

Haley Griffith (adpce.ad)

Subject: RE: 2024 AEIR SOUTH PLANT LANDFILL, Albemarle South Plant, Class 3N Landfill, Permit N. 0175-S, AFIN: 14-00028

From: Zarker, Douglas <Doug.Zarker@aecom.com>

Sent: Wednesday, July 9, 2025 2:25 PM

To: Richard Bennett (adpce.ad) <richard.bennett@arkansas.gov>

Cc: Stephen Stamps <stephen.stamps@albemarle.com>; Christ, Scott <scott.christ@aecom.com>; Heitzmann, Cory <Cory.Heitzmann@aecom.com>

Subject: 2024 AEIR SOUTH PLANT LANDFILL, Albemarle South Plant, Class 3N Landfill, Permit N. 0175-S, AFIN: 14-00028

Dear Mr. Bennett,

Please find attached the 2024 Annual Engineering Inspection Report for the South Plant Landfill (SPL), Albemarle South Plant, Permit No. 0175-S, located at the Albemarle South Plant in Magnolia.

If you have any questions, please feel free to contact Stephen Stamps with Albemarle at 870-235-6663 or myself at the number below.

Please also confirm that you received this document.

Thanks,

Doug Zarker, PG

Senior Project Manager/Geologist

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2024 ANNUAL ENGINEERING
INSPECTION REPORT
ALBEMARLE CORPORATION
SOUTH PLANT LANDFILL
CLASS 3N LANDFILL
PERMIT NO. 0175-S
AFIN: 14-00028

Prepared for:



Albemarle Corporation
2270 Highway 79 South
Magnolia, Arkansas 71753
(870) 235-6500

July 2025

AECOM File: 60751038



8555 United Plaza Blvd., Suite 300
Baton Rouge, LA 70809
Tel: 225-922-5700

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ANNUAL ENGINEERING INSPECTION REPORT (AEIR) FORM

Reporting Year: 2024

Note: Check applicable landfill class. Class 1 (Reg 22.423(b)) , Class 3 (22.522(a)) X, Class 4 (22.619(b))

Facility Name: Albemarle South Plant Landfill AFIN: 14-00028 Permit #: 0175-S Landfill Class: 3N

Report Submittal Date: July 8, 2025 Date of Landfill Site Inspection by Certifying Engineer: Brian H. Sullivan, P.E. on 12/19/2024

***Complete the form as indicated
Instructions are bolded and italicized.***

COLUMN TO BE COMPLETED BY REPORTER

Item	Regulation Reference	Item Description	Report Information/Comments/Remarks	Attachment Reference
1	22.423(b)(1) 22.522(a)(1) 22.619(b)(1)	Remaining volume in current cell. <i>Phase 1 of Area IV</i>	a) <u>323</u> cubic yards	
		Projected date of opening new cell.	b) Date: <u>None anticipated this calendar year.</u>	
2	22.423(b)(2) 22.522(a)(2) 22.619(b)(2)	Remaining volume of all permitted units. <i>Permitted Units - Areas I, II, III, and IV (14.12 acres)</i>	a) <u>10,920</u> cubic yards <i>Phase 1 of Area IV (323 CY remaining) and Phase 2 of Area IV (10,597.14 CY).</i>	
		Total air space used during the reporting period.	b) <u>11</u> cubic yards	
		Estimated remaining site life (years) based on utilization rate during the reporting period. <i>Note: Itemize current permitted unit/cell information - use attachment if necessary.</i> <i>Phase 1 of Area IV (1.64 acres) is Active.</i> <i>Phase 2 of Area IV (1.34 acres) is not constructed.</i>	c) Landfill Unit/Cell remaining life: Landfill unit/cell <u>Phase 1 of Area IV</u> , <u>29</u> years. Landfill unit/cell <u>Phase 2 of Area IV</u> , <u>963</u> years. Landfill unit/cell <u>Areas I, II, and III</u> , <u>0</u> years. d) Entire permitted landfill: <u>992</u> years remaining life.	
3	22.423(b)(3) 22.522(a)(3) 22.619(b)(3)	Documentation of fill progression in compliance with permit plans, specs and operating plan and narrative. <i>Note: Provide narrative regarding fill progression during the reporting period. Be specific about landfill unit/cell designations (example: Cell 1, Phase A completely filled; Cell 2, Phase A, 50% full, being filled south to north as of December 31). Specifically note any overfill conditions.</i> <i>Total Permitted Area is 14.12 acres.</i> <i>Area IV area is 2.98 acres (capacity is 28,822 CY)</i>	a) Progression narrative: <u>Phase 1 of Area IV (1.64 acres) is currently active. Phase 2 of Area IV (1.34 acres) is not yet constructed. Areas I, II, and III (11.14 acres) have reached capacity. Phase 1 of Area IV is 98% full. Phase 2 of Area IV will be constructed next. The fill progression is generally from the north to the south in the active area. The landfill is being filled using open trench-fill areas, to the maximum capacity that can be reached without affecting the efficiency of waste placement. Overfill conditions have not been observed.</u>	

4	22.423(b)(4) 22.522(a)(4) 22.619(b)(4)	Documentation of compliance with regulatory operating requirements, permit conditions, approved operating plan, and other applicable regulations. Note: Review current operating plans, and permit conditions. Include photographs of engineer's inspection as Attachment A. Check for weekly/monthly operational logs, waste volume records in and out of landfill, unauthorized waste form sheets, waste cover maintenance, stormwater reports to ADEQ, and wet weather repair information.	a) Weekly/monthly operational logs exist (Y/N)? <u>Y</u> b) Photos of AEIR inspection attached (Y/N)? <u>Y</u> c) Waste volume in and out records exist (Y/N)? <u>Y</u> d) Unauthorized waste forms exist (Y/N)? <u>Y</u> e) Daily/weekly cover adequate at time of inspection (Y/N)? <u>Y</u> f) Alternative Daily Cover (ADC) Plan located onsite (Y/N)? <u>N/A</u> Operations in compliance with ADC Plan (Y/N)? <u>N/A</u> g) Liquid Waste Management (LWM) Plan located onsite (Y/N)? <u>N/A</u> Operations in compliance with LWM Plan (Y/N)? <u>N/A</u> h) Liquids received to be bulked during reporting period: _____ gallons _____ tons i) Waste cover of inactive areas maintained adequately (Y/N)? <u>Y</u> j) Net amount of waste disposed in landfill during reporting period: _____ cubic yards <u>10.84</u> tons k) Leachate head level less than 1' on liner at time of inspection (Y/N)? <u>Y</u>	A
5	22.423(b)(5) 22.522(a)(5) 22.619(b)(5)	Updated contour map that depicts: Note: Provide updated drawing(s) and final cover permit drawing as Attachment B – discuss any discrepancies. Max. contour interval = 2 feet)	a) Updated contour drawing attached (Y/N)? <u>Y</u> b) Final cover permit drawing attached (Y/N)? <u>Y</u> c) List all discrepancies here: <u>NA</u> d) Is there an overfill condition (Y/N)? <u>N</u>	B
		(i) horizontal and vertical extent of active and inactive fill areas;		
		(ii) status of all permitted units/cells; (Note: Label all active (working face, bulking area, stockpiles), inactive, closed and interim cover areas).	a) Currently, does the facility have sufficient on-site quantities and types of soils for liner and cover construction of permitted units/cells (Y/N)? <u>N</u> b) If not, where will deficiency shortfalls be obtained (be specific)? <u>Soil balance not needed, as costs for using all off-site materials were included in cost estimates.</u> c) Is the current Design Narrative earthwork balance accurate (Y/N)? <u>NA</u>	
		(iii) survey grid (required by 22.426); Note: Include benchmarks and horizontal controls		
		(iv) location of other visible surface features or improvements (e.g., roads, buildings, gas control systems, etc.); Note: Include leachate risers, manholes, monitoring wells, gas wells, etc.	Determined	
		(v) the person responsible for gathering the survey data and the date survey data was taken to prepare the map. <i>Reminder: Reporting period is calendar year. Survey data should be collected to reflect the AEIR reporting period.</i>	a) Name: <u>Joshua Hazen, PLS #1851</u> b) Name of person using the data to produce contour map: <u>Phillip Dempsey</u> c) Date survey data was collected: <u>April 4, 2025</u>	

6	22.423(b)(6) 22.522(a)(6) 22.619(b)(6)	Quantity, location, and characteristics of leachate collected, recirculated, and disposed. Note: Provide analytical report as Attachment C. Provide brief narrative on this form in space provided about leachate sources, how leachate is collected, measured and disposed. Also, explain how the leachate head on the landfill liner is monitored and measured.	a) Leachate Collected: <u>5,047,980</u> gallons b) Leachate Disposed: <u>5,047,980</u> gallons c) Leachate Recirculated: <u>0</u> gallons d) Leachate Recirculation Plan exists (Y/N)? <u>N</u> ADEQ approval Doc # <u>N/A</u> e) Leachate operating records exist (Y/N)? <u>Y</u> f) Leachate analytical report attached (Y/N)? <u>Y</u> g) Leachate narrative (collection, measurements and disposal): <u>Leachate is collected from the plant-wide perimeter French drain and in-cell dewatering sump pump. Both sources drain to Sump 13. From Sump 13 leachate is pumped to the facility wastewater treatment system. The analytical reports may show constituents not attributable to the landfill, since the drain collects subsurface water from other areas of the plant. Sumps 4 and 13 are in the vicinity of the landfill.</u> h) Leachate narrative (verifying <1' head on liner system): <u>A temporary sump pump operates and pumps stormwater and leachate to collection Sump 13 through dual wall HDPE piping.</u>	C
7	22.423(b)(7) 22.522(a)(7) 22.619(b)(7)	Maintenance of stormwater controls and best management practices for erosion control. Note: List any upset conditions during the reporting period (i.e., washouts, etc...). Also, include narrative about vegetation maintenance and repair.	a) Briefly list maintenance activities and upset conditions here: <u>Stormwater within the constructed area is collected and transferred to the facility wastewater treatment system. Maintenance is performed when necessary to maintain compliance with ADEQ regulations.</u>	
8	22.423(b)(8) 22.619(b)(8)	Status of capping and closure of completed areas. Note: List areas with acreage that have received interim or final cover. Include total landfilled area acreage not yet under final certified closed cover. Note: "Certified closed" means the facility has received an approval letter from ADEQ accepting the engineer's closure certification report. <u>Permitted Units - Areas I, II, III, and IV (14.12 acres)</u> <u>Currently 12.78 acres constructed.</u> <u>Phase 2 of Area IV (1.34 acres) is not constructed.</u> <u>Phase 1 of Area IV (1.64 acres) - 1.61 acres is filled & covered and</u> <u>- 0.03 acres is open.</u>	a) Lndfl unit/cell <u>Areas I, II, and III , 11.14</u> acres. Intrm or Final Cover (I/F): <u>Interim Cover</u> b) Lndfl unit/cell <u>Phase 1 of Area IV , 1.6</u> acres. Intrm or Final Cover (I/F): <u>Interim Cover</u> c) Lndfl unit/cell _____ , _____ acres. Intrm or Final Cover (I/F): _____ d) Lndfl unit/cell _____ , _____ acres. Intrm or Final Cover (I/F): _____ e) Acres of disposed waste not under final certified cover: <u>12.78</u> acres f) Acres of disposed waste area that have interim cover: <u>12.74</u> acres	
9	22.423(b)(9) 22.522(a)(8) 22.619(b)(9)	Status of remedial or corrective action activities. Note: List corrective action events during reporting period (e.g., seeps and erosion correction, leachate spills, unauthorized waste handling and removal , etc...), and indicate whether action was taken in response to an ADEQ inspection.	a) Briefly list corrective actions events here: <u>Top soil was brought in and hydroseeded in areas that lacked grass as needed.</u> b) Were any of the corrective actions taken in response to an ADEQ inspection (Y/N)? <u>N</u> c) Current status of corrective actions: <u>Complete</u> d) Did corrective actions permanently solve the conditions (Y/N)? <u>Y</u> Explain briefly: <u>Ongoing maintenance and inspections.</u>	

10	22.423(b)(10) 22.522(a)(9) 22.619(b)(10)	Updated Financial Assurance documentation as required by Chapter 14. Note: Include copy of most recent financial assurance documentation as Attachment D. Also, include updated closure and post closure cost estimated as an attachment– recommend to use the Closure Costs and Post-closure Care Costs Worksheet located at ADEQ - Solid Waste - Technical Branch Home Page Specific links to the worksheets: http://www.adeg.state.ar.us/solwaste/branch_technical/pdfs/closure_costs_worksheet.xlsx and http://www.adeg.state.ar.us/solwaste/branch_technical/pdfs/post_closure_care_costs_worksheet.xlsx. . Show detailed calculations of cost items in tabular format with specific item breakdowns. Also, show source of unit cost information and/or inflationary factor adjustments – use ADEQ factors where applicable. If updated unit cost information is used instead of inflationary factors, show the source of unit cost information. Confirm estimates are based on largest area ever requiring final cover.	a) Size of the facility property under current permit? <u>14.12</u> acres b) Size of actual permitted disposal area? <u>14.12</u> acres c) What is the current total permitted disposal area that contains disposed waste but is not certified closed? <u>12.78</u> acres d) Updated closure cost estimate amount: \$ <u>1,812,816</u> e) Is the closure cost estimate based on the largest area ever requiring closure (Y/N)? <u>Y</u> f) Is the existing closure financial assurance adequate for acreage not yet certified closed (Y/N)? <u>Y</u> g) Updated post closure care cost estimate amount: \$ <u>441,308</u> h) Is the existing post closure care financial assurance adequate for all permitted areas (Y/N)? <u>Y</u> i) Is the financial assurance mechanism a trust fund (Y/N)? <u>N</u> j) Are the sources of information for updated unit cost line items shown on the cost estimate calculations (Y/N)? <u>N/A</u> k) Do the unit cost items for soil cover material include actual third party cost of materials and labor (Y/N)? <u>Y</u> <u>These 2024 costs were inflated as shown in Attachment D and the 2024 costs were priced using off-site sourced materials with volume calculated to cover the entire landfill, and therefore, a soil balance of the active working area is not required.</u>	D
11	22.423(b)(11) 22.522(a)(10) 22.619(b)(11)	Revised or updated facility Closure Plan in accordance with Chapter 13. Note: Provide updated Closure Plan as Attachment E if facility obtained a permit modification during the reporting period that affects the closure and/or post closure care.	a) Was an updated Closure Plan required during this reporting period (Y/N)? <u>N</u> b) Is an updated Closure Plan attached herein (Y/N)? <u>N</u> (Attachment E not needed).	
12	22.423(b)(12) 22.522(a)(11) 22.619(b)(12)	Other items that affect compliance. Note: Include an ADEQ enforcement activity summary (solid waste, water, air, hazardous waste related) and , status of operating and permit fees. Also, include brief narrative concerning groundwater monitoring reports, landfill gas, leachate recirculation, alternate daily cover, etc...	a) Are there current ADEQ enforcement actions (Y/N)? <u>Y</u> b) Summary of enforcement actions: <u>The landfill is included in a plant-wide response to an order under jurisdiction of the Hazardous Waste Division.</u> c) Are operating and permit fees payments up-to-date (Y/N) ? <u>Y</u> If not explain: _____ _____ Additional Information: d) Does the facility monitor groundwater (Y/N)? <u>Y</u> If so, is it detection monitoring or assessment monitoring?: <u>Detection Monitoring</u> e) What is the groundwater analytical sampling frequency? <u>6</u> months f) Does the facility collect landfill gas (Y/N)? <u>N</u>	

			g) Does the facility have a Gas Monitoring Plan (Y/N)? <u>N</u> h) Does the facility have gas monitoring probes (Y/N)? <u>N</u> i) Does the facility use an alternate daily cover (ADC)(Y/N)? <u>N</u> If so, what type of ADC is used: <u>N/A</u> If so, list document id# approving ADC: _____ j) Does the facility have a Liquid Waste Management (LWM) Plan (Y/N)? <u>N</u> If so, list document id# approving the LWM Plan: <u>N/A</u> k) Date and document id # of currently approved Operating Plan and Narrative: Date: <u>February 16, 1981</u> Doc#: <u>27851</u> l) Date and document id # for currently approved Closure/ Post Closure Plan: Date: <u>February 16, 1981</u> Doc#: <u>27851</u> m) Date and document id # of currently approved Permit Drawings: Date: <u>February 2, 1981</u> Doc#: <u>28301</u> n) Date and document id # of currently approved Design Narrative: Date: <u>February 16, 1981</u> Doc#: <u>27851</u> o) Are weigh scales utilized at the landfill (Y/N)? <u>N</u> p) Does the final cap include a synthetic liner (Y/N)? <u>N</u> q) Does the final cap include clay liner (Y/N)? <u>Y</u> r) Total current permitted landfill volume: <u>110,002.86</u> cubic yards	
13	22.423(b) 22.522(a) 22.619(b)	Certification of AEIR Report: "I have inspected the landfill site and have prepared this report to reflect operational compliance with permit conditions, permit plans, specifications, narrative, and all applicable regulations"	a) Arkansas Licensed Engineer: Brian H. Sullivan, PE Sign:  Date: <u>July 08, 2025</u> b) License Number: <u>17461</u> c) Attach seal here: 	

Attachment A

Site Inspection Form and Photos

SITE INSPECTION FORM
South Plant Landfill, Albemarle South Plant
Magnolia, Arkansas

PROJECT: 60751038

INSPECTOR(S): Brian H. Sullivan, PE

DATE/TIME:

12/19/2024

10:00 am

Inspection Items	Comments
SPLF Landfill	Secured gate at SPLF at southeast entrance. Photograph 1.
	Good vegetation and no erosion along the northwest corner. Fencing in good condition. Photograph 2.
	Secure fencing and good vegetation along the west side of the SWV. Southwest corner facing north. Photograph 3.
	Typical view near center of landfill. West side of access road facing northwest. Photograph 4.
	East side of landfill. Good vegetation and no erosion. Photograph 5.
	Good vegetation and no erosion noted on the east side. Photograph 6.
	Sump on the southeast corner of the access road. No activity at the sump. Photograph 7.
	Center west side of landfill with good vegetation and no erosion visible. Only a couple of small areas with minimal vegetation. Southwest facing northeast. Photograph 8.
	Good vegetation and no erosion center of the west side. Photograph 9.
	Several small areas with minimal vegetation and no erosion on west center area. Photograph 10.
	Minimal vegetation and no erosion on the west side. Photograph 11.
	Good vegetation and no erosion near the southwest corner area. Photograph 12.
	Good vegetation and no erosion along the west slope. Photograph 13.
	Southeast corner facing southwest corner. Photograph 14.
	Staging and work area next to access road. Photograph 15.

Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
1.

Date:
12/19/2024

Direction Photo Taken:

East

Description:

Secured gate at SPLF at southeast entrance. West facing east.



Photo No.
2.

Date:
12/19/2024

Direction Photo Taken:

North

Description:

Good vegetation and no erosion along the northwest corner. Fencing in good condition. East facing west from access road.



Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
3.

Date:
12/19/2024

Direction Photo Taken:

Southeast

Description:

Northeast corner of landfill slope. Good vegetation and minimal erosion. Fencing is in good condition. South facing Northeast.



Photo No.
4.

Date:
12/19/2024

Direction Photo Taken:

Northwest

Description:

Typical view near center of landfill. West side of access road facing northwest.



Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
5.

Date:
12/19/2024

Direction Photo Taken:

Southeast

Description:

East side of landfill. Good vegetation and no erosion. Northeast corner facing south.



Photo No.
6.

Date:
12/19/2024

Direction Photo Taken:

North

Description:

Good vegetation and no erosion noted on the east side. South facing north along the east side.



Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
7.

Date:
12/19/2024

Direction Photo Taken:

North

Description:

Sump area on the southeast corner of the access road. No activity at the sump. South facing north.



Photo No.
8.

Date:
12/19/2024

Direction Photo Taken:

Northeast

Description:

Center west side of landfill with good vegetation and no erosion visible. Only a couple of small areas with minimal vegetation. Southwest facing northeast.



Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
9.

Date:
12/19/2024

Direction Photo Taken:

Northwest

Description:

Good vegetation and no erosion center of the west side. Center west side of access road facing northwest.



Photo No.
10.

Date:
12/19/2024

Direction Photo Taken:

Northwest

Description:

Several small areas with minimal vegetation and no erosion on west center area. South facing northwest.



Facility Name:
Albemarle South Plant**Site Location:**
South Plant Landfill, Magnolia, AR**Project No.**
60751038**Photo No.**
11.**Date:**
12/19/2024**Direction Photo Taken:**

Southwest

Description:

Minimal vegetation and no erosion on the west side.
Center facing southwest

**Photo No.**
12.**Date:**
12/19/2024**Direction Photo Taken:**

Northwest

Description:

Good vegetation and no erosion near the southwest corner area.
South facing northwest.



Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
13.

Date:
12/19/2024

Direction Photo Taken:

West

Description:

Good vegetation and no erosion along the west slope.



Photo No.
14.

Date:
12/19/2024

Direction Photo Taken:

Southwest

Description:

Southeast corner facing southwest corner.



Facility Name:
Albemarle South Plant

Site Location:
South Plant Landfill, Magnolia, AR

Project No.
60751038

Photo No.
15.

Date:
12/19/2024

Direction Photo Taken:

Northwest

Description:

Staging and work area next to access road. South facing northwest.



Attachment B

Updated Drawings



NOTES:

-
- A horizontal graphic scale bar with a black and white checkerboard pattern on the left. Above the bar, the markings "200'", "0", "200'", and "400'" are displayed from left to right.

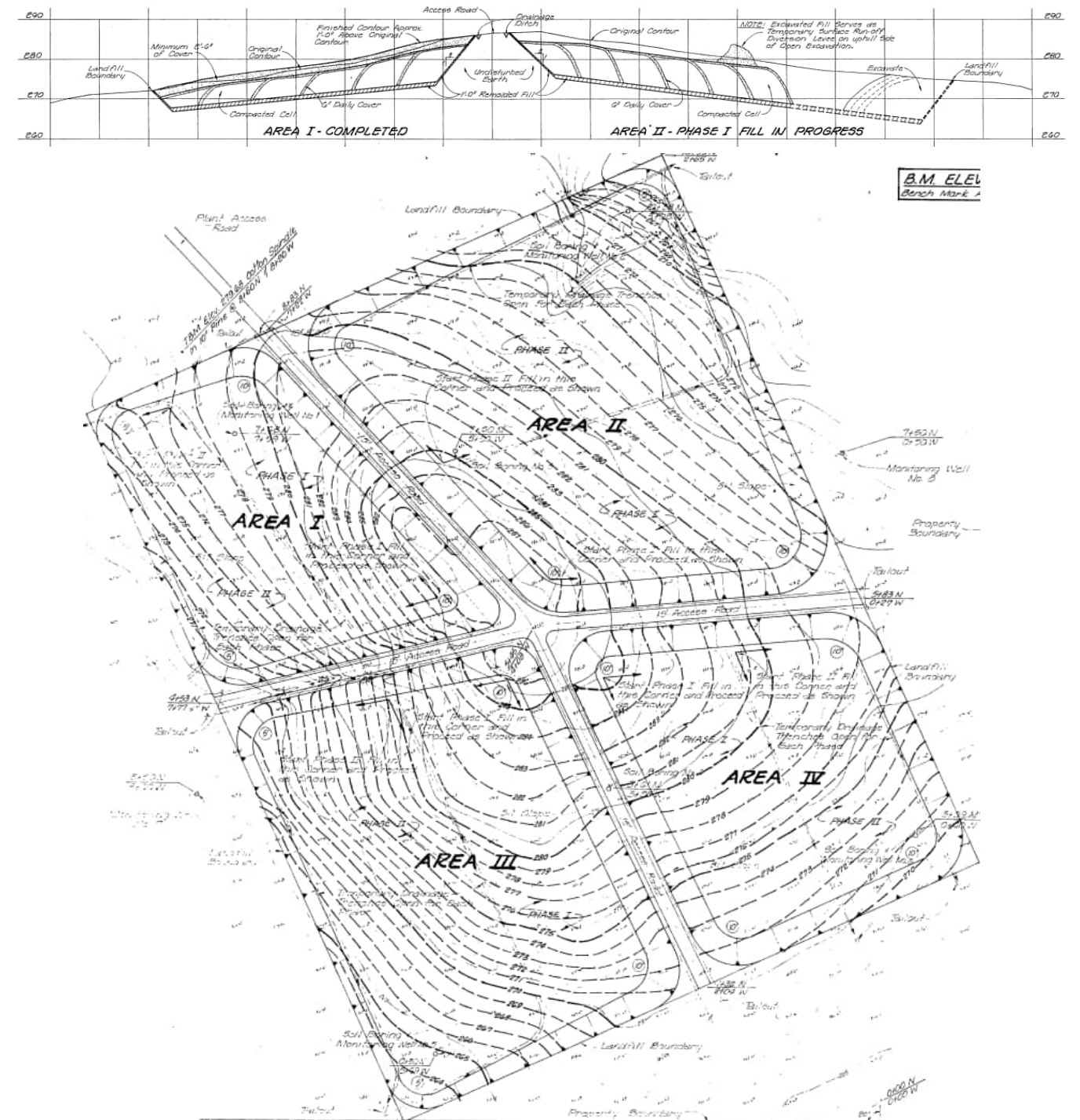
AECOM

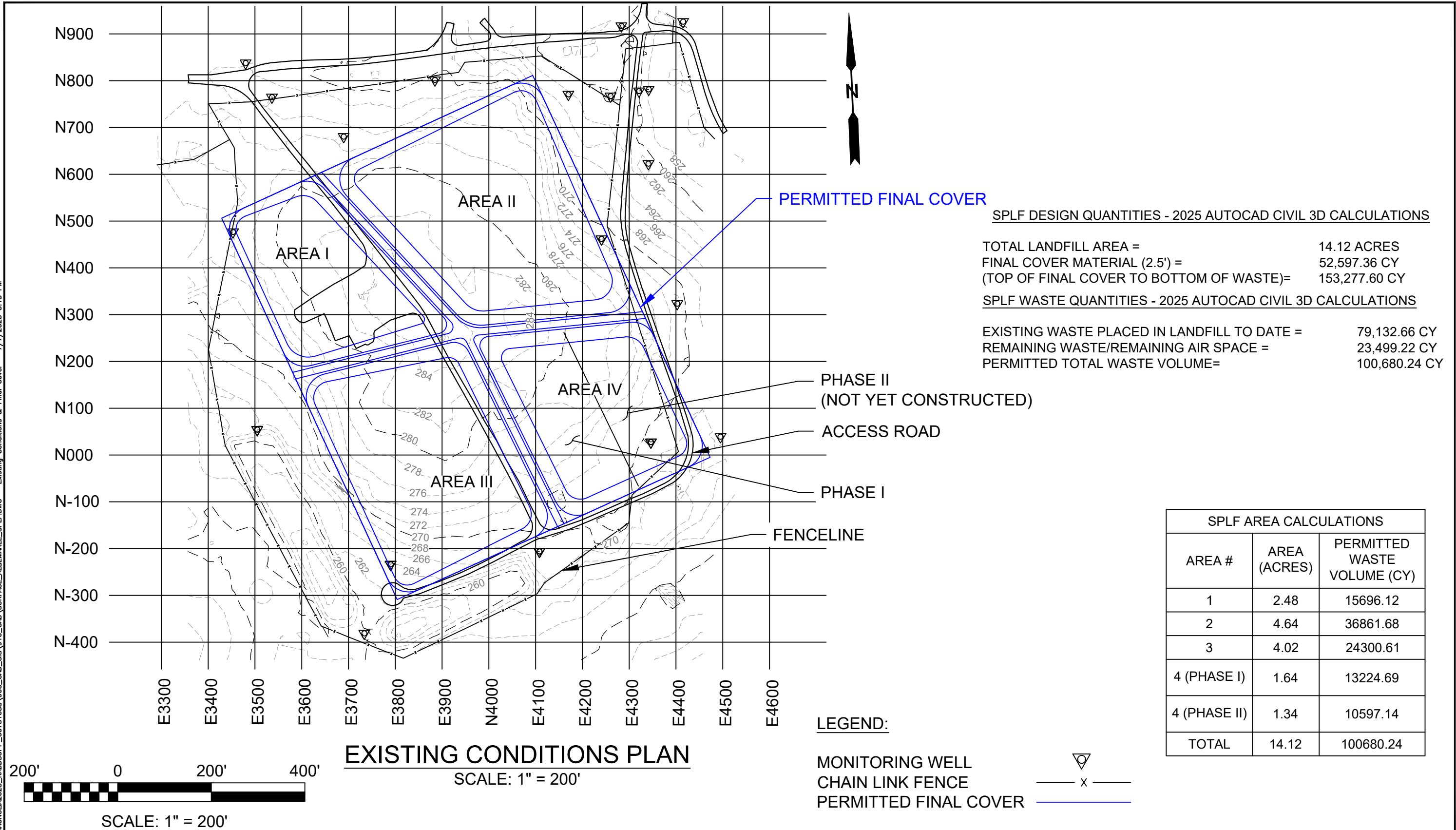
REFERENCE DRAWINGS

ALBEMARLE SOUTH PLANT
MAGNOLIA, ARKANSAS
2024 ANNUAL ENGINEERING INSPECTION REPORT

SOUTH PLANT LANDFILL
FINAL COVER PLAN
JANUARY 1, 2024 THRU DECEMBER 31, 2024

REVISION	
PROJECT	60751038
FIGURE	1





SPLF AREA CALCULATIONS		
AREA #	AREA (ACRES)	PERMITTED WASTE VOLUME (CY)
1	2.48	15696.12
2	4.64	36861.68
3	4.02	24300.61
4 (PHASE I)	1.64	13224.69
4 (PHASE II)	1.34	10597.14
TOTAL	14.12	100680.24

△			
△			
△			
△			
△			
△			
REV	DESCRIPTION OF REVISION	BY	DATE

AECOM
8555 United Plaza Blvd., Suite 300
Baton Rouge, Louisiana 70809
225-922-5700

REFERENCE DRAWINGS	SCALE
	AS SHOWN
	DESIGNED
	DRAWN
	PD
	CHECKED
	BS
PEER REVIEWED	
DATE	06/30/25

ALBEMARLE SOUTH PLANT
MAGNOLIA, ARKANSAS
2024 ANNUAL ENGINEERING INSPECTION REPORT

SOUTH PLANT LANDFILL
EXISTING CONDITIONS AND PERMITTED FINAL COVER
APRIL 4, 2025 TOPOGRAPHIC SURVEY

REVISION	
PROJECT	60751038
FIGURE	1

Attachment C

Leachate Analytical Report



ANALYTICAL REPORT

PREPARED FOR

Attn: Mr. Stephen Stamps
Albemarle Corporation
2270 Highway 79 South
Magnolia, Arkansas 71753

Generated 2/11/2025 1:02:52 PM

JOB DESCRIPTION

South Plant Sumps

JOB NUMBER

192-18706-1

Eurofins Arkansas

Job Notes

This report may not be reproduced except in full, and with written approval from the laboratory. The results relate only to the samples tested. For questions please contact the Project Manager at the e-mail address or telephone number listed on this page.

The test results in this report relate only to the samples as received by the laboratory and will meet all requirements of the methodology, with any exceptions noted. This report shall not be reproduced except in full, without the express written approval of the laboratory. All questions should be directed to the Eurofins Environment Testing South Central, LLC Project Manager.

Authorization



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2/11/2025 1:02:52 PM

Authorized for release by
Steve Bradford, Lab Director
steve.bradford@et.eurofinsus.com
(501)224-5060



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Definitions/Glossary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Qualifiers

GC/MS VOA

Qualifier	Qualifier Description
4	MS, MSD: The analyte present in the original sample is greater than 4 times the matrix spike concentration; therefore, control limits are not applicable.
E	Result exceeded calibration range.
F1	MS and/or MSD recovery exceeds control limits.
F2	MS/MSD RPD exceeds control limits
S1-	Surrogate recovery exceeds control limits, low biased.
S1+	Surrogate recovery exceeds control limits, high biased.

HPLC/IC

Qualifier	Qualifier Description
F1	MS and/or MSD recovery exceeds control limits.

Glossary

Abbreviation	These commonly used abbreviations may or may not be present in this report.
☼	Listed under the "D" column to designate that the result is reported on a dry weight basis
%R	Percent Recovery
CFL	Contains Free Liquid
CFU	Colony Forming Unit
CNF	Contains No Free Liquid
DER	Duplicate Error Ratio (normalized absolute difference)
Dil Fac	Dilution Factor
DL	Detection Limit (DoD/DOE)
DL, RA, RE, IN	Indicates a Dilution, Re-analysis, Re-extraction, or additional Initial metals/anion analysis of the sample
DLC	Decision Level Concentration (Radiochemistry)
EDL	Estimated Detection Limit (Dioxin)
LOD	Limit of Detection (DoD/DOE)
LOQ	Limit of Quantitation (DoD/DOE)
MCL	EPA recommended "Maximum Contaminant Level"
MDA	Minimum Detectable Activity (Radiochemistry)
MDC	Minimum Detectable Concentration (Radiochemistry)
MDL	Method Detection Limit
ML	Minimum Level (Dioxin)
MPN	Most Probable Number
MQL	Method Quantitation Limit
NC	Not Calculated
ND	Not Detected at the reporting limit (or MDL or EDL if shown)
NEG	Negative / Absent
POS	Positive / Present
PQL	Practical Quantitation Limit
PRES	Presumptive
QC	Quality Control
RER	Relative Error Ratio (Radiochemistry)
RL	Reporting Limit or Requested Limit (Radiochemistry)
RPD	Relative Percent Difference, a measure of the relative difference between two points
TEF	Toxicity Equivalent Factor (Dioxin)
TEQ	Toxicity Equivalent Quotient (Dioxin)
TNTC	Too Numerous To Count

Case Narrative

Client: Albemarle Corporation
Project: South Plant Sumps

Job ID: 192-18706-1

Job ID: 192-18706-1

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Job Narrative 192-18706-1

Analytical test results meet all requirements of the associated regulatory program listed on the Accreditation/Certification Summary Page unless otherwise noted under the individual analysis. Data qualifiers and/or narrative comments are included to explain any exceptions, if applicable.

- Matrix QC may not be reported if insufficient sample is provided or site-specific QC samples were not submitted. In these situations, to demonstrate precision and accuracy at a batch level, a LCS/LCSD may be performed, unless otherwise specified in the method.
- Surrogate and/or isotope dilution analyte recoveries (if applicable) which are outside of the QC window are confirmed unless attributed to a dilution or otherwise noted in the narrative.

Regulated compliance samples (e.g. SDWA, NPDES) must comply with the associated agency requirements/permits.

Receipt

The samples were received on 1/28/2025 1:50 PM. Unless otherwise noted below, the samples arrived in good condition, and, where required, properly preserved and on ice. The temperature of the cooler at receipt time was 0.1°C.

GC/MS VOA

Method 8260D_SIM: Samples are reported as estimated value analytes are above the 8260SIM calibration range. No dilution was done for 8260SIM. Samples were analyzed and reported by standard EPA.8260 method.

Sump1 - 20250127 (192-18706-2), Sump2 - 20250127 (192-18706-3), Sump11 - 20250127 (192-18706-5), Sump12 - 20250127 (192-18706-6) and Sump13 - 20250127 (192-18706-7)

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

HPLC/IC

Method 9056A: The matrix spike / matrix spike duplicate (MS/MSD) recoveries for analytical batch 192-29322 were outside control limits. Sample matrix interference is suspected because the associated laboratory control sample (LCS) recovery was within acceptance limits.

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

Metals

No additional analytical or quality issues were noted, other than those described above or in the Definitions/ Glossary page.

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Trip Blank - 20250127

Lab Sample ID: 192-18706-1

Date Collected: 01/27/25 14:00

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	<0.20		0.20		ug/L			02/05/25 08:14	1
1,2-Dibromoethane	<0.050		0.050		ug/L			02/05/25 08:14	1
1,1,2,2-Tetrachloroethane	<0.076		0.076		ug/L			02/05/25 08:14	1
1,2,3-Trichloropropane	<0.020		0.020		ug/L			02/05/25 08:14	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			01/30/25 16:54	1
1-Bromo-2-chloroethane	<5.0		5.0		ug/L			01/30/25 16:54	1
Bromochloromethane	<5.0		5.0		ug/L			01/30/25 16:54	1
Bromodichloromethane	<5.0		5.0		ug/L			01/30/25 16:54	1
Bromoform	<5.0		5.0		ug/L			01/30/25 16:54	1
Carbon disulfide	<10		10		ug/L			01/30/25 16:54	1
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 16:54	1
Chloroform	<4.0		4.0		ug/L			01/30/25 16:54	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 16:54	1
Dibromochloromethane	<5.0		5.0		ug/L			01/30/25 16:54	1
1,2-Dibromoethane	<5.0		5.0		ug/L			01/30/25 16:54	1
Dibromomethane	<5.0		5.0		ug/L			01/30/25 16:54	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 16:54	1
1,2-Dichloroethane	<5.0		5.0		ug/L			01/30/25 16:54	1
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 16:54	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			01/30/25 16:54	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 16:54	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 16:54	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 16:54	1
Methylene Chloride	<5.0		5.0		ug/L			01/30/25 16:54	1
Styrene	<5.0		5.0		ug/L			01/30/25 16:54	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			01/30/25 16:54	1
Tetrachloroethene	<5.0		5.0		ug/L			01/30/25 16:54	1
Toluene	<5.0		5.0		ug/L			01/30/25 16:54	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 16:54	1
Trichloroethene	<5.0		5.0		ug/L			01/30/25 16:54	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 16:54	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 16:54	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 16:54	1
Vinyl chloride	<2.0		2.0		ug/L			01/30/25 16:54	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	104		91 - 109		01/30/25 16:54	1
Toluene-d8 (Surr)	95		87 - 112		01/30/25 16:54	1
4-Bromofluorobenzene (Surr)	89		86 - 112		01/30/25 16:54	1

Client Sample ID: Sump1 - 20250127

Lab Sample ID: 192-18706-2

Date Collected: 01/27/25 14:25

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	25	E	0.20		ug/L			02/05/25 11:12	1

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump1 - 20250127

Lab Sample ID: 192-18706-2

Date Collected: 01/27/25 14:25

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	690	E	0.050		ug/L			02/05/25 11:12	1
1,1,2,2-Tetrachloroethane	8.7	E	0.076		ug/L			02/05/25 11:12	1
1,2,3-Trichloropropane	1.4		0.020		ug/L			02/05/25 11:12	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			01/30/25 17:24	1
1-Bromo-2-chloroethane	3200		500		ug/L			02/07/25 19:31	100
Bromochloromethane	590		50		ug/L			02/07/25 19:01	10
Bromodichloromethane	370		50		ug/L			02/07/25 19:01	10
Bromoform	19000		5000		ug/L			02/07/25 20:00	1000
Carbon disulfide	26		10		ug/L			01/30/25 17:24	1
Carbon tetrachloride	150		20		ug/L			02/07/25 19:01	10
Chloroform	45		4.0		ug/L			01/30/25 17:24	1
1,2-Dibromo-3-Chloropropane	27		5.0		ug/L			01/30/25 17:24	1
Dibromochloromethane	2400		500		ug/L			02/07/25 19:31	100
1,2-Dibromoethane	5000		500		ug/L			02/07/25 19:31	100
Dibromomethane	2800		500		ug/L			02/07/25 19:31	100
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 17:24	1
1,2-Dichloroethane	6200		500		ug/L			02/07/25 19:31	100
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 17:24	1
cis-1,2-Dichloroethene	5.0		5.0		ug/L			01/30/25 17:24	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 17:24	1
1,3-Dichloropropane	25		5.0		ug/L			01/30/25 17:24	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 17:24	1
Methylene Chloride	330		50		ug/L			02/07/25 19:01	10
Styrene	<5.0		5.0		ug/L			01/30/25 17:24	1
1,1,2,2-Tetrachloroethane	8.6		5.0		ug/L			01/30/25 17:24	1
Tetrachloroethene	8.1		5.0		ug/L			01/30/25 17:24	1
Toluene	8.5		5.0		ug/L			01/30/25 17:24	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 17:24	1
Trichloroethene	16		5.0		ug/L			01/30/25 17:24	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 17:24	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 17:24	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 17:24	1
Vinyl chloride	22		2.0		ug/L			01/30/25 17:24	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	98		91 - 109		01/30/25 17:24	1
Dibromofluoromethane (Surr)	93		91 - 109		02/07/25 19:01	10
Dibromofluoromethane (Surr)	92		91 - 109		02/07/25 19:31	100
Dibromofluoromethane (Surr)	91		91 - 109		02/07/25 20:00	1000
Toluene-d8 (Surr)	100		87 - 112		01/30/25 17:24	1
Toluene-d8 (Surr)	94		87 - 112		02/07/25 19:01	10
Toluene-d8 (Surr)	100		87 - 112		02/07/25 19:31	100
Toluene-d8 (Surr)	94		87 - 112		02/07/25 20:00	1000
4-Bromofluorobenzene (Surr)	193	S1+	86 - 112		01/30/25 17:24	1
4-Bromofluorobenzene (Surr)	110		86 - 112		02/07/25 19:01	10
4-Bromofluorobenzene (Surr)	100		86 - 112		02/07/25 19:31	100
4-Bromofluorobenzene (Surr)	94		86 - 112		02/07/25 20:00	1000

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump1 - 20250127

Lab Sample ID: 192-18706-2

Date Collected: 01/27/25 14:25

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	510		20		mg/L			02/04/25 21:15	100
Chloride	2800		20		mg/L			02/04/25 21:15	100

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0039		0.00050		mg/L		02/06/25 14:34	02/06/25 18:06	1
Lead	0.0034		0.00050		mg/L		02/06/25 14:34	02/06/25 18:06	1

Client Sample ID: Sump2 - 20250127

Lab Sample ID: 192-18706-3

Date Collected: 01/27/25 14:45

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	0.78		0.20		ug/L			02/05/25 10:13	1
1,2-Dibromoethane	53	E	0.050		ug/L			02/05/25 10:13	1
1,1,2,2-Tetrachloroethane	15	E	0.076		ug/L			02/05/25 10:13	1
1,2,3-Trichloropropane	0.61		0.020		ug/L			02/05/25 10:13	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	5.2		5.0		ug/L			02/07/25 17:02	1
1-Bromo-2-chloroethane	19		5.0		ug/L			02/07/25 17:02	1
Bromochloromethane	<5.0		5.0		ug/L			02/07/25 17:02	1
Bromodichloromethane	10		5.0		ug/L			02/07/25 17:02	1
Bromoform	190		50		ug/L			02/08/25 18:10	10
Carbon disulfide	<10		10		ug/L			01/30/25 17:53	1
Carbon tetrachloride	2.4		2.0		ug/L			02/07/25 17:02	1
Chloroform	6.9		4.0		ug/L			02/07/25 17:02	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 17:53	1
Dibromochloromethane	36		5.0		ug/L			02/07/25 17:02	1
1,2-Dibromoethane	46		5.0		ug/L			02/07/25 17:02	1
Dibromomethane	19		5.0		ug/L			02/07/25 17:02	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 17:53	1
1,2-Dichloroethane	59		5.0		ug/L			02/07/25 17:02	1
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 17:53	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			02/07/25 17:02	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 17:53	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 17:53	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 17:53	1
Methylene Chloride	5.3		5.0		ug/L			02/07/25 17:02	1
Styrene	<5.0		5.0		ug/L			01/30/25 17:53	1
1,1,2,2-Tetrachloroethane	15		5.0		ug/L			02/07/25 17:02	1
Tetrachloroethene	<5.0		5.0		ug/L			01/30/25 17:53	1
Toluene	<5.0		5.0		ug/L			01/30/25 17:53	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 17:53	1
Trichloroethene	9.2		5.0		ug/L			02/07/25 17:02	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 17:53	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 17:53	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 17:53	1

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump2 - 20250127

Lab Sample ID: 192-18706-3

Date Collected: 01/27/25 14:45

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<2.0		2.0		ug/L			01/30/25 17:53	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	101		91 - 109					01/30/25 17:53	1
Dibromofluoromethane (Surr)	91		91 - 109					02/07/25 17:02	1
Dibromofluoromethane (Surr)	89	S1-	91 - 109					02/08/25 18:10	10
Toluene-d8 (Surr)	99		87 - 112					01/30/25 17:53	1
Toluene-d8 (Surr)	96		87 - 112					02/07/25 17:02	1
Toluene-d8 (Surr)	94		87 - 112					02/08/25 18:10	10
4-Bromofluorobenzene (Surr)	96		86 - 112					01/30/25 17:53	1
4-Bromofluorobenzene (Surr)	100		86 - 112					02/07/25 17:02	1
4-Bromofluorobenzene (Surr)	97		86 - 112					02/08/25 18:10	10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	350		20		mg/L			02/04/25 21:38	100
Chloride	17000		200		mg/L			02/11/25 10:07	1000

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.010		0.010		mg/L		02/06/25 14:34	02/10/25 16:03	20
Lead	0.23		0.010		mg/L		02/06/25 14:34	02/10/25 16:03	20

Client Sample ID: Sump3 - 20250127

Lab Sample ID: 192-18706-4

Date Collected: 01/27/25 15:10

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	15		5.0		ug/L			01/30/25 19:23	1
1-Bromo-2-chloroethane	20		5.0		ug/L			01/30/25 19:23	1
Bromochloromethane	23		5.0		ug/L			01/30/25 19:23	1
Bromodichloromethane	<5.0		5.0		ug/L			01/30/25 19:23	1
Bromoform	350		50		ug/L			02/07/25 18:31	10
Carbon disulfide	<10		10		ug/L			01/30/25 19:23	1
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 19:23	1
Chloroform	<4.0		4.0		ug/L			01/30/25 19:23	1
1,2-Dibromo-3-Chloropropane	8.8		5.0		ug/L			01/30/25 19:23	1
Dibromochloromethane	32		5.0		ug/L			01/30/25 19:23	1
1,2-Dibromoethane	31		5.0		ug/L			01/30/25 19:23	1
Dibromomethane	56		5.0		ug/L			01/30/25 19:23	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 19:23	1
1,2-Dichloroethane	250		50		ug/L			02/07/25 18:31	10
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 19:23	1
cis-1,2-Dichloroethene	13		5.0		ug/L			01/30/25 19:23	1
1,2-Dichloropropane	5.4		5.0		ug/L			01/30/25 19:23	1
1,3-Dichloropropane	26		5.0		ug/L			01/30/25 19:23	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 19:23	1
Methylene Chloride	14		5.0		ug/L			01/30/25 19:23	1
Styrene	<5.0		5.0		ug/L			01/30/25 19:23	1
1,1,2,2-Tetrachloroethane	310		50		ug/L			02/07/25 18:31	10

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump3 - 20250127

Lab Sample ID: 192-18706-4

Date Collected: 01/27/25 15:10

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Tetrachloroethene	<5.0		5.0		ug/L			01/30/25 19:23	1
Toluene	16		5.0		ug/L			01/30/25 19:23	1
1,1,2-Trichloroethane	7.9		5.0		ug/L			01/30/25 19:23	1
Trichloroethene	73		5.0		ug/L			01/30/25 19:23	1
1,2,3-Trichloropropane	19		5.0		ug/L			01/30/25 19:23	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 19:23	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 19:23	1
Vinyl chloride	2.3		2.0		ug/L			01/30/25 19:23	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	101		91 - 109		01/30/25 19:23	1
Dibromofluoromethane (Surr)	94		91 - 109		02/07/25 18:31	10
Toluene-d8 (Surr)	99		87 - 112		01/30/25 19:23	1
Toluene-d8 (Surr)	97		87 - 112		02/07/25 18:31	10
4-Bromofluorobenzene (Surr)	103		86 - 112		01/30/25 19:23	1
4-Bromofluorobenzene (Surr)	94		86 - 112		02/07/25 18:31	10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	210		20		mg/L			02/04/25 22:01	100
Chloride	4300		200		mg/L			02/11/25 10:30	1000

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.0025		0.0025		mg/L		02/06/25 14:34	02/10/25 15:25	5
Lead	0.0080		0.0025		mg/L		02/06/25 14:34	02/10/25 15:25	5

Client Sample ID: Sump11 - 20250127

Lab Sample ID: 192-18706-5

Date Collected: 01/27/25 15:30

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	1.2		0.20		ug/L			02/05/25 10:42	1
1,2-Dibromoethane	180	E	0.050		ug/L			02/05/25 10:42	1
1,1,2,2-Tetrachloroethane	17	E	0.076		ug/L			02/05/25 10:42	1
1,2,3-Trichloropropane	8.7	E	0.020		ug/L			02/05/25 10:42	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	26		5.0		ug/L			01/30/25 19:53	1
1-Bromo-2-chloroethane	460		50		ug/L			02/07/25 20:30	10
Bromochloromethane	1300		500		ug/L			02/07/25 21:00	100
Bromodichloromethane	170		50		ug/L			02/07/25 20:30	10
Bromoform	9900		500		ug/L			02/07/25 21:00	100
Carbon disulfide	470		100		ug/L			02/07/25 20:30	10
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 19:53	1
Chloroform	24		4.0		ug/L			01/30/25 19:53	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 19:53	1
Dibromochloromethane	970		50		ug/L			02/07/25 20:30	10
1,2-Dibromoethane	400		50		ug/L			02/07/25 20:30	10

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump11 - 20250127

Lab Sample ID: 192-18706-5

Date Collected: 01/27/25 15:30

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Dibromomethane	7900		500		ug/L			02/07/25 21:00	100
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 19:53	1
1,2-Dichloroethane	4100		500		ug/L			02/07/25 21:00	100
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 19:53	1
cis-1,2-Dichloroethene	8.7		5.0		ug/L			01/30/25 19:53	1
1,2-Dichloropropane	5.2		5.0		ug/L			01/30/25 19:53	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 19:53	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 19:53	1
Methylene Chloride	840		50		ug/L			02/07/25 20:30	10
Styrene	<5.0		5.0		ug/L			01/30/25 19:53	1
1,1,2,2-Tetrachloroethane	19		5.0		ug/L			01/30/25 19:53	1
Tetrachloroethene	22		5.0		ug/L			01/30/25 19:53	1
Toluene	640		50		ug/L			02/07/25 20:30	10
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 19:53	1
Trichloroethene	34		5.0		ug/L			01/30/25 19:53	1
1,2,3-Trichloropropane	9.3		5.0		ug/L			01/30/25 19:53	1
1,2,4-Trimethylbenzene	12		5.0		ug/L			01/30/25 19:53	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 19:53	1
Vinyl chloride	15		2.0		ug/L			01/30/25 19:53	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	99		91 - 109		01/30/25 19:53	1
Dibromofluoromethane (Surr)	93		91 - 109		02/07/25 20:30	10
Dibromofluoromethane (Surr)	91		91 - 109		02/07/25 21:00	100
Dibromofluoromethane (Surr)	90	S1-	91 - 109		02/07/25 21:30	1000
Toluene-d8 (Surr)	98		87 - 112		01/30/25 19:53	1
Toluene-d8 (Surr)	94		87 - 112		02/07/25 20:30	10
Toluene-d8 (Surr)	94		87 - 112		02/07/25 21:00	100
Toluene-d8 (Surr)	94		87 - 112		02/07/25 21:30	1000
4-Bromofluorobenzene (Surr)	172	S1+	86 - 112		01/30/25 19:53	1
4-Bromofluorobenzene (Surr)	107		86 - 112		02/07/25 20:30	10
4-Bromofluorobenzene (Surr)	98		86 - 112		02/07/25 21:00	100
4-Bromofluorobenzene (Surr)	93		86 - 112		02/07/25 21:30	1000

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	810		20		mg/L			02/04/25 22:24	100
Chloride	5700		200		mg/L			02/11/25 10:53	1000

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	0.0041		0.0025		mg/L		02/06/25 14:34	02/10/25 15:29	5
Lead	<0.0025		0.0025		mg/L		02/06/25 14:34	02/10/25 15:29	5

Client Sample ID: Sump12 - 20250127

Lab Sample ID: 192-18706-6

Date Collected: 01/27/25 15:45

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	<0.20		0.20		ug/L			02/05/25 09:43	1

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump12 - 20250127

Lab Sample ID: 192-18706-6

Date Collected: 01/27/25 15:45

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS) (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromoethane	15	E	0.050		ug/L			02/05/25 09:43	1
1,1,2,2-Tetrachloroethane	1.2		0.076		ug/L			02/05/25 09:43	1
1,2,3-Trichloropropane	0.14		0.020		ug/L			02/05/25 09:43	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			01/30/25 20:22	1
1-Bromo-2-chloroethane	7.7		5.0		ug/L			02/07/25 17:32	1
Bromochloromethane	10		5.0		ug/L			02/07/25 17:32	1
Bromodichloromethane	<5.0		5.0		ug/L			02/07/25 17:32	1
Bromoform	390		50		ug/L			02/07/25 18:02	10
Carbon disulfide	35		10		ug/L			02/07/25 17:32	1
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 20:22	1
Chloroform	<4.0		4.0		ug/L			01/30/25 20:22	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 20:22	1
Dibromochloromethane	24		5.0		ug/L			02/07/25 17:32	1
1,2-Dibromoethane	16		5.0		ug/L			02/07/25 17:32	1
Dibromomethane	92		5.0		ug/L			02/07/25 17:32	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 20:22	1
1,2-Dichloroethane	33		5.0		ug/L			02/07/25 17:32	1
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 20:22	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			01/30/25 20:22	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 20:22	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 20:22	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 20:22	1
Methylene Chloride	<5.0		5.0		ug/L			02/07/25 17:32	1
Styrene	<5.0		5.0		ug/L			01/30/25 20:22	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			01/30/25 20:22	1
Tetrachloroethene	<5.0		5.0		ug/L			02/07/25 17:32	1
Toluene	53		5.0		ug/L			02/07/25 17:32	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 20:22	1
Trichloroethene	<5.0		5.0		ug/L			01/30/25 20:22	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 20:22	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 20:22	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 20:22	1
Vinyl chloride	<2.0		2.0		ug/L			01/30/25 20:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	101		91 - 109		01/30/25 20:22	1
Dibromofluoromethane (Surr)	91		91 - 109		02/07/25 17:32	1
Dibromofluoromethane (Surr)	93		91 - 109		02/07/25 18:02	10
Toluene-d8 (Surr)	98		87 - 112		01/30/25 20:22	1
Toluene-d8 (Surr)	94		87 - 112		02/07/25 17:32	1
Toluene-d8 (Surr)	95		87 - 112		02/07/25 18:02	10
4-Bromofluorobenzene (Surr)	111		86 - 112		01/30/25 20:22	1
4-Bromofluorobenzene (Surr)	107		86 - 112		02/07/25 17:32	1
4-Bromofluorobenzene (Surr)	101		86 - 112		02/07/25 18:02	10

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump12 - 20250127

Lab Sample ID: 192-18706-6

Date Collected: 01/27/25 15:45

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	26		2.0		mg/L			02/05/25 21:31	10
Chloride	230		20		mg/L			02/04/25 22:46	100

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 18:19	1
Lead	0.0011		0.00050		mg/L		02/06/25 14:34	02/06/25 18:19	1

Client Sample ID: Sump13 - 20250127

Lab Sample ID: 192-18706-7

Date Collected: 01/27/25 16:20

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	<0.20		0.20		ug/L			02/05/25 09:13	1
1,2-Dibromoethane	5.6	E	0.050		ug/L			02/05/25 09:13	1
1,1,2,2-Tetrachloroethane	0.42		0.076		ug/L			02/05/25 09:13	1
1,2,3-Trichloropropane	0.028		0.020		ug/L			02/05/25 09:13	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			01/30/25 20:52	1
1-Bromo-2-chloroethane	<5.0		5.0		ug/L			01/30/25 20:52	1
Bromochloromethane	<5.0		5.0		ug/L			01/30/25 20:52	1
Bromodichloromethane	<5.0		5.0		ug/L			01/30/25 20:52	1
Bromoform	77		5.0		ug/L			02/07/25 16:32	1
Carbon disulfide	<10		10		ug/L			02/07/25 16:32	1
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 20:52	1
Chloroform	<4.0		4.0		ug/L			01/30/25 20:52	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 20:52	1
Dibromochloromethane	<5.0		5.0		ug/L			01/30/25 20:52	1
1,2-Dibromoethane	<5.0		5.0		ug/L			01/30/25 20:52	1
Dibromomethane	17		5.0		ug/L			02/07/25 16:32	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 20:52	1
1,2-Dichloroethane	5.3		5.0		ug/L			02/07/25 16:32	1
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 20:52	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			01/30/25 20:52	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 20:52	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 20:52	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 20:52	1
Methylene Chloride	<5.0		5.0		ug/L			01/30/25 20:52	1
Styrene	<5.0		5.0		ug/L			01/30/25 20:52	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			01/30/25 20:52	1
Tetrachloroethene	<5.0		5.0		ug/L			01/30/25 20:52	1
Toluene	14		5.0		ug/L			02/07/25 16:32	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 20:52	1
Trichloroethene	<5.0		5.0		ug/L			01/30/25 20:52	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 20:52	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 20:52	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 20:52	1

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump13 - 20250127

Lab Sample ID: 192-18706-7

Date Collected: 01/27/25 16:20

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Vinyl chloride	<2.0		2.0		ug/L			01/30/25 20:52	1
Surrogate	%Recovery	Qualifier	Limits				Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	102		91 - 109					01/30/25 20:52	1
Dibromofluoromethane (Surr)	91		91 - 109					02/07/25 16:32	1
Toluene-d8 (Surr)	96		87 - 112					01/30/25 20:52	1
Toluene-d8 (Surr)	95		87 - 112					02/07/25 16:32	1
4-Bromofluorobenzene (Surr)	101		86 - 112					01/30/25 20:52	1
4-Bromofluorobenzene (Surr)	101		86 - 112					02/07/25 16:32	1

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	30		2.0		mg/L			02/05/25 21:54	10
Chloride	21		2.0		mg/L			02/06/25 17:29	10

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 18:23	1
Lead	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 18:23	1

Client Sample ID: Sump4 - 20250128

Lab Sample ID: 192-18706-8

Date Collected: 01/28/25 08:30

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D SIM - Volatile Organic Compounds (GC/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	<0.20		0.20		ug/L			02/05/25 08:44	1
1,2-Dibromoethane	4.7		0.050		ug/L			02/05/25 08:44	1
1,1,2,2-Tetrachloroethane	0.27		0.076		ug/L			02/05/25 08:44	1
1,2,3-Trichloropropane	<0.020		0.020		ug/L			02/05/25 08:44	1

Method: SW846 8260D - Volatile Organic Compounds by GC/MS

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			01/30/25 21:22	1
1-Bromo-2-chloroethane	<5.0		5.0		ug/L			01/30/25 21:22	1
Bromochloromethane	<5.0		5.0		ug/L			01/30/25 21:22	1
Bromodichloromethane	<5.0		5.0		ug/L			01/30/25 21:22	1
Bromoform	120		50		ug/L			02/08/25 17:40	10
Carbon disulfide	<10		10		ug/L			01/30/25 21:22	1
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 21:22	1
Chloroform	<4.0		4.0		ug/L			01/30/25 21:22	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 21:22	1
Dibromochloromethane	8.6		5.0		ug/L			02/07/25 16:03	1
1,2-Dibromoethane	<5.0		5.0		ug/L			01/30/25 21:22	1
Dibromomethane	8.8		5.0		ug/L			02/07/25 16:03	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 21:22	1
1,2-Dichloroethane	<5.0		5.0		ug/L			01/30/25 21:22	1
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 21:22	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			01/30/25 21:22	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 21:22	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 21:22	1

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Client Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump4 - 20250128

Lab Sample ID: 192-18706-8

Date Collected: 01/28/25 08:30

Matrix: Water

Date Received: 01/28/25 13:50

Method: SW846 8260D - Volatile Organic Compounds by GC/MS (Continued)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 21:22	1
Methylene Chloride	<5.0		5.0		ug/L			01/30/25 21:22	1
Styrene	<5.0		5.0		ug/L			01/30/25 21:22	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			01/30/25 21:22	1
Tetrachloroethene	<5.0		5.0		ug/L			01/30/25 21:22	1
Toluene	6.2		5.0		ug/L			02/07/25 16:03	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 21:22	1
Trichloroethene	<5.0		5.0		ug/L			01/30/25 21:22	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 21:22	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 21:22	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 21:22	1
Vinyl chloride	<2.0		2.0		ug/L			01/30/25 21:22	1

Surrogate	%Recovery	Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	103		91 - 109		01/30/25 21:22	1
Dibromofluoromethane (Surr)	92		91 - 109		02/07/25 16:03	1
Dibromofluoromethane (Surr)	91		91 - 109		02/08/25 17:40	10
Toluene-d8 (Surr)	97		87 - 112		01/30/25 21:22	1
Toluene-d8 (Surr)	96		87 - 112		02/07/25 16:03	1
Toluene-d8 (Surr)	94		87 - 112		02/08/25 17:40	10
4-Bromofluorobenzene (Surr)	95		86 - 112		01/30/25 21:22	1
4-Bromofluorobenzene (Surr)	99		86 - 112		02/07/25 16:03	1
4-Bromofluorobenzene (Surr)	97		86 - 112		02/08/25 17:40	10

Method: SW846 9056A - Anions, Ion Chromatography

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	110		20		mg/L			02/04/25 23:32	100
Chloride	27		20		mg/L			02/04/25 23:32	100

Method: SW846 6020B - Metals (ICP/MS)

Analyte	Result	Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 18:26	1
Lead	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 18:26	1

Surrogate Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Matrix: Water

Prep Type: Total/NA

Lab Sample ID	Client Sample ID	Percent Surrogate Recovery (Acceptance Limits)		
		DBFM (91-109)	TOL (87-112)	BFB (86-112)
192-18706-1	Trip Blank - 20250127	104	95	89
192-18706-2	Sump1 - 20250127	98	100	193 S1+
192-18706-2	Sump1 - 20250127	93	94	110
192-18706-2	Sump1 - 20250127	92	100	100
192-18706-2	Sump1 - 20250127	91	94	94
192-18706-3	Sump2 - 20250127	101	99	96
192-18706-3	Sump2 - 20250127	91	96	100
192-18706-3	Sump2 - 20250127	89 S1-	94	97
192-18706-3 MS	Sump2 - 20250127	104	101	110
192-18706-3 MSD	Sump2 - 20250127	99	102	111
192-18706-4	Sump3 - 20250127	101	99	103
192-18706-4	Sump3 - 20250127	94	97	94
192-18706-5	Sump11 - 20250127	99	98	172 S1+
192-18706-5	Sump11 - 20250127	93	94	107
192-18706-5	Sump11 - 20250127	91	94	98
192-18706-5	Sump11 - 20250127	90 S1-	94	93
192-18706-6	Sump12 - 20250127	101	98	111
192-18706-6	Sump12 - 20250127	91	94	107
192-18706-6	Sump12 - 20250127	93	95	101
192-18706-7	Sump13 - 20250127	102	96	101
192-18706-7	Sump13 - 20250127	91	95	101
192-18706-8	Sump4 - 20250128	103	97	95
192-18706-8	Sump4 - 20250128	92	96	99
192-18706-8	Sump4 - 20250128	91	94	97
LCS 192-29149/1005	Lab Control Sample	100	103	105
LCS 192-29489/1005	Lab Control Sample	90 S1-	99	101
LCS 192-29524/1005	Lab Control Sample	91	99	105
MB 192-29149/7	Method Blank	105	95	92
MB 192-29489/7	Method Blank	86 S1-	95	97
MB 192-29524/7	Method Blank	95	95	94

Surrogate Legend

DBFM = Dibromofluoromethane (Surr)

TOL = Toluene-d8 (Surr)

BFB = 4-Bromofluorobenzene (Surr)

QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS

Lab Sample ID: MB 192-29149/7

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			01/30/25 14:31	1
1-Bromo-2-chloroethane	<5.0		5.0		ug/L			01/30/25 14:31	1
Bromochloromethane	<5.0		5.0		ug/L			01/30/25 14:31	1
Bromodichloromethane	<5.0		5.0		ug/L			01/30/25 14:31	1
Bromoform	<5.0		5.0		ug/L			01/30/25 14:31	1
Carbon disulfide	<10		10		ug/L			01/30/25 14:31	1
Carbon tetrachloride	<2.0		2.0		ug/L			01/30/25 14:31	1
Chloroform	<4.0		4.0		ug/L			01/30/25 14:31	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			01/30/25 14:31	1
Dibromochloromethane	<5.0		5.0		ug/L			01/30/25 14:31	1
1,2-Dibromoethane	<5.0		5.0		ug/L			01/30/25 14:31	1
Dibromomethane	<5.0		5.0		ug/L			01/30/25 14:31	1
1,1-Dichloroethane	<5.0		5.0		ug/L			01/30/25 14:31	1
1,2-Dichloroethane	<5.0		5.0		ug/L			01/30/25 14:31	1
1,1-Dichloroethene	<5.0		5.0		ug/L			01/30/25 14:31	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			01/30/25 14:31	1
1,2-Dichloropropane	<5.0		5.0		ug/L			01/30/25 14:31	1
1,3-Dichloropropane	<5.0		5.0		ug/L			01/30/25 14:31	1
Isopropylbenzene	<5.0		5.0		ug/L			01/30/25 14:31	1
Methylene Chloride	<5.0		5.0		ug/L			01/30/25 14:31	1
Styrene	<5.0		5.0		ug/L			01/30/25 14:31	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			01/30/25 14:31	1
Tetrachloroethene	<5.0		5.0		ug/L			01/30/25 14:31	1
Toluene	<5.0		5.0		ug/L			01/30/25 14:31	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			01/30/25 14:31	1
Trichloroethene	<5.0		5.0		ug/L			01/30/25 14:31	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			01/30/25 14:31	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 14:31	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			01/30/25 14:31	1
Vinyl chloride	<2.0		2.0		ug/L			01/30/25 14:31	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	105		91 - 109		01/30/25 14:31	1
Toluene-d8 (Surr)	95		87 - 112		01/30/25 14:31	1
4-Bromofluorobenzene (Surr)	92		86 - 112		01/30/25 14:31	1

Lab Sample ID: LCS 192-29149/1005

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	49.8	49.5		ug/L		99	70 - 130
1-Bromo-2-chloroethane	50.1	51.5		ug/L		103	70 - 130
Bromochloromethane	50.1	48.9		ug/L		98	70 - 130
Bromodichloromethane	50.2	50.3		ug/L		100	70 - 130
Bromoform	49.9	50.3		ug/L		101	70 - 130
Carbon disulfide	101	94.3		ug/L		94	70 - 130
Carbon tetrachloride	50.0	47.5		ug/L		95	70 - 130

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 192-29149/1005

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Chloroform	50.2	48.3		ug/L		96	70 - 130
1,2-Dibromo-3-Chloropropane	50.2	49.5		ug/L		99	70 - 130
Dibromochloromethane	50.7	50.1		ug/L		99	70 - 130
1,2-Dibromoethane	50.3	52.4		ug/L		104	70 - 130
Dibromomethane	50.0	50.1		ug/L		100	70 - 130
1,1-Dichloroethane	50.0	50.0		ug/L		100	70 - 130
1,2-Dichloroethane	50.0	50.1		ug/L		100	70 - 130
1,1-Dichloroethene	50.0	48.4		ug/L		97	70 - 130
cis-1,2-Dichloroethene	50.1	49.3		ug/L		98	70 - 130
1,2-Dichloropropane	50.0	50.3		ug/L		101	70 - 130
1,3-Dichloropropane	50.1	50.7		ug/L		101	70 - 130
Isopropylbenzene	50.0	53.8		ug/L		108	70 - 130
Methylene Chloride	50.1	49.1		ug/L		98	70 - 130
Styrene	50.0	49.4		ug/L		99	70 - 130
1,1,2,2-Tetrachloroethane	50.5	47.8		ug/L		95	70 - 130
Tetrachloroethene	50.3	48.4		ug/L		96	70 - 130
Toluene	49.9	51.5		ug/L		103	70 - 130
1,1,2-Trichloroethane	49.8	49.4		ug/L		99	70 - 130
Trichloroethene	49.7	49.1		ug/L		99	70 - 130
1,2,3-Trichloropropane	50.0	47.7		ug/L		95	70 - 130
1,2,4-Trimethylbenzene	50.0	49.8		ug/L		99	70 - 130
1,3,5-Trimethylbenzene	50.0	52.4		ug/L		105	70 - 130
Vinyl chloride	50.4	45.6		ug/L		90	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	100		91 - 109
Toluene-d8 (Surr)	103		87 - 112
4-Bromofluorobenzene (Surr)	105		86 - 112

Lab Sample ID: 192-18706-3 MS

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Sump2 - 20250127

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	5.6		49.8	55.3		ug/L		100	70 - 130
1-Bromo-2-chloroethane	23	F1 F2	50.1	75.6		ug/L		106	70 - 130
Bromochloromethane	6.7		50.1	55.3		ug/L		97	70 - 130
Bromodichloromethane	12		50.2	61.2		ug/L		98	70 - 130
Bromoform	290	E F2	49.9	366	E 4	ug/L		147	70 - 130
Carbon disulfide	<10		101	98.3		ug/L		98	70 - 130
Carbon tetrachloride	3.4		50.0	54.2		ug/L		102	70 - 130
Chloroform	7.8		50.2	57.1		ug/L		98	70 - 130
1,2-Dibromo-3-Chloropropane	<5.0		50.2	56.6		ug/L		113	70 - 130
Dibromochloromethane	42	F1 F2	50.7	93.7		ug/L		102	70 - 130
1,2-Dibromoethane	63	F1 F2	50.3	122	E	ug/L		117	70 - 130
Dibromomethane	28	F1 F2	50.0	76.1		ug/L		96	70 - 130
1,1-Dichloroethane	<5.0		50.0	50.2		ug/L		101	70 - 130
1,2-Dichloroethane	73	F1 F2	50.0	123	E	ug/L		99	70 - 130

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 192-18706-3 MS

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Sump2 - 20250127

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
1,1-Dichloroethene	<5.0		50.0	50.2		ug/L		100	70 - 130
cis-1,2-Dichloroethene	5.4		50.1	55.2		ug/L		100	70 - 130
1,2-Dichloropropane	<5.0		50.0	50.1		ug/L		100	70 - 130
1,3-Dichloropropane	<5.0		50.1	51.7		ug/L		103	70 - 130
Isopropylbenzene	<5.0		50.0	53.7		ug/L		108	70 - 130
Methylene Chloride	6.8		50.1	56.5		ug/L		99	70 - 130
Styrene	<5.0		50.0	48.4		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	19		50.5	67.8		ug/L		97	70 - 130
Tetrachloroethene	<5.0		50.3	49.5		ug/L		98	70 - 130
Toluene	<5.0		49.9	53.6		ug/L		108	70 - 130
1,1,2-Trichloroethane	<5.0		49.8	50.5		ug/L		101	70 - 130
Trichloroethene	9.8		49.7	58.8		ug/L		99	70 - 130
1,2,3-Trichloropropane	<5.0		50.0	52.2		ug/L		104	70 - 130
1,2,4-Trimethylbenzene	<5.0		50.0	49.9		ug/L		100	70 - 130
1,3,5-Trimethylbenzene	<5.0		50.0	52.3		ug/L		105	70 - 130
Vinyl chloride	<2.0		50.4	49.4		ug/L		95	70 - 130

Surrogate	MS %Recovery	MS Qualifier	Limits
Dibromofluoromethane (Surr)	104		91 - 109
Toluene-d8 (Surr)	101		87 - 112
4-Bromofluorobenzene (Surr)	110		86 - 112

Lab Sample ID: 192-18706-3 MSD

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Sump2 - 20250127

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Benzene	5.6		49.8	54.7		ug/L		99	70 - 130	1	20
1-Bromo-2-chloroethane	23	F1 F2	50.1	109	E F1 F2	ug/L		173	70 - 130	36	20
Bromochloromethane	6.7		50.1	58.8		ug/L		104	70 - 130	6	20
Bromodichloromethane	12		50.2	65.0		ug/L		106	70 - 130	6	20
Bromoform	290	E F2	49.9	629	E 4 F2	ug/L		674	70 - 130	53	20
Carbon disulfide	<10		101	96.9		ug/L		96	70 - 130	1	20
Carbon tetrachloride	3.4		50.0	54.4		ug/L		102	70 - 130	1	20
Chloroform	7.8		50.2	56.1		ug/L		96	70 - 130	2	20
1,2-Dibromo-3-Chloropropane	<5.0		50.2	59.1		ug/L		118	70 - 130	4	20
Dibromochloromethane	42	F1 F2	50.7	125	E F1 F2	ug/L		164	70 - 130	29	20
1,2-Dibromoethane	63	F1 F2	50.3	201	E F1 F2	ug/L		273	70 - 130	49	20
Dibromomethane	28	F1 F2	50.0	105	E F1 F2	ug/L		155	70 - 130	32	20
1,1-Dichloroethane	<5.0		50.0	50.0		ug/L		100	70 - 130	0	20
1,2-Dichloroethane	73	F1 F2	50.0	173	E F1 F2	ug/L		199	70 - 130	34	20
1,1-Dichloroethene	<5.0		50.0	49.4		ug/L		99	70 - 130	2	20
cis-1,2-Dichloroethene	5.4		50.1	54.1		ug/L		97	70 - 130	2	20
1,2-Dichloropropane	<5.0		50.0	49.3		ug/L		99	70 - 130	1	20
1,3-Dichloropropane	<5.0		50.1	50.4		ug/L		101	70 - 130	3	20
Isopropylbenzene	<5.0		50.0	53.0		ug/L		106	70 - 130	1	20
Methylene Chloride	6.8		50.1	57.0		ug/L		100	70 - 130	1	20
Styrene	<5.0		50.0	47.6		ug/L		95	70 - 130	2	20

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: 192-18706-3 MSD

Matrix: Water

Analysis Batch: 29149

Client Sample ID: Sump2 - 20250127

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
1,1,2,2-Tetrachloroethane	19		50.5	66.2		ug/L		94	70 - 130	2	20
Tetrachloroethene	<5.0		50.3	48.7		ug/L		97	70 - 130	2	20
Toluene	<5.0		49.9	52.8		ug/L		106	70 - 130	2	20
1,1,2-Trichloroethane	<5.0		49.8	49.2		ug/L		99	70 - 130	3	20
Trichloroethene	9.8		49.7	57.5		ug/L		96	70 - 130	2	20
1,2,3-Trichloropropane	<5.0		50.0	51.0		ug/L		102	70 - 130	2	20
1,2,4-Trimethylbenzene	<5.0		50.0	49.8		ug/L		100	70 - 130	0	20
1,3,5-Trimethylbenzene	<5.0		50.0	51.6		ug/L		103	70 - 130	1	20
Vinyl chloride	<2.0		50.4	48.3		ug/L		93	70 - 130	2	20

Surrogate	MSD %Recovery	MSD Qualifier	Limits
Dibromofluoromethane (Surr)	99		91 - 109
Toluene-d8 (Surr)	102		87 - 112
4-Bromofluorobenzene (Surr)	111		86 - 112

Lab Sample ID: MB 192-29489/7

Matrix: Water

Analysis Batch: 29489

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			02/07/25 14:06	1
1-Bromo-2-chloroethane	<5.0		5.0		ug/L			02/07/25 14:06	1
Bromochloromethane	<5.0		5.0		ug/L			02/07/25 14:06	1
Bromodichloromethane	<5.0		5.0		ug/L			02/07/25 14:06	1
Bromoform	<5.0		5.0		ug/L			02/07/25 14:06	1
Carbon disulfide	<10		10		ug/L			02/07/25 14:06	1
Carbon tetrachloride	<2.0		2.0		ug/L			02/07/25 14:06	1
Chloroform	<4.0		4.0		ug/L			02/07/25 14:06	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			02/07/25 14:06	1
Dibromochloromethane	<5.0		5.0		ug/L			02/07/25 14:06	1
1,2-Dibromoethane	<5.0		5.0		ug/L			02/07/25 14:06	1
Dibromomethane	<5.0		5.0		ug/L			02/07/25 14:06	1
1,1-Dichloroethane	<5.0		5.0		ug/L			02/07/25 14:06	1
1,2-Dichloroethane	<5.0		5.0		ug/L			02/07/25 14:06	1
1,1-Dichloroethene	<5.0		5.0		ug/L			02/07/25 14:06	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			02/07/25 14:06	1
1,2-Dichloropropane	<5.0		5.0		ug/L			02/07/25 14:06	1
1,3-Dichloropropane	<5.0		5.0		ug/L			02/07/25 14:06	1
Isopropylbenzene	<5.0		5.0		ug/L			02/07/25 14:06	1
Methylene Chloride	<5.0		5.0		ug/L			02/07/25 14:06	1
Styrene	<5.0		5.0		ug/L			02/07/25 14:06	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			02/07/25 14:06	1
Tetrachloroethene	<5.0		5.0		ug/L			02/07/25 14:06	1
Toluene	<5.0		5.0		ug/L			02/07/25 14:06	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			02/07/25 14:06	1
Trichloroethene	<5.0		5.0		ug/L			02/07/25 14:06	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			02/07/25 14:06	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			02/07/25 14:06	1

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 192-29489/7

Matrix: Water

Analysis Batch: 29489

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			02/07/25 14:06	1
Vinyl chloride	<2.0		2.0		ug/L			02/07/25 14:06	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	86	S1-	91 - 109		02/07/25 14:06	1
Toluene-d8 (Surr)	95		87 - 112		02/07/25 14:06	1
4-Bromofluorobenzene (Surr)	97		86 - 112		02/07/25 14:06	1

Lab Sample ID: LCS 192-29489/1005

Matrix: Water

Analysis Batch: 29489

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	49.8	46.5		ug/L		94	70 - 130
Bromochloromethane	50.1	43.5		ug/L		87	70 - 130
Bromodichloromethane	50.2	47.9		ug/L		95	70 - 130
Bromoform	49.9	52.7		ug/L		106	70 - 130
Carbon disulfide	101	80.8		ug/L		80	70 - 130
Carbon tetrachloride	50.0	53.2		ug/L		106	70 - 130
Chloroform	50.2	41.6		ug/L		83	70 - 130
1,2-Dibromo-3-Chloropropane	50.2	51.9		ug/L		103	70 - 130
Dibromochloromethane	50.7	51.0		ug/L		101	70 - 130
1,2-Dibromoethane	50.3	50.3		ug/L		100	70 - 130
Dibromomethane	50.0	46.5		ug/L		93	70 - 130
1,1-Dichloroethane	50.0	40.3		ug/L		81	70 - 130
1,2-Dichloroethane	50.0	46.8		ug/L		94	70 - 130
1,1-Dichloroethene	50.0	41.9		ug/L		84	70 - 130
cis-1,2-Dichloroethene	50.1	43.8		ug/L		88	70 - 130
1,2-Dichloropropane	50.0	46.1		ug/L		92	70 - 130
1,3-Dichloropropane	50.1	47.3		ug/L		95	70 - 130
Isopropylbenzene	50.0	57.8		ug/L		116	70 - 130
Methylene Chloride	50.1	41.1		ug/L		82	70 - 130
Styrene	50.0	48.5		ug/L		97	70 - 130
1,1,2,2-Tetrachloroethane	50.5	43.8		ug/L		87	70 - 130
Tetrachloroethene	50.3	52.8		ug/L		105	70 - 130
Toluene	49.9	49.1		ug/L		98	70 - 130
1,1,2-Trichloroethane	49.8	47.5		ug/L		95	70 - 130
Trichloroethene	49.7	46.7		ug/L		94	70 - 130
1,2,3-Trichloropropane	50.0	45.6		ug/L		91	70 - 130
1,2,4-Trimethylbenzene	50.0	50.3		ug/L		101	70 - 130
1,3,5-Trimethylbenzene	50.0	52.9		ug/L		106	70 - 130
Vinyl chloride	50.4	36.7		ug/L		73	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	90	S1-	91 - 109
Toluene-d8 (Surr)	99		87 - 112
4-Bromofluorobenzene (Surr)	101		86 - 112

Eurofins Arkansas

QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: MB 192-29524/7

Matrix: Water

Analysis Batch: 29524

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Benzene	<5.0		5.0		ug/L			02/08/25 16:11	1
1-Bromo-2-chloroethane	<5.0		5.0		ug/L			02/08/25 16:11	1
Bromochloromethane	<5.0		5.0		ug/L			02/08/25 16:11	1
Bromodichloromethane	<5.0		5.0		ug/L			02/08/25 16:11	1
Bromoform	<5.0		5.0		ug/L			02/08/25 16:11	1
Carbon disulfide	<10		10		ug/L			02/08/25 16:11	1
Carbon tetrachloride	<2.0		2.0		ug/L			02/08/25 16:11	1
Chloroform	<4.0		4.0		ug/L			02/08/25 16:11	1
1,2-Dibromo-3-Chloropropane	<5.0		5.0		ug/L			02/08/25 16:11	1
Dibromochloromethane	<5.0		5.0		ug/L			02/08/25 16:11	1
1,2-Dibromoethane	<5.0		5.0		ug/L			02/08/25 16:11	1
Dibromomethane	<5.0		5.0		ug/L			02/08/25 16:11	1
1,1-Dichloroethane	<5.0		5.0		ug/L			02/08/25 16:11	1
1,2-Dichloroethane	<5.0		5.0		ug/L			02/08/25 16:11	1
1,1-Dichloroethene	<5.0		5.0		ug/L			02/08/25 16:11	1
cis-1,2-Dichloroethene	<5.0		5.0		ug/L			02/08/25 16:11	1
1,2-Dichloropropane	<5.0		5.0		ug/L			02/08/25 16:11	1
1,3-Dichloropropane	<5.0		5.0		ug/L			02/08/25 16:11	1
Isopropylbenzene	<5.0		5.0		ug/L			02/08/25 16:11	1
Methylene Chloride	<5.0		5.0		ug/L			02/08/25 16:11	1
Styrene	<5.0		5.0		ug/L			02/08/25 16:11	1
1,1,2,2-Tetrachloroethane	<5.0		5.0		ug/L			02/08/25 16:11	1
Tetrachloroethene	<5.0		5.0		ug/L			02/08/25 16:11	1
Toluene	<5.0		5.0		ug/L			02/08/25 16:11	1
1,1,2-Trichloroethane	<5.0		5.0		ug/L			02/08/25 16:11	1
Trichloroethene	<5.0		5.0		ug/L			02/08/25 16:11	1
1,2,3-Trichloropropane	<5.0		5.0		ug/L			02/08/25 16:11	1
1,2,4-Trimethylbenzene	<5.0		5.0		ug/L			02/08/25 16:11	1
1,3,5-Trimethylbenzene	<5.0		5.0		ug/L			02/08/25 16:11	1
Vinyl chloride	<2.0		2.0		ug/L			02/08/25 16:11	1

Surrogate	MB %Recovery	MB Qualifier	Limits	Prepared	Analyzed	Dil Fac
Dibromofluoromethane (Surr)	95		91 - 109		02/08/25 16:11	1
Toluene-d8 (Surr)	95		87 - 112		02/08/25 16:11	1
4-Bromofluorobenzene (Surr)	94		86 - 112		02/08/25 16:11	1

Lab Sample ID: LCS 192-29524/1005

Matrix: Water

Analysis Batch: 29524

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Benzene	49.8	45.9		ug/L		92	70 - 130
Bromochloromethane	50.1	42.7		ug/L		85	70 - 130
Bromodichloromethane	50.2	48.4		ug/L		96	70 - 130
Bromoform	49.9	54.8		ug/L		110	70 - 130
Carbon disulfide	101	78.3		ug/L		78	70 - 130
Carbon tetrachloride	50.0	56.4		ug/L		113	70 - 130
Chloroform	50.2	41.1		ug/L		82	70 - 130

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 8260D - Volatile Organic Compounds by GC/MS (Continued)

Lab Sample ID: LCS 192-29524/1005

Matrix: Water

Analysis Batch: 29524

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromo-3-Chloropropane	50.2	55.8		ug/L		111	70 - 130
Dibromochloromethane	50.7	52.0		ug/L		103	70 - 130
1,2-Dibromoethane	50.3	51.9		ug/L		103	70 - 130
Dibromomethane	50.0	47.5		ug/L		95	70 - 130
1,1-Dichloroethane	50.0	39.8		ug/L		80	70 - 130
1,2-Dichloroethane	50.0	46.7		ug/L		94	70 - 130
1,1-Dichloroethene	50.0	43.0		ug/L		86	70 - 130
cis-1,2-Dichloroethene	50.1	43.8		ug/L		88	70 - 130
1,2-Dichloropropane	50.0	45.6		ug/L		91	70 - 130
1,3-Dichloropropane	50.1	47.2		ug/L		94	70 - 130
Isopropylbenzene	50.0	57.0		ug/L		114	70 - 130
Methylene Chloride	50.1	40.4		ug/L		81	70 - 130
Styrene	50.0	48.2		ug/L		96	70 - 130
1,1,2,2-Tetrachloroethane	50.5	45.5		ug/L		90	70 - 130
Tetrachloroethene	50.3	53.5		ug/L		106	70 - 130
Toluene	49.9	49.1		ug/L		98	70 - 130
1,1,2-Trichloroethane	49.8	47.8		ug/L		96	70 - 130
Trichloroethene	49.7	47.3		ug/L		95	70 - 130
1,2,3-Trichloropropane	50.0	48.6		ug/L		97	70 - 130
1,2,4-Trimethylbenzene	50.0	48.6		ug/L		97	70 - 130
1,3,5-Trimethylbenzene	50.0	51.8		ug/L		104	70 - 130
Vinyl chloride	50.4	37.1		ug/L		74	70 - 130

Surrogate	LCS %Recovery	LCS Qualifier	Limits
Dibromofluoromethane (Surr)	91		91 - 109
Toluene-d8 (Surr)	99		87 - 112
4-Bromofluorobenzene (Surr)	105		86 - 112

Method: 8260D SIM - Volatile Organic Compounds (GC/MS)

Lab Sample ID: MB 192-29350/6

Matrix: Water

Analysis Batch: 29350

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
1,2-Dibromo-3-Chloropropane	<0.20		0.20		ug/L			02/05/25 07:44	1
1,2-Dibromoethane	<0.050		0.050		ug/L			02/05/25 07:44	1
1,1,2,2-Tetrachloroethane	<0.076		0.076		ug/L			02/05/25 07:44	1
1,2,3-Trichloropropane	<0.020		0.020		ug/L			02/05/25 07:44	1

Lab Sample ID: LCS 192-29350/1004

Matrix: Water

Analysis Batch: 29350

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
1,2-Dibromo-3-Chloropropane	0.502	0.577		ug/L		115	70 - 130
1,2-Dibromoethane	0.503	0.508		ug/L		101	70 - 130
1,1,2,2-Tetrachloroethane	0.505	0.618		ug/L		122	70 - 130
1,2,3-Trichloropropane	0.500	0.525		ug/L		105	70 - 130

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: MB 192-29322/3

Matrix: Water

Analysis Batch: 29322

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	<0.20		0.20		mg/L			02/04/25 14:10	1
Chloride	<0.20		0.20		mg/L			02/04/25 14:10	1

Lab Sample ID: LCS 192-29322/4

Matrix: Water

Analysis Batch: 29322

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	25.0	24.9		mg/L		99	90 - 110
Chloride	25.0	24.8		mg/L		99	90 - 110

Lab Sample ID: 192-18708-E-1 MS

Matrix: Water

Analysis Batch: 29322

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	1600	F1	2500	4640	F1	mg/L		121	80 - 120
Chloride	920	F1	2500	3960	F1	mg/L		122	80 - 120

Lab Sample ID: 192-18708-E-1 MSD

Matrix: Water

Analysis Batch: 29322

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	1600	F1	2500	4700	F1	mg/L		123	80 - 120	1	10
Chloride	920	F1	2500	4010	F1	mg/L		124	80 - 120	1	10

Lab Sample ID: MB 192-29356/15

Matrix: Water

Analysis Batch: 29356

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	<0.20		0.20		mg/L			02/05/25 16:57	1
Chloride	<0.20		0.20		mg/L			02/05/25 16:57	1

Lab Sample ID: LCS 192-29356/16

Matrix: Water

Analysis Batch: 29356

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	25.0	26.7		mg/L		107	90 - 110
Chloride	25.0	26.7		mg/L		107	90 - 110

Lab Sample ID: 192-18858-B-1 MS

Matrix: Water

Analysis Batch: 29356

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	<20		2500	2560		mg/L		102	80 - 120
Chloride	65	^2	2500	2620		mg/L		102	80 - 120

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 9056A - Anions, Ion Chromatography

Lab Sample ID: 192-18858-B-1 MSD

Matrix: Water

Analysis Batch: 29356

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Bromide	<20		2500	2540		mg/L		102	80 - 120	1	10
Chloride	65	^2	2500	2530		mg/L		99	80 - 120	3	10

Lab Sample ID: MB 192-29433/3

Matrix: Water

Analysis Batch: 29433

Client Sample ID: Method Blank

Prep Type: Total/NA

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Bromide	<0.20		0.20		mg/L			02/06/25 14:50	1
Chloride	<0.20		0.20		mg/L			02/06/25 14:50	1

Lab Sample ID: LCS 192-29433/4

Matrix: Water

Analysis Batch: 29433

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Bromide	25.0	24.8		mg/L		99	90 - 110
Chloride	25.0	23.8		mg/L		95	90 - 110

Method: 6020B - Metals (ICP/MS)

Lab Sample ID: MB 192-29429/1-A

Matrix: Water

Analysis Batch: 29458

Client Sample ID: Method Blank

Prep Type: Total/NA

Prep Batch: 29429

Analyte	MB Result	MB Qualifier	RL	MDL	Unit	D	Prepared	Analyzed	Dil Fac
Arsenic	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 17:26	1
Lead	<0.00050		0.00050		mg/L		02/06/25 14:34	02/06/25 17:26	1

Lab Sample ID: LCS 192-29429/2-A

Matrix: Water

Analysis Batch: 29458

Client Sample ID: Lab Control Sample

Prep Type: Total/NA

Prep Batch: 29429

Analyte	Spike Added	LCS Result	LCS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	0.0200	0.0205		mg/L		102	85 - 115
Lead	0.0200	0.0209		mg/L		104	85 - 115

Lab Sample ID: 192-18590-Q-2-A MS

Matrix: Water

Analysis Batch: 29458

Client Sample ID: Matrix Spike

Prep Type: Total/NA

Prep Batch: 29429

Analyte	Sample Result	Sample Qualifier	Spike Added	MS Result	MS Qualifier	Unit	D	%Rec	%Rec Limits
Arsenic	<0.00050		0.0200	0.0205		mg/L		103	75 - 125
Lead	<0.00050		0.0200	0.0202		mg/L		101	75 - 125

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QC Sample Results

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method: 6020B - Metals (ICP/MS) (Continued)

Lab Sample ID: 192-18590-AC-2-B MSD

Matrix: Water

Analysis Batch: 29458

Client Sample ID: Matrix Spike Duplicate

Prep Type: Total/NA

Prep Batch: 29429

Analyte	Sample Result	Sample Qualifier	Spike Added	MSD Result	MSD Qualifier	Unit	D	%Rec	%Rec Limits	RPD	RPD Limit
Arsenic	<0.00050		0.0200	0.0210		mg/L		105	75 - 125	2	20
Lead	<0.00050		0.0200	0.0203		mg/L		102	75 - 125	1	20

QC Association Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

GC/MS VOA

Analysis Batch: 29149

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-1	Trip Blank - 20250127	Total/NA	Water	8260D	
192-18706-2	Sump1 - 20250127	Total/NA	Water	8260D	
192-18706-3	Sump2 - 20250127	Total/NA	Water	8260D	
192-18706-4	Sump3 - 20250127	Total/NA	Water	8260D	
192-18706-5	Sump11 - 20250127	Total/NA	Water	8260D	
192-18706-6	Sump12 - 20250127	Total/NA	Water	8260D	
192-18706-7	Sump13 - 20250127	Total/NA	Water	8260D	
192-18706-8	Sump4 - 20250128	Total/NA	Water	8260D	
MB 192-29149/7	Method Blank	Total/NA	Water	8260D	
LCS 192-29149/1005	Lab Control Sample	Total/NA	Water	8260D	
192-18706-3 MS	Sump2 - 20250127	Total/NA	Water	8260D	
192-18706-3 MSD	Sump2 - 20250127	Total/NA	Water	8260D	

Analysis Batch: 29350

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-1	Trip Blank - 20250127	Total/NA	Water	8260D SIM	
192-18706-2	Sump1 - 20250127	Total/NA	Water	8260D SIM	
192-18706-3	Sump2 - 20250127	Total/NA	Water	8260D SIM	
192-18706-5	Sump11 - 20250127	Total/NA	Water	8260D SIM	
192-18706-6	Sump12 - 20250127	Total/NA	Water	8260D SIM	
192-18706-7	Sump13 - 20250127	Total/NA	Water	8260D SIM	
192-18706-8	Sump4 - 20250128	Total/NA	Water	8260D SIM	
MB 192-29350/6	Method Blank	Total/NA	Water	8260D SIM	
LCS 192-29350/1004	Lab Control Sample	Total/NA	Water	8260D SIM	

Analysis Batch: 29489

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-2	Sump1 - 20250127	Total/NA	Water	8260D	
192-18706-2	Sump1 - 20250127	Total/NA	Water	8260D	
192-18706-2	Sump1 - 20250127	Total/NA	Water	8260D	
192-18706-3	Sump2 - 20250127	Total/NA	Water	8260D	
192-18706-4	Sump3 - 20250127	Total/NA	Water	8260D	
192-18706-5	Sump11 - 20250127	Total/NA	Water	8260D	
192-18706-5	Sump11 - 20250127	Total/NA	Water	8260D	
192-18706-5	Sump11 - 20250127	Total/NA	Water	8260D	
192-18706-6	Sump12 - 20250127	Total/NA	Water	8260D	
192-18706-6	Sump12 - 20250127	Total/NA	Water	8260D	
192-18706-7	Sump13 - 20250127	Total/NA	Water	8260D	
192-18706-8	Sump4 - 20250128	Total/NA	Water	8260D	
MB 192-29489/7	Method Blank	Total/NA	Water	8260D	
LCS 192-29489/1005	Lab Control Sample	Total/NA	Water	8260D	

Analysis Batch: 29524

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-3	Sump2 - 20250127	Total/NA	Water	8260D	
192-18706-8	Sump4 - 20250128	Total/NA	Water	8260D	
MB 192-29524/7	Method Blank	Total/NA	Water	8260D	
LCS 192-29524/1005	Lab Control Sample	Total/NA	Water	8260D	

QC Association Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

HPLC/IC

Analysis Batch: 29322

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-2	Sump1 - 20250127	Total/NA	Water	9056A	
192-18706-3	Sump2 - 20250127	Total/NA	Water	9056A	
192-18706-4	Sump3 - 20250127	Total/NA	Water	9056A	
192-18706-5	Sump11 - 20250127	Total/NA	Water	9056A	
192-18706-6	Sump12 - 20250127	Total/NA	Water	9056A	
192-18706-8	Sump4 - 20250128	Total/NA	Water	9056A	
MB 192-29322/3	Method Blank	Total/NA	Water	9056A	
LCS 192-29322/4	Lab Control Sample	Total/NA	Water	9056A	
192-18708-E-1 MS	Matrix Spike	Total/NA	Water	9056A	
192-18708-E-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 29356

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-6	Sump12 - 20250127	Total/NA	Water	9056A	
192-18706-7	Sump13 - 20250127	Total/NA	Water	9056A	
MB 192-29356/15	Method Blank	Total/NA	Water	9056A	
LCS 192-29356/16	Lab Control Sample	Total/NA	Water	9056A	
192-18858-B-1 MS	Matrix Spike	Total/NA	Water	9056A	
192-18858-B-1 MSD	Matrix Spike Duplicate	Total/NA	Water	9056A	

Analysis Batch: 29433

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-7	Sump13 - 20250127	Total/NA	Water	9056A	
MB 192-29433/3	Method Blank	Total/NA	Water	9056A	
LCS 192-29433/4	Lab Control Sample	Total/NA	Water	9056A	

Analysis Batch: 29586

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-3	Sump2 - 20250127	Total/NA	Water	9056A	
192-18706-4	Sump3 - 20250127	Total/NA	Water	9056A	
192-18706-5	Sump11 - 20250127	Total/NA	Water	9056A	

Metals

Prep Batch: 29429

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-2	Sump1 - 20250127	Total/NA	Water	3010A	
192-18706-3	Sump2 - 20250127	Total/NA	Water	3010A	
192-18706-4	Sump3 - 20250127	Total/NA	Water	3010A	
192-18706-5	Sump11 - 20250127	Total/NA	Water	3010A	
192-18706-6	Sump12 - 20250127	Total/NA	Water	3010A	
192-18706-7	Sump13 - 20250127	Total/NA	Water	3010A	
192-18706-8	Sump4 - 20250128	Total/NA	Water	3010A	
MB 192-29429/1-A	Method Blank	Total/NA	Water	3010A	
LCS 192-29429/2-A	Lab Control Sample	Total/NA	Water	3010A	
192-18590-Q-2-A MS	Matrix Spike	Total/NA	Water	3010A	
192-18590-AC-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	3010A	

Analysis Batch: 29457

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-2	Sump1 - 20250127	Total/NA	Water	6020B	29429

Eurofins Arkansas

QC Association Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Metals (Continued)

Analysis Batch: 29457 (Continued)

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-6	Sump12 - 20250127	Total/NA	Water	6020B	29429
192-18706-7	Sump13 - 20250127	Total/NA	Water	6020B	29429
192-18706-8	Sump4 - 20250128	Total/NA	Water	6020B	29429

Analysis Batch: 29458

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-6	Sump12 - 20250127	Total/NA	Water	6020B	29429
MB 192-29429/1-A	Method Blank	Total/NA	Water	6020B	29429
LCS 192-29429/2-A	Lab Control Sample	Total/NA	Water	6020B	29429
192-18590-Q-2-A MS	Matrix Spike	Total/NA	Water	6020B	29429
192-18590-AC-2-B MSD	Matrix Spike Duplicate	Total/NA	Water	6020B	29429

Analysis Batch: 29561

Lab Sample ID	Client Sample ID	Prep Type	Matrix	Method	Prep Batch
192-18706-3	Sump2 - 20250127	Total/NA	Water	6020B	29429
192-18706-4	Sump3 - 20250127	Total/NA	Water	6020B	29429
192-18706-5	Sump11 - 20250127	Total/NA	Water	6020B	29429

Lab Chronicle

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Trip Blank - 20250127

Lab Sample ID: 192-18706-1

Date Collected: 01/27/25 14:00

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 16:54
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 08:14

Client Sample ID: Sump1 - 20250127

Lab Sample ID: 192-18706-2

Date Collected: 01/27/25 14:25

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 17:24
Total/NA	Analysis	8260D		10	29489	LC5	EET ARK	02/07/25 19:01
Total/NA	Analysis	8260D		100	29489	LC5	EET ARK	02/07/25 19:31
Total/NA	Analysis	8260D		1000	29489	LC5	EET ARK	02/07/25 20:00
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 11:12
Total/NA	Analysis	9056A		100	29322	LC5	EET ARK	02/04/25 21:15
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		1	29457	JEP	EET ARK	02/06/25 18:06

Client Sample ID: Sump2 - 20250127

Lab Sample ID: 192-18706-3

Date Collected: 01/27/25 14:45

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 17:53
Total/NA	Analysis	8260D		1	29489	LC5	EET ARK	02/07/25 17:02
Total/NA	Analysis	8260D		10	29524	LC5	EET ARK	02/08/25 18:10
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 10:13
Total/NA	Analysis	9056A		100	29322	LC5	EET ARK	02/04/25 21:38
Total/NA	Analysis	9056A		1000	29586	LC5	EET ARK	02/11/25 10:07
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		20	29561	JEP	EET ARK	02/10/25 16:03

Client Sample ID: Sump3 - 20250127

Lab Sample ID: 192-18706-4

Date Collected: 01/27/25 15:10

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 19:23
Total/NA	Analysis	8260D		10	29489	LC5	EET ARK	02/07/25 18:31
Total/NA	Analysis	9056A		100	29322	LC5	EET ARK	02/04/25 22:01
Total/NA	Analysis	9056A		1000	29586	LC5	EET ARK	02/11/25 10:30
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		5	29561	JEP	EET ARK	02/10/25 15:25

Lab Chronicle

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump11 - 20250127

Lab Sample ID: 192-18706-5

Date Collected: 01/27/25 15:30

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 19:53
Total/NA	Analysis	8260D		10	29489	LC5	EET ARK	02/07/25 20:30
Total/NA	Analysis	8260D		100	29489	LC5	EET ARK	02/07/25 21:00
Total/NA	Analysis	8260D		1000	29489	LC5	EET ARK	02/07/25 21:30
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 10:42
Total/NA	Analysis	9056A		100	29322	LC5	EET ARK	02/04/25 22:24
Total/NA	Analysis	9056A		1000	29586	LC5	EET ARK	02/11/25 10:53
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		5	29561	JEP	EET ARK	02/10/25 15:29

Client Sample ID: Sump12 - 20250127

Lab Sample ID: 192-18706-6

Date Collected: 01/27/25 15:45

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 20:22
Total/NA	Analysis	8260D		1	29489	LC5	EET ARK	02/07/25 17:32
Total/NA	Analysis	8260D		10	29489	LC5	EET ARK	02/07/25 18:02
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 09:43
Total/NA	Analysis	9056A		100	29322	LC5	EET ARK	02/04/25 22:46
Total/NA	Analysis	9056A		10	29356	LC5	EET ARK	02/05/25 21:31
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		1	29457	JEP	EET ARK	02/06/25 18:19
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		1	29458	JEP	EET ARK	02/06/25 18:19

Client Sample ID: Sump13 - 20250127

Lab Sample ID: 192-18706-7

Date Collected: 01/27/25 16:20

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 20:52
Total/NA	Analysis	8260D		1	29489	LC5	EET ARK	02/07/25 16:32
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 09:13
Total/NA	Analysis	9056A		10	29356	LC5	EET ARK	02/05/25 21:54
Total/NA	Analysis	9056A		10	29433	LC5	EET ARK	02/06/25 17:29
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		1	29457	JEP	EET ARK	02/06/25 18:23

Eurofins Arkansas

Lab Chronicle

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Client Sample ID: Sump4 - 20250128

Lab Sample ID: 192-18706-8

Date Collected: 01/28/25 08:30

Matrix: Water

Date Received: 01/28/25 13:50

Prep Type	Batch Type	Batch Method	Run	Dilution Factor	Batch Number	Analyst	Lab	Prepared or Analyzed
Total/NA	Analysis	8260D		1	29149	LC5	EET ARK	01/30/25 21:22
Total/NA	Analysis	8260D		1	29489	LC5	EET ARK	02/07/25 16:03
Total/NA	Analysis	8260D		10	29524	LC5	EET ARK	02/08/25 17:40
Total/NA	Analysis	8260D SIM		1	29350	LC5	EET ARK	02/05/25 08:44
Total/NA	Analysis	9056A		100	29322	LC5	EET ARK	02/04/25 23:32
Total/NA	Prep	3010A			29429	JEP	EET ARK	02/06/25 14:34
Total/NA	Analysis	6020B		1	29457	JEP	EET ARK	02/06/25 18:26

Laboratory References:

EET ARK = Eurofins Arkansas, 8600 Kanis Rd, Little Rock, AR 72204, TEL (501)224-5060

Accreditation/Certification Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Laboratory: Eurofins Arkansas

Unless otherwise noted, all analytes for this laboratory were covered under each accreditation/certification below.

Authority	Program	Identification Number	Expiration Date
Arkansas DEQ	State	60-00889	03-02-25
The following analytes are included in this report, but the laboratory is not certified by the governing authority. This list may include analytes for which the agency does not offer certification.			
Analysis Method	Prep Method	Matrix	Analyte
8260D SIM		Water	1,1,2,2-Tetrachloroethane
8260D SIM		Water	1,2,3-Trichloropropane
8260D SIM		Water	1,2-Dibromo-3-Chloropropane
8260D SIM		Water	1,2-Dibromoethane

Method Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Method	Method Description	Protocol	Laboratory
8260D	Volatile Organic Compounds by GC/MS	SW846	EET ARK
8260D SIM	Volatile Organic Compounds (GC/MS)	SW846	EET ARK
9056A	Anions, Ion Chromatography	SW846	EET ARK
6020B	Metals (ICP/MS)	SW846	EET ARK
3010A	Preparation, Total Metals	SW846	EET ARK
5030C	Purge and Trap	SW846	EET ARK

Protocol References:

SW846 = "Test Methods For Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 And Its Updates.

Laboratory References:

EET ARK = Eurofins Arkansas, 8600 Kanis Rd, Little Rock, AR 72204, TEL (501)224-5060

Sample Summary

Client: Albemarle Corporation
Project/Site: South Plant Sumps

Job ID: 192-18706-1

Lab Sample ID	Client Sample ID	Matrix	Collected	Received
192-18706-1	Trip Blank - 20250127	Water	01/27/25 14:00	01/28/25 13:50
192-18706-2	Sump1 - 20250127	Water	01/27/25 14:25	01/28/25 13:50
192-18706-3	Sump2 - 20250127	Water	01/27/25 14:45	01/28/25 13:50
192-18706-4	Sump3 - 20250127	Water	01/27/25 15:10	01/28/25 13:50
192-18706-5	Sump11 - 20250127	Water	01/27/25 15:30	01/28/25 13:50
192-18706-6	Sump12 - 20250127	Water	01/27/25 15:45	01/28/25 13:50
192-18706-7	Sump13 - 20250127	Water	01/27/25 16:20	01/28/25 13:50
192-18706-8	Sump4 - 20250128	Water	01/28/25 08:30	01/28/25 13:50

Ver: 10/10/2024

Login Sample Receipt Checklist

Client: Albemarle Corporation

Job Number: 192-18706-1

Login Number: 18706

List Source: Eurofins Arkansas

List Number: 1

Creator: Stephens, Ren

Question	Answer	Comment
Radioactivity wasn't checked or is $\leq$ background as measured by a survey meter.	N/A	
The cooler's custody seal, if present, is intact.	True	
Sample custody seals, if present, are intact.	True	
The cooler or samples do not appear to have been compromised or tampered with.	True	
Samples were received on ice.	True	
Cooler Temperature is acceptable.	True	
Cooler Temperature is recorded.	True	
COC is present.	True	
COC is filled out in ink and legible.	True	
COC is filled out with all pertinent information.	True	
Is the Field Sampler's name present on COC?	True	
There are no discrepancies between the containers received and the COC.	True	
Samples are received within Holding Time (excluding tests with immediate HTs)	True	
Sample containers have legible labels.	True	
Containers are not broken or leaking.	True	
Sample collection date/times are provided.	True	
Appropriate sample containers are used.	True	
Sample bottles are completely filled.	True	
Sample Preservation Verified.	True	
There is sufficient vol. for all requested analyses, incl. any requested MS/MSDs	True	
Containers requiring zero headspace have no headspace or bubble is $<6\text{mm}$ (1/4").	True	
Multiphasic samples are not present.	True	
Samples do not require splitting or compositing.	True	
Residual Chlorine Checked.	N/A	

Data Validation Report

Project/Site: Albemarle Corporation/SWV, SPL, RADD
AECOM Chemist: Jamie Herman
Secondary Reviewer: Delaine Austin

Event: 2SA 2024 Sumps
Date: 2/19/2025
Date: 2/19/2025

Introduction:

This validation report documents the data review through the checklists below. Further identification and explanation of the anomalies identified are provided following each section of the checklist, as needed.

The field sample and laboratory identification associations are summarized in Table 1. A summary of qualified sample results are presented in Table 2. Data are qualified per the definitions and reason codes presented in Attachment A.

Laboratory - Sample Delivery Groups:

Eurofins Environment Testing Little Rock, Arkansas (Eurofins) – 192-18706-1, 192-18708-1

Methods:

South Plant Landfill and RADD Samples: Total Metals (6020B), Volatile Organic Compounds (VOCs) (8260D and 8260D with selective ion monitoring [SIM]), Anions (Bromide, Chloride) (9056A)

Solid Waste Vault Samples: Total Metals (6020B), Volatile Organic Compounds (VOCs) (8260D and 8260D with selective ion monitoring [SIM]), Anions (Bromide, Chloride, Sulfate) (9056A) Total Organic Halides (9020B), Total Dissolved Solids (SM2540C), Total Organic Carbon (SM5310C)

Validation:

Stage 2A Validation

Guidance Documents:

United States Environmental Protection Agency (USEPA) National Functional Guidelines for Organic Superfund Methods Data Review (November 2020), *National Function Guidelines for Inorganic Superfund Methods Data Review* (November 2020), laboratory quality control (QC) criteria, and method requirements, where applicable.

Overall Assessment of Data:

Although multiple results were reported for 1,1,2,2-tetrachloroethene, 1,2-dibromoethane, 1,2-dibromo-3-chloropropane, and 1,2,3-trichloropropane by Methods 8260D and 8260D SIM as noted in Section 4.0, the overall completeness of the data set was not impacted. The data are considered usable with the qualifications and clarifications applied through this validation process, and the overall assessment of data was acceptable and considered 100% complete.

A summary of qualified sample results are presented in Table 2.

Data Validation Report

Project/Site: Albemarle Corporation/SWV, SPL, RADD
AECOM Chemist: Jamie Herman
Secondary Reviewer: Delaine Austin

Event: 2SA 2024 Sumps
Date: 2/19/2025
Date: 2/19/2025

1.0 Sample Documentation

Sample Documentation Criteria	Yes	No	NA
Were all samples documented correctly on the chain-of-custody (COC) and container labels?	X		
Were sample analyses completed per the COC?	X		
Were samples extracted and analyzed within the method required holding times?	X		
Laboratory Case Narrative	Yes	No	NA
Were there narrative clarifications not identified within this validation report?		X	

Data Validation Report

Project/Site: Albemarle Corporation/SWV, SPL, RADD
AECOM Chemist: Jamie Herman
Secondary Reviewer: Delaine Austin

Event: 2SA 2024 Sumps
Date: 2/19/2025
Date: 2/19/2025

2.0 Quality Control and Performance Checks

Stage 2A			
Method Blank Criteria	Yes	No	NA
Was a method blank analyzed for each batch?	X		
Were method blank concentrations reported as non-detected for the target analytes?	X		
Laboratory Control Sample (LCS) Criteria	Yes	No	NA
Was an LCS reported with each preparation batch?	X		
Were LCS/LCSD recoveries and/or RPDs within laboratory control limits?	X		
Matrix Spike/Matrix Spike Duplicates (MS/MSD) Criteria	Yes	No	NA
Was an MS/MSD performed on a project specific sample?	X		
Parent Sample Identification	Method		
Sump2 - 20250127	8260D		
SumpP – 20250127	9056A		
For concentrations <4x the spike concentration, were MS/MSD recoveries and RPDs within criteria?		X ¹	
Laboratory Duplicate Criteria (Inorganics)	Yes	No	NA
Was a laboratory duplicate performed on a project specific sample?		X	
If both the parent sample and duplicate values were >5xRL, was laboratory duplicate RPD within acceptance criteria of <20%?			X
If either the parent sample or duplicate value was <5xRL, was the absolute difference within acceptance criteria of <1xRL?			X
Surrogate Criteria (Organics)	Yes	No	NA
Were the surrogates within acceptance limits?		X ²	

- The following matrix spike samples were outside laboratory control limits:

Matrix Spike Identification	Method	Analyte	Recovery (Limit)	RPD (Limit)
Sump2 – 20250127	8260D	1-Bromo-2-chloroethane	106/173 (70-130)	36 (20)
		Dibromochloromethane	102/164 (70-130)	29 (20)
		1,2-Dibromoethane	117/273 (70-130)	49 (20)
		Dibromomethane	96/155 (70-130)	32 (20)
		1,2-Dichloroethane	99/199 (70-130)	34 (20)
SumpP – 20250127	9056A	Bromide	121/123 (80-120)	1 (10)
		Chloride	122/124 (80-120)	1 (10)

The detected sample results associated with the high matrix spike recoveries were qualified as estimated (J+ m). The results were also qualified as estimated (J ld) due to RPDs outside acceptance criteria.

A summary of qualified sample results are presented in Table 2.

- The following surrogate recoveries were outside control limits:

Data Validation Report

Project/Site: Albemarle Corporation/SWV, SPL, RADD
AECOM Chemist: Jamie Herman
Secondary Reviewer: Delaine Austin

Event: 2SA 2024 Sumps
Date: 2/19/2025
Date: 2/19/2025

Sample Identification	Method	Surrogate	Recovery (Limit)
Sump1 – 20250127 (1x)	8260D	4-Bromofluorobenzene	193 (86-112)
Sump2 – 20250127 (10x)	8260D	Dibromofluoromethane	89 (91-109)
Sump11 – 20250127 (1x)	8260D	4-Bromofluorobenzene	172 (86-112)

The detected sample results for Sump1 – 20250127 (1x) and Sump11 – 20250127 (1x) associated with high surrogate recoveries were qualified as estimated (J+ s).

The sample results associated with Sump2 – 20250127 (10x) were diluted beyond the ability to quantitate surrogate recoveries. Data qualification was not applicable for these sample results.

Data Validation Report

Project/Site: Albemarle Corporation/SWV, SPL, RADD
AECOM Chemist: Jamie Herman
Secondary Reviewer: Delaine Austin

Event: 2SA 2024 Sumps
Date: 2/19/2025
Date: 2/19/2025

3.0 Field Quality Control Samples

Verification Criteria		Yes	No	NA
Was a trip blank shipped with, and analyzed with the samples? (VOCs only)		X		
Were trip blank concentrations reported as non-detected for the target analytes?		X		
Were field and/or equipment blanks collected and analyzed? (Field blank VOCs only)				X
Were field QC blank concentrations reported as non-detected for the target analytes?				X
Field Duplicate Criteria		Yes	No	NA
Were field duplicate samples collected?			X	
Parent Sample	Field Duplicate Sample			
N/A	N/A			
Were parent sample/field duplicate RPDs $\leq 30\%$ for analytes that had concentrations $> 5x$ the RL?				X
Were the differences between the parent sample/field duplicate $< 2x$ RL for analytes that had concentrations $< 5x$ the RL?				X

Data Validation Report

Project/Site: Albemarle Corporation/SWV, SPL, RADD
AECOM Chemist: Jamie Herman
Secondary Reviewer: Delaine Austin

Event: 2SA 2024 Sumps
Date: 2/19/2025
Date: 2/19/2025

4.0 Sensitivity and Additional Qualification

Sensitivity Criteria	Yes	No	NA
Was the laboratory sensitivity consistent with project requirements?	X		
Did all analytes meet sensitivity requirements?		X ¹	
Additional Qualification Criteria	Yes	No	NA
Was professional judgment used to qualify data, if not addressed in Sections 1, 2, and 3?	X ²		
Trace level detections, results reported between the method detection limit (MDL) and the reporting limit (RL) were qualified as estimated (J lq).			X
Were multiple results reported?	X ²		
Completeness Criteria	Yes	No	NA
Were the reported results usable if qualified?	X		
Were the analyses requested performed, the correct analyte lists used, and correct sample preparation and analyses methods and units utilized?	X		

1. Lead and/or arsenic results associated with samples Sump2 – 20250127, Sump3 – 20250127, and Sump11-20250127 were reported as non-detect at elevated reporting limits. These results will need to be evaluated by the end user for meeting project objectives.
2. Several results for samples Sump1 – 20250127, Sump2 – 20250127, Sump11 – 20250127, Sump12 – 20250127 and Sump13 – 20250127 were qualified as exceeding the instrument calibration by the laboratory. The associated sample results were qualified as estimated (J c).

Several analytes were reported by multiple methods (1,1,2,2-tetrachloroethene, 1,2-dibromoethane, 1,2-dibromo-3-chloropropane, and/or 1,2,3-trichloropropane by Methods 8260D and 8260D SIM), results were selected for reporting using the following criteria:

- a. If both results were non-detect, the non-detect result with the lower reporting limit was selected.
- b. If both results were reported as detected, the higher detected result was selected for reporting.
- c. If one result was reported as non-detect and the other result was reported as detected, the detected result was selected for reporting.

Table 1: Sample Summary and Laboratory Association

Sample Identification	Laboratory Identification	Sample Date	Sample Type	Analyses
Trip Blank-20250127	192-18706-1	1/27/2025	Trip Blank	8260D, 8260D SIM
Sump1 - 20250127	192-18706-2	1/27/2025	Normal	8260D, 8260D SIM, 6020B, 9056A
Sump2 - 20250127	192-18706-3	1/27/2025	Normal	8260D, 8260D SIM, 6020B, 9056A
Sump3 - 20250127	192-18706-4	1/27/2025	Normal	8260D, 8260D SIM, 6020B, 9056A
Sump11 - 20250127	192-18706-5	1/27/2025	Normal	8260D, 8260D SIM, 6020B, 9056A
Sump12 - 20250127	192-18706-6	1/27/2025	Normal	8260D, 8260D SIM
Sump13 - 20250127	192-18706-7	1/27/2025	Normal	8260D, 8260D SIM, 6020B, 9056A
Sump4 - 20250128	192-18706-8	1/28/2025	Normal	8260D, 8260D SIM, 6020B, 9056A

Table 2. Summary of Qualified Data

Sample Identification	Laboratory Identification	Fraction	Method	Analyte	Result	Unit	Result Reportable	Qualifier	Reason Code
Sump1-20250127	192-18706-2	N	SW8260D	1,1,2,2-Tetrachloroethane	8.6	ug/L	NO	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	1,2-Dibromo-3-chloropropane	27	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	Carbon disulfide	26	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	Chloroform	45	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	cis-1,2-Dichloroethene	5.0	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	Tetrachloroethene	8.1	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	Toluene	8.5	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	Trichloroethene	16	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D	Vinyl chloride	22	ug/L	YES	J+	s
Sump1-20250127	192-18706-2	N	SW8260D-SIM	1,1,2,2-Tetrachloroethane	8.7	ug/L	YES	J	c
Sump1-20250127	192-18706-2	N	SW8260D-SIM	1,2-Dibromo-3-chloropropane	25	ug/L	NO	J	c
Sump1-20250127	192-18706-2	N	SW8260D-SIM	1,2-Dibromoethane	690	ug/L	NO	J	c
Sump2-20250127	192-18706-3	N	SW8260D	1,2-Dibromoethane	46	ug/L	NO	J+	m,ld
Sump2-20250127	192-18706-3	N	SW8260D	1,2-Dichloroethane	59	ug/L	YES	J+	m,ld
Sump2-20250127	192-18706-3	N	SW8260D	1-Bromo-2-chloroethane	19	ug/L	YES	J+	m,ld
Sump2-20250127	192-18706-3	N	SW8260D	Dibromochloromethane	36	ug/L	YES	J+	m,ld
Sump2-20250127	192-18706-3	N	SW8260D	Dibromomethane	19	ug/L	YES	J+	m,ld
Sump2-20250127	192-18706-3	N	SW8260D-SIM	1,1,2,2-Tetrachloroethane	15	ug/L	NO	J	c
Sump2-20250127	192-18706-3	N	SW8260D-SIM	1,2-Dibromoethane	53	ug/L	YES	J	c
Sump11-20250127	192-18706-5	N	SW8260D	1,1,2,2-Tetrachloroethane	19	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	1,2,3-Trichloropropane	9.3	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	1,2-Dichloropropane	5.2	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	Chloroform	24	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	cis-1,2-Dichloroethene	8.7	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	Tetrachloroethene	22	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	Trichloroethene	34	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D	Vinyl chloride	15	ug/L	YES	J+	s
Sump11-20250127	192-18706-5	N	SW8260D-SIM	1,1,2,2-Tetrachloroethane	17	ug/L	NO	J	c
Sump11-20250127	192-18706-5	N	SW8260D-SIM	1,2,3-Trichloropropane	8.7	ug/L	NO	J	c
Sump11-20250127	192-18706-5	N	SW8260D-SIM	1,2-Dibromoethane	180	ug/L	NO	J	c
Sump12-20250127	192-18706-6	N	SW8260D-SIM	1,2-Dibromoethane	15	ug/L	NO	J	c
Sump13-20250127	192-18706-7	N	SW8260D-SIM	1,2-Dibromoethane	5.6	ug/L	YES	J	c
SumpP-20250127	192-18708-1	N	SW9056A	Bromide	1600	mg/L	YES	J+	m
SumpP-20250127	192-18708-1	N	SW9056A	Chloride	920	mg/L	YES	J+	m

Attachment A
List of Possible Qualifiers Assigned by AECOM Data Review Team

DATA QUALIFIER DEFINITIONS

- U The analyte was analyzed for, but was not detected above the reported sample quantitation limit, or the sample result was considered not-detected due to associated blank contamination.
- J The analyte was positively identified; 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.
- UJ The analyte was analyzed for, but was not detected. The reported sample quantitation limit is approximate and may be inaccurate or imprecise.
- R The data are 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.

REASON CODE DEFINITIONS

- be Equipment blank contamination
- bf Field blank contamination
- bl Laboratory blank contamination
- c Calibration issue
- cl Clean-up standard recovery
- cr Chromatographic resolution
- d Reporting limit raised due to chromatographic interference
- dt Dissolved result > total over limit
- fd Field duplicate imprecision
- g Chromatographic pattern match issue
- h Holding times
- i Internal standard areas
- ii Injection internal standard area or retention time exceedance
- k Estimated Maximum Possible Concentrations
- l LCS recoveries
- lc Labeled compound recovery
- ld Laboratory duplicate imprecision (matrix duplicate, MSD, LCSD)
- lq Level of quantitation/trace value
- m Matrix spike recovery
- nb Negative laboratory blank contamination
- p Chemical preservation issue
- pe Post Extraction Spike
- pj Professional Judgement
- q Quantitation issue
- r Dual column RPD
- rp Re-extraction precision issue [PAHs only]
- rt SIM ions not within + 2 seconds
- s Surrogate/IDA recovery
- sp Sample preparation issue
- su Evidence of ion suppression
- t Temperature Preservation Issue
- v compound identification issue
- y Serial dilution results
- z ICS results

Attachment D

Updated Financial Assurance

ALBEMARLE CORPORATION
SOUTH PLANT LANDFILL

CLOSURE COST ESTIMATE			
YEAR	ESTIMATED COST	INFLATION FACTOR	ADJUSTED CLOSURE COST
2020	\$1,540,635	NA	\$1,540,635
2021	\$1,540,635	1.013	\$1,560,663
2022	\$1,560,663	1.062	\$1,657,424
2023	\$1,657,424	1.065	\$1,765,157
2024	\$1,765,157	1.027	\$1,812,816

POST-CLOSURE CARE COST ESTIMATE			
YEAR	ESTIMATED COST	INFLATION FACTOR	ADJUSTED POST CLOSURE COST
2020	\$375,049	NA	\$375,049
2021	\$375,049	1.013	\$379,925
2022	\$379,925	1.062	\$403,480
2023	\$403,480	1.065	\$429,706
2024	\$429,706	1.027	\$441,308

TOTAL ESTIMATED CLOSURE COST (2024)	\$1,812,816
TOTAL ESTIMATED POST-CLOSURE CARE COST (2024)	\$441,308
TOTAL REQUIRED FINANCIAL ASSURANCE (2024)	\$2,254,124

Attachment E

Closure Plan

The Closure and Post Closure Care Plan was not updated during 2024.