water sample (reported in µg/L) and the associated samples within this SDG were analyzed as soil samples (reported in µg/kg).

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF4) outside of this SDG (in SDG EYB80) is associated with samples EYBD5, EYBD6, EYBD8, EYBE0, EYBE1, EYBD2, EYBE3, and EYBE4 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF4) collected on 10/01/2022 is associated with the samples collected on 09/29/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF4) was analyzed as a water sample (reported in µg/L) and the associated samples within this SDG were analyzed as soil samples (reported in µg/kg).

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYBD6 and EYBE3.

According to the Weston DV Field QC Samples chart the following samples are Field Duplicates EYBE2 and EYBE4.

Case: 50221 SDG: EYBB9
Site: Gelman Sciences Inc, MI Laboratory: CHX

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00893
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Kara Epple
Contact email address:	kara.epple@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYBC2

Number and Type of Samples: 18 Waters (SVOA, SVSIM, ARO)

Sample Numbers: EYB36, EYB39, EYB74, EYB77, EYB81, EYB83, EYB86-EYB90, EYB99, EYBC2, EYBC4, EYBC8, EYBE8, EYBF0, EYBF1

Laboratory: Eurofins Burlington (ETB)

The following are our findings:

Case: 50221 SDG: EYBC2
Site: Gelman Sciences Inc, MI Laboratory: ETB

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Eighteen (18) water samples, numbered EYB36, EYB39, EYB74, EYB77, EYB81, EYB83, EYB86-EYB90, EYB99, EYBC2, EYBC4, EYBC8, EYBE8, EYBF0, EYBF1, were collected on 09/29/2022-10/04/2022. The lab, Eurofins Burlington, located in South Burlington, VT, received the samples on 10/05/2022-10/06/2022 intact and in good condition with temperatures <6°C and >0°C.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Analysis Date/Time (SVOA)	Analysis Date/Time (SVSIM)	Analyses
EYB36	G-SWSW-01	200-65201-1	10/01/2022 08:00	10/16/2022 16:02	10/21/2022 22:51	SVOA, SVSIM, ARO
EYB39	G-SWBK-01	200-65201-2	10/03/2022 16:00	10/12/2022 20:31	10/21/2022 23:40	SVOA, SVSIM, ARO
EYB74	G-GWBK02	200-65201-3	10/02/2022 17:00	10/12/2022 21:05	10/20/2022 19:52	SVOA, SVSIM
EYB77	G-GWBK-MW-28	200-65201-5	10/04/2022 12:50	10/12/2022 23:20	10/20/2022 23:11	SVOA, SVSIM
EYB81	G-GWRS-MW-108d	200-65201-7	10/03/2022 19:07	10/13/2022 00:28 10/22/2022 16:03 [Di]	10/21/2022 00:50	SVOA, SVSIM
EYB83	G-GWRS-MW-85	200-65201-12	10/04/2022 13:18	10/18/2022 17:49 [Rea] 10/20/2022 19:50 [Re-n]	10/22/2022 01:19	SVOA, SVSIM
EYB86	G-GWRW-175	200-65201-8	10/03/2022 10:05	10/13/2022 01:01 10/22/2022 17:43 [Di]	10/21/2022 01:39	SVOA, SVSIM
EYB87	G-GWRW-3550	200-65201-10	10/02/2022 15:07	10/13/2022 02:08	10/21/2022 03:18	SVOA, SVSIM
EYB88	G-GWRW-93563	200-65201-13	10/02/2022 15:55	10/16/2022 17:09	10/22/2022 02:08	SVOA, SVSIM
EYB89	G-GWRW-3573	200-65201-11	10/02/2022 16:21	10/13/2022 02:42	10/22/2022 00:29	SVOA, SVSIM
EYB90	G-GWRW-3574	200-65201-9	10/02/2022 15:45	10/13/2022 01:35	10/21/2022 02:28	SVOA, SVSIM
EYB99	G-GWRW-3563	200-65201-6	10/02/2022 15:43	10/12/2022 23:54	10/21/2022 00:00	SVOA, SVSIM
EYBC2	G-EB-02	200-65185-1	09/30/2022 08:00	10/11/2022 20:23	10/13/2022 01:39	SVOA, SVSIM, ARO

EYBC4	G-SWSW-91	200-65201-14	10/01/2022 08:10	10/16/2022 17:43	10/22/2022 02:58	SVOA, SVSIM, ARO
EYBC8	G-SWPPE-93	200-65201-15	09/30/2022 11:20	10/13/2022 04:23	10/22/2022 03:47	SVOA, SVSIM, ARO
EYBE8	G-GWBK03	200-65201-4	10/04/2022 08:38	10/12/20222 2:47	10/20/2022 22:21	SVOA, SVSIM
EYBF0	G-EB-03	200-65185-2	09/29/2022 07:30	10/11/2022 20:57	10/13/2022 02:28	SVOA, SVSIM
EYBF1	G-EB-04	200-65185-3	09/29/2022 08:00	10/11/2022 21:31	10/13/2022 03:18	SVOA, SVSIM

All samples were analyzed for SVOA and SVSIM. Samples EYB36, EYB39, EYBC2, EYBC4, and EYBC8 were additionally analyzed for ARO. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYB74 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Samples EYBC2, EYBF0 and EYBF1 were identified as equipment blanks.
Samples EYBG0 and EYBG1 were identified as equipment blanks outside of this SDG having associated samples within this SDG.

Sample EYB36 was identified as the sample duplicate of EYBC4.
Sample EYB88 was identified as the sample duplicate of EYB99.
Sample EYB33 from outside this SDG was identified as the sample duplicate of EYBC8 within this SDG.
Sample EYB41 from outside this SDG was identified as the sample duplicate of EYB39 within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method: Semivolatiles

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB36, EYB39, EYB74, EYB74MS, EYB74MSD, EYB81[Dilution-01], EYB83[Reanalysis-01], EYB83[Reanalysis-n-], EYB86, EYB86[Dilution-01], EYB87, EYB88, EYB89, EYB90, EYB99, EYBC4, EYBC8, EYBF0, EYBF1

Method: Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB36, EYB39, EYB74, EYB74MS, EYB74MSD, EYB86, EYB87, EYB88, EYB89, EYB90, EYB99, EYBC4, EYBC8, EYBF0, EYBF1

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method: Semivolatiles

EXES-1208
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB36, EYB88, EYBC4
Benzo(k)fluoranthene

EYB81[Dilution-01], EYB86[Dilution-01]
N-Nitrosodiphenylamine

EYB83[Reanalysis-n-]
Fluoranthene, Pyrene

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB36, EYB88, EYBC4
Di-n-octyl phthalate

EYB81[Dilution-01], EYB83[Reanalysis-n-], EYB86[Dilution-01]
Hexachlorocyclopentadiene

Method: Semivolatiles by SIM

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ.

EYB36, EYB39, EYB74, EYB74MS, EYB74MSD, EYB77, EYB81, EYB83, EYB86, EYB87, EYB88, EYB89, EYB90, EYB99, EYBC2, EYBC4, EYBC8, EYBE8, EYBF0, EYBF1, SBLKG2, SBLKG3, SLCSG2, SLCSG3
Pentachlorophenol

4. BLANKS:

Method: Semivolatiles

Samples have non-common laboratory contaminant analyte results reported less than the CRQLs. The associated equipment blank (EB – EYBG0) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB81, EYB83, EYB86
bis(2-ethylhexyl)phthalate

Samples have non-common laboratory contaminant analyte results reported less than the CRQLs. The associated equipment blank (EB – EYBG1) results are less than CRQLs. Detects are qualified U. Sample results are reported at the CRQLs.

EYB77
bis(2-ethylhexyl)phthalate

5. DMC_SURROGATE:

Method: Semivolatiles

EXES-113
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYBC8
Hexachlorobenzene, Atrazine, Phenanthrene, Anthracene

EXES-225
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYBC8
2-Methylphenol, 3-Methylphenol (TCLP Leachate), 4-Methylphenol, 2,4-Dimethylphenol, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

EXES-226
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYBC8
2-Nitroaniline, 3-Nitroaniline, 2,4-Dinitrophenol, 4-Nitrophenol, 4-Nitroaniline

EXES-228
The following diluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are not qualified. Nondetects are not qualified.

EYB83[Reanalysis-n-]
2-Nitroaniline, 3-Nitroaniline, 2,4-Dinitrophenol, 4-Nitrophenol, 4-Nitroaniline, 4,6-Dinitro-2-methylphenol

Method: Semivolatiles by SIM

EXES-113
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

EYBC4
Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

EXES-225
The following undiluted sample analyses have DMC/surrogate percent recoveries less than the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB39
Naphthalene, 1-Methylnaphthalene, 2-Methylnaphthalene, Acenaphthylene, Acenaphthene, Fluorene, Pentachlorophenol, Phenanthrene, Anthracene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Dibenzo(a,h)anthracene, Benzo(g,h,i)perylene

6. MATRIX SPIKE:

Method: Semivolatiles by SIM

EXES-559
The relative percent difference (RPD) between the following matrix spike and matrix spike duplicate recoveries is outside criteria. Detects are qualified as estimated J. Nondetects are not qualified.

EYB74MS, EYB74MSD
Pentachlorophenol

Method: Aroclors

EXES-041
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYB36, EYB39, EYBC4, EYBC8

EXES-042
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYB36, EYB39, EYBC4, EYBC8

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB36
1,4-Dioxane, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene

EYB74MS
Hexachlorocyclopentadiene

EYB74MSD
3,3'-Dichlorobenzidine

EYB87, EYB88, EYB89
1,4-Dioxane

EYBC2
Phenol, Diethyl phthalate

EYBC4
1,4-Dioxane, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Benzo(g,h,i)perylene

EYBF1
Diethyl phthalate

SLCSG2
Benzaldehyde, Hexachlorocyclopentadiene, 3,3'-Dichlorobenzidine

SLCSG3, SLCSG9
Hexachlorocyclopentadiene

The following samples have analyte results that exceeded the quantitation limit (CRQL) and as a result have been diluted.

EYB81, EYB83, EYB86
1,4-Dioxane

Method: Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB36
Naphthalene, 2-Methylnaphthalene, Acenaphthene, Fluorene, Anthracene

EYB39
Fluorene, Phenanthrene, Fluoranthene, Pyrene, Benzo(a)anthracene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene, Benzo(a)pyrene, Indeno(1,2,3-cd)pyrene, Benzo(g,h,i)perylene

EYBC2
Naphthalene, 2-Methylnaphthalene

EYBC4
Naphthalene, 2-Methylnaphthalene, Acenaphthene, Fluorene, Anthracene

The following samples have analyte results that exceeded the quantitation limit (CRQL) and have not been diluted.

EYB36
Fluoranthene, Pyrene, Chrysene, Benzo(b)fluoranthene

EYBC4
Fluoranthene, Pyrene, Chrysene, Benzo(b)fluoranthene, Benzo(k)fluoranthene

11. FIELD QC SAMPLES:

Samples EYBC2, EYBF0 and EYBF1 were identified as equipment blanks. EYBC2, EYBF0, and EYBF1 were determined to have no associated samples within this SDG. EYBC2 had no target analyte detects for ARO. EYBF0 had no target analyte detects for SVOA, SVOA-SIM, and ARO. EYBF1 had no target analyte detects for SVOA-SIM and ARO.

Equipment Blank	EYBC2	EYBF1
Collection Date	09/30/2022	09/30/2022
SVOA	µg/L	µg/L
Phenol	3.4 J	ND
Diethylphthalate	3.1 J	1 J
Associated Samples	None	None

Equipment Blank	EYBC2
Collection Date	09/30/2022
SVOA-SIM	µg/L
Naphthalene	0.015 J
1-Methylnaphthalene	0.010 J
Associated Samples	none

Samples EYBG0 and EYBG1 were identified as equipment blanks outside of this SDG having associated samples withing this SDG. EYBG0 and EYBG1 were not analyzed for ARO.

Equipment Blank	EYBG0	EYBG1
Collection Date	10/03/2022	10/04/2022
SVOA	µg/L	µg/L
Bis(2-ethylhexyl) phthalate	10	11
Associated Samples	EYB81, EYB83, EYB86	EYB77

Equipment Blank	EYBG0	EYBG1
Collection Date	10/03/2022	10/04/2022
SVSIM	µg/L	µg/L
Naphthalene	0.082 J	0.070 J
Pyrene	0.082 J	0.070 J
Associated Samples	EYB81, EYB83, EYB86	EYB77

Sample EYB36 was identified as the sample duplicate of EYBC4. Both samples have no target analyte detects for ARO.

Sample	EYB36	EYBC4	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	0.87 J	0.73 J	18%
Phenanthrene	0.73 J	0.76 J	4%
Fluoranthene	2.6 J	2.7 J	4%

Pyrene	2.3 J	2.3 J	0%
Benzo(a)anthracene	0.58 J	0.61 J	5%
Chrysene	1.8 J	1.7 J	6%
Benzo(b)fluoranthene	1.6 J	1.6 J	0%
Benzo(k)fluoranthene	1.6 J	1.9 J	17%
Benzo(a)pyrene	1.2 J	1.3 J	8%
Benzo(g,h,i)perylene	1.5 J	1.3 J	14%

Sample	EYB36	EYBC4	RPD
SVOA-SIM	µg/L	µg/L	%R
Naphthalene	0.021 J	0.027 J	25%
2-Methylnaphthalene	0.0097 J	0.0088 J	10%
Acenaphthene	0.026 J	0.028 J	7%
Fluorene	0.046 J	0.046 J	0%
Phenanthrene	0.58	0.59	2%
Anthracene	0.045 J	0.050 J	11%
Fluoranthene	1.9 E	2.1 E	10%
Pyrene	3.4 E	3.2 E	6%
Benzo(a)anthracene	0.71	0.76	7%
Chrysene	1.7 E	1.8 E	6%
Benzo(b)fluoranthene	2.3 E	2.6 E	12%
Benzo(k)fluoranthene	1.1	1.5 E	31%
Benzo(a)pyrene	1.2	1.4	15%
Indeno1,2,3-cd)pyrene	1.2	0.9	29%
Benzo(g,h,i)perylene	1.1	0.82	29%

Sample EYB88 was identified as the sample duplicate of EYB99. Both samples had no target analyte detects for SVOA-SIM.

Sample	EYB88	EYB99	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	0.97 J	ND	200%

Sample EYB33 from outside this SDG was identified as the sample duplicate of EYBC8 within this SDG. Both samples have no target analyte detects for ARO.

Sample	EYB33	EYBC8	RPD
SVOA	µg/L	µg/L	%R
1,4-Dioxane	ND	2.4	200%
Caprolactam	2.4 J	ND	200%
Di-n-butylphthalate	3.3 J	ND	200%

bis(2-ethylhexyl)phthalate	8.7	ND	200%

Sample	EYB33	EYBC8	RPD
SVOA-SIM	µg/L	µg/L	%R
Pentachlorophenol	0.10 J	ND	200%

Sample EYB41 from outside this SDG was identified as the sample duplicate of EYB39 within this SDG. Sample EYB41 was not analyzed for SVOA, SVOA-SIM, and ARO and cannot be compared to EYB39 that was analyzed for SVOA, SVOA-SIM, and ARO.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

The laboratory did not receive a sample EYBF1. A sample that matches the collection date/time of EYBF1 was received but labeled as EYB97. The laboratory was directed to use the ID of EYBF1 for the mentioned sample.

Samples EYB36, EYB39, EYB74, EYB74MS, EYB74MSD, EYB83[Reanalysis-01], EYB83[Reanalysis-n-], EYB86, EYB86[Dilution-01], EYB87, EYB88, EYB89, EYB90, EYB99, EYBC4, EYBC8, EYBF0, and EYBF1 were prepped outside of the 7 days hold time according to the SAP for SVOA.

Samples EYB36, EYB39, EYB74, EYB74MS, EYB74MSD, EYB86, EYB87, EYB88, EYB89, EYB90, EYB99, EYBC4, EYBC8, EYBF0, and EYBF1 were prepped outside of the 7 days hold time according to the SAP for SVSIM.

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBC2, EYBF0 and EYBF1) is not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) outside of this SDG (in SDG EYB33) is associated with sample EYB81, EYB83, and EYB86 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG0) collected on 10/03/2022 is associated with the samples collected on 10/03/2022 and 10/04/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG1) outside of this SDG (in SDG EYB33) is associated with sample EYB77 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBG1) collected on 10/04/2022 is associated with the sample collected on 10/04/2022 according

to the COC.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB36 and EYBC4.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB88 and EYB99.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB33 and EYBC8. Sample EYB33 is in SDG EYB33.

According to the Westin DV Field QC Samples chart the following samples are Field Duplicates EYB41 and EYB39. Sample EYB41 is in SDG EYB45. Sample EYB41 was not analyzed for ARO, SVOA, or SVOA-SIM and cannot be compared.

Case: 50221 SDG: EYBC2
Site: Gelman Sciences Inc, MI Laboratory: ETB

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00811
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Kara Epple
Contact email address:	kara.epple@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	Muniz.Nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, MI

CASE NUMBER: 50221 MA No: N/A SOW: SFAM01.1 SDG NUMBER: EYBE7

Number and Type of Samples: 5 Water Samples (TVOA)

Sample Numbers: EYBE7, EYBE8, EYBF2, EYBF3, EYBG6

Laboratory: Eurofins Burlington (ETB)

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Five (5) water samples, EYBE7, EYBE8, EYBF2, EYBF3, and EYBG6, were collected on 10/01/2022, 10/02/2022, and 10/04/2022. The lab, Eurofins Burlington, located in South Burlington, VT, received the samples on 10/08/2022 intact, and in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYBE7	G-GWRS-MW-190/ MW-100- Bladder Pump	200-65309-21	10/02/2022 12:15	4.8°C	TVOA
EYBE8	G-GWBK03/ 524 Lakeview Ave	200-65309-22	10/04/2022 08:38	4.8°C	TVOA
EYBF2	G-EB-05/ Equipment Blank	200-65309-23	10/01/2022 10:00	4.8°C	TVOA
EYBF3	G-EB-06/ Equipment Blank	200-65309-24	10/01/2022 11:00	4.8°C	TVOA
EYBG6	G-TB05/ Blank	200-65309-25	10/01/2022 07:30	4.8°C	TVOA

Five (5) water samples were analyzed for TVOA analysis. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc. SAP (Sample and Analysis Plan), November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

No sample was designated by the samplers to be used for laboratory QC, i.e., MS/MSD analyses.

Sample EYBG6 was identified as a trip blank. Samples EYBF2 and EYBF3 were identified as equipment blanks but have no associated samples within this SDG. Sample EYBF9 was identified as an equipment blank outside of this SDG with an associated sample within this SDG. Sample EYBE7 was determined to be the sample duplicate of sample EYB80 that is outside of this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Method- Trace Volatiles

EXES-0133
The following aqueous samples are properly cooled and preserved, and analysis is outside the technical holding time. Detects are qualified as estimated J. Nondetects are qualified as unusable R.

EYBE7[Reanalysis-01], EYBE8, EYBF2, EYBF3, EYBG6

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

Method- Trace Volatiles

EXES-793
The following samples are associated with an initial calibration percent relative standard deviation (%RSD) outside criteria. Detects are qualified as estimated J. Nondetects are not qualified or qualified as estimated UJ.

VBLKDB1, VBLKDB2
Styrene, 1,2,4-Trimethylbenzene

EXES-208
ICV is not performed from alternate source or different lot than the ICAL standards. Detects are qualified as estimated J. Nondetects are not qualified.

EYBE7 [Reanalysis-01], EYBE8, EYBF2, EYBF3, EYBG6, VBLKAX2, VBLKDB1, VBLKDB2, VBLKFE1, VHBLK01
Dichlorodifluoromethane, Chloromethane, Vinyl chloride, Bromomethane, Chloroethane, Trichlorofluoromethane

EXES-1209
The following samples are associated with an opening or closing CCV with % Difference exceeding criteria. Detects are qualified as estimated J. Nondetects are qualified as estimated UJ. Nondetects are qualified R due to holding time criteria.

EYBE7[Reanalysis-01], VBLKDB2
Bromomethane

4. BLANKS:

Method- Trace Volatiles

Samples have non-common laboratory contaminant analyte results reported less than the CRQLs. The associated trip blank (EYBG6) results are less than CRQLs. Detects are qualified as U. Sample results are reported at the CRQLs.

EYBF2, EYBF3
Toluene

Samples have laboratory contaminant analyte results greater than the CRQLs. The associated trip blank (EYBG6) results are greater than CRQLs. Detects are qualified as U. Sample results are reported.

EYBE8, EYBF3
Acetone

Samples have laboratory contaminant analyte results greater than the CRQLs. The samples are greater than the blank result. The associated trip blank (EYBG6) results are greater than CRQLs. Detects are qualified as J+.

EYBF2
Acetone

5. DMC_SURROGATE:

Method- Trace Volatiles

EXES-792
The following samples have DMC/surrogate percent recoveries less than the primary minimum criteria but greater than or equal to the expanded minimum criteria. Detects are qualified as estimated J-. Nondetects are qualified as estimated UJ.

VHBLK01
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

EXES-973
The following method blanks have DMC/surrogate percent recoveries outside criteria. Detects are not qualified. Nondetects are not qualified.

VBLKDB2
Chlorobenzene, 1,3-Dichlorobenzene, 1,4-Dichlorobenzene, 1,2-Dichlorobenzene, 1,2,4-Trichlorobenzene, 1,2,3-Trichlorobenzene

6. MATRIX SPIKE:

Method- Trace Volatiles

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYBE7[Reanalysis-01], EYBE8

EXES-58
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYBE7[Reanalysis-01], EYBE8

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method- Trace Volatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYBF2
Bromodichloromethane, 2-Hexanone, Dibromochloromethane, Styrene

EYBF3
2-Butanone, Bromodichloromethane, Styrene

EYBG6
Methyl acetate, 2-Butanone, Cyclohexane, Toluene

EYBE8
2-Hexanone, 2-Butanone

11. FIELD QC SAMPLES:

Sample EYBG6 was identified as a trip blank.

Trip Blank	EYBG6
Shipping Date	10/07/2022
TVOA	µg/L
Acetone	7.9
Methyl acetate	0.46 J
2-Butanone	1.1 J
Cyclohexane	0.045 J
Toluene	0.40 J
Associated samples	EYBE7, EYBE8, EYBF2, EYBF3

Sample EYBF9 was identified as an equipment blank outside of this SDG with EYBE7 as an associated sample within this SDG. Sample EYBF9 was run as TVOA and had no analyte detects.

Samples EYBF2 and EYBF3 were identified as equipment blanks but have no associated blanks within this SDG.

Equipment Blank	EYBF2
Collection Date	10/01/2022
TVOA	µg/L
2-Butanone	14
Chloroform	0.63
Bromodichloromethane	0.11 J
Toluene	0.047 J
2-Hexanone	1.6 J
Dibromochloromethane	0.038 J
Styrene	0.066 J
Associated Samples	None

Equipment Blank	EYBF3
Collection Date	10/01/2022
TVOA	µg/L
2-Butanone	1.9 J
Bromodichloromethane	0.11 J
Toluene	0.046 J

Styrene	0.070 J
Associated Sample	None

Sample EYBE7 was determined to be the sample duplicate of sample EYB80 that is outside of this SDG. Both samples have no target analyte detects.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

Shipping Discrepancies and/or QC issues:

Eurofins lab noticed that the COC requested analysis for TVOA SIM but did not mention if TVOA analysis was necessary. Lab contacted region 5 on the issue who informed them to run TVOA analysis on all VOCs and that the SIM was a labeling error.

Sample EYB97 was received with a label for TVOA, however this sample was not listed on the COC. The lab also noted that they did not receive a container for sample EYBF1. Region 5 was contacted, and they informed the lab that EYBF1 should be sample identifier G-EB-04 and EYB97 should be sample identifier G-EB-01. Both samples are equipment blanks.

TVOA was listed on the COC for sample EYB39, but labels for 2 of 6 vials indicate TVOA and 4 of 6 indicate VOA. Region 5 was contacted about the issue and informed the lab that all VOCs should be run as TVOA.

TVOA SIM was listed on the COC for sample EYB80, however labels for 4 of 6 vials indicate TVOA SIM and 2 of 6 vials indicate PAH. Region 5 was contacted about the issue and informed the lab that all VOCs should be run as TVOA.

The lab received 13 samples for TVOA SIM analysis, but they were only supposed to receive 4 samples. Region 5 was contacted and informed the lab that these 13 samples should be run as TVOA.

The COC did not indicate any sample to be used as the QC MS/MSD for TVOA SIM analysis, but additional volume was received for sample EYB74. Region 5 instructed lab to use sample EYB74 for MS/MSD and to exclude TVOA SIM.

According to the Weston DV Field QC Samples chart the following Equipment Blanks (EYBF2, EYBF3) are not associated with any of the samples within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF9) outside of this SDG (in SDG EYB54) is associated with sample EYBE7 within this SDG.

According to the Weston DV Field QC Samples chart the following Equipment Blank (EYBF9) collected on 10/03/2022 is associated with the sample (EYBE7) collected on 10/02/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Sample Duplicate (EYBE7) within this SDG is associated with sample EYB80 (in SDG EYB39) outside of this SDG.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG6) is associated with the VOCs on 10/01/2022, 10/02/2022, and 10/04/2022 but was shipped to the lab on 10/07/2022 according to the COC.

Case: 50221 SDG: EYBE7
Site: Gelman Science Laboratory: Eurofins

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00931
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 1/23/23_____

FROM: Mihaela Delia Tinca, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO: Data User: Weston_____
Contact Person's Name: Natalie Quiet
Contact email address: Natalie.Quiet@WestonSolutions.com

EPA Data User: SFD_____
Contact Person's Name: Nuria Muniz
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All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: _Gelman Sciences Inc, MI_____

CASE NUMBER: _____50221_____ SDG NUMBER: EYBF0_____

Number and Type of Samples: __15 Waters (SVOA-SIM/1,4-Dioxane)____

Sample Numbers: EYB39, EYB74, EYB77, EYB87-EYB90, EYB99, EYBC2, EYBE8, EYBF0-EYBF4__

Laboratory: ___Eurofins South Burlington, VT_____

The following are our findings:

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Fifteen (15) water samples, properly preserved, listed below, were collected on 9/29-10/04/22. The lab, Eurofins, located in South Burlington, VT received the samples on 10/05-10/06/22 in good condition and with a temperature lower than 6 °C.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Analyses
EYB39	G-SWBK-01	200-65201-2	10/03/22 16:00	SVOA-SIM
EYB74	G-GWBK02	200-65201-3	10/02/22 17:00	SVOA-SIM
EYB77	G-GWBK-MW-28	200-65201-5	10/04/22 12:50	SVOA-SIM
EYB87	G-GWRW-3550	200-65201-10	10/02/22 15:07	SVOA-SIM
EYB88	G-GWRW-93563	200-65201-13	10/02/22 15:55	SVOA-SIM
EYB89	G-GWRW-3573	200-65201-11	10/02/22 16:21	SVOA-SIM
EYB90	G-GWRW-3574	200-65201-9	10/02/22 15:45	SVOA-SIM
EYB99	G-GWRW-3563	200-65201-6	10/02/22 15:43	SVOA-SIM
EYBC2/EB	G-EB-02	200-65185-1	09/30/22 08:00	SVOA-SIM
EYBE8	G-GWBK03	200-65201-4	10/04/22 08:38	SVOA-SIM
EYBF0/EB	G-EB-03	200-65185-2	09/29/22 07:30	SVOA-SIM
EYBF1/EB	G-EB-04	200-65185-3	09/29/22 08:00	SVOA-SIM
EYBF2/EB	G-EB-05	200-65226-3	10/01/22 10:00	SVOA-SIM
EYBF3/EB	G-EB-06	200-65226-4	10/01/22 11:00	SVOA-SIM
EYBF4/EB	G-EB-07	200-65226-5	10/01/22 12:00	SVOA-SIM

All samples were analyzed for SVOA-SIM. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Site Assessment Technical Support SAP (Sampling and Analysis Plan) dated June 29, 2022, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

No Sample was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Samples EYBC2, EYBF0, EYBF1, EYBF2, EYBF3 and EYBF4 were identified as equipment blanks.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

1. HOLDING TIMES AND PRESERVATION:

Semivolatiles by SIM

EXES-84
The following aqueous samples are properly cooled, and the extraction is performed outside the extraction technical holding time, or the extract is analyzed outside the analysis technical holding time. Detects are qualified as estimated J-. Nondetects are qualified as unusable R.

EYB39, EYB74, EYB77, EYB87, EYB88, EYB89, EYB90, EYB99, EYBC2, EYBE8, EYBF0, EYBF1, EYBF2, EYBF3, EYBF4

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

NONE FOUND.

5. DMC_SURROGATE:

NONE FOUND.

6. MATRIX SPIKE:

Semivolatiles by SIM

EXES-57
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYB39, EYB74, EYB77, EYB87, EYB88, EYB89, EYB90, EYB99, EYBE8

EXES-58
The following samples are not associated with Matrix Spike sample. Detects are not qualified. Nondetects are not qualified.

EYB39, EYB74, EYB77, EYB87, EYB88, EYB89, EYB90, EYB99, EYBE8

7. LABORATORY CONTROL SAMPLE:

EXES-512
The following samples have no associated laboratory control sample (LCS). Detects are not qualified. Nondetects are not qualified.

EYB39, EYB74, EYB77, EYB87, EYB88, EYB89, EYB90, EYB99, EYBC2, EYBE8, EYBF0, EYBF1, EYBF2, EYBF3, EYBF4

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Semivolatiles by SIM

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

EYB90, EYBC2, EYBF0, EYBF1, EYBF2, EYBF3, EYBF4
1,4-Dioxane

11. FIELD QC SAMPLES:

Samples EYBC2, EYBF0, EYBF1, EYBF2, EYBF3 and EYBF4 were identified as equipment blanks, but none of them were associated with the samples from this SDG.

According to the Weston spreadsheet, all these Equipment Blanks are associated with samples in different SDGs.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

These samples were analyzed for 1,4-Dioxane due to a special request by Region 5.

Case:50221 SDG: EYBF0
Site: Gelman Sciences Inc, MI Laboratory: ETB

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Reviewed by: Mihaela Delia Tinca/ICF-ESAT
Date: 2/24/23

Region 5 ICF-ESAT Document Control Number: 00812
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 10/20/2022

FROM: Martin Sarmiento, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Kara Epple
Contact email address:	kara.epple@westonsolutions.com
EPA Data User:	USEPA Superfund Division
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Inc, MI

CASE NUMBER: 50221 SDG NUMBER: EYBG3

Number and Type of Samples: 1 Soil (L/M VOA, SVOA)

Sample Numbers: EYBG3

Laboratory: Chemtex (CHX)

The following are our findings:

Case: 50221 SDG: EYBG3
Site: Gelman Sciences Inc, MI Laboratory: CHX

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

One (1) soil sample, numbered EYBG3, was collected on 10/04/2022. The lab, Chemtex, located in Wilmington, NC, received the samples on 10/08/2022 in good condition.

EPA Sample IDs	Sample Identifier (from COC)	Lab ID Number	Collection Date/Time	Receipt Temp	Analyses
EYBG3	G-WS01	0003286-01	10/04/2022 19:20	5.1℃	L/M VOA, SVOA, TCLP VOA, TCLP SVOA

The sample was analyzed for L/M VOA and SVOA. The sample was analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to the Gelman Sciences Inc Superfund Site SAP (Sampling Plan), Rev 5/21/21 and November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Organic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-005-r0.

Sample EYBG3 was designated by the samplers to be used for laboratory QC (Quality Control), i.e., MS/MSD analyses.

Sample EYBG9 was identified as a trip blank outside of this SDG associated with sample EYBG3 within this SDG.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Case: 50221 SDG: EYBG3
Site: Gelman Sciences Inc, MI Laboratory: CHX

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE AND SYSTEM PERFORMANCE

NONE FOUND.

3. CALIBRATION:

NONE FOUND.

4. BLANKS:

NONE FOUND.

5. DMC_SURROGATE:

Method: Semivolatiles

EXES-982
The following samples have DMC/surrogate percent recoveries greater than the primary maximum criteria. Detects are qualified as estimated J+.

EYBG3MS, EYBG3MSD
Pyridine (TCLP Leachate), 2-Methylphenol, 4-Methylphenol, Hexachloroethane, Nitrobenzene, Hexachlorobutadiene, 2,4,6-Trichlorophenol, 2,4,5-Trichlorophenol, 2,4-Dinitrophenol, Hexachlorobenzene, Pentachlorophenol

6. MATRIX SPIKE:

NONE FOUND.

7. LABORATORY CONTROL SAMPLE:

NONE FOUND.

8. CLEANUP:

NONE FOUND.

9. INTERNAL STANDARD:

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS:

Method: Semivolatiles

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

SLCSB51
Pentachlorophenol

11. FIELD QC SAMPLES:

Sample EYBG9 was identified as a trip blank outside of this SDG (in SDG EYB54) associated with sample EYBG3 within this SDG.

Trip Blank	EYBG9
Shipping Date	10/07/2022
TVOA	µg/L
Acetone	3.3 J
Associated samples	EYBG3

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

13. DOCUMENTATION:

The COC requests TCLP SVOA, the Lab ran VOA, TCLP VOA, SVOA and TCLP SVOA with no supporting communication as to why the change.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG9) outside of this SDG (in SDG EYB54) is associated with samples EYBG3 within this SDG.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG9) is associated with the samples taken on 10/04/2022 but was shipped to the lab on 10/07/2022 according to the COC.

According to the Weston DV Field QC Samples chart the following Trip Blank (EYBG9) was analyzed as TVOA but the associated samples (EYBG3) were analyzed as L/M VOA and TCLP VOA.

The Trip Blank EYBG9 contained target analyte detects for analytes (acetone) that were not analyzed by EYBG3, due to being different analyses.

Case: 50221 SDG: EYBG3
Site: Gelman Sciences Inc, MI Laboratory: CHX

EXES SFAM01.1 Data Qualifier Sheet

Validation Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the results may be biased high.
J-	The result is an estimated quantity, but the results may be biased low.
NJ	The analyte has been “tentatively identified” or “presumptively” as present and the associated numerical value is the estimated concentration in the sample.
UJ	The analyte was analyzed for but was not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting QC criteria. The analyte may or may not be present in the sample.
C	The Target Pesticide or Aroclor analyte identification has been confirmed by Gas Chromatograph/Mass Spectrometer (GC/MS).
X	The Target Pesticide or Aroclor analyte identification was not confirmed

Region 5 ICF-ESAT Document Control Number: 00894
UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION 5
SUPERFUND AND EMERGENCY MANAGEMENT DIVISION

SUBJECT: Review of Data
Received for review on 11/17/22

FROM: Thomas Sedlacek, ICF Incorporated.
Contractor, Environmental Services Assistance Team (ESAT)

THROUGH: Michelle Kerr
Region 5 ESAT Contracting Officer's Representative

TO:

Data User:	Weston
Contact Person's Name:	Natalie Quiet
Contact email address:	natalie.quiet@westonsolutions.com
EPA Data User:	SUPERFUND
Contact Person's Name:	Nuria Muniz
Contact email address:	muniz.nuria@epa.gov

All sample results in the attached sample delivery group (SDG) have the following label:

Stage_3_Validation_Electronic_and_Manual (S3VEM)

We have reviewed the data for the following case:

SITE NAME: Gelman Sciences Ann Arbor, WI

CASE NUMBER: 50221 SDG NUMBER: EYBG4

Number and Type of Samples: 2 soils /TCLP (ICP-AES, Hg)

Sample Numbers: EYBG3, EYBG4

Laboratory: Chemtex

The following are our findings:

Case: 50221
Site: Gelman Sciences Ann Arbor MI

SDG: EYBG4
Laboratory: CHX

Below is a summary of the out-of-control audits and the possible effects on the data for this case:

Two soil samples, numbered EYBG3 and EYBG4, were collected on 10/04/22. The Chemtex lab in Port Arthur TX received the samples on 01/09/2023 in good condition.

EPA Sample IDs	Sample Identifier (from Chain of Custody)	Lab ID Number	Collection Date/Time	Matrix	Analyses
EYBG3	G-WS01/ Staging Area	0003493-01	10/04/22 19:20	Soil	ICP-AES. Hg
EYBG4	G-WSO2/ Staging Area	0003493-02	10/04/22 19:45	Water	ICP-AES. Hg

All samples were analyzed for TCLP ICP-AES and Mercury. All samples were analyzed using the CLP (Contract Laboratory Program) SFAM01.1 analysis procedures and reviewed according to Site Assessment Technical Support Sampling Plan Gelman Sciences Inc, June 29, 2022, and the Michigan Department of Environmental Quality Superfund Site Assessment QAPP (Quality Assurance Project Plan) Nov 7, 2016, November 2020 NFG (National Functional Guidelines) for SFAM01.1 and the Region 5 Inorganic CLP Validation SOP (STANDARD OPERATING PROCEDURE) R5-LSASD-003-r0.

The sample results have been reviewed for compliance with the QAPP worksheets and all non-compliances are described in Section 12. – QAPP Compliance

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/09/2023

1. HOLDING TIMES AND PRESERVATION:

NONE FOUND.

2. TUNE:

NONE FOUND

3. CALIBRATION:

NONE FOUND

4. BLANKS:

EXES-0150
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Mercury
EYBG3, EYBG3D

EXES-0151
The following samples have analyte results less than CRQLs. The associated CCB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Mercury
EYBG3, EYBG3D

EXES-0152
The following samples have analyte results less than CRQLs. The associated ICB analyte results are less than CRQLs. Detects are qualified as U. Sample results are reported at CRQLs.

Mercury
EYBG3, EYBG3D

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Mercury
EYBG3S

EXES-0166
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Mercury
EYBG3S

EXES-0167
The following samples have analyte results greater than or equal to the CRQLs. The associated CCB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Mercury
EYBG3S

Method: Metals by ICP-AES

EXES-0165
The following samples have analyte results greater than or equal to the CRQLs. The associated ICB analyte results are less than the CRQLs. Detects are qualified as estimated J+.

Arsenic
EYBG3S, EYBG4S, LCSD34, LCSD36

EXES-0175
The following samples are associated with CCB that has analyte results less than or equal to (-MDLs) but greater than (-CRQLs). Detects are qualified as estimated J- or no qualification. Nondetects are qualified as estimated UJ.

Arsenic
EYBG3, EYBG3D, EYBG3L, EYBG3S, EYBG4, EYBG4D, EYBG4L, EYBG4S, LCSD34, LCSD36, LEBD35, LEBD37, PBWD34, PBWD36.

EXES-0177
The following samples are associated with LEB that has analyte results less than or equal to (-MDL) but greater than (-CRQL). Detects are qualified as estimated J- or no qualification. Nondetects are qualified as estimated UJ.

Arsenic
EYBG4, EYBG4D, EYBG4S

EXES-1156
The following samples have analyte results reported greater than or equal to CRQLs. The associated TCLP/SPLP blank results are less than CRQLs. Detects are qualified as estimated J+.

Arsenic
EYBG3S

5. INTERFERENCE CHECK SAMPLE:

NONE FOUND.

6. LABORATORY CONTROL SAMPLE:

NONE FOUND.

7. SPIKES:

NONE FOUND.

8. SERIAL DILUTION:

NONE FOUND.

9. INTERNAL STANDARDS (only ICP-MS Analyses)

NONE FOUND.

10. TARGET ANALYTE QUANTITATION AND SAMPLE ANALYSIS

Method: Metals by ICP-AES

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Arsenic
LEBD35, LEBD37

Barium
EYBG3L, EYBG4, EYBG4D

Chromium
EYBG3, EYBG3D, EYBG4, EYBG4D

Selenium
EYBG3, EYBG3D

Method: Mercury by Cold Vapor Analysis

EXES-790
The following samples have analyte results greater than or equal to detection limit (MDL) and below quantitation limit (CRQL). Detects are qualified as estimated J.

Mercury
EYBG4, EYBG4D

11. DUPLICATES:

NONE FOUND.

12. QAPP COMPLIANCE:

The analytical package fulfilled the component QC requirements (of QAPP worksheets #12, #15, #19, #35 & #36).

The technical acceptance for the ICP-AES Interference check states "The ICSA and ICSAB %R must be within the control limits of ±15% of the analyte's true value or the results must be within ±1 times the CRQL of the analyte's true value, whichever is greater." The reported concentration for Selenium was within the ±1 x the CRQL and therefore no deficiency was found.

The technical acceptance for the ICP-AES Serial dilution states "If the analyte concentration is sufficiently high (minimally a factor of 50 above the MDL in the original sample), then the serial dilution (a five-fold dilution) must be within 20% of the original determination after correction for dilution." The sample concentration was less than 10x the CRQL therefore no deficiency was found.

12. DOCUMENTATION:

No discrepancies found.

Case: 50221
SDG: EYBG4
Site: Gelman Sciences Ann Arbor MI
Laboratory: CHX

EXES SFAM01.1 Data Qualifier Sheet

Qualifiers	Data Qualifier Definitions
U	The analyte was analyzed for but was not detected above the reported sample quantitation limit.
J	The result is an estimated quantity. The associated numerical value is the approximate concentration of the analyte in the sample.
J+	The result is an estimated quantity, but the result may be biased high.
J-	The result is an estimated quantity, but the result may be biased low.
R	The data is unusable. The sample results are rejected due to serious deficiencies in meeting Quality Control (QC) criteria. The analyte may or may not be present in the sample.
UJ	The analyte was analyzed for, but not detected. The reported quantitation limit is approximate and may be inaccurate or imprecise.

Reviewed by: Thomas Sedlacek, ICF-ESAT
Date: 02/09/2023