Pennsylvania
Department of Environmental Protection

SPS Technologies Fire
Abington Township
Montgomery County

SAMPLING AND ANALYSIS PLAN

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I. LOCATION

SPS Technologies operates a manufacturing facility (facility) that produces fasteners and other materials for the aviation industry at 301 Highland Avenue, in Abington Township, Montgomery County.

The area surrounding the facility is mixed use and includes residential and commercial properties. The Jenkintown Middle and High School is located approximately 0.25 miles to the southeast. The Tookany and Tacony creeks border the facility to the east and south. The Tookany joins the Tacony creek just south of the facility, and the Tacony flows southeast for approximately 10 miles before joining with the Delaware River.

II. BACKGROUND

On February 17th, 2025, a fire started at SPS Technologies, a manufacturing company in Jenkintown that produces fasteners and other materials for the aviation industry. Emergency responders from several dozen fire companies extinguished the fire on February 22nd, 2025.

SPS used a variety of chemicals in their manufacturing processes, including heavy metals, cyanide salts, and zinc containing compounds. A list of chemicals reported by SPS to have been used in the facility as part of its manufacturing is included as **Appendix A**.

III. OBJECTIVE

DEP will collect soil samples from multiple locations in public areas or areas where access has been granted to determine if contaminants were released during the fire and evaluate the presence or absence of contaminants of concern in soil near the facility to inform further actions.

IV. SAMPLING and ANALYSIS PLAN

This Sampling and Analysis Plan is intended to document the sampling procedures and methods to be used by DEP staff in the collection of samples, and to ensure that data provides accurate and precise information.

V. SAMPLING LOCATIONS

DEP will seek to collect soil samples from several properties and areas: Hallowell Park, Ralph Morgan Park, the Lightbridge Academy, Jenkintown Elementary, and Middle/High School, and from Rights-of-Ways (RoW) of several avenues (See Table 1).

Aerial deposition is the assumed potential mechanism that contaminants from the fire could have potentially been transferred to these properties, and therefore contaminants from the fire are expected to be present in the uppermost surface soil layer (0 – 1 inch, "surface soil layer"). Therefore, samples will be collected at all locations from this surface soil layer.

At least one sample will be collected from each property from a depth greater than 1 inch up to 6 inches to aid in the evaluation of the potential contaminants present at the locations that are natural occurring or from historical anthropogenic sources, such as vehicle emissions. Additionally, samples may be collected from soil beneath structures that would have been shielded from aerial deposition during the time-period of the fire, if present, at the properties.

Individual sample locations on each property will be selected in the field, based on consideration of both likely exposure location (i.e. used playground areas, trails, etc.) and further biased based on X-ray fluorescence (XRF) analyzer readings. Exact locations will be determined and recorded during sample collection. Tentative locations are listed in **Table 1** and shown in **Figure 1**.

Table 1: Tentative Sampling Locations: Soil Matrix

Sample ID	Location	Depth (in.)	Tentative Location Description:
A	Hallowell Park	0-1	North baseball field, homeplate
B	Hallowell Park	1-6	North baseball field, homeplate - Deep
C	Ralph Morgan Park	0-1	Playground Area
D	Ralph Morgan Park	1-6	Playground Area - Deep
E	Runnymade Ave S	0-1	RoW of Avenue
F	Runnymade Ave S	1-6	RoW of Avenue - Deep
G	Paxson Ave	0-1	RoW of Avenue
H	Paxson Ave	1-6	RoW of Avenue - Deep
I	Rodman Ave	0-1	RoW of Avenue

Sample ID	Location	Depth (in.)	Tentative Location Description:
J	Rodman Ave	1-6	RoW of Avenue - Deep
K	Jenkintown Elementary School	0-1	Playground area near Florence Ave
L	Jenkintown Elementary School	1-6	Playground area near Florence Ave - Deep
M	Jenkintown Middle/High School	0-1	Soccer Field
N	Jenkintown Middle/High School	1-6	Soccer Field - Deep
O	Lightbridge Academy	0-1	Play area
P	Lightbridge Academy	1-6	Play area- deep

VI. SAMPLE ANALYTICAL METHODS

Samples will be submitted to Pace Analytical, a laboratory that holds PA NELAP accreditation for requested methods as outlined in Table 2. A complete list of analytes is provided as **Appendix B**.

Table 2: Sample Analyses

Matrix: Soil				
USEPA Method	**Test Description**	**Preservative**	**Expected Container (lab dependent)**	**Hold Time**
8270 SIM	Low PAHs	≤6 ˚C	500 mL amber jar	7 days
6020/6010	Metals	≤6 ˚C	500 mL amber jar	180 days
9012	Total CN^-	≤6 ˚C	Plastic/HDPE	14 days
SM 4500-CN G	Amenable CN^-	≤6 ˚C	Plastic/HDPE	14 days
7471	Mercury	≤6 ˚C	HPDE 250 mL	28 days
600-R-93-116	Asbestos	No Ice	Preferred double bagged in Ziploc/plastic; will accept plastic or glass jars; no more than 8 oz of material	No Hold time

Note: Large debris from the fire has been reported to have been deposited on properties from the fire. This discrete non-soil debris, if present at a sampling location will not be intentionally included for PAH, metals (including mercury), cyanide analysis to avoid biasing soil concentration data. Debris can be collected for asbestos analysis as those results are used to determine the presence of asbestos-containing material (ACM).

VII. QA/QC

Laboratories contracted for all analyses will be NELAP accredited by DEP as listed on Lab_Certification - Report Viewer. The lab can also provide a Certificate and Scope of accreditation for each method and analyte per requested matrix. The lab's reporting limits will be requested and reviewed ensure they can meet the Act 2 standards.

The following QA/QC samples will be collected:

- (1) Triplicate sample per twenty samples to allow for the determination of sampling precision.

VIII. SAMPLING PROCEDURES

Sampling Equipment

Equipment to be used in the field is provided as **Appendix C**. Equipment will be operated per the vendor and/or manufacture's specifications. Staff will reserve a state vehicle at least 24 hrs. prior to the sampling event through DEP's Vehicle Reservation System. IntraDEP - VRS

Safety Procedures

DEP personnel will wear proper PPE (i.e., nitrile gloves, high visibility clothing, safety toed boots) while collecting samples. Gloves will be changed and discarded between each sample. Sampling should be conducted in two person teams, at a minimum.

Sample collection efforts should be performed in a manner that minimizes the potential for the creation of dust or airborne particles. All field personnel have the right and duty to stop sampling activities if hazardous conditions are observed to exist.

General Sample Collection

PAHs, cyanide, and metals samples collected will promptly be placed on wet ice in a cooler. Asbestos samples will be placed in a dry cooler or box apart from the rest of the samples. Care will be taken to seal the plastic bags and prevent water from contacting the asbestos samples. The sampling team shall take due care to leave the sampling area in the same general condition as it was prior to sample collection.

Soil Sampling Procedure

Soil samples will be collected in a manner consistent with the considerations in the ***Quality Assurance Program Plan for the Bureau of Environmental Cleanup and Brownfields Hazardous Sites Cleanup Act Section***.

Prior to sampling, an X-Ray Fluorescence (XRF) analyzer (X-550 XRF Analyzer) maybe be used to screen the area. In such case, XRF readings will be recorded of selected sample locations. Follow all manufacture instructions or vendor procedures on how to operate and maintain the equipment.

A shallow soil sample will be collected using disposable scoops for each unique sample. For each sample, the scoop will be used to disturb enough surface soil to fill all sample containers. The soil will be mixed before the sample containers are filled. For triplicate samples, enough soil must be well mixed to fill all necessary sample bottleware in triplicate to ensure precision. Asbestos samples will be double bagged as instructed by Pace.

A shovel or auger may be used to access soil in desired sampling locations. Any reusable equipment will be decontaminated as necessary between samples.

Investigation Derived Waste (IDW)

IDW will be handled and disposed manner consistent with the considerations in the ***Quality Assurance Program Plan for the Bureau of Environmental Cleanup and Brownfields Hazardous Sites Cleanup Act Section***.

Used disposable items will be bagged and returned to DEP's Southeast Regional Office. Used disposable items are assumed to contain, at most, de minims quantities of RCRA hazardous wastes, and can disposed of as municipal waste.

Record Keeping

Field notes will be recorded in the site Field logbook following sampling events. Chain of Custody (COC) forms will be scanned into the site folder on the server. Maps, figures, and photographs will also be saved in the site folder.

At a minimum, the following information will be recorded in the field logbook during the collection of the samples:

- Team members and their responsibilities
- Time of arrival/entry on site and time of site departure
- Other personnel on site
- Deviations from sampling plans
- Sample location and description
- Date and time of sample collection
- Field observations and details related to analysis or integrity of samples (e.g., weather conditions, noticeable odors, colors, etc.)
- The use of field equipment, readings and/or calibration and use notes.

Photographs will be taken at the sampling locations and at other areas of interest on the site or sampling area. For each photograph taken, the following information will be recorded in the Field logbook or Photo Log.

- Date and location
- Description of the subject photographed

Sample Labels

Soil Samples will be labeled as "SPS-Location ID (ex: A, B, C) - MMDDYY". Additional information to include on each sample label is listed below.

- Collector's name or initials
- Sample ID as described above
- Date and time of collection
- Preservative type and sample matrix
- Requested analysis
- Organization (DEP)

Staff will follow Pace's COC procedures included in the bottle order or found on the Chain of Custody Forms – Pace Analytical website. Samples collected will be listed on an analytical lab (COC) form provided by Pace. COCs shall be filled completely per labs guidelines with information including but not limited to:

- sample collection times and dates (ensure to match labels)
- sample location or ID (ensure to match labels)
- preservation and bottle type
- laboratory methods requested per quote and analyte lists
- sample matrix or matrix code
- number of containers, type of samples (grab or composite)
- collector's name, email, and signature
- any items required by the lab (requested turnaround time, data deliverables, permit or regulatory samples)
- project name, site, or number
- Purchase Order/Request number and Quote number
- client or organization (DEP)
- state of origin of samples

Also list any comments that would inform the lab including but not limited to strong odors, sample color, etc. Line out or "N/A" unused spaces. It is recommended to use a black ballpoint pen to prevent ink smearing if paperwork gets wet. Pace also provides an electronic COC form that can be pre-populated with header information like project name and contact information.

Ensure to add QC samples to the COC including DUP, Field Blanks and Trip Blanks. If the lab provides a temperature blank, leave in the cooler and do not record in the COC. Sample labels for QA/QC samples may exclude identifying information such as sampling location and collection time to ensure unbiased sample processing. This identifying information will be recorded in the field logbook.

Sample Shipping

PAH, cyanide, and metals samples will be kept cold at < 6˚C with wet ice. The asbestos samples will be kept dry in a separate container. The sample coolers will be picked up from the DEP SERO office following collection. Schedule the courier with Pace at least 24 hrs. prior to the sampling event. Provide the office address and guidance on using the front entrance and parking. Also provide and contact information for the staff coordinating the event as the Pace courier may call to confirm pick up location and time.

Standard turnaround time will be requested of results. Data deliverables requested will be Level II CLP equivalent lab reports.

IX. REPORTING

Upon receipt of analytical results, DEP will prepare a summary of the results. The sample locations will be mapped using GIS software and figures will be updated as needed. The information gathered will be referenced in possible further actions.

PAH, metals, and cyanide results will be compared to residential soils, Direct Contact Medium Specific Concentrations (MSC) Statewide Health Standards (SHS). There is no MSC for asbestos: those results will be used to determine if there is asbestos containing material, defined as 1% or greater asbestos present in the material.

Local Contact Information

Organization	Phone Number	E-Mail
Abington Township Municipal Office	267.536.1000	info@abingtonpa.gov
Abington Township Police	267.536.1100	AbingtonPolice@abingtonpa.gov
Cheltenham Township Administration Building	215.887.1000	manager@cheltenhampa.gov
Cheltenham Township Police Administration Building	215.885.1600	

X. REFERENCES

1. 4500-CN− CYANIDE - Standard Methods For the Examination of Water and Wastewater
2. EPA Method 6010D (SW-846): Inductively Coupled Plasma - Atomic Emission Spectrometry
3. EPA Method 7471B (SW-846): Mercury in Solid or Semisolid Wastes (Manual Cold-Vapor Technique)
4. EPA Method 8270E (SW-846): Semivolatile Organic Compounds by Gas Chromatography/Mass Spectrometry (GC-MS)
5. DEP HSCA Health and Safety Plan
6. DEP Statewide Health Standards | Department of Environmental Protection | Commonwealth of Pennsylvania
7. DEP Quality Assurance Program Plan for the Bureau of Environmental Cleanup and Brownfields Hazardous Sites Cleanup Act Section
8. SW-846 Test Method 9012B: Total and Amenable Cyanide (Automated Colorimetric, With Off-Line Distillation)
9. SW-846 Test Method 6200: Field Portable X-Ray Fluorescence Spectrometry for the Determination of Elemental Concentrations in Soil and Sediment | US EPA

FIGURES

Figure 1: Tentative DEP Sampling Locations

APPENDICES

Appendix A: Chemicals used in the Facility

Albatex 5.1%

Ammonium Fluoroborate 3.4% to 6%

Boric Acid 1.7% to 2.5%

Cadmium Cyanide 0.2% to 5.4%

Cadmium Fluoroborate 20.1% to 20.2%

Caustic Soap 4.3% to 6.9%

Chromic Acid 1.1% to 3.9%

E-Chrome 851l 0.1%

Free Chloride 2.8% to 9.4%

Hydrochloric Acid 5.1% to 5.8%

Interlox 2325mciz 2.7%

Kenvert 11 0.7%

Nickel Sulfamate 5.1% to 5.7%

Nitric Concentrate 4.2% to 6.8%

Potassium Copper Cyanide 7.5% to 8.8%

Potassium Cyanide 0.7% to 7.9%

Potassium Permanganate 2.2%

Silver Cyanide 0.1% to 0.8%

Sodium Cyanide 5.9% to 7.9%

Sodium Dichromate 1.2%

Sodium Hydroxide 0.5% to 9.2%

Sulfuric Acid Concentrate 0.2%

Zil 906 Solution 1.9%

Appendix B: List of Analytes (all units in mg/Kg)

Analyte	CAS Number	Soil MSC DC 0-15 ft	Reporting Limit (RL)	Method Detection Limit (MDL)
Aluminum	7429-90-5	190,000	5	0.7781
Antimony	7440-36-0	88	5	0.732
Arsenic	7440-38-2	12	5	1.000
Barium	7440-39-3	44,000	-	-
Beryllium	7440-41-7	440	0.5	0.0481
Boron	7440-42-8	44,000	5	0.6848
Cadmium	7440-43-9	110	1	0.1402
Calcium	7440-70-2		50	18.6022
Total Chromium[1]	7440-47-3	190,000	5	0.6297
Cobalt	7440-48-4	66	5	0.3784
Copper	7440-50-8	7200	5	1.4848
Iron	7439-89-6	150,000	20	1.8915
Lead	7439-92-1	500	5	0.5137
Lithium	7439-93-2	440	5	1.4169
Magnesium	7439-95-4		25	2.2584
Manganese	7439-96-5	31,000	5	0.3688
Mercury	7439-97-6	35	0.02	0.019
Molybdenum	7439-98-7	1,100	-	-
Nickel	7440-02-0	4,400	5	0.3562
Potassium	7440-09-7		25	5.8747
Selenium	7782-49-2	1,100	5	0.9999
Silver	7440-22-4	1,100	2.5	0.3562
Thallium	7440-28-0	2.2	5	0.7003
Tin	7440-31-5	130,000	-	-
Titanium	7440-32-6		5	0.484
Vanadium	7440-62-2	1,100	5	0.4256
Zinc	7440-66-6	66,000	5	2.6876
Total Cyanide	57-12-5	130	-	0.2991
Amenable Cyanide	E-10275	-	-	-
Acenaphthene	83-32-9	13000	6700	1765
Acenaphthylene	208-96-8	13000	6700	1378
Anthracene	120-12-7	66000	6700	1330.9
Fluoranthene	206-44-0	8800	-	-
Naphthalene	91-20-3	13	6700	2856
Benzo[a]pyrene	50-32-8	4.2	6700	2925
Benzo(a)anthracene	56-55-3	6.1	6700	1766.2
Benzo(b)fluoranthene	205-99-2	3.5	6700	1911
Benzo(k)fluoranthene	207-08-9	3.5	6700	1123.9

Analyte	CAS Number	Soil MSC DC 0-15 ft	Reporting Limit (RL)	Method Detection Limit (MDL)
Benzo(ghi)perylene	191-24-2	13000	6700	1009.5
Phenanthrene	85-01-8	66000	13340	4024.3
Chrysene	218-01-9	35	6700	1054
2-Chloronaphthalene	91-58-7	18000	-	-
Dibenzo(a,h)anthracene	53-70-3	1	6700	1303.7
Indeno(1,2,3-cd) pyrene	193-39-5	3.5	6700	2587
2-Methylnaphthalene	91-57-6	57	-	-
Pyrene	129-00-0	220	-	-
Asbestos	1332-21-4	None; Presence above 1%	NA	NA

[1] Total Cr includes both Cr^{3+} and Cr^{6+}.

Appendix C: Sampling Equipment

Quantity	Item	Notes
3	Business Cards	For each team member
1	Employee ID	For each team member
1	Field Notebook/Logbook	Kept by Project Officer
1	Chain of Custody	Sufficient for all samples
-	Cooler (s)	As needed, to transport samples
-	Disposal Shovel	As needed to collect samples
1	Ice	For each cooler, except asbestos samples
1	Trash Bag	For each team
-	Bottleware and labels	Provided by lab
-	Extra Bottleware	In case of breakage or need for additional samples
1	Camera	
1	Nitrile Gloves - Box	For each team
-	Ziplock Bag(s)	As needed for asbestos sample collection, soil mixing, chain of custody, cell phones, electronics, etc.