DOCUMENTATION OF ENVIRONMENTAL INDICATOR DETERMINATION
RCRA Corrective Action
Environmental Indicator (EI) RCRIS code (CA725)

Current Human Exposures Under Control

Facility Name:	Former SGS Thomson – Microelectronics
Facility Address:	140 Commerce Drive, Montgomeryville, Pennsylvania 18936
Facility EPA ID #:	PAD 021047584

1. Has **all** available relevant/significant information on known and reasonably suspected releases to soil, groundwater, surface water/sediments, and air, subject to RCRA Corrective Action (e.g., from Solid Waste Management Units (SWMU), Regulated Units (RU), and Areas of Concern (AOC)), been **considered** in this EI determination?

X	If yes – check here and continue with #2 below.
	If no – re-evaluate existing data, or
	If data are not available skip to #6 and enter "IN" (more information needed) status code

BACKGROUND

Definition of Environmental Indicators (for the RCRA Corrective Action)

Environmental Indicators (EI) are measures being used by the RCRA Corrective Action program to go beyond programmatic activity measures (e.g., reports received and approved, etc.) to track changes in the quality of the environment. The two EI developed to-date indicate the quality of the environment in relation to current human exposures to contamination and the migration of contaminated groundwater. An EI for non-human (ecological) receptors is intended to be developed in the future.

Definition of "Current Human Exposures Under Controls" EI

A positive "Current Human Exposures Under Control" EI determination ("YE" status code) indicates that there are no "unacceptable" human exposures to "contamination" (i.e., contaminants in concentrations in excess of appropriate risk-based levels) that can be reasonably expected under current land- and groundwater-use conditions (for all "contamination" subject to RCRA corrective action at or from the identified facility (i.e., site-wide)).

Relationship of EI to Final Remedies

While Final remedies remain the long-term objective of the RCRA Corrective Action program, the EI are near-term objectives which are currently being used as Program measures for the Government Performance and Results Act of 1993 (GPRA). The "Current Human Exposures Under Control" EI are for reasonably expected human exposures under current land- and groundwater-use conditions ONLY, and do not consider potential future land- or groundwater-use conditions or ecological receptors. The RCRA Corrective Action program's overall mission to protect human health and the environment requires that Final remedies address these issues (i.e., potential future human exposure scenarios, future land and groundwater uses, and ecological receptors).

Duration / Applicability of EI Determinations

EI Determinations status codes should remain in RCRIS national database ONLY as long as they remain true (i.e., RCRIS status codes must be changed when the regulatory authorities become aware of contrary information).

Facility Background

The Former SGS Thomson – Microelectronics facility (SGS or the Facility) occupies approximately two acres in a commercial/industrial park complex in southeastern Montgomeryville, Montgomery County, Pennsylvania. Figure 1 provides a site location map. The Facility property is developed with an approximately 20,000 square foot one-story building believed to have been constructed in 1967, a large parking lot south of the building and smaller landscaped areas along Commerce Drive and the north face of the building. The Facility and surrounding properties were used as farmland prior to 1967.

From the late 1960s through 2007, the Facility was a manufacturer of silicon-based semiconductors for transistors, primarily used in radio frequency applications by electronic equipment manufacturers. The Facility has changed ownership several times since Solid State Scientific began production of radio frequency wafers shortly after the building was constructed. SGS Thomson occupied the property from the 1970s through 1993. It was SGS Thomson that applied for and received a RCRA Part B Permit to store mixed solvent wastes on-site in 1984. Microsemi RF owned and operated the Facility from 1993 through 2003. Advanced Power Technology RF owned and operated the Facility from 2003 through 2005. Microsemi RF repurchased the Facility in 2005 and operated there until their operations ceased in 2007.

After receiving its RCRA Part B Permit in 1984 the Facility installed solvent waste storage and dilute hydrofluoric acid storage tanks located along the western face of the building. In 1990, closure of the storage tanks was initiated because less waste was being generated by SGS Thomson than initially anticipated. During closure activities volatile organic compounds (VOCs) were discovered in the soils and groundwater in the general vicinity of the tanks and the Pennsylvania Department of Environmental Protection (PADEP) recommended further investigation and remediation of the area.

In January 1997 PADEP granted the Facility full liability protection for soils under its newly established Land Recycling Program (Act 2). This release of liability was granted because of the cleanup standards obtained by a soil removal effort in 1994. In February 1997, PADEP granted the Facility liability protection under Act 2 for the remaining groundwater contamination beneath the property. PADEP based its decision on groundwater modeling results that indicated that no adverse health impacts would occur as a result of the predicted migration of compounds of concern from the site. The Facility attained a site specific standard even though several chlorinated VOCs remained in groundwater at concentrations greater than EPA's Maximum Contaminant Levels (MCLs).

Hazardous wastes have not been generated and the property has not housed a RCRA treatment, storage or disposal (TSD) type facility since prior to Microsemi RF vacating the property in 2007. The Facility was purchased by K & B Wireless Communications, Inc. in 2007 and was used as a mobile phone showroom and warehouse through March 2020. K & B Wireless sold the Facility in March 2020 to its current owner, 140 Commerce Drive LLC, which leases out portions of the building to tenants. The Tustin Group, a provider of HVAC, Energy, Water, Fire & Life Safety and Security Services for business owners and property managers, currently leases space in the building.

2. Are groundwater, soil, surface water, sediments, or air media known or reasonably suspected to be "contaminated"[1] above appropriately protective risk-based "levels" (applicable promulgated standards, as well as other appropriate standards, guidelines, guidance, or criteria) from releases subject to RCRA Corrective Action (from SWMUs, RUs or AOCs)?

	Yes	No	?	Rationale/Key Contaminants
Groundwater	X			See rationale below
Air (indoors)[2]		X		See rationale below
Surface Soil (e.g., <2 ft)		X		See rationale below
Surface Water		X		See rationale below
Sediment		X		See rationale below
Subsurface Soil (e.g., >2 ft)		X		See rationale below
Air (outdoors)		X		See rationale below

_____ If no (for all media) – skip to #6, and enter "YE," status code after providing or citing appropriate "levels," and referencing sufficient support documentation demonstrating that these "levels" are not exceeded.

_____ If yes (for any media) – continue after identifying key contaminants in each "contaminated" medium, citing appropriate "levels" (or provide an explanation for the determination that the medium could pose an unacceptable risk), and referencing supporting documentation.

_____ If unknown (for any media) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

The following sections describe information available for the various site media.

1. Groundwater:

Groundwater beneath the Facility occurs in two relatively isolated and distinct water-bearing zones; a shallow, seasonal system, within the thin, unconsolidated, more permeable overburden above the bedrock surface and a deep, regional system within the bedrock of the Lockatong Formation. The shallow bedrock water-bearing zone ranges from 17 to 22 feet below the ground surface (bgs) and the deeper bedrock water-bearing zone ranges from 50 to 60 feet bgs. Recorded water level measurements obtained from both shallow and deep monitoring wells at the Facility have been as shallow as five feet below grade. The degree of interconnection between the two aquifers depends on the degree of fracturing within the bedrock. The Lockatong Formation is a relatively poor water bearing aquifer due to its lack of fracture permeability.

As many as sixteen wells [MW-A, MW-B, and MW-1 through MW-8 shallow and deep (no MW-4D or MW-7D)] were installed at the Facility between 1990 and 1996. Figure 2 presents the locations of those wells. The wells (with the exception of MW-8S and D, MW-A, and MW-B) were sampled and analyzed at least annually for VOCs since either 1995 or installation through 2006.

[1] "Contamination" and "contaminated" describes media containing contaminants (in any form, NAPL and/or dissolved, vapors, or solids, that are subject to RCRA) in concentrations in excess of appropriately protective risk-based "levels" (for the media, that identify risks within the acceptable risk range).

[2] Recent evidence (from the Colorado Dept. of Public Health and Environment, and others) suggest that unacceptable indoor air concentrations are more common in structures above groundwater with volatile contaminants than previously believed. This is a rapidly developing field and reviewers are encouraged to look to the latest guidance for the appropriate methods and scale of demonstration necessary to be reasonably certain that indoor air (in structures located above (and adjacent to) groundwater with volatile contaminants) does not present unacceptable risks.

Generally, the shallow wells at the Facility were found to contain much higher concentrations of contaminants, primarily chlorinated VOCs, than the wells screened into the deeper water-bearing unit. Wells north and east of the building (MW-5S, MW-5D, MW-6S and MW-6D) had no contaminants above PADEP's Medium Specific Concentrations (MSCs) for used aquifers since 1995. The groundwater contamination at the facility appears to originate west of the building in the vicinity of MW-1, which corresponds to the former solvent waste storage tank location. The contaminant plume has migrated to the south/southeast toward monitoring wells MW-2, MW-3, MW-4 and MW-7.

The well exhibiting the greatest amount of contamination historically was shallow well MW-1S, located near the northwest corner of the property. MW-1S contained concentrations of trichloroethylene (TCE) as high as 24,000 µg/l at that location in samples collected in the late 1990s. This may be indicative of the one-time presence of dense non-aqueous phase liquids (DNAPL) since the water solubility limit of TCE is 1,000 µg/l. Concentrations of TCE in MW-1S appear to have significantly decreased at that location over the ensuing years ranging between 12.9 µg/l to 242 µg/l between 2004-2006. Similarly 1,1,1-trichloroethane (1,1,1-TCA), 1,2-dichloroethene (1,2-DCE), and methylene chloride all appear to exhibit significant decreases in concentration over the same time period indicating that natural attenuation had been occurring. This is further evidenced by the appearance of contaminants such as vinyl chloride and 1,1-dichloroethane (1,1-DCA) in 1998 and later. By the last round of groundwater sampling in 2006, only TCE and vinyl chloride were observed in MW-1S at concentrations above PADEP's MSC or EPA's MCL.

Other shallow monitoring wells found to historically contain contaminants above screening levels included MW-2S, MW-3S, MW-4S and MW-7S. MW-2S, located between MW-1 and the former loading dock on the west side of the building initially contained TCE as high as 64 µg/l in 1995 but that contaminant was detected below the MCL of 5 µg/l from 1998 through 2006. Natural attenuation at this location was again apparent as vinyl chloride which had been undetected in 1995 began to be detected in late 1997, was observed as high as 15.2 µg/l in 1998 and was below the MCL of 2 µg/l in both 2005 and 2006. MW-4S contained TCE as high as 92 µg/l in 1995 but was below its MCL from 2001 through 2005. TCE was however detected in MW-4S at 15 µg/l in the final sample collected from that location in 2006. MW-7S was observed to contain tetrachloroethylene (PCE), TCE and 1,2-DCE at concentrations above screening levels in the mid-1990s but by the end of the monitoring program in 2006, only TCE continued to be seen at concentrations above the MCL of 5 µg/l. The only shallow well that did not exhibit decreasing TCE concentrations over time was MW-3. TCE at this location was observed at 45 µg/l in 1995 but was seen at 106 µg/l in the final sample collected in 2006. Vinyl chloride at this location was not detected until 1998, indicating that some natural attenuation was also occurring there, but the increase in TCE concentrations during the same time period is curious.

For the deep monitoring wells, the highest concentrations of contaminants were once again seen in the vicinity of the former waste storage tank at monitoring well MW-1D. TCE was observed as high as 130 µg/l in 1994 and although there appeared to be a decrease in concentration over the years, TCE remained above the MCL when MW-1D was last sampled in 2006 (20 µg/l). The TCE concentrations in MW-3D slightly increased from around 7 µg/l in 1995 to as high as 24 µg/l in 1998 and but was not detected in 2006. Monitoring wells MW-2D, MW-5D and MW-6D have been clean historically.

Because concentrations of chlorinated organics remained in groundwater above screening levels, EPA planned to conduct additional groundwater monitoring from the existing monitoring system in 2019 to verify that the natural attenuation that had been occurring as described above was continuing. However, during a site visit in April 2019, EPA learned that the monitoring network utilized at the facility had been abandoned. In July 2019, EPA, through a PADEP contractor, installed and developed three nested groundwater monitoring wells at the Facility. The locations of the wells, identified as MW-9, MW-10, and MW-11 can be seen on Figure 3. MW-9 was intended to replace former monitoring well MW-1, MW-10 replaced former MW-3 and MW-11 replaced monitoring wells MW-4 and MW-7. Each location was installed as a multiple well borehole containing two screened intervals: a shallow interval of 5 to 25 feet bgs and a deep interval to depths ranging from 40 to 65 feet bgs.

The wells were developed a week after they were installed and were then allowed time to stabilize for several weeks. Groundwater samples from each monitoring well were collected via low-flow sampling methods on September 4, 2019 and analyzed for VOCs. No contaminants were detected above PADEP's MSCs for used aquifers in the wells screened into the deep flow interval. However, MW-9S was found to contain TCE (590 µg/l), PCE (7 µg/l), 1,1-

dichloroethene (1,1-DCE) (47 µg/l) and vinyl chloride (100 µg/l), MW-10S contained PCE (8 µg/l) and TCE (290 µg/l) and MW-11S contained TCE at 11 µg/l, all above their respective MSCs. The contaminant concentrations observed at MW-9S and MW-10S were higher than anticipated based on the historic natural attenuation thought to be occurring beneath the Facility.

Under EPA direction, the U.S. Army Corps of Engineers (ACE) conducted a second round of groundwater sampling at the Facility on March 12, 2020. Because no contaminants were detected above screening levels in the deeper water interval, only the shallow wells were sampled. Monitoring well MW-9S presented anomalous results. TCE, which had been detected at 590 µg/l in September 2019 was undetected in March 2020 (<0.4 µg/l). The only MSC exceedance in MW-9S in March 2020 was vinyl chloride (36.7 µg/l) which was detected at 100 µg/l at that location in September 2019. The other two shallow well samples presented similar results to the previous sample event. MW-10S exhibited exceedances of the MSCs for TCE (157 µg/l) and vinyl chloride (5.39 µg/l) and MW-11S contained TCE at 7.53 µg/l. Based on the above, groundwater beneath the Facility remains "contaminated" above appropriately protective risk-based "levels."

2. Indoor Air:

The historic groundwater contamination observed in close proximity to the building on the Facility property was strong enough for EPA's Vapor Intrusion Screening Level Calculator (VISL) to indicate a potential complete vapor intrusion (VI) pathway could exist. Because of this, EPA through a PADEP contractor, arranged for the collection of three paired sub-slab soil gas/indoor air samples at three locations within the building on the same day that groundwater samples were collected September 4, 2019. The sample locations were in the western half of the building since the highest groundwater contamination concentrations were just west of the building. A background outdoor air sample was collected concurrent with the indoor air samples. Figure 3 provides the locations of the paired samples and outdoor air sample.

Prior to sampling during an earlier April 2019 site visit, the contractor inspected the building interior and recorded a chemical inventory to assess what contaminants may be present in background indoor air. During the chemical inventory, common household chemical items were observed such as paints, household cleaners, small containers of gasoline, and PVC pipe cement. Additionally, no major preferential pathways were observed in the building at that time.

Sub-slab soil vapor analytical results were compared to the PADEP Non-Residential Sub-Slab Soil Gas Statewide Health Standard (SHS) VI Screening Values (SVSS). Samples SV-01 and SV-02 exceeded the SVSS for TCE (1,100 micrograms per cubic meter (µg/m^3)) at concentrations of 15,000 µg/m^3 and 1,400 µg/m^3, respectively. Other contaminants including PCE, vinyl chloride, 1,1-DCE and 2-Butanone were detected but at concentrations below the SVSS.

Indoor and outdoor air sample analytical results were compared to the PADEP Non-Residential SHS VI Screening Values (SVIA). No contaminants were detected above their respective SVIA. TCE, benzene and 2-butanone were detected at concentrations below the SVIA. Additionally, concentrations of benzene in IA-01, IA-02, and IA-03, 2-butanone in OA-01, and TCE in SV-02 were reported as estimated concentrations with a J flag. The detected concentration of 2-butanone in the background outdoor air sample (OA-01) makes that chemical's presence in indoor air questionable. The 2-butanone and benzene detections are most likely due to a background source within the building since these contaminants are not associated with the Facility's operational history and have not been detected in groundwater beneath the property.

Concentrations of TCE that were reported above the SVSS in sub-slab samples SV-01 and SV-02 were reported as non-detect in the corresponding indoor air samples IA-01 and IA-02. However, during the indoor air sampling event, the former leasing tenant of the western portion of the building was moving out. The loading dock garage door remained open for a few hours during the indoor air sampling event. Therefore, the indoor air samples may be biased low due to the building not remaining sealed during the sampling event.

EPA, through ACE, arranged for the collection of paired sub-slab soil gas/indoor air samples at the three locations previously sampled on March 12, 2020. As in the previous event a background outdoor air sample was collected concurrent with the indoor air samples. Figure 4 presents a sample location map for the sampling conducted by ACE.

The analytical results of the sub-slab soil gas samples were similar to the results seen in September 2019. TCE remained the primary contaminant of concern in the subsurface with exceedances of PADEP's soil gas to indoor air vapor intrusion screening value observed at SV-01 (1,180 micrograms/cubic meter (ug/m3)) and SV-02 (3,120 ug/m3). The TCE in the subsurface is present above screening levels which further justified the collection of the indoor air samples.

TCE was detected at very low concentrations (0.48-0.59 ug/m3) in all three samples collected within the building in March 2020 and at an even lower concentration in the sample collected outside the building (0.16 ug/m3). The values were below both PADEP and EPA indoor air human health risk based screening levels. While several other contaminants including 2-butanone, carbon tetrachloride, chlorobenzene, chloroform, and PCE were detected below screening levels in at least one indoor air sample, PCE is the only one of these contaminants also detected in both groundwater and sub-slab soil gas samples at the Facility.

The results of the two rounds of indoor air-related sampling indicate that the concrete slab in conjunction with the design and dimensions of the building are protective of the indoor air within the building. While a complete pathway exists, as demonstrated by the presence of PCE and TCE in indoor air, the concentrations of these contaminants are more than an order of magnitude below EPA and PADEP's risk based concentrations for those substances.

A groundwater flow and transport model produced by ERM (contractor for SGS Thomson) in February 1997 was used to evaluate the potential for off-site migration of compounds in the groundwater beneath SGS. The analysis included the constituents historically detected at MW-1S. The results of the model indicated that the farthest predicted distance a contaminant would migrate from the former source is 525 feet (1,1-DCE). The only downgradient building located within that distance is Solid State Scientific, Inc., another RCRA Corrective Action Facility located at 160 Commerce Drive adjacent to former SGS Thomson Facility. Solid State Scientific has shallow monitoring wells located near its northwestern boundary with the Facililty (identified as MW-1 and MW2, which are within approximately 60 feet southwest and 150 feet south of the Facility's MW-10). Neither of Solid State Scientific's monitoring wells contained any contaminants above PADEP's residential used aquifer MSCs when sampled in September 2010 and April 2013. Although TCE was detected in Solid State Scientific's monitoring well no. MW-2 at an estimated 4 J µg/l in the April 2013 sample, TCE was observed in a soil boring sample collected within a few feet of MW-2 at a concentration of 14 µg/kg, making attribution of its occurrence in groundwater to the Former SGS Thomson Facility questionable. Additionally, the Solid State Scientific building is more than 100 feet from its monitoring well no. MW-2, which indicates its indoor air would not be significantly impacted by the low level of TCE seen in the groundwater north of the building. Based on the above, groundwater contamination associated with the Facility is not suspected to significantly impact the indoor air quality of any off-site buildings.

3. Soils (Surface and Subsurface)

Soil sampling was conducted at the Facility in 1990, December 1992, August 1994, July 1996, September 1996 and October 1996. All of the soil results were compared to PADEPs MSCs for Residential Direct Contact and Residential Soil to Groundwater pathways. The only detections above the standard were from 1990, when TCE was detected in soil near the chiller, soil near the trailer and in the soil background. Excavation of more than 150 cubic yards of contaminated soil was performed in August 1994, to depths approximately 5 feet below grade. None of the post excavation samples contained any contaminants at concentrations above PADEP's Residential Soil MSCs. PADEP approved of the cleanup and no further soil sampling or excavation was recommended.

In 1997, the Site was afforded PADEP Act 2 liability protection by virtue of attainment of the Statewide Health Standard for Soil.

4. Surface Water and Sediment

A small drainage ditch, approximately 80-90 feet in length, is located along the northern side of the building. The ditch appears to drain to a storm sewer in the northwestern portion of the Site which eventually discharges to an unnamed tributary of Park Creek, approximately 800 feet southwest of the Facility property. Park Creek flows into the Little Neshaminy Creek before emptying into Neshaminy Creek and finally the Delaware River. The drainage ditch receives water from the buildings rain spouts and storm drainage from the property to the north. When in

operation, the Facility had a NPDES Industrial Waste Permit, which allowed its five outfalls (001, 002, 003, 004 and 005) to discharge to the unnamed tributary of Park Creek. Outfall 001 received wastewater from non-contact cooling water and is located at a manhole prior to discharge pipe from vault no. 2. Outfalls 002, 003 and 004 received stormwater from paved areas, roof drains and near the chiller unit. Outfall 005 received wastewater from reverse osmosis units and the neutralization tank, which was located at vault no. 2.

While in operation, magnesium hydroxide precipitate periodically made its way through the Facility processes and entered the public storm sewer and a neighbor's pond. After receiving notices of violation from PADEP for this discharge, the Facility began cleaning its wet wells more often to address this issue. The Facility's NPDES permit was cancelled after it reported to PADEP that operations were shut down and there would be no process discharge after December 2006. Currently there are no controls required to be in place for the discharge of overland flow drainage to off-site areas.

Other than being cited for the magnesium hydroxide precipitate, the Facility had no other violations of its NPDES permit while in operation. The Facility is not suspected to have any significant impacts on the sediments or water quality of the unnamed tributary to Park Creek or further downstream water bodies. Groundwater modelling has indicated that the contamination beneath the facility could not migrate with the strength needed to negatively impact the unnamed tributary to Park Creek.

5. Outdoor Air

The Facility was never required to have an air permit, as it didn't utilize sufficient quantities of potential air pollutants to warrant a Title V permit. No air issues were observed and, as of February 2007, the Facility was no longer in operation. Current tenants at the Facility have no operations that would require an air permit. Historic and/or current releases of hazardous substances to outdoor air are therefore not suspected. Therefore, no controls for releases to outdoor air are known or presumed to be required.

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3. Are there complete pathways between "contamination" and human receptors such that exposures can be reasonably expected under the current (land- and groundwater-use) conditions?

Summary Exposure Pathway Evaluation Table

Potential **Human Receptors** (Under Current Conditions)

"Contaminated Media"	Residents	Workers	Daycare	Construction	Trespassers	Recreation	Food[3]
Groundwater	No	No	No	No	No	No	No
~~Air (indoors)~~							
~~Soil (surface, e.g., <2 ft)~~							
~~Surface Water~~							
~~Sediment~~							
~~Soil (subsurface e.g., >2 ft)~~							
~~Air (outdoors)~~							

Instructions for Summary Exposure Pathway Evaluation Table:

1. Strikeout specific Media including Human Receptors -- spaces for Media, which are not "contaminated" as identified in #2 above.
2. Enter "yes" or "no" for potential "completeness" under each "Contaminated" Media – Human Receptor combination (Pathway).

Note: In order to focus the evaluation to the most probable combinations, some potential "Contaminated" Media – Human Receptor combinations (Pathways) do not have check spaces ("_____"). While these combinations may not be probable in most situations, they may be possible in some settings and should be added as necessary.

X If no (pathways are not complete for any contaminated media –receptor combination) – skip to #6, and enter "YE" status code, after explaining and/or referencing condition(s) in-place, whether natural or man-made, preventing a complete exposure pathway from each contaminated medium (e.g., use optional Pathway Evaluation Work Sheet) to analyze major pathways.

_____ If yes (pathways are complete for any "Contaminated" Media – Human Receptor combination) – continue after providing supporting explanation.

_____ If unknown (for any "Contaminated" Media – Human Receptor combination) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

As described in the answer to question no. 2 above, shallow groundwater at the Facility continues to contain concentrations of chlorinated VOCs above both PADEP's MSCs and EPA's MCLs. The primary contaminant of concern continues to be TCE, which was observed at a concentration as high as 590 µg/l in monitoring well MW-9S when sampled in September 2019 compared to its MCL of 5 µg/l. Vinyl chloride, present as an attenuation product of TCE, was observed at a concentration as high as 100 µg/l in MW-9S when sampled in September 2019 compared to its MCL of 2 µg/l. The highest concentrations of contaminants continue to occur in the vicinity of the former location of solvent waste storage and dilute hydrofluoric acid storage tanks along the western face of the building. The contamination is slowly migrating to the south/southeast from the former source area (all soils above PADEP's

[3] Indirect Pathway/Receptor (e.g., vegetables, fruits, crops, meat and dairy products, fish, shellfish, etc.)

residential soil MSCs were removed in 1994).

A groundwater flow and transport model produced by ERM in February 1997 was used to evaluate the potential for off-site migration of compounds in the groundwater beneath SGS. The analysis included the constituents historically detected at MW-1S, the most contaminated monitoring well. The results of the model indicated that the farthest predicted distance a contaminant would migrate from the former source is 525 feet (1,1-DCE). Off-site wells within that distance on the neighboring Solid State Scientific, Inc. RCRA Corrective Action facility have not been impacted by the Facility's chlorinated VOC contamination. PADEP approved of the groundwater modeling report and granted the Facility liability protection pursuant to Chapter 5 of Act 2 by virtue of attainment of the site specific for groundwater. A deed notice indicating the existing contamination exists for the Facility property.

The Facility is located in the southern portion of Montgomery Township and receives potable water from the North Wales Water Authority (NWWA) which also serves the surrounding townships to the east and south. The NWWA primarily uses surface water from the North Branch Neshaminy Creek and the Delaware River. While no registered private wells were identified within ½-mile of the Facility, three public supply wells are reportedly located approximately ½-mile northeast of the Site. These wells are not expected to be impacted by the groundwater beneath the Facility. The Goddard School of Montgomeryville, which provides day care to pre-K children, is located approximately 500 feet north (upgradient of the contamination in the shallow water bearing zone) of the facility and is not suspected to be impacted by the Facility groundwater. An ecological assessment concluded that the Facility is in an industrial park complex with little or no natural wildlife habitats or exposure pathways to sensitive habitats or habitats with wildlife or aquatic life.

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4. Can the **exposures** from any of the complete pathways identified in #3 be reasonably expected to be **"significant"** (i.e., potentially[4] " unacceptable" levels) because exposures can be reasonably expected to be: 1) greater in magnitude (intensity, frequency and/or duration) than assumed in the derivation of the acceptable "levels" (used to identify the "contamination"); or 2) the combination of exposure magnitude (perhaps even though low) and contaminant concentrations (which may be substantially above the acceptable "levels") could result in greater than acceptable risks)?

_____ If no (exposures (can not be reasonably expected to be significant (i.e., potentially "unacceptable") for any complete exposure pathway) – skip to #6 and enter "YE" status code after explaining and/or referencing documentation justifying why the exposures (from each of the complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If yes (exposures could be reasonably expected to be "significant" (i.e., potentially "unacceptable") for any complete exposure pathway) – continue after providing a description (of each potentially "unacceptable" exposure pathway) and explaining and/or referencing documentation justifying why the exposures (from each of the remaining complete pathways) to "contamination" (identified in #3) are not expected to be "significant."

_____ If unknown (for any complete pathway) – skip to #6 and enter "IN" status code.

Rationale and Reference(s):

No rationale warranted.

[4] If there is any question on whether the identified exposures are "significant' (i.e., potentially "unacceptable") consult a Human Health Risk Assessment specialist with appropriate education, training and experience.

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5. Can the "significant" **exposures** (identified in #4) be shown to be within **acceptable** limits?

_____ If yes (all "significant" exposures have been shown to be within acceptable limits) – continue and enter a "YE" after summarizing and referencing documentation justifying why all "significant" exposures to "contamination" are within acceptable limits (e.g., a site-specific Human Health Risk Assessment).

_____ If no (there are current exposures that can be reasonably expected to be "unacceptable") – continue and enter a "NO" status code after providing a description of each potentially "unacceptable" exposure.

_____ If unknown (for any potentially "unacceptable" exposure) – continue and enter "IN" status code.

Rationale and Reference(s):

No rationale warranted.

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6. Check the appropriate RCRIS status codes for the Current Human Exposures Under Control EI event code (CA725), and obtain Supervisor (or appropriate Manager) signature and date on the EI determination below (and attach appropriate supporting documentation as well as a map of the facility):

X YE – Yes, "Current Human Exposures Under Control" has been verified.

_____ NO – "Current Human Exposures" are NOT "Under Control."

_____ IN – More information is needed to make a determination.

Completed by:  Date 10/12/2022

Andrew Clibanoff

RCRA Corrective Action Project Manager

Supervisor: (signature)  Date 10/27/2022

(print) Alizabeth Olhasso

(title) Chief, RCRA CA Branch No. 2

(EPA Region or State) EPA Region 3

Locations where References may be found:

USEPA documents referenced herein can be found at USEPA's Region III office in Philadelphia, PA. PADEP files may also be obtained from the Department's Southeast Regional Office (SERO) in Norristown, PA.

Contact telephone and e-mail numbers:

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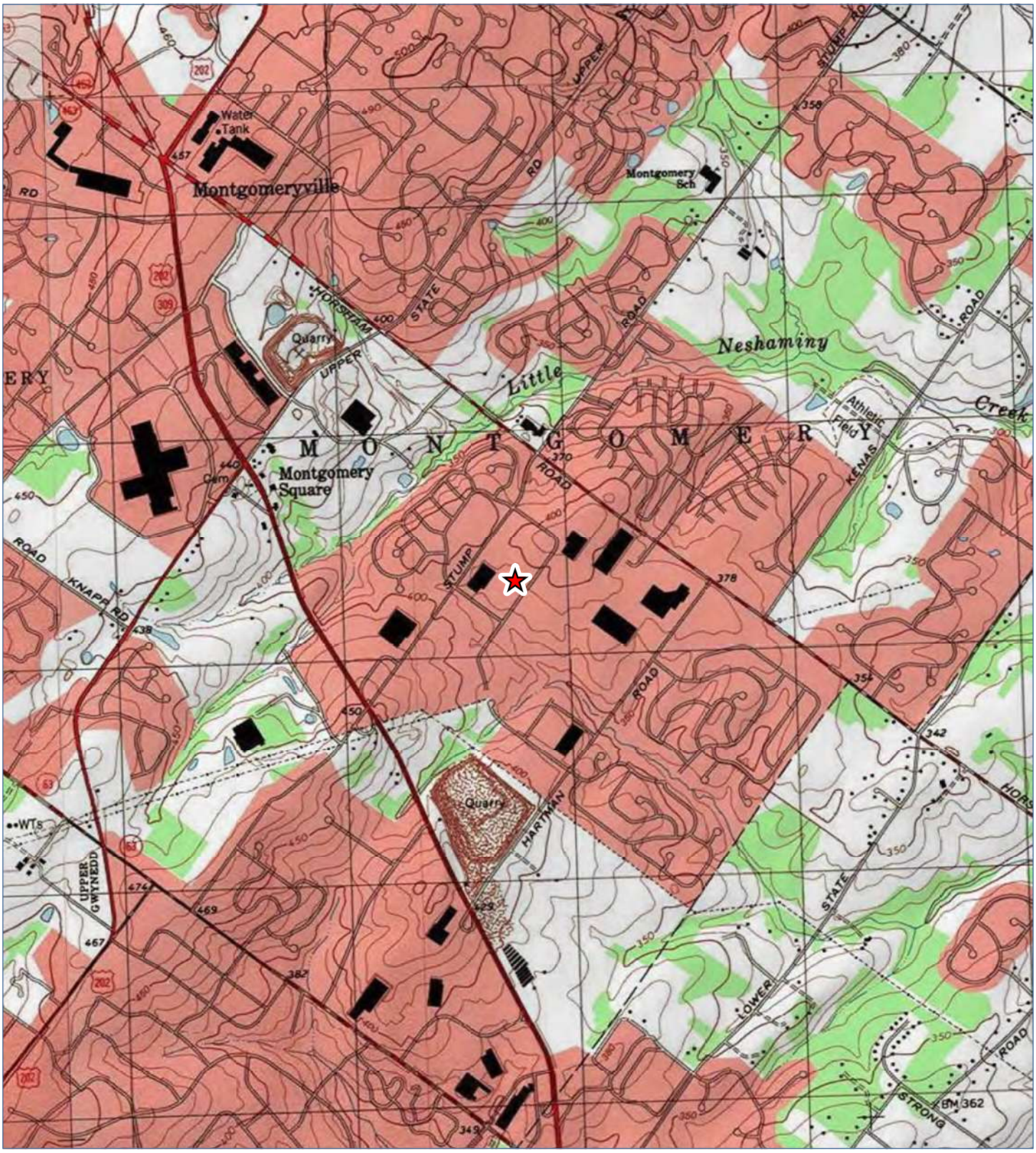
FINAL NOTE: THE HUMAN EXPOSURES EI IS A QUALITATIVE SCREENING OF EXPOSURES AND THE DETERMINATIONS WITHIN THIS DOCUMENT SHOULD NOT BE USED AS THE SOLE BASIS FOR RESTRICTING THE SCOPE OF MORE DETAILED (E.G., SITE-SPECIFIC) ASSESSMENTS OF RISK.

Figures



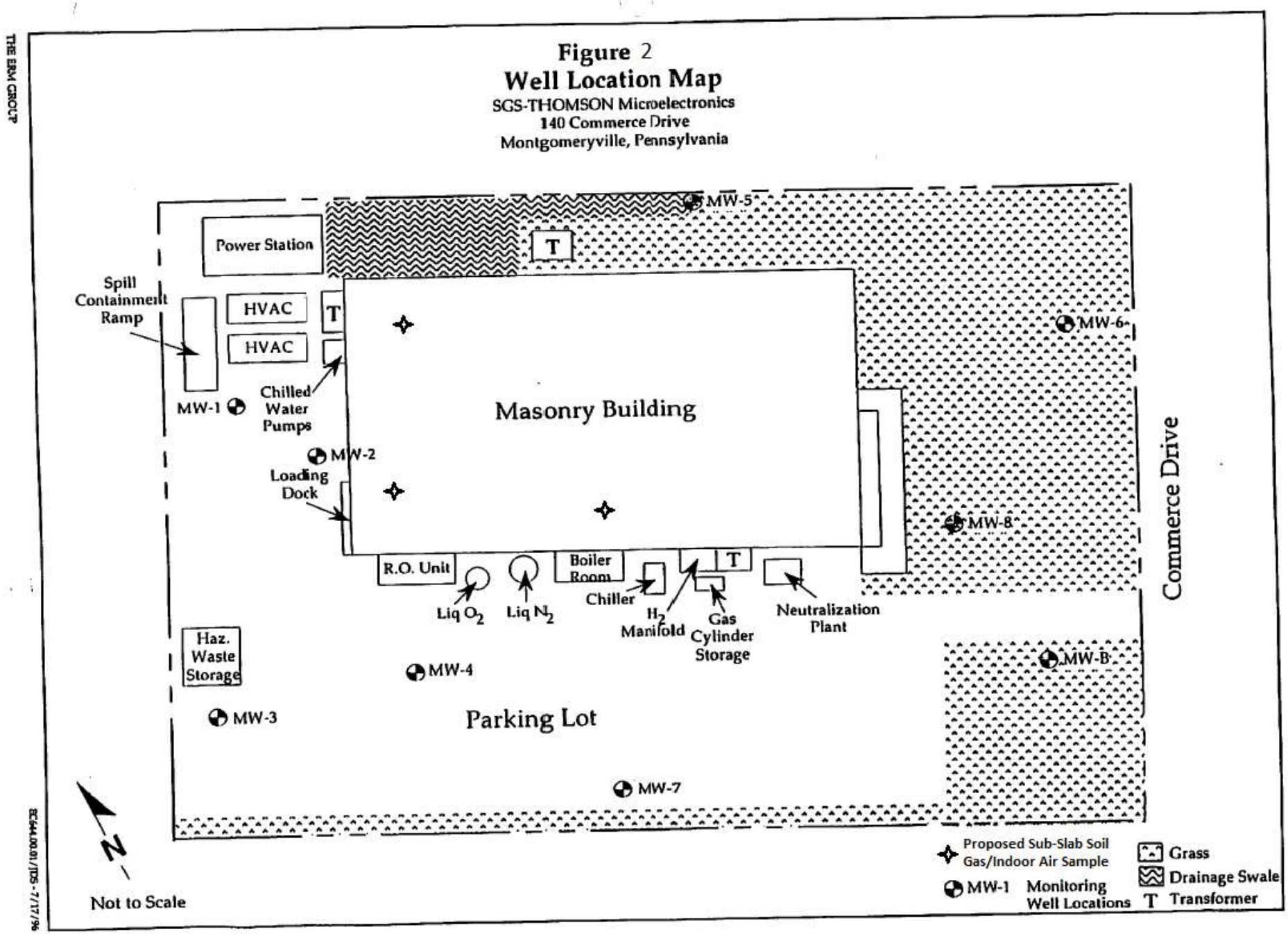
Legend

★ SITE LOCATION

NOTES:
1 TOPOGRAPHIC IMAGE WAS TAKEN FROM ESRI DATABASE; NATIONAL GEOGRAPHIC SOCIETY 2013
2. 7.5' USGS QUADRANGLE: AMBLER, PA (1999)

Adopted from EnviroTrac's 10/14/2019 Letter Report

SITE LOCATION MAP	DRAFTED BY: MED CHECKED BY: REVIEWED BY:	EnviroTrac 176 THORN HILL ROAD, WARRENDALE, PA 15086
RCRA/SGS THOMSON FACILITY 140 COMMERCE DRIVE MONTGOMERYVILLE, PA 18936 40.230368, -75.225942	N	SCALE: 0 1,000 2,000 Feet DATE: 2/7/2019 FIGURE: 1

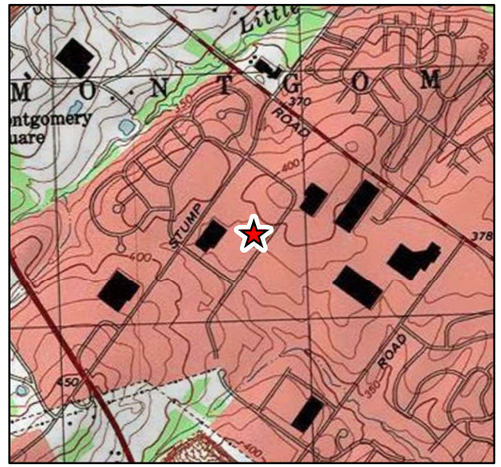


Note: These are historic well locations. Each of these wells has been properly abandoned.

Legend

- Monitoring Well Location
- Sub-Slab Soil Gas/Indoor/Outdoor Air Sample
- Abandoned Monitoring Well Location
- Utility Pole
- Overhead Electric Line
- Property Boundary
- X Proposed Sub-Slab Soil Gas/Indoor Air Sample

Site Location



DRAFTED BY: MED	SITE MAP features are approximate locations.
CHECKED BY:	RCRA/SGS THOMSON FACILITY 140 COMMERCE DRIVE MONTGOMERYVILLE, PA 18936 40.230368, -75.225942
REVIEWED BY:	

EnviroTrac

176 THORN HILL ROAD, WARRENDALE, PA 15086

N

SCALE	DATE	FIGURE
0 12.5 25 50 Feet	10/14/2019	3

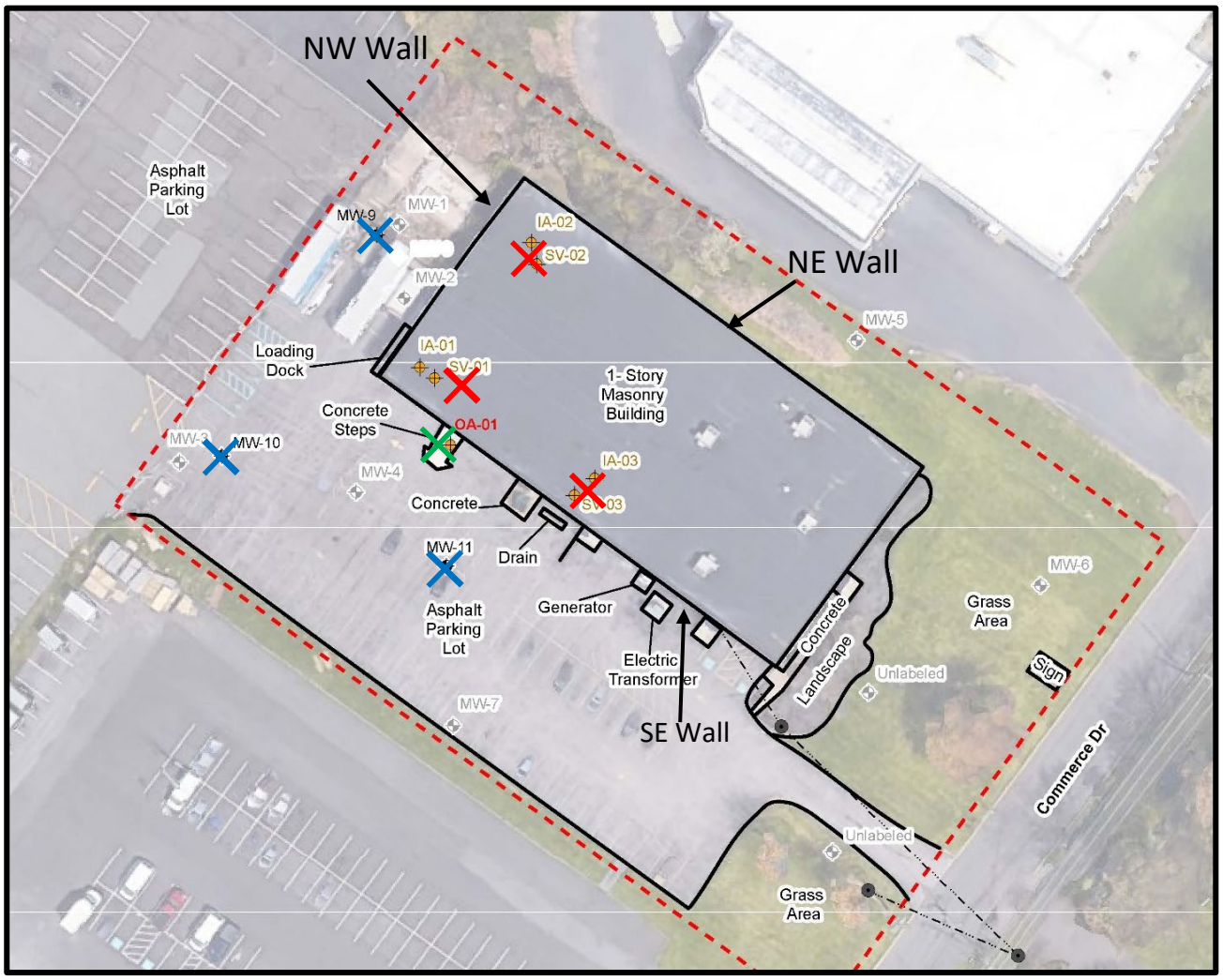
Figure 4

Summa Canister and Ground Water Sampling Locations (12 March 2020)

RCRA/Former SGS Thomson Facility

140 Commerce Drive

Montgomeryville, Montgomery County, Pennsylvania



Legend

- Monitoring Well Location
- Sub-Slab Soil Gas/Indoor/Outdoor Air Sample
- Abandoned Monitoring Well Location
- Utility Pole
- Overhead Electric Line
- Property Boundary

3/12/20 SV and IA sample

3/12/20 OA sample

3/12/20 Groundwater sample

Air sample Location Notes:

SV-01; 10'1" from SE Wall, 18'6" from NW Wall.

SV-02; 14'3" from NW Wall, 13'7" from NE Wall.

SV-03; 6'10" from SE Wall, 97'4" from NW Wall.

IA; Collected near the sub-slab locations, approximately 3 - 4 feet above floor surface.

NE = North Eastern.

NW = North Western.

SE = South Eastern.

SV = Sub-Slab.

IA = Indoor Air.

OA = Outdoor Air.