



April 21, 2023

Mr. Brian Croyle, Environmental Specialist
Montgomery County Public Schools
Division of Sustainability and Compliance
8301 Turkey Thicket Drive
Gaithersburg, MD 20879

Ref: **Sampling for Asphalt Fumes and Hydrogen Sulfide Gas – April 13th, 2023**
Poolesville High School
KCI Job No. 122302497

KCI Technologies Inc. (KCI) is submitting the following letter report detailing the findings of air sampling of Asphalt Fumes (benzene soluble fraction) and Hydrogen Sulfide gas at Poolesville High School located at 17501 W. Willard Rd. Poolesville, MD 20837 (subject site). Baseline sampling was conducted by KCI's Industrial Hygienist, Mr. Tyler McCleaf, CSP, under the oversight of KCI's Certified Industrial Hygienist (CIH), Mr. Jonathan Coale.

Background:

At Poolesville High School, current renovations and construction has raised concerns from student parents. Students and faculty have voiced concerns related to an odor present in the school while the roofing work is occurring. The parents are concerned the students are being exposed to unsafe conditions related to the asphalt fumes being produced during the roofing installation. MCPS contacted KCI to assist them in collecting data on the school's occupants' potential exposure to fumes related to the roofing work being conducted.

Description of the Work Performed:

On April 13, 2023, KCI conducted air sampling for Asphalt Fumes (benzene soluble fraction) and Hydrogen Sulfide gas levels at Poolesville High School. The sampling of Asphalt Fumes (benzene soluble fraction) was done under method: Modified NIOSH 5042. This method will determine the total concentration of total particulate and the soluble fraction to which an individual is exposed.

There isn't an Occupational Exposure Limit (OEL) set by OSHA for Asphalt Fumes. Reputable consensus standards offer guidance on OELs for Asphalt Fumes and are referenced herein. NIOSH has an adopted value of 5 mg/m³ Recommended Exposure Limits (REL) - Time-Weighted Average (TWA) for Total Particulate asphalt fumes. NIOSH's definition of REL-TWA is the "concentration for a conventional 10-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, for a working lifetime without adverse effect". ACGIH has an adopted value of 0.5 mg/m³ Threshold Limit Value (TLV) -Time-Weighted Average (TWA) for Inhalable asphalt fumes. ACGIH's definition of TLV-TWA is the "concentration for a conventional 8-hour workday and a 40-hour workweek, to which it is believed that nearly all workers may be repeatedly exposed, day after day, for a working lifetime without adverse effect". It should be noted that KCI's sampling methods were based on total particulates for benzene soluble asphalt fumes but for the purpose of this project, the more stringent ACGIH standard is being applied as the threshold value for indoor air.

KCI also utilized a multi-gas meter to collect real time readings of hydrogen sulfide (H₂S), carbon monoxide (CO), and oxygen (O₂) levels in various locations throughout the building and exterior. Direct read data was performed to collect short term “grab” samples to determine if the gas was present and was not intended to collect exposure data.

During the time of the air sampling, construction was being conducted, asphalt tar smell was noted outside of the building. KCI placed six (6) sampling pumps set to approximately 1 liter per minute in locations pre-determined by MCPS. It is KCI’s understanding that the sample locations selected by MCPS were where complaints were made from students. After all sampling pumps were placed, KCI took real time readings of the hydrogen sulfide, CO, and O₂ levels at each of these locations every 30 minutes inside and every 30 minutes outside. A sampling location map can be found in attachment A.

KCI conducted area sampling from approximately 0830 until 1430. Conditions during the sampling period were clear skies and 55°- 85°F. Winds were between 0 and 10mph from N, NW to S, SW.

After sampling, the cassettes were sealed, logged, bagged, and shipped as required to Galson Laboratories in East Syracuse, NY, where they were analyzed for Asphalt Fume (benzene soluble fraction) Modified NIOSH Method 5042. Galson Laboratories is accredited by the American Industrial Hygiene Association (#100324).

Results:

Asphalt Fumes (Benzene Soluble Fraction)

Table 1 – Asphalt Fumes Sampling Summary				
Location	Sample Number	Concentration (mg/m³)	Above ACGIH TLV-TWA?	Above NIOSH REL-TWA
Media Center Hallway – Outside Room 37	PH – 01	<0.28	No	No
Arts Hallway – Outside Room 44	PH – 02	<0.28	No	No
Science Building 1 st Floor – Outside Room 184	PH – 03	<0.28	No	No
Science Building 2 nd Floor – Outside Room 284	PH – 04	<0.28	No	No
West End of Portables – (exterior)	PH – 05	<0.28	No	No
Outside of Main Office (exterior)	PH – 06	<0.28	No	No
Field Blank	PH – FB	N/A	N/A	N/A
Lab Blank	PH – LB	N/A	N/A	N/A
N/A: Not Applicable				

Laboratory analysis results are included as Attachment B.

Gas Meter Readings

Table 2 – Gas Meter Sampling Summary			
Time	Oxygen (O ₂)	Carbon Monoxide (CO)	Hydrogen Sulfide (H ₂ S)
830-835	20.8	0	0
900-905	20.8	0	0
940-945	20.8	0	0
1100-1105	20.8	0	0
1132-1137	20.8	0	0
1250-1255	20.8	0	0
1315-1320	20.8	0	0
1400-1405	20.8	0	0
1430-1435	20.8	0	0

Olfactory Findings

During walkthroughs, KCI noted a tar smell outside of the new main office location and in the corridor outside of the auditorium and health room.

Conclusion:

In conclusion, the baseline sampling data determined airborne Asphalt Fumes concentrations were below the ACGIH TLV-TWA and NIOSH REL-TWA adopted value during the period of sampling. In addition, H₂S and CO concentrations were not present or at concentrations below the gas meters detectable range. Oxygen levels were at the expected levels.

During sampling, asphalt roofing activities were being performed. There was tar smell permeating into the auditorium corridor, outside of the new main office, and downwind from where roofing activities were being performed.

If you have questions or comments regarding this report, please contact me.

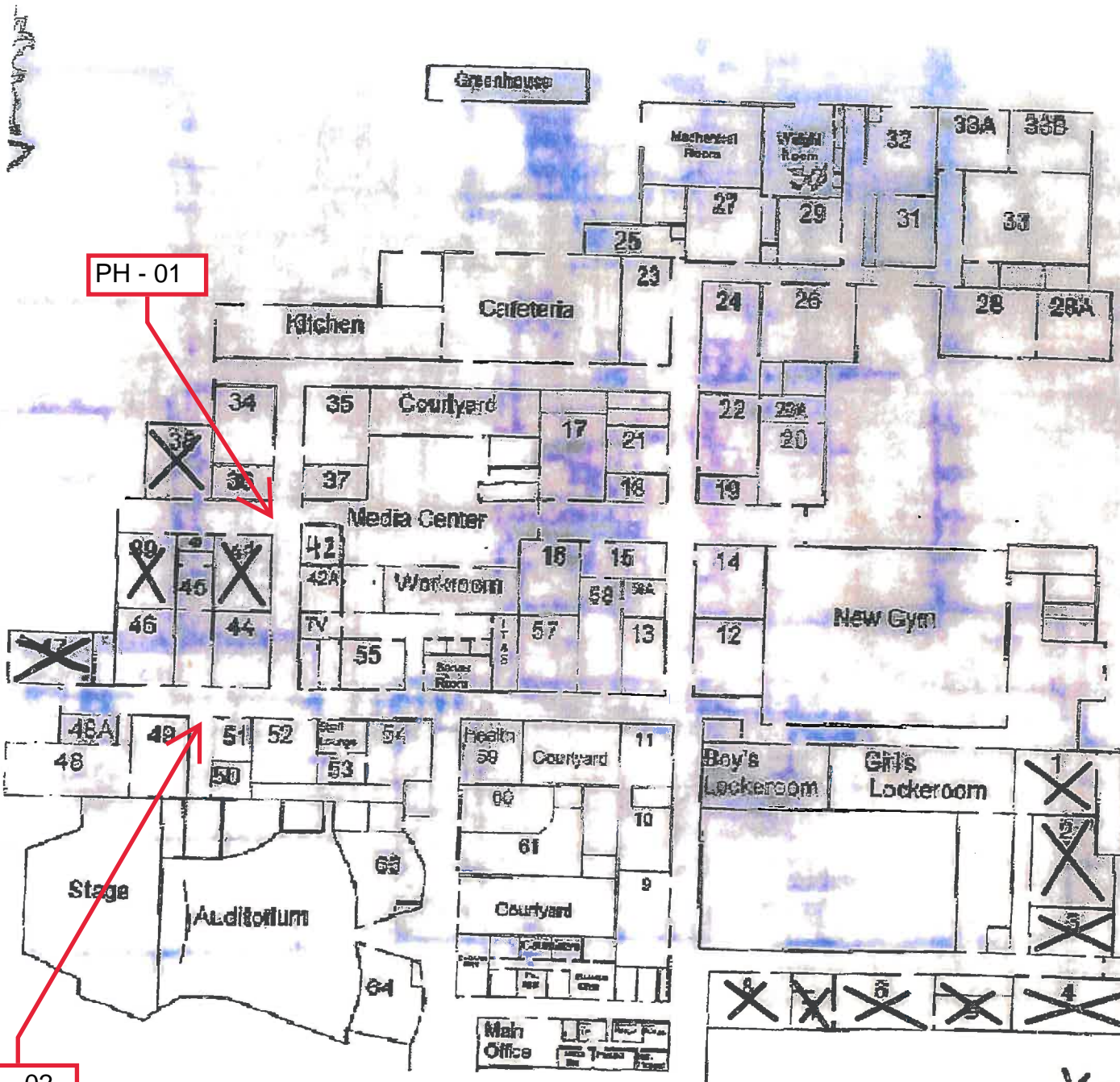
Sincerely,
KCI Technologies, Inc



Jonathan S. Coale, CIH, CIEC
Certified Industrial Hygienist
KCI Technologies, Inc.

Attachment A: Sample Location Map
Attachment B: Laboratory Certificate of Analysis Report for Air Samples

**Attachment A:
Sample Location Map**



PH - 01

PH - 05

P1	P6
P2	P7
P3	P8
P4	P9
P5	P10
Portables	

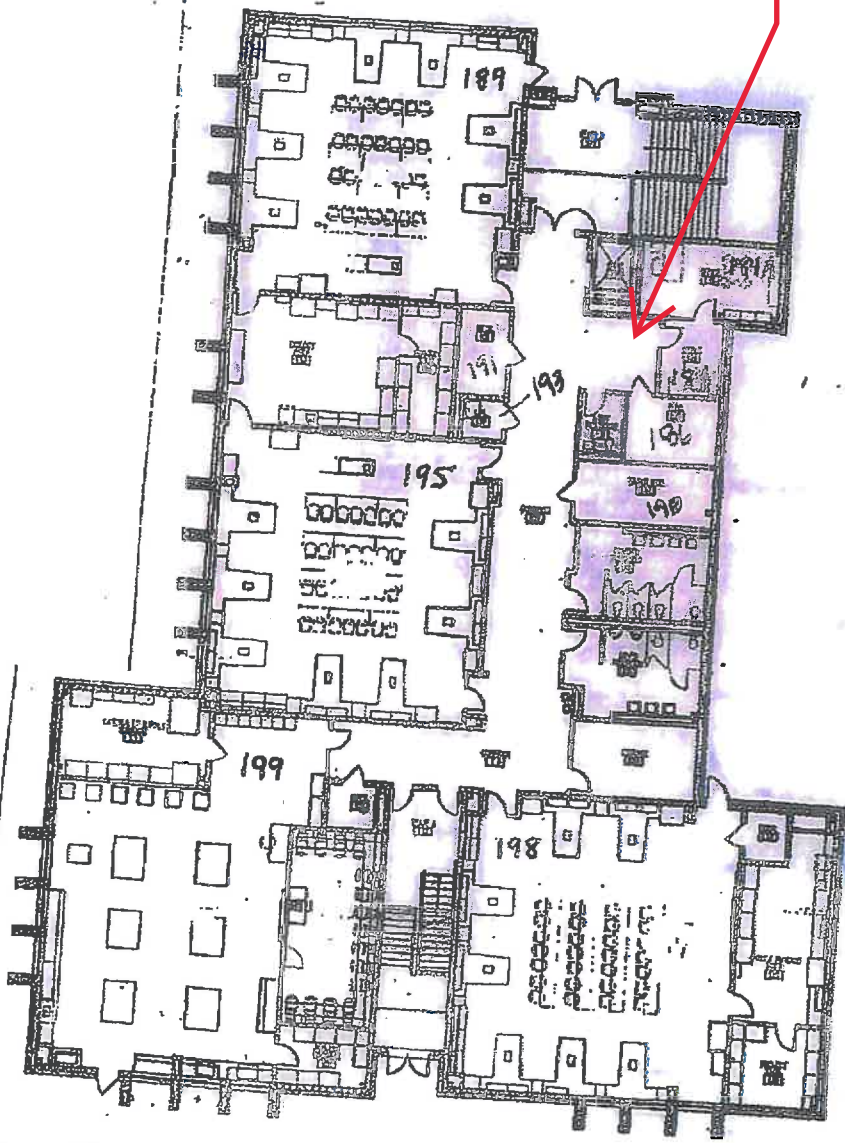
PH-06

PH - 02

X = Room not being used

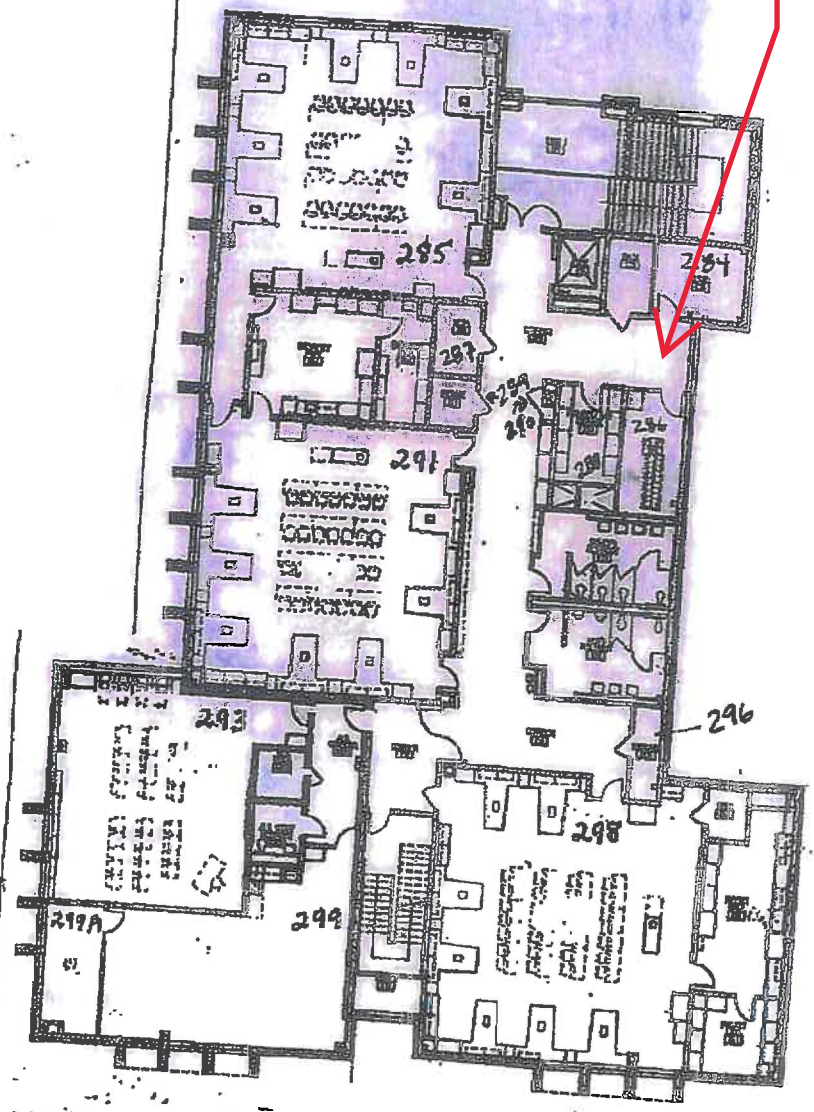
PH - 03

PH - 04



POOLSVILLE HIGH SCHOOL
Science/Technology Addition

FIRST FLOOR



POOLSVILLE HIGH SCHOOL
Science/Technology Addition

SECOND FLOOR

Attachment B:
Laboratory Certificate of Analysis Report for Air Samples



GALSON

**Mr. Jon Coale
KCI Technologies
936 Ridgebrook Road
Sparks Glencoe, MD 21152**

April 19, 2023

Account# 17844

Login# L591435

Dear Mr. Coale:

Enclosed are the analytical results for the samples received by our laboratory on April 17, 2023. All samples on the chain of custody were received in good condition unless otherwise noted. Any additional observations will be noted on the chain of custody.

Please contact client services at (888) 432-5227 if you would like any additional information regarding this report. Thank you for using SGS Galson.

Sincerely,

SGS Galson

A handwritten signature in black ink that reads 'Lisa Swab'. The signature is written in a cursive, flowing style.

**Lisa Swab
Laboratory Director**

Enclosure(s)



Terms and Conditions & General Disclaimers

- This document is issued by the Company under its General Conditions of Service accessible at <http://www.sgs.com/en/Terms-and-Conditions.aspx>. Attention is drawn to the limitation of liability, indemnification and jurisdiction issues defined therein.
- Any holder of this document is advised that information contained herein reflects the Company’s findings at the time of its intervention only and within the limits of Client’s instructions, if any. The Company’s sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the content or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

Analytical Disclaimers

- Unless otherwise noted within the report, all quality control results associated with the samples were within established control limits or did not impact reported results.
- Note: The findings recorded within this report were drawn from analysis of the sample(s) provided to the laboratory by the Client (or a third party acting at the Client’s direction). The laboratory does not have control over the sampling process, including but not limited to the use of field equipment and collection media, as well as the sampling duration, collection volume or any other collection parameter used by the Client. The findings herein constitute no warranty of the sample's representativeness of any sampled environment, and strictly relate to the samples as they were presented to the laboratory. For recommended sampling collection parameters, please refer to the Sampling and Analysis Guide at www.sgsgalson.com.
- Unrounded results are carried through the calculations that yield the final result and the final result is rounded to the number of significant figures appropriate to the accuracy of the analytical method. Please note that results appearing in the columns preceding the final result column may have been rounded and therefore, if carried through the calculations, may not yield an identical final result to the one reported.
- The stated LOQs for each analyte represent the demonstrated LOQ concentrations prior to correction for desorption efficiency (if applicable).
- Unless otherwise noted within the report, results have not been blank corrected for any field blank or method blank data.

Accreditations SGS Galson holds a variety of accreditations and recognitions. Our quality management system conforms with the requirements of ISO/IEC 17025. Where applicable, samples may also be analyzed in accordance with the requirements of ELAP, NELAC, or LELAP under one of the state accrediting bodies listed below. Current Scopes of Accreditation can be viewed at <http://www.sgsgalson.com> in the accreditations section of the "About" page. To determine if the analyte tested falls under our scope of accreditation, please visit our website or call Client Services at (888) 432-5227.

National/International	Accreditation/Recognition	Lab ID#	Program/Sector
AIHA-LAP, LLC - IHLAP, ELLAP, EMLAP	ISO/IEC 17025 and USEPA NLLAP	Lab ID 100324	Industrial Hygiene, Environmental Lead, Environmental Microbiology

State	Accreditation/Recognition	Lab ID#	Program/Sector
New York (NYSDOH)	ELAP and NELAC (TNI)	Lab ID: 11626	Air Analysis, Solid and Hazardous Waste
Louisiana (LDEQ)	LELAP	Lab ID: 04083	Air Analysis, Solid Chemical Materials

Legend

< - Less than	mg - Milligrams	MDL - Method Detection Limit	ppb - Parts per Billion
> - Greater than	ug - Micrograms	NA - Not Applicable	ppm - Parts per Million
l - Liters	m3 - Cubic Meters	NS - Not Specified	ppbv - ppb Volume
LOQ - Limit of Quantitation	kg - Kilograms	ND - Not Detected	ppmv - ppm Volume
ft2 - Square Feet	cm2 - Square Centimeters	in2 - Square Inches	ng - Nanograms



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LABORATORY ANALYSIS REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.sgsgalson.com

Client : KCI Technologies
Site : NS
Project No. : POOLESVILLE HS
Date Sampled : 13-APR-23
Date Received : 17-APR-23

Account No.: 17844
Login No. : L591435
Date Analyzed : 19-APR-23
Report ID : 1353561

Asphalt Fumes (Benzene-Soluble Fraction)

<u>Sample ID</u>	<u>Lab ID</u>	<u>Air Vol</u> <u>liter</u>	<u>Total</u> <u>mg</u>	<u>Conc</u> <u>mg/m3</u>
PH-LB	L591435-1	NA	<0.10	NA
PH-FB	L591435-2	NA	<0.10	NA
PH-01	L591435-3	360	<0.10	<0.28
PH-02	L591435-4	357	<0.10	<0.28
PH-03	L591435-5	354	<0.10	<0.28
PH-04	L591435-6	355	<0.10	<0.28
PH-05	L591435-7	352	<0.10	<0.28
PH-06	L591435-8	355	<0.10	<0.28

COMMENTS: Please see attached lab footnote report for any applicable footnotes.

Level of Quantitation: 0.10 mg
Analytical Method : mod. NIOSH 5042; Gravimetric
Collection Media : PTFE PW 1u 37mm

Submitted by: PMH
Date : 19-APR-23
Supervisor : JGC

Approved by: JGC



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LABORATORY FOOTNOTE REPORT

6601 Kirkville Road
East Syracuse, NY 13057
(315) 432-5227
FAX: (315) 437-0571
www.ssggalson.com

Client Name : KCI Technologies
Site :
Project No. : POOLESVILLE HS

Date Sampled : 13-APR-23
Date Received: 17-APR-23
Date Analyzed: 19-APR-23

Account No.: 17844
Login No. : L591435

L591435 (Report ID: 1353561):

SOPs: ic-asphalt(26)
BSF = Benzene Soluble Fraction

L591435 (Report ID: 1353561):

Accuracy and mean recovery data presented below is based on a 95% confidence interval (k=2). The estimated accuracy applies to the media, technology, and SOP referenced in this report and does not account for the uncertainty associated with the sampling process. The accuracy is based solely on spike recovery data from internal quality control samples. Where N/A appears below, insufficient data is available to provide statistical accuracy and mean recovery values for the associated analyte.

<u>Parameter</u>	<u>Accuracy</u>	<u>Mean Recovery</u>
Asphalt Fumes (Benzene-Soluble Fraction)	+/-16.8%	90.3%

771860966659
 Date: 04/17/23
 Shipper: FEDEX
 Initials: AMF



Prep: UNKNOWN

1591435

124

GALSON

CHAIN OF CUSTODY

Turn Around Time (TAT): (surcharge) You may edit and complete this COC electronically by logging in to your Client Portal account at <https://portal.galsonlabs.com/>

<input type="checkbox"/> Standard	0%
<input type="checkbox"/> 4 Business Days	35%
<input type="checkbox"/> 3 Business Days	50%
<input type="checkbox"/> 2 Business Days	75%
<input type="checkbox"/> Next Day by 6pm	100%
<input type="checkbox"/> Next Day by Noon	150%
<input type="checkbox"/> Same Day	200%

Samples submitted using the FreePumpLoan™ Program
 Samples submitted using the FreeSamplingBadges™ Program

Client Acct No.: 17844
 Report To: Jon Coale
 Invoice To: Accounts Payable
 Company Name: KCI Technologies
 Address 1: 936 Ridgebrook Road
 Address 2:
 City, State Zip: Sparks Glencoe, MD 21152
 Phone No.: 410 - 891 - 1810
 Cell No.:
 Email reports to: Jonathan.Coale@kci.com
 Email EDD to: Jonathan.Coale@kci.com
 Comments:
 Payment info.: I will call SGS Galson to provide credit card info
 Card on File (enter the last five digits on the line below)

Original Prep No.: PSY691761
 CS Rep: TLANCASTER
 Online COC No.: 268805

Company Name: KCI TECHNOLOGIES INC
 Address 1: 936 Ridgebrook Road
 Address 2:
 City, State Zip: Sparks, MD 21152
 Phone No.: 410 - 316 - 0818
 Email Address: ap@kci.com
 P.O. No.:
 Comments:

Comments:

State Sampled: MD

Please indicate which OEL(s) this data will be used for:

OSHA PEL ACGIH TLV MSHA Cal OSHA
 IAQ: _____ Other: _____
 Specify Limit(s) Specify Other

Site Name: Project: Poolesville HS Sampled By: Tyler Mcclint

List description of industry or Process/interferences present in sampling area: Roofing / construction

Sample ID * (Maximum of 20 Characters)	Date Sampled *	Collection Medium	Sample Volume Sample Time Sample Area *	Liters Minutes in ² , cm ² , ft ² *	Analysis Requested	Method Reference ^	Hexavalent Chromium Process (e.g., welding, plating, painting, etc.)
PH-LB	4/13/23	37mm lum PW PTFE, 2pc (black band)	NA	NA	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	
PH-FB	4/13/23	37mm lum PW PTFE, 2pc (black band)	NA	NA	Asphalt Fume (Benzene Soluble Fraction)	mod. NIOSH 5042; Gravimetric	

^ If the method(s) indicated on the COC are not our routine/preferred method(s), we will substitute our routine/preferred methods. If this is not acceptable, check here to have us contact you.

Chain of Custody	Print Name / Signature	Date	Time	Print Name / Signature	Date	Time
Relinquished By:	Tyler Mcclint	4/14/23	7:50 AM	Ava Ferreira	4/17/23	9:54
Relinquished By:						

* You must fill in these columns for any samples which you are submitting.
 Samples received after 3pm will be considered as next day's business.

Online COC No.: 268805
 Prep No.: PSY691761
 Account No.: 17844
 Draft: 3/31/2023 11:28:41 AM

All services are rendered in accordance with the applicable SGS General Conditions of Service accessible via: <http://www.sgs.com/en/Terms-and-Conditions.aspx>

