

MERCURY SURVEILLANCE REPORT

**Hunterdon Central Regional High School
11-12 Field House Gymnasium
9-10 Auxiliary Gymnasium
84 Route 31
Flemington, New Jersey 08822**

PREPARED FOR:

Hunterdon Central Regional High School
84 Route 31
Flemington, New Jersey 08822

PREPARED BY:

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PARS PROJECT NO. 1124-19



December 2020



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**Mercury Surveillance Report
Hunterdon Central Regional High School
11-12 Field House and 9-10 Auxiliary Gymnasiums**



1.0 INTRODUCTION

On December 30, 2020, PARS Environmental, Inc. (PARS) conducted Mercury Periodic Surveillance (hereinafter, the "Surveillance") of the Hunterdon Central Regional High School (HCRHS) 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium located at 84 Route 31, Flemington, New Jersey 08822. Section 2.0 describes methodology; Section 3.0 includes findings of the Investigation; and Section 4.0 describes the conclusions and recommendations for HCRHS.

The gymnasiums were constructed in the 1960s, and are used frequently by students both during and after school hours for a variety of activities. It is known that mercury-containing products were used in the construction of the 11-12 Field House Gymnasium, and are suspected to be used in the construction of the 9-10 Auxiliary Gymnasium.

HCRHS has installed a new floor atop the original gymnasium floor in the 11-12 Field House, complete with a vapor barrier. No actions have been taken with regards to the 9-10 Auxiliary Gymnasium, as the observed mercury vapor levels have been well under New Jersey Department of Health (NJDOH) guidelines.

The Surveillance was conducted to evaluate whether or not mercury vapor was present above NJDOH guidelines, and if so, propose mitigation methods.

The Surveillance was completed by PARS Project Industrial Hygienist Ms. Jessica Perrini.



2.0 METHODOLOGY

2.1 MERCURY VAPOR SCREENING

PARS utilized a Jerome 550 Mercury Meter to collect real-time mercury vapor concentrations within the HCRHS 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium. Vapor screening was conducted randomly across both gymnasiums. PARS has previously conducted extensive Mercury Vapor Screening for both gymnasiums, and utilized the grid patterns from those screenings for location identification purposes. The grid layouts used for reference are attached as **Figures 1 and 2**. Readings were biased to areas likely to give off mercury vapors, i.e. areas where the floor was cracked or damaged, or where penetrations and holes or seams were observed.

PARS collected a total of 37 readings, two (2) readings per sample location. The first sample location was approximately six (6) inches off of the floor where the damage/penetration was located, and the second was taken approximately four (4) feet—chest height—off of the ground.



3.0 RESULTS

3.1 MERCURY VAPOR SCREENING

Mercury vapors were detected in low amounts throughout both the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium. The range of readings observed went from 1 nanogram per cubic meter (ng/m^3) up to $940 \text{ ng}/\text{m}^3$, which equals 0.000940 milligrams per cubic meter (mg/m^3).

The Occupational Safety and Health Administration (OSHA) set a Permissible Exposure Limit (PEL) for mercury at $0.1 \text{ mg}/\text{m}^3$ (equal to $100,000 \text{ ng}/\text{m}^3$). The American Conference of Governmental Industrial Hygienists (ACGIH) sets a Threshold Limit Value (TLV) at $0.025 \text{ mg}/\text{m}^3$ (equal to $25,000 \text{ ng}/\text{m}^3$). All readings observed in both the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium are well below both of these threshold amounts.

New Jersey Department of Health's (NJDOH) guideline for mercury vapor is 0.8 micrograms per cubic unit of air ($800 \text{ ng}/\text{m}^3$). Under this state guideline, this reading would be acceptable for a preschool age child to be in the room for eight hours a day for 180 days.

The averaged mercury concentration observed within both the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium were below this guideline. Sampling results are provided in **Table 1**. NJDOH's informational guidance document is provided in **Appendix A**.



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4.0 CONCLUSIONS AND RECOMMENDATIONS

Site observations showed the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium to be in good condition with minimal damage noted. Flooring seams and designed penetrations are also present within the flooring.

Based on the results of the investigation, PARS does not consider the mercury-containing flooring material within either gymnasium to be an immediate health hazard to the building occupants or visitors. Mercury vapor levels detected were below the NJDOH guidelines.

PARS continues to recommend six-month periodic surveillances of the 11-12 Field House Gymnasium and 9-10 Auxiliary Gymnasium to assess the condition of the flooring material and existing mercury vapor concentrations until the flooring has been removed.

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PARS appreciates the opportunity to assist Hunterdon Central Regional High School with this project. Should you have any questions or comments please feel free to contact us at (609) 890-7277.

Respectfully submitted,

PARS ENVIRONMENTAL, INC.

Jessica Perrini
Project Manager

Julian Fernandez-Obregon
Project Industrial Hygienist



**Mercury Surveillance Report
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**FIGURE 1
9-10 Auxiliary Gymnasium Sample Grid**

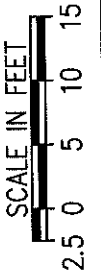
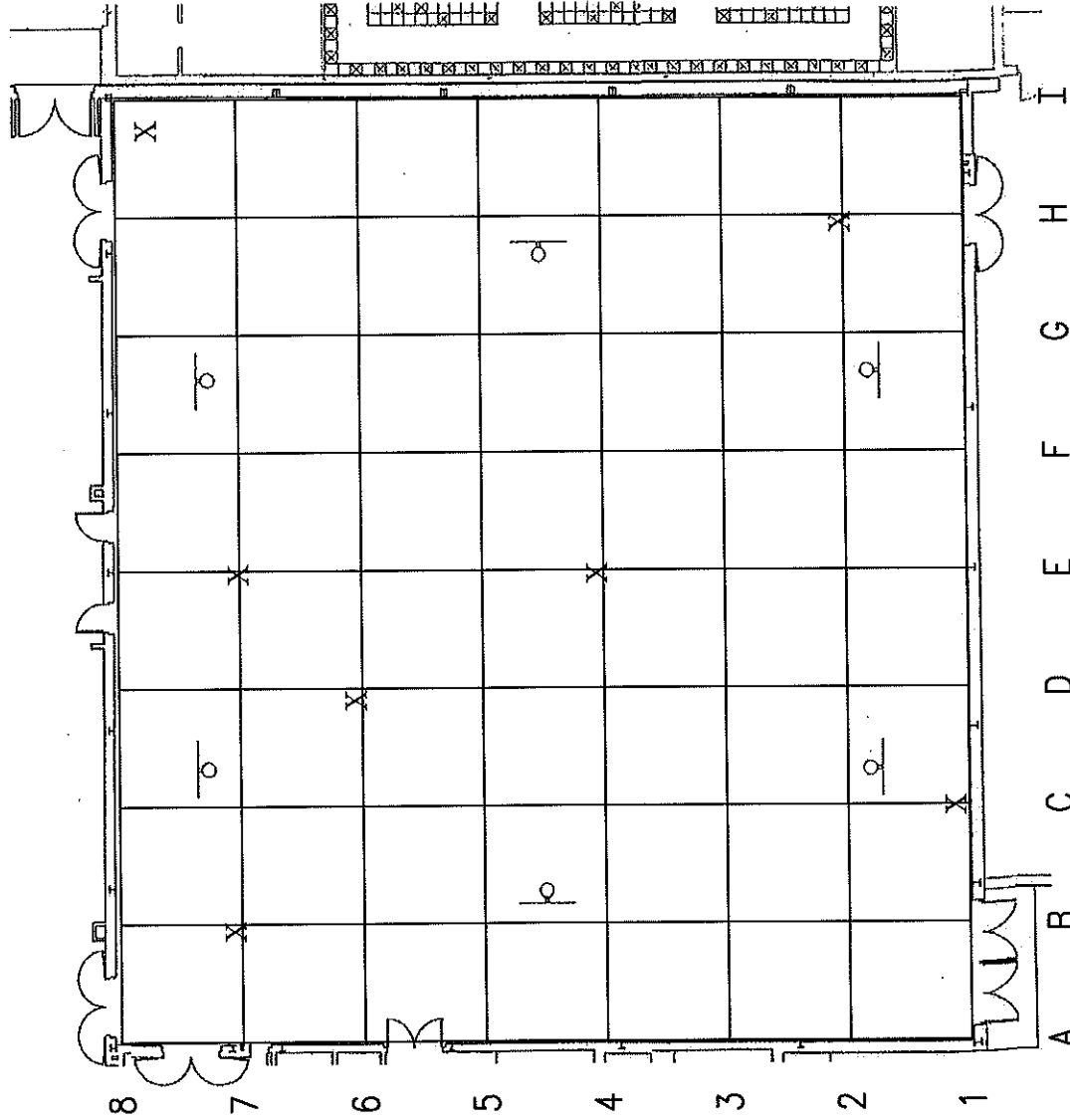
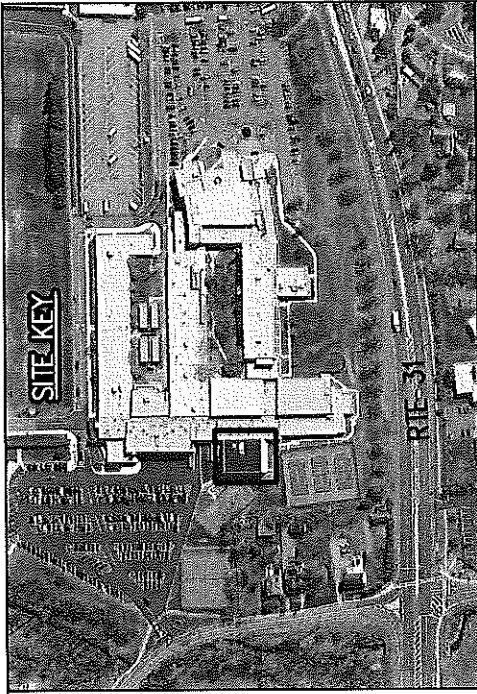


FIGURE 1
SAMPLE LOCATION MAP
HUNTERDON CENTRAL HIGH SCHOOL
RARITAN, NJ

PARS ENVIRONMENTAL, INC.
500 HORIZON DRIVE SUITE 540 ROBBINSVILLE, NEW JERSEY

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CHECKED BY:	JFO	DATE:	9/5/19



**FIGURE 2
11-12 Field House Gymnasium Sample Grid**

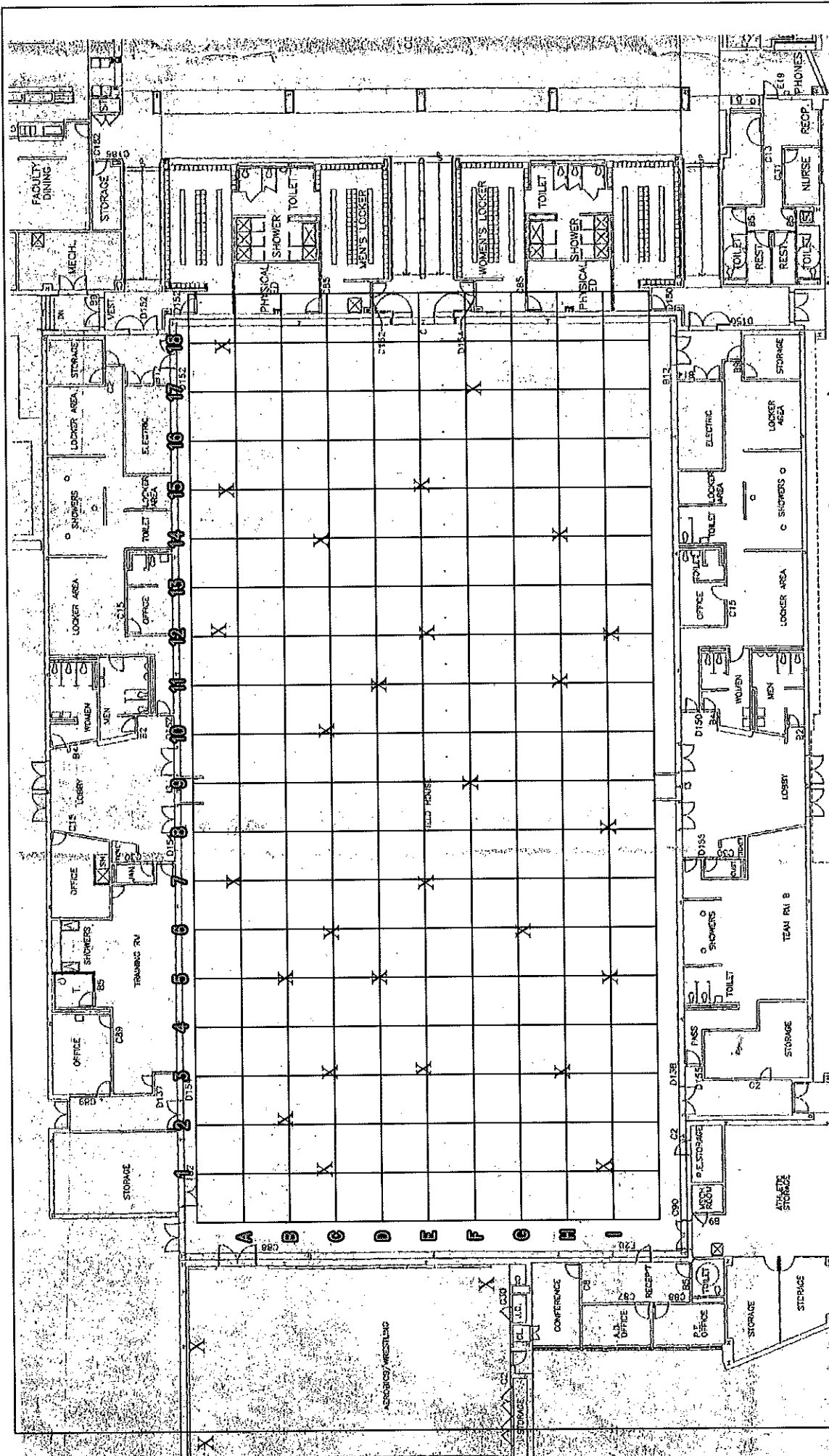
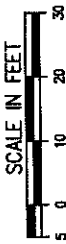


FIGURE 1
SAMPLING GRID
HUNTERDON CENTRAL REGIONAL HIGH SCHOOL
84 ROUTE 31
FLEMINGTON, NJ

PARS ENVIRONMENTAL, INC.
 500 HORIZON DRIVE SUITE 540 ROBBINSVILLE, NEW JERSEY

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**TABLE 1
Sampling Results**

Table 1
Jerome Sampling Results
Hunterdon Central Regional High School
11-12 Field House and 9-10 Auxiliary Gymnasiums
84 Route 31
Flemington, New Jersey

Date	Reading	Location on Grid	Low Reading (6" Off Floor)	High Reading (Chest Height)
11-12 Field House Gymnasium				
12/30/2020	1	I1	410	580
12/30/2020	2	C2	580	560
12/30/2020	3	B2	450	580
12/30/2020	4	C3	510	540
12/30/2020	5	E3	650	570
12/30/2020	6	H3	480	530
12/30/2020	7	B5	910	470
12/30/2020	8	D5	760	520
12/30/2020	9	I5	620	630
12/30/2020	10	G6	930	600
12/30/2020	11	C6	810	650
12/30/2020	12	A7	390	550
12/30/2020	13	E7	940	630
12/30/2020	14	I8	760	720
12/30/2020	15	F9	620	730
12/30/2020	16	C10	780	590
12/30/2020	17	D11	800	720
12/30/2020	18	H11	820	650
12/30/2020	19	I12	960	760
12/30/2020	20	E12	700	610
12/30/2020	21	A12	990	650
12/30/2020	22	C14	720	510
12/30/2020	23	H14	890	710
12/30/2020	24	A15	890	720
12/30/2020	25	E15	620	610
12/30/2020	26	A18	370	560
12/30/2020	27	F18	660	690
12/30/2020	28	Wrestling Rm Rt Corner	0	0
12/30/2020	29	Wrestling Rm Rt Middle	0	0
12/30/2020	30	Wrestling Rm Lt front	0	0
12/30/2020	Average Reading		634	554.6666667
Combined Average (Low & High Readings)				594.3333333
9-10 Auxillary Gymnasium				
12/30/2020	1	B7	0	0
12/30/2020	2	E7	70	0
12/30/2020	3	I8	40	80
12/30/2020	4	D6	50	60
12/30/2020	5	E4	50	70
12/30/2020	6	H2	20	80
12/30/2020	7	C1	80	50
12/30/2020	Average Reading		44.28571429	48.57142857
Combined Average (Low & High Readings)				46.42857143



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**Appendix A
NJDOH Mercury Flooring Guidance**

Guidance for New Jersey Schools: Evaluating Mercury in Synthetic Flooring

The New Jersey Department of Health is providing this fact sheet to New Jersey school districts concerned about mercury exposure from synthetic flooring.

What types of floors contain mercury?

The types of floors that may contain mercury are solid, rubber-like synthetic flooring manufactured from about 1960 until the 1990s. Not all synthetic flooring contains mercury. Flooring made using a catalyst known as “phenyl mercuric acetate” may release mercury vapors into the air under certain conditions. Not all flooring that contains mercury emit mercury vapors into the air.

What should you do if your school has a synthetic floor?

- Check to see if you can determine if the flooring contains mercury by contacting the manufacturer/installer or reviewing the Safety Data Sheet (SDS).
- If you are able to determine that the flooring contains mercury or you suspect it contains mercury, work with a qualified environmental consultant to evaluate the flooring and determine next steps.
- If indoor air sampling is recommended, it should be done under normal school operating conditions.

What levels of mercury are considered safe for school children and staff?

The New Jersey Department of Health (NJDOH) has adopted Standards for Indoor Environment Certification and for Licensure of Indoor Environmental Consultants (N.J.A.C. 8:50). These regulations provide a risk assessment model that can be used to evaluate indoor air contaminants for school children and staff. Your indoor environmental consultant can use this risk model to determine a Maximum Contaminant Level (MCL) for mercury in your school. Alternatively, your consultant may evaluate the indoor air data to ensure that mercury levels are below $0.8\mu\text{g}/\text{m}^3$ which is based on the exposure scenario in the risk model that is protective of preschool-aged children.

N.J.A.C. 8:50 is available on the NJDOH website at:
http://www.nj.gov/health/ceohs/documents/eohap/njac_850_adoption.pdf



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