Maryland Department of the Environment

Technical Guidelines for Vapor Intrusion

What You Need to Know

The Land Restoration Program (LRP) is charged with assessing and cleaning up uncontrolled hazardous waste sites throughout Maryland to protect public health and the environment at sites historically contaminated by hazardous waste. Cleanups abate immediate uncontrolled discharges, ensure that contaminated soil does not pose a risk to public health and the environment, address groundwater contamination that may affect drinking water supplies or otherwise pose a risk to public health and the environment and address surface water discharges.

Purpose

This fact sheet provides technical information on vapor intrusion issues including target indoor air and soil gas remedial goals at residential and commercial properties. It is intended to supplement other technical guidance documents prepared by the Maryland Department of the Environment (MDE).

Initial Investigation

In most cases, the potential for vapor intrusion at a property can be ruled out by developing a conceptual site model (CSM) and collecting soil gas or groundwater samples near the contamination site. In some cases, sampling closer to your property, building, or the point of exposure may be necessary. MDE does not usually recommend indoor air sampling for vapor intrusion during the early stages of an investigation without a complete CSM. Indoor air quality may vary on a daily basis; therefore, sampling one day may not show a problem even though sampling a day later might show contamination. Since a variety of VOC sources are present in most buildings, testing will not necessarily confirm or refute that VOCs in the indoor air are from VOC contamination in soils or groundwater nearby. Often, soil vapor samples are taken from areas outside of the building to see if vapors are near the building. Samples may also be taken from beneath the building's foundation (called sub-slab samples), to see if vapors have reached the building. Due to the variability of indoor air samples, sub-slab coupled with indoor air samples may be more reliable in predicting and assessing potential indoor air impacts.

Sampling for Soil Vapor and Indoor Air

MDE encourages the use of innovative technologies for collection of samples to evaluate the vapor intrusion exposure pathway. However, prior to proposing a new technology it is a best practice to submit a work plan to MDE for review and approval prior to implementation.

Sample collection and analytical methods accepted by the MDE include:

- EPA TO-15; Evacuated canisters (Considerations include sampling duration/exposure period and access to the building);

- EPA TO-17; Sorbent tube with vacuum pump;
- EPA TO-17; Sorbent tube with passive caps;
- EPA 8260; Sorbent media and Tedlar® bags.

When choosing a laboratory for analysis of soil gas and/or indoor air samples, it is imperative that the laboratory selected be capable of obtaining reliable analytical detections of concentrations less than the screening levels for the proposed future use of the property (i.e. for a soil gas sample, the lab must be able to meet the Tier 1 residential soil gas screening level for a property proposed for future residential use).

MDE's experience across multiple sites shows that there is substantial variability in sub-slab soil gas across a building slab. Therefore, MDE recommends collecting multiple samples per building for sub-slab soil gas.

MDE allows variable time duration soil gas samples for evaluation of the extent of a vapor plume. For regulatory decision making regarding site closure, MDE generally requires a specific sample period for indoor air depending on the future proposed use of the property. For indoor air at a residential property, a 24-hour sample period is required and for indoor air at a commercial property, an 8-hour sample period is required. Caution must be taken to ensure sample integrity. The MDE recommends the use of leak tests to ensure sub-slab soil gas and soil gas sample integrity. Additionally, review of the following documents and guidance are recommended prior to sampling and/or submission of a sampling and analysis plan to MDE:

- OSWER Technical Guide for Assessing and Mitigating the Vapor Intrusion Pathway from Subsurface Vapor Sources to Indoor Air, U.S. Environmental Protection Agency (USEPA), Office of Solid Waste and Emergency Response, June 2015;

- Technical Guide For Addressing Petroleum Vapor Intrusion At Leaking Underground Storage Tank Sites, USEPA - Office of Underground Storage Tanks - June 2015.

When evaluating the adequacy of the samples collected and data provided for evaluation of the vapor intrusion pathway, the MDE will also consider the adequacy of the CSM. If the CSM is not complete, additional evaluation may be needed.

When evaluating a property that has previously been subject to historic evaluation of the vapor intrusion pathway, it is recommended that new data be collected to ensure that past decisions pertaining to vapor intrusion continue to be supported by current conditions and the site conceptual model continues to be adequate.

Target Indoor Air and Soil Gas Remedial Goals

MDE has evaluated potential indoor air hazards from volatile contaminants using the EPA Regional Screening Level (RSL) table as the foundation for toxicity information used to derive hazard screening values and remedial goals. The Land and Materials Administration (LMA) has adopted the process illustrated in Figure 1 for determining remedial goals for both indoor air and soil gas at residential and commercial properties within the LMA.

The residential and commercial target indoor air remedial goals are based on whichever represents the lowest indoor air concentration for noncarcinogens set at a Hazard Index of 1 or carcinogens set

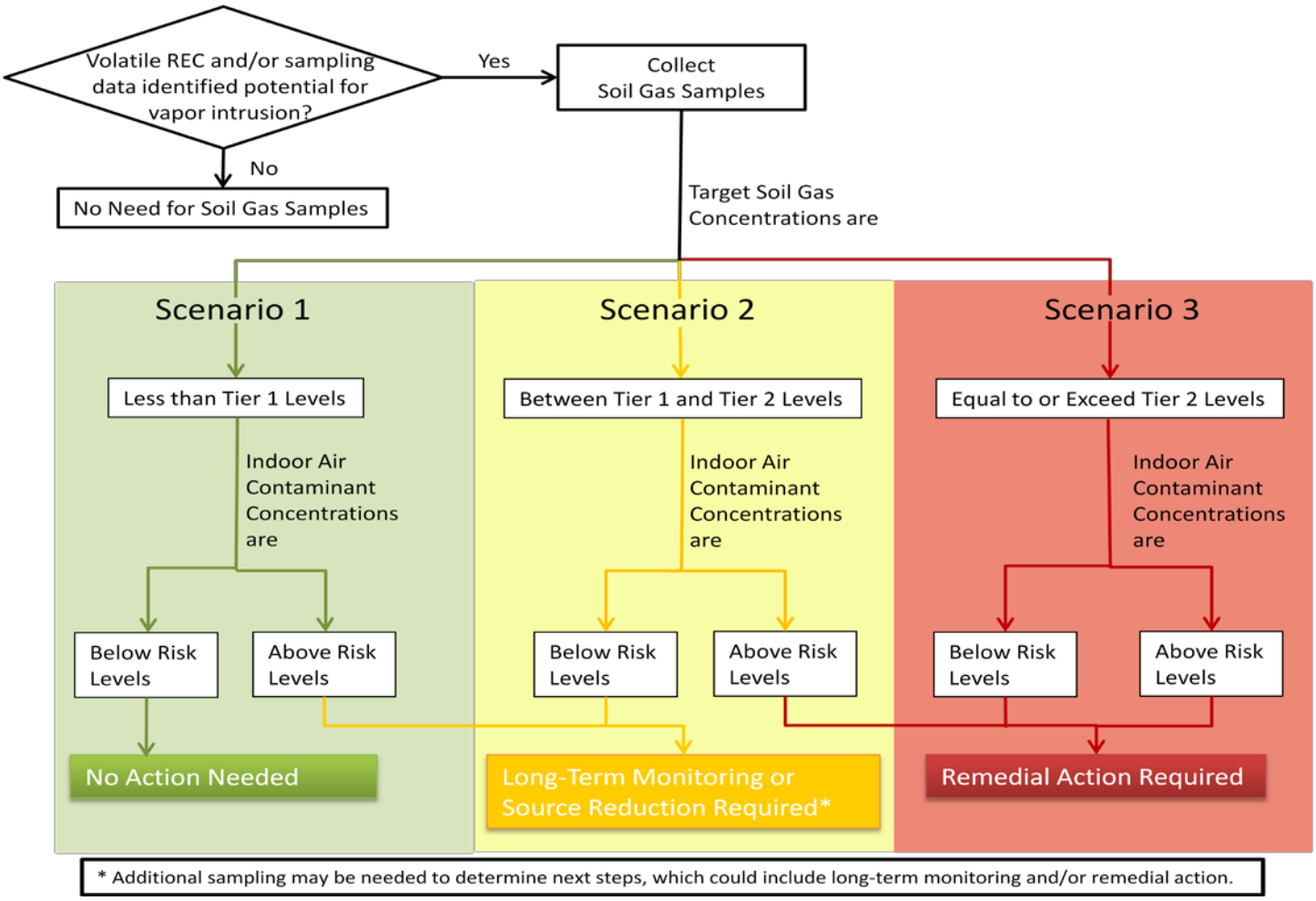
at a target of 1 in 100,000 ($1x10^{-5}$) excess cancer risk. In an effort to reduce uncertainty and future reopeners on cases the LMA has taken a tiered approach to target soil gas action levels.

- If indoor air contaminant concentrations are below acceptable risk thresholds and soil gas concentrations are below the Tier 1 soil gas screening values, additional monitoring or assessment when source conditions are known and appear to be stable are not required.
- If target soil gas concentrations are between the Tier 1 and Tier 2 values, and indoor air is acceptable, additional long term soil gas monitoring or source reduction will be necessary. In this scenario, it is particularly important to evaluate the adequacy of the CSM, as well as the number and frequency of samples of vapor and/or indoor air samples.
- If target soil gas concentrations exceed the Tier 2 values remedial measures will be necessary at the site. In all instances site-specific factors will be considered in establishing remedial goals and selecting monitoring frequencies.

At a minimum, the LRP requires that the sub-slab soil gas levels in the source area be reduced target levels less than 500 times the indoor air criteria for commercial properties and 100 times the indoor air criteria for residential properties. The remediator can achieve these objectives through one or more remedial options, including but not limited to soil venting. Target levels in the indoor air and sub-slab levels may need to be lower if the additive effects of multiple constituents have a total cancer risk greater than $1x10^{-5}$ and a Hazard Index greater than 1. The applicant may elect to adopt sub-slab soil gas target levels at or below 100 times the indoor air criteria to reduce post monitoring requirements. Once such levels are achieved, the remediator may request permission to shut the system down and establish an approved post-treatment confirmation sampling schedule with MDE's approval. Typical post closure monitoring requirements must be of a sufficient duration to account for contaminant rebound. Recommended post closure monitoring periods are 30, 180, 360 and 720 days or a period sufficient to account for source rebound.

See the Tables 1 (Residential) and Table 2 (Commercial) on pages 5 through 17 for the appropriate indoor air and tiered soil gas screening concentrations.

Figure 1—Indoor Air and Soil Gas Remedial Goals Flow Chart



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Definitions to Know

Ambient Air Sample

An ambient air sample is an outdoor air sample that is representative of the air surrounding a home or building.

Breathing Zone

A breathing zone is defined as the area from 3 – 5 feet above the ground, lower if small children are present. Indoor air samples should be taken from this zone to insure that they are representative of the air being breathed in the building.

Chlorinated Compounds

These include chemicals such as PCE (also know by its chemical name tetrachloroethene) and TCE (also known by its chemical name trichloroethene) that are commonly used in dry cleaning and industrial operations. These chemicals can breakdown into others that may also be of concern for vapor intrusion. They do not readily biodegrade in subsurface soil and may require active remediation to remove.

Cracks

A fracture or other narrow opening in the cement floor or foundation of a building can provide a means for soil vapor to enter a home or building.

Indoor Air Sample

An air sample taken from within the living or workspace of a home or building that is used to determine the concentration of the chemical that may be inhaled.

Preferential Pathway

A subsurface feature that exists below ground can include a fracture, utility line, or pipeline through which soil gas moves more easily than through the natural soil.

Soil Gas Sample

A soil gas sample is an air sample taken from the air in the soil pore spaces. Soil gas samples are used to characterize chemical concentrations in the soil.

Sub-Slab Sample

A sub-slab sample is an air sample collected immediately beneath a home or building with a basement foundation and/or a slab-on-grade. Sub-slabs are collected to determine the concentration of chemicals in the soil vapor beneath a home or building because these chemicals may enter the building.

Summa Canisters

An airtight, stainless-steel container, which is used to collect air, samples. Summa canisters are evacuated and used under vacuum to take indoor air, ambient air or soil air vapor samples.

Vapor Intrusion (Radon) Mitigation System

A mechanical device(s) that applies a low amount of suction immediately below the foundation or the occupied space of the building and collects soil vapors which are then vented to the outside. For more information on how these systems operate, please see the IDEM Web page "How Do You Get Radon Out of a Building?"

For More Information

For vapor intrusion related questions, contact MDE at (410) 537 3437.

More information on this and related topics are available on the MDE website at:

https://mde.maryland.gov/programs/LAND/MarylandBrownfieldVCP/Pages/index.aspx.

Other sources of information about vapor intrusion are available at the websites listed below.

U.S. Environmental Protection Agency: https://www.epa.gov/vaporintrusion

Interstate Technology and Regulatory Council: https://www.itrcweb.org/team/public?teamid=22

Table 1 -Residential Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Acetaldehyde	**75-07-0**	**9.40E+00**	**2.2E-06**	**9.0E-03**	**I**		**1.00E+00**	**8.50E-06**		**1.88E+02**	**9.40E+02**
Acetone	**67-64-1**	**3.30E+04**		**3.1E+01**	**A**		**1.02E+00**			**6.60E+05**	**3.30E+06**
Acetone Cyanohydrin	75-86-5	2.10E+00		2.0E-03	X		1.01E+00			4.20E+01	2.10E+02
Acetonitrile	**75-05-8**	**6.30E+01**		**6.0E-02**	**I**		**1.01E+00**			**1.26E+03**	**6.30E+03**
Acetylaminofluorene, 2-	53-96-3	1.90E-02	1.3E-03		C			1.02E-05		3.80E-01	1.90E+00
Acrolein	**107-02-8**	**2.10E-02**		**2.0E-05**	**I**		**1.01E+00**			**4.20E-01**	**2.10E+00**
Acrylamide	79-06-1	9.70E-02	1.0E-04	6.0E-03	I	**M**	1.55E-02	3.99E-06	1.01E-05	1.94E+00	9.70E+00
Acrylic Acid	**79-10-7**	**1.05E+00**		**1.0E-03**	**I**		**1.01E+00**			**2.10E+01**	**1.05E+02**
Acrylonitrile	**107-13-1**	**3.60E-01**	**6.8E-05**	**2.0E-03**	**I**		**1.73E-01**	**1.01E-05**		**7.20E+00**	**3.60E+01**
Adiponitrile	111-69-3	6.30E+00		6.0E-03	P		1.01E+00			1.26E+02	6.30E+02
Aldrin	**309-00-2**	**5.00E-03**	**4.9E-03**		**I**			**1.01E-05**		**1.00E-01**	**5.00E-01**
Allyl Alcohol	**107-18-6**	**1.05E-01**		**1.0E-04**	**I**		**1.01E+00**			**2.10E+00**	**1.05E+01**
Allyl Chloride	**107-05-1**	**1.05E+00**	**6.0E-06**	**1.0E-03**	**I**		**1.01E+00**	**2.59E-06**		**2.10E+01**	**1.05E+02**
Aluminum	7429-90-5	5.30E+00		5.0E-03	P		1.02E+00			1.06E+02	5.30E+02
Aminobiphenyl, 4-	92-67-1	4.10E-03	6.0E-03		C			1.01E-05		8.20E-02	4.10E-01
Ammonia	**7664-41-7**	**5.22E+02**		**5.0E-01**	**I**		**1.00E+00**			**1.04E+04**	**5.22E+04**
Amyl Alcohol, tert-	**75-85-4**	**3.20E+00**		**3.0E-03**	**X**		**1.02E+00**			**6.40E+01**	**3.20E+02**
Aniline	62-53-3	1.05E+00	1.6E-06	1.0E-03	I		1.01E+00	6.90E-07		2.10E+01	1.05E+02
Antimony Trioxide	1309-64-4	2.10E-01		2.0E-04	I		1.01E+00			4.20E+00	2.10E+01
Arsenic, Inorganic	7440-38-2	5.80E-03	4.3E-03	1.5E-05	C		3.71E-01	1.02E-05		1.16E-01	5.80E-01
Arsine	7784-42-1	5.30E-02		5.0E-05	I		1.02E+00			1.06E+00	5.30E+00
Auramine	492-80-8	9.80E-02	2.5E-04		C			1.01E-05		1.96E+00	9.80E+00
Azinphos-methyl	86-50-0	1.05E+01		1.0E-02	A		1.01E+00			2.10E+02	1.05E+03
Azobenzene	**103-33-3**	**7.90E-01**	**3.1E-05**		**I**			**1.01E-05**		**1.58E+01**	**7.90E+01**
Azodicarbonamide	123-77-3	7.30E-03		7.0E-06	P		1.00E+00			1.46E-01	7.30E-01
Barium	7440-39-3	5.30E-01		5.0E-04	H		1.02E+00			1.06E+01	5.30E+01
Benzene	**71-43-2**	**3.20E+00**	**7.8E-06**	**3.0E-02**	**I**		**1.02E-01**	**1.03E-05**		**6.40E+01**	**3.20E+02**
Benzidine	92-87-5	1.45E-04	6.7E-02	3.0E-03	I	**M**	4.63E-05	3.99E-06	1.01E-05	2.90E-03	1.45E-02
Benzyl Chloride	**100-44-7**	**5.00E-01**	**4.9E-05**	**1.0E-03**	**P**		**4.79E-01**	**1.01E-05**		**1.00E+01**	**5.00E+01**
Beryllium and Compounds	744041-7	1.02E-02	2.4E-03	2.0E-05	I		4.89E-01	1.01E-05		2.04E-01	1.02E+00
Biphenyl, 1,1'-	**92-52-4**	**4.20E-01**		**4.0E-04**	**X**		**1.01E+00**			**8.40E+00**	**4.20E+01**
Bis(2-chloro-1-methylethyl) ether	**108-60-1**	**2.50E+00**	**1.0E-05**					**1.03E-05**		**5.00E+01**	**2.50E+02**
Bis(2-chloroethyl)ether	**111-44-4**	**7.40E-02**	**3.3E-04**		**I**			**1.00E-05**		**1.48E+00**	**7.40E+00**
Bis(chloromethyl)ether	**542-88-1**	**4.00E-04**	**6.2E-02**		**I**			**1.02E-05**		**8.00E-03**	**4.00E-02**
Boron and Borates	7440-42-8	2.10E+01		2.0E-02	H		1.01E+00			4.20E+02	2.10E+03
Boron Trichloride	**10294-34-5**	**2.10E+01**		**2.0E-02**	**P**		**1.01E+00**			**4.20E+02**	**2.10E+03**
Boron Trifluoride	**7637-07-2**	**1.40E+01**		**1.3E-02**	**C**		**1.03E+00**			**2.80E+02**	**1.40E+03**
Bromo-2-chloroethane, 1-	**107-04-0**	**4.10E-02**	**6.0E-04**		**X**			**1.01E-05**		**8.20E-01**	**4.10E+00**
Bromobenzene	**108-86-1**	**6.30E+01**		**6.0E-02**	**H**		**1.01E+00**			**1.26E+03**	**6.30E+03**
Bromochloromethane	**74-97-5**	**4.20E+01**		**4.0E-02**	**X**		**1.01E+00**			**8.40E+02**	**4.20E+03**
Bromodichloromethane	**75-27-4**	**6.60E-01**	**3.7E-05**		**C**			**1.00E-05**		**1.32E+01**	**6.60E+01**
Bromoform	**75-25-2**	**2.30E+01**	**1.1E-06**		**I**			**1.04E-05**		**4.60E+02**	**2.30E+03**
Bromomethane	**74-83-9**	**5.30E+00**		**5.0E-03**	**I**		**1.02E+00**			**1.06E+02**	**5.30E+02**
Bromopropane, 1-	**106-94-5**	**1.05E+02**		**1.0E-01**	**A**		**1.01E+00**			**2.10E+03**	**1.05E+04**
Butadiene, 1,3-	**106-99-0**	**8.20E-01**	**3.0E-05**	**2.0E-03**	**I**		**3.93E-01**	**1.01E-05**		**1.64E+01**	**8.20E+01**
Butyl alcohol, sec-	**78-92-2**	**3.20E+04**		**3.0E+01**	**I**		**1.02E+00**			**6.40E+05**	**3.20E+06**
Buytlated hydroxyanisole	25013-16-5	4.30E+02	5.7E-08		C			1.01E-05		8.60E+03	4.30E+04
Cadmium (Water)	7440-43-9	1.05E-02	1.8E-03	1.0E-05	I		1.01E+00	7.77E-06		2.10E-01	1.05E+00
Caprolactam	105-60-2	2.30E+00		2.2E-03	C		1.00E+00			4.60E+01	2.30E+02
Captafol	2425-06-1	5.70E-01	4.3E-05		C			1.01E-05		1.14E+01	5.70E+01
Captan	133-06-2	3.70E+01	6.6E-07		C			1.00E-05		7.40E+02	3.70E+03
Carbon Disulfide	**75-15-0**	**7.30E+02**		**7.0E-01**	**I**		**1.00E+00**			**1.46E+04**	**7.30E+04**
Carbon Tetrachloride	**56-23-5**	**4.10E+00**	**6.0E-06**	**1.0E-01**	**I**		**3.93E-02**	**1.01E-05**		**8.20E+01**	**4.10E+02**
Carbonyl Sulfide	**463-58-1**	**1.05E+02**		**1.0E-01**	**I**		**1.01E+00**			**2.10E+03**	**1.05E+04**
Ceric oxide	1306-38-3	9.40E-01		9.0E-04	I		1.00E+00			1.88E+01	9.40E+01
Chlordane	**12789-03-6**	**2.45E-01**	**1.0E-04**	**7.0E-04**	**I**		**3.36E-01**	**1.01E-05**		**4.90E+00**	**2.45E+01**
Chlordecone (Kepone)	143-50-0	5.30E+02	4.6E-03		I			1.00E+00		1.06E+04	5.30E+04

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Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Chlorine	**7782-50-5**	**1.57E-01**		**1.5E-04**	**I**		**1.00E+00**			**3.14E+00**	**1.57E+01**
Chlorine Dioxide	**10049-04-4**	**2.10E-01**		**2.0E-04**	**I**		**1.01E+00**			**4.20E+00**	**2.10E+01**
Chloro-1,1-difluoroethane, 1-	**75-68-3**	**5.30E+04**		**5.0E+01**	**I**		**1.02E+00**			**1.06E+06**	**5.30E+06**
Chloro-1,3-butadiene, 2-	**126-99-8**	**8.20E-02**	**3.0E-04**	**2.0E-02**	**H**		**3.93E-03**	**1.01E-05**		**1.64E+00**	**8.20E+00**
Chloro-2-methylaniline, 4-	95-69-2	3.20E-01	7.7E-05		C			1.01E-05		6.40E+00	3.20E+01
Chloroacetophenone, 2-	532-27-4	3.20E-02		3.0E-05	I		1.02E+00			6.40E-01	3.20E+00
Chlorobenzene	**108-90-7**	**5.30E+01**		**5.0E-02**	**P**		**1.02E+00**			**1.06E+03**	**5.30E+03**
Chlorobenzilate	510-15-6	7.90E-01	3.1E-05		C			1.01E-05		1.58E+01	7.90E+01
Chlorobenzotrifluoride, 4-	**98-56-6**	**3.20E+02**		**3.0E-01**	**P**		**1.02E+00**			**6.40E+03**	**3.20E+04**
Chlorodifluoromethane	**75-45-6**	**5.30E+04**		**5.0E+01**	**I**		**1.02E+00**			**1.06E+06**	**5.30E+06**
Chloroform	**67-66-3**	**1.10E+00**	**2.3E-05**	**9.8E-02**	**A**		**1.08E-02**	**1.04E-05**		**2.20E+01**	**1.10E+02**
Chloromethane	**74-87-3**	**9.40E+01**		**9.0E-02**	**I**		**1.00E+00**			**1.88E+03**	**9.40E+03**
Chloromethyl Methyl Ether	**107-30-2**	**3.60E-02**	**6.9E-04**		**C**			**1.02E-05**		**7.20E-01**	**3.60E+00**
Chloronitrobenzene, o-	88-73-3	1.05E-02		1.0E-05	I		1.01E+00			2.10E-01	1.05E+00
Chloronitrobenzene, p-	100-00-5	2.10E+00		2.0E-03	I		1.01E+00			4.20E+01	2.10E+02
Chloropicrin	**76-06-2**	**4.20E-01**		**4.0E-04**	**C**		**1.01E+00**			**8.40E+00**	**4.20E+01**
Chlorothalonil	1897-45-6	2.80E+01	8.9E-07		C			1.02E-05		5.60E+02	2.80E+03
Chlorozotocin	54749-90-5	3.60E-04	6.9E-02		C			1.02E-05		7.20E-03	3.60E-02
Chromium(VI)	18540-29-9	1.15E-04	8.4E-02	1.0E-04	I	**M**	1.10E-03	3.97E-06	1.01E-05	2.30E-03	1.15E-02
Cobalt	7440-48-4	2.80E-03	9.0E-03	6.0E-06	P		4.47E-01	1.04E-05		5.60E-02	2.80E-01
Coke Oven Emissions	**8007-45-2**	**1.60E-02**	**6.2E-04**		**I**	**M**		**4.08E-06**	**1.03E-05**	**3.20E-01**	**1.60E+00**
Cresol, m-	108-39-4	6.30E+02		6.0E-01	C		1.01E+00			1.26E+04	6.30E+04
Cresol, o-	95-48-7	6.30E+02		6.0E-01	C		1.01E+00			1.26E+04	6.30E+04
Cresol, p-	106-44-5	6.30E+02		6.0E-01	C		1.01E+00			1.26E+04	6.30E+04
Cresols	1319-77-3	6.30E+02		6.0E-01	C		1.01E+00			1.26E+04	6.30E+04
Cumene (Isopropylbenzene)	**98-82-8**	**4.20E+02**		**4.0E-01**	**I**		**1.01E+00**			**8.40E+03**	**4.20E+04**
Cupferron	135-20-6	3.90E-01	6.3E-05		C			1.01E-05		7.80E+00	3.90E+01
Cyanide (CN-)	**57-12-5**	**8.40E-01**		**8.0E-04**	**S**		**1.01E+00**			**1.68E+01**	**8.40E+01**
Cyanide, Hydrogen	**74-90-8**	**8.40E-01**		**8.0E-04**	**I**		**1.01E+00**			**1.68E+01**	**8.40E+01**
Cyclohexane	**110-82-7**	**6.30E+03**		**6.0E+00**	**I**		**1.01E+00**			**1.26E+05**	**6.30E+05**
Cyclohexanone	**108-94-1**	**7.30E+02**		**7.0E-01**	**P**		**1.00E+00**			**1.46E+04**	**7.30E+04**
Cyclohexene	**110-83-8**	**1.05E+03**		**1.0E+00**	**X**		**1.01E+00**			**2.10E+04**	**1.05E+05**
DDD, p,p'	72-54-8	3.60E-01	6.9E-05		C			1.02E-05		7.20E+00	3.60E+01
DDE, p,p'	**72-55-9**	**2.54E-01**	**9.7E-05**		**C**			**1.01E-05**		**5.08E+00**	**2.54E+01**
DDT	50-29-3	2.54E-01	9.7E-05		I			1.01E-05		5.08E+00	2.54E+01
Daminozide	1596-84-5	4.80E+00	5.1E-06		C			1.01E-05		9.60E+01	4.80E+02
Dibromo-3-chloropropane, 1,2-	**96-12-8**	**1.62E-03**	**6.0E-03**	**2.0E-04**	**I**	**M**	**7.77E-03**	**3.99E-06**	**1.01E-05**	**3.24E-02**	**1.62E-01**
Dibromochloromethane	**124-48-1**	**9.10E-01**	**2.7E-05**					**1.01E-05**		**1.82E+01**	**9.10E+01**
Dibromoethane, 1,2-	**106-93-4**	**4.10E-02**	**6.0E-04**	**9.0E-03**	**I**		**4.37E-03**	**1.01E-05**		**8.20E-01**	**4.10E+00**
Dibromomethane (Methylene Bromide)	**74-95-3**	**4.20E+00**		**4.0E-03**	**X**		**1.01E+00**			**8.40E+01**	**4.20E+02**
Dichloro-2-butene, 1,4-	**764-41-0**	**5.80E-03**	**4.2E-03**		**P**			**1.00E-05**		**1.16E-01**	**5.80E-01**
Dichloro-2-butene, cis-1,4-	**1476-11-5**	**5.80E-03**	**4.2E-03**		**P**			**1.00E-05**		**1.16E-01**	**5.80E-01**
Dichloro-2-butene, trans-1,4-	**110-57-6**	**5.80E-03**	**4.2E-03**		**P**			**1.00E-05**		**1.16E-01**	**5.80E-01**
Dichlorobenzene, 1,2-	**95-50-1**	**2.10E+02**		**2.0E-01**	**H**		**1.01E+00**			**4.20E+03**	**2.10E+04**
Dichlorobenzene, 1,4-	**106-46-7**	**2.30E+00**	**1.1E-05**	**8.0E-01**	**I**		**2.76E-03**	**1.04E-05**		**4.60E+01**	**2.30E+02**
Dichlorobenzidine, 3,3'-	91-94-1	7.20E-02	3.4E-04		C			1.01E-05		1.44E+00	7.20E+00
Dichlorodifluoromethane (Freon 12)	**75-71-8**	**1.05E+02**		**1.0E-01**	**X**		**1.01E+00**			**2.10E+03**	**1.05E+04**
Dichloroethane, 1,1-	**75-34-3**	**1.54E+01**	**1.6E-06**		**C**			**1.01E-05**		**3.08E+02**	**1.54E+03**
Dichloroethane, 1,2-	**107-06-2**	**9.40E-01**	**2.6E-05**	**7.0E-03**	**P**		**1.29E-01**	**1.00E-05**		**1.88E+01**	**9.40E+01**
Dichloroethylene, 1,1-	**75-35-4**	**2.10E+02**		**2.0E-01**	**I**		**1.01E+00**			**4.20E+03**	**2.10E+04**
Dichloroethylene, 1,2-cis-	**156-59-2**	**3.70E+01**		**3.5E-02**			**1.01E+00**			**7.40E+02**	**3.70E+03**
Dichloroethylene, 1,2-trans-	**156-60-5**	**7.40E+01**		**7.0E-02**			**1.01E+00**			**1.48E+03**	**7.40E+03**
Dichloropropane, 1,2-	**78-87-5**	**4.20E+00**	**3.7E-06**	**4.0E-03**	**I**		**1.01E+00**	**6.39E-06**		**8.40E+01**	**4.20E+02**
Dichloropropene, 1,3-	**542-75-6**	**6.10E+00**	**4.0E-06**	**2.0E-02**	**I**		**2.92E-01**	**1.00E-05**		**1.22E+02**	**6.10E+02**
Dichlorvos	62-73-7	3.00E-01	8.3E-05	5.0E-04	I		5.75E-01	1.02E-05		6.00E+00	3.00E+01
Dicyclopentadiene	**77-73-6**	**3.20E-01**		**3.0E-04**	**P**		**1.02E+00**			**6.40E+00**	**3.20E+01**
Dieldrin	60-57-1	5.40E-03	4.6E-03		I			1.02E-05		1.08E-01	5.40E-01

Table 1 -Residential Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Diesel Engine Exhaust	E17136615	8.20E-02	3.0E-04	5.0E-03	I		1.57E-02	1.01E-05		1.64E+00	8.20E+00
Diethylanolamine	111-42-2	2.10E-01		2.0E-04	P		1.01E+00			4.20E+00	2.10E+01
Diethylene Glycol Monobutyl Ether	112-34-5	1.05E-01		1.0E-04	P		1.01E+00			2.10E+00	1.05E+01
Diethylene Glycol Monoethyl Ether	111-90-0	3.20E-01		3.0E-04	P		1.02E+00			6.40E+00	3.20E+01
Diethylstilbestrol	56-53-1	2.50E-04	1.0E-01		C			1.03E-05		5.00E-03	2.50E-02
Difluoroethane, 1,1-	**75-37-6**	**4.20E+04**		**4.0E+01**	**I**		**1.01E+00**			**8.40E+05**	**4.20E+06**
Difluoropropane, 2,2-	**420-45-1**	**3.20E+04**		**3.0E+01**	**I**		**1.02E+00**			**6.40E+05**	**3.20E+06**
Dihydrosafrole	**94-58-6**	**1.90E+00**	**1.3E-05**		**C**			**1.02E-05**		**3.80E+01**	**1.90E+02**
Diisopropyl Ether	**108-20-3**	**7.30E+02**		**7.0E-01**	**P**		**1.00E+00**			**1.46E+04**	**7.30E+04**
Dimethylamino azobenzene [p-]	60-11-7	1.90E-02	1.3E-03		C			1.02E-05		3.80E-01	1.90E+00
Dimethylformamide	**68-12-2**	**3.20E+01**		**3.0E-02**	**I**		**1.02E+00**			**6.40E+02**	**3.20E+03**
Dimethylhydrazine, 1,1-	**57-14-7**	**2.10E-03**		**2.0E-06**	**X**		**1.01E+00**			**4.20E-02**	**2.10E-01**
Dimethylhydrazine, 1,2-	**540-73-8**	**1.60E-04**	**1.6E-01**		**X**			**1.05E-05**		**3.20E-03**	**1.60E-02**
Dimethylvinylchloride	**513-37-1**	**1.90E+00**	**1.3E-05**		**C**			**1.02E-05**		**3.80E+01**	**1.90E+02**
Dinitrotoluene, 2,4-	121-14-2	2.80E-01	8.9E-05		C			1.02E-05		5.60E+00	2.80E+01
Dioxane, 1,4-	**123-91-1**	**4.90E+00**	**5.0E-06**	**3.0E-02**	**I**		**1.57E-01**	**1.01E-05**		**9.80E+01**	**4.90E+02**
Hexachlorodibenzo-p-dioxin		1.90E-05	1.3E+00		I			1.02E-05		3.80E-04	1.90E-03
TCDD, 2,3,7,8-	**1746-01-6**	**6.50E-07**	**3.8E+01**	**4.0E-08**	**I**		**1.56E-02**	**1.02E-05**		**1.30E-05**	**6.50E-05**
Diphenyl Ether	**101-84-8**	**4.20E-01**		**4.0E-04**	**X**		**1.01E+00**			**8.40E+00**	**4.20E+01**
Diphenylhydrazine, 1,2-	122-66-7	1.12E-01	2.2E-04		I			1.01E-05		2.24E+00	1.12E+01
Direct Black 38	1937-37-7	1.75E-04	1.4E-01		C			1.01E-05		3.50E-03	1.75E-02
Direct Blue 6	2602-46-2	1.75E-04	1.4E-01		C			1.01E-05		3.50E-03	1.75E-02
Direct Brown 95	16071-86-6	1.75E-04	1.4E-01		C			1.01E-05		3.50E-03	1.75E-02
Epichlorohydrin	**106-89-8**	**1.05E+00**	**1.2E-06**	**1.0E-03**	**I**		**1.01E+00**	**5.18E-07**		**2.10E+01**	**1.05E+02**
Epoxybutane, 1,2-	**106-88-7**	**2.10E+01**		**2.0E-02**	**I**		**1.01E+00**			**4.20E+02**	**2.10E+03**
Ethoxyethanol Acetate, 2-	**111-15-9**	**6.30E+01**		**6.0E-02**	**P**		**1.01E+00**			**1.26E+03**	**6.30E+03**
Ethoxyethanol, 2-	**110-80-5**	**2.10E+02**		**2.0E-01**	**I**		**1.01E+00**			**4.20E+03**	**2.10E+04**
Ethyl Acetate	**141-78-6**	**7.40E+01**		**7.0E-02**	**P**		**1.01E+00**			**1.48E+03**	**7.40E+03**
Ethyl Acrylate	**140-88-5**	**8.50E+00**		**8.0E-03**	**P**		**1.02E+00**			**1.70E+02**	**8.50E+02**
Ethyl Chloride (chloroethane)	**75-00-3**	**1.05E+04**		**1.0E+01**	**I**		**1.01E+00**			**2.10E+05**	**1.05E+06**
Ethyl Methacrylate	**97-63-2**	**3.20E+02**		**3.0E-01**	**P**		**1.02E+00**			**6.40E+03**	**3.20E+04**
Ethylbenzene	**100-41-4**	**1.00E+01**	**2.5E-06**	**1.0E+00**	**I**		**9.59E-03**	**1.03E-05**		**2.00E+02**	**1.00E+03**
Ethylene Glycol	107-12-1	4.20E+02		4.0E-01	C		1.01E+00			8.40E+03	4.20E+04
Ethylene Glycol Monobutyl Ether	111-76-2	1.70E+03		1.6E+00	I		1.02E+00			3.40E+04	1.70E+05
Ethylene Oxide	**75-21-8**	**3.30E-03**	**3.0E-03**	**3.0E-02**	**I**	**M**	**1.05E-04**	4.07E-06	**1.03E-05**	**6.60E-02**	**3.30E-01**
Ethylene Thiourea	96-45-7	1.90E+00	1.3E-05					1.02E-05		3.80E+01	1.90E+02
Ethyleneimine	**151-56-4**	**1.30E-03**	**1.9E-02**					**1.02E-05**		**2.60E-02**	**1.30E-01**
Fluoride	16984-48-8	1.40E+01		1.3E-02	C		1.03E+00			2.80E+02	1.40E+03
Fluorine (Soluble Fluoride)	7782-41-4	1.40E+01		1.3E-02	C		1.03E+00			2.80E+02	1.40E+03
Formaldehyde	**50-00-0**	**1.90E+00**	**1.3E-05**	**9.8E-03**	**I**		**1.86E-01**	**1.02E-05**		**3.80E+01**	**1.90E+02**
Formic Acid	**64-18-6**	**3.20E-01**		**3.0E-04**	**X**		**1.02E+00**			**6.40E+00**	**3.20E+01**
Furfural	**98-01-1**	**5.30E+01**		**5.0E-02**	**H**		**1.02E+00**			**1.06E+03**	**5.30E+03**
Furium	531-82-8	5.70E-02	4.3E-04		C			1.01E-05		1.14E+00	5.70E+00
Furmecyclox	60568-05-0	2.90E+00	8.6E-06		C			1.02E-05		5.80E+01	2.90E+02
Glutaraldehyde	111-30-8	8.40E-02		8.0E-05	C		1.01E+00			1.68E+00	8.40E+00
Glycidyl	**765-34-4**	**1.05E+00**		**1.0E-03**	**H**		**1.01E+00**			**2.10E+01**	**1.05E+02**
Heptachlor	**76-44-8**	**1.90E-02**	**1.3E-03**		**I**			**1.02E-05**		**3.80E-01**	**1.90E+00**
Heptachlor Epoxide	**1024-57-3**	**9.40E-03**	**2.6E-03**		**I**			**1.00E-05**		**1.88E-01**	**9.40E-01**
Heptanol, n-	**111-71-7**	**3.20E+00**		**3.0E-03**	**X**		**1.02E+00**			**6.40E+01**	**3.20E+02**
Heptane, N-	**142-85-5**	**4.20E+02**		**4.0E-01**	**P**		**1.01E+00**			**8.40E+03**	**4.20E+04**
Hexachlorobenzene	**118-74-1**	**5.40E-02**	**4.6E-04**		**I**			**1.02E-05**		**1.08E+00**	**5.40E+00**
Hexachlorobutadiene	**87-68-3**	**1.13E+00**	**2.2E-05**		**I**			**1.02E-05**		**2.26E+01**	**1.13E+02**
Hexachlorocyclohexane, Alpha-	319-84-6	1.36E-02	1.8E-03		I			1.01E-05		2.72E-01	1.36E+00
Hexachlorocyclohexane, Beta-	319-85-7	4.70E-02	5.3E-04		I			1.02E-05		9.40E-01	4.70E+00
Hexachlorocyclohexane,Gamma- (Lindane)	58-89-9	7.90E-02	3.1E-04		C			1.01E-05		1.58E+00	7.90E+00
Hexachlorocyclohexane, Technical	608-73-1	4.80E-02	5.1E-04		I			1.01E-05		9.60E-01	4.80E+00
Hexachlorocyclopentadiene	**77-47-4**	**2.10E-01**		**2.0E-04**	**I**		**1.01E+00**			**4.20E+00**	**2.10E+01**

Table 1 -Residential Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Hexachloroethane	**67-72-1**	**2.24E+00**	**1.1E-05**	**3.0E-02**	**I**		**7.16E-02**	**1.01E-05**		**4.48E+01**	**2.24E+02**
Hexamethylene Diisocyanate, 1,6-	**822-06-0**	**1.05E-02**		**1.0E-05**	**I**		**1.01E+00**			**2.10E-01**	**1.05E+00**
Hexane, N-	**110-54-3**	**7.30E+02**		**7.0E-01**	**I**		**1.00E+00**			**1.46E+04**	**7.30E+04**
Hexanone, 2-	**591-78-6**	**3.20E+01**		**3.0E-02**	**I**		**1.02E+00**			**6.40E+02**	**3.20E+03**
Hydrazine	**302-01-2**	**5.00E-03**	**4.9E-03**	**3.0E-05**	**I**		**1.60E-01**	**1.01E-05**		**1.00E-01**	**5.00E-01**
Hydrazine Sulfate	10034-93-2	5.00E-03	4.9E-03		I			1.01E-05		1.00E-01	5.00E-01
Hydrogen Chloride	**7647-01-0**	**2.10E+01**		**2.0E-02**	**I**		**1.01E+00**			**4.20E+02**	**2.10E+03**
Hydrogen Fluoride	**7664-39-3**	**1.50E+01**		**1.4E-02**	**C**		**1.03E+00**			**3.00E+02**	**1.50E+03**
Hydrogen Sulfide	**7783-06-4**	**2.10E+00**		**2.0E-03**	**I**		**1.01E+00**			**4.20E+01**	**2.10E+02**
Isophorone	78-59-1	2.10E+03		2.0E+00	I		1.01E+00			4.20E+04	2.10E+05
Isopropanol	**67-63-0**	**2.10E+02**		**2.0E-01**	**P**		**1.01E+00**			**4.20E+03**	**2.10E+04**
JP-7	**NA**	**3.20E+02**		**3.0E-01**	**A**		**1.02E+00**			**6.40E+03**	**3.20E+04**
Lead Phosphate	7446-27-7	2.10E+00	1.2E-05		C			1.04E-05		4.20E+01	2.10E+02
Lead Acetate	301-04-2	2.10E+00	1.2E-05		C			1.04E-05		4.20E+01	2.10E+02
Lead Subacetate	1335-32-6	2.10E+00	1.2E-05		C			1.04E-05		4.20E+01	2.10E+02
Maleic Anhydride	108-31-6	7.40E-01		7.0E-04	C		1.01E+00			1.48E+01	7.40E+01
Manganese (Non-diet)	7439-96-5	5.30E-02		5.0E-05	I		1.02E+00			1.06E+00	5.30E+00
Mercuric Chloride	7487-94-7	3.20E-01		3.0E-04	I		1.02E+00			6.40E+00	3.20E+01
Mercury (elemental)	**7439-97-6**	**3.20E-01**		**3.0E-04**	**I**		**1.02E+00**			**6.40E+00**	**3.20E+01**
Methacrylonitrile	**126-98-7**	**3.20E+01**		**3.0E-02**	**P**		**1.02E+00**			**6.40E+02**	**3.20E+03**
Methanol	**67-56-1**	**2.10E+04**		**2.0E+01**	**I**		**1.01E+00**			**4.20E+05**	**2.10E+06**
Methoxy-5-nitroaniline, 2-	99-59-2	1.80E+00	1.4E-05		C			1.04E-05		3.60E+01	1.80E+02
Methoxyethanol Acetate, 2-	**110-49-6**	**1.05E+00**		**1.0E-03**	**P**		**1.01E+00**			**2.10E+01**	**1.05E+02**
Methoxyethanol, 2-	**109-86-4**	**2.10E+01**		**2.0E-02**	**I**		**1.01E+00**			**4.20E+02**	**2.10E+03**
Methyl Acrylate	**96-33-3**	**2.10E+01**		**2.0E-02**	**P**		**1.01E+00**			**4.20E+02**	**2.10E+03**
Methyl Ethyl Ketone (2-Butanone)	**78-93-3**	**5.30E+03**		**5.0E+00**	**I**		**1.02E+00**			**1.06E+05**	**5.30E+05**
Methyl Hydrazine	**60-34-4**	**2.10E-02**	**1.0E-03**	**2.0E-05**	**I**		**1.01E+00**	**8.63E-06**		**4.20E-01**	**2.10E+00**
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	**108-10-1**	**3.20E+03**		**3.0E+00**	**I**		**1.02E+00**			**6.40E+04**	**3.20E+05**
Methyl Isocyanate	**624-83-9**	**1.10E+00**		**1.0E-03**	**C**		**1.05E+00**			**2.20E+01**	**1.10E+02**
Methyl Methacrylate	**80-62-6**	**7.30E+02**		**7.0E-01**	**I**		**1.00E+00**			**1.46E+04**	**7.30E+04**
Methyl Styrene (Mixed Isomers)	**25013-15-4**	**4.20E+01**		**4.0E-02**	**H**		**1.01E+00**			**8.40E+02**	**4.20E+03**
Methyl methanesulfonate	66-27-3	8.90E-01	2.8E-05		C			1.02E-05		1.78E+01	8.90E+01
Methyl tert-Butyl Ether (MTBE)	**1634-04-4**	**9.40E+01**	**2.6E-07**	**3.0E+00**	**I**		**3.00E-02**	**1.00E-05**		**1.88E+03**	**9.40E+03**
Methyl-2-Pentanol, 4-	**80-62-6**	**3.20E+03**		**3.0E+00**	**X**		**1.02E+00**			**6.40E+04**	**3.20E+05**
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	1.02E-02	2.4E-03		C			1.01E-05		2.04E-01	1.02E+00
Methylaniline Hydrochloride, 2-	636-21-5	6.60E-01	3.7E-05		C			1.00E-05		1.32E+01	6.60E+01
Methylcholanthrene, 3-	56-49-5	1.54E-03	6.3E-03		I	**M**			1.01E-05	3.08E-02	1.54E-01
Methylene Chloride	**75-09-2**	**6.30E+02**	**1.0E-08**	**6.0E-01**	**I**	**M**	**1.01E+00**		**6.56E-06**	**1.26E+04**	**6.30E+04**
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	2.30E-02	4.3E-04		C	**M**			1.03E-05	4.60E-01	2.30E+00
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	1.90E+00	1.3E-05		C			1.02E-05		3.80E+01	1.90E+02
Methylenebisbenzenamine, 4,4'-	101-77-9	5.30E-02	4.6E-04	2.0E-02	C		2.54E-03	1.00E-05		1.06E+00	5.30E+00
Methylene Diisocyanate	101-68-8	6.30E-01		6.0E-04	I		1.01E+00			1.26E+01	6.30E+01
Mirax	**2385-85-5**	**4.80E-03**	**5.1E-03**		**C**			**1.01E-05**		**9.60E-02**	**4.80E-01**
Naphtha, High Flash Aromatic (HFAN)	**64724-95-6**	**1.05E+02**		**1.0E-01**	**P**		**1.01E+00**			**2.10E+03**	**1.05E+04**
Nickel Acetate	373-02-4	1.47E-02	2.6E-04	1.4E-05	C		1.01E+00	1.57E-06		2.94E-01	1.47E+00
Nickel Carbonate	3333-67-3	1.47E-02	2.6E-04	1.4E-05	C		1.01E+00	1.57E-06		2.94E-01	1.47E+00
Nickel Carbonyl	**13463-39-3**	**1.47E-02**	**2.6E-04**	**1.4E-05**	**C**		**1.01E+00**	**1.57E-06**		**2.94E-01**	**1.47E+00**
Nickel Hydroxide	12054-48-7	1.47E-02	2.6E-04	1.4E-05	C		1.01E+00	1.57E-06		2.94E-01	1.47E+00
Nickel Oxide	1313-99-1	2.10E-02	2.6E-04	2.0E-05	C		1.01E+00	2.24E-06		4.20E-01	2.10E+00
Nickel Soluble Salts	7440-02-0	9.40E-02	2.6E-04	9.0E-05	C		1.00E+00	1.00E-05		1.88E+00	9.40E+00
Nickel Subsulfide	12035-72-2	1.47E-02	4.8E-04	1.4E-05			1.01E+00	2.90E-06		2.94E-01	1.47E+00
Nickelocene	1271-28-9	1.47E-02	2.6E-04	1.4E-05	C		1.01E+00	1.57E-06		2.94E-01	1.47E+00
Nitroaniline, 2-	88-74-4	5.30E-02		5.0E-05	X		1.02E+00			1.06E+00	5.30E+00
Nitroaniline, 4-	100-01-6	6.30E+00		6.0E-03	P		1.01E+00			1.26E+02	6.30E+02
Nitrobenzene	**98-95-3**	**6.10E-01**	**4.0E-05**	**9.0E-03**	**H**		**6.50E-02**	**1.00E-05**		**1.22E+01**	**6.10E+01**
Nitrofurazone	59-87-0	6.60E-02	3.7E-04		C			1.00E-05		1.32E+00	6.60E+00
Nitromethane	**75-52-5**	**2.80E+00**	**8.8E-06**	**5.0E-03**	**P**		**5.37E-01**	**1.01E-05**		**5.60E+01**	**2.80E+02**

Table 1 -Residential Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Nitropropane, 2-	**79-46-9**	**9.10E-03**	**2.7E-03**	**2.0E-02**	**I**		**4.36E-04**	**1.01E-05**		**1.82E-01**	**9.10E-01**
Nitroso-N-ethylurea, N-	759-73-9	1.25E-03	7.7E-03		C	**M**		3.96E-06	**1.00E-05**	2.50E-02	1.25E-01
Nitroso-N-methylurea, N-	684-93-5	2.85E-04	3.4E-02		C	**M**		3.98E-06	**1.01E-05**	5.70E-03	2.85E-02
Nitroso-di-N-butylamine, N-	**924-16-3**	**1.54E-02**	**1.6E-03**		**I**			**1.01E-05**		**3.08E-01**	**1.54E+00**
Nitroso-di-N-propylamine, N-	621-64-7	1.23E-02	2.0E-03		C			1.01E-05		2.46E-01	1.23E+00
Nitrosodiethanolamine, N-	1116-54-7	3.10E-02	8.0E-04		C			1.02E-05		6.20E-01	3.10E+00
Nitrosodiethylamine, N-	55-18-5	5.70E-03	4.3E-03		I	**M**		1.01E-05	2.55E-05	1.14E-01	5.70E-01
Nitrosodimethylamine, N-	**62-75-9**	**6.90E-04**	**1.4E-02**	**4.0E-05**	**C**	**M**	**1.65E-02**	**3.97E-06**	**1.01E-05**	**1.38E-02**	**6.90E-02**
Nitrosodiphenylamine, N-	86-30-6	9.40E+00	2.6E-06		C			1.00E-05		1.88E+02	9.40E+02
Nitrosomethylethylamine, N-	**10595-95-6**	**3.90E-03**	**6.3E-03**		**C**			**1.01E-05**		**7.80E-02**	**3.90E-01**
Nitrosomorpholine [N-]	59-89-2	1.30E-02	1.9E-03		C			1.02E-05		2.60E-01	1.30E+00
Nitrosopiperidine [N-]	100-75-4	9.10E-03	2.7E-03		C			1.01E-05		1.82E-01	9.10E-01
Nitrosopyrrolidine, N-	930-55-2	4.00E-02	6.1E-04		C			1.00E-05		8.00E-01	4.00E+00
Nonane, n-	**111-84-2**	**2.10E+01**		**2.0E-02**	**P**		**1.01E+00**			**4.20E+02**	**2.10E+03**
Pentachlorophenol	87-86-5	4.80E+00	5.1E-06		C			1.01E-05		9.60E+01	4.80E+02
Pentane, n-	**109-66-0**	**1.05E+03**		**1.0E+00**	**P**		**1.01E+00**			**2.10E+04**	**1.05E+05**
Phenacetin	62-44-2	3.90E+01	6.3E-07		C			1.01E-05		7.80E+02	3.90E+03
Phenol	108-95-2	2.10E+02		2.0E-01	C		1.01E+00			4.20E+03	2.10E+04
Phosgene	**75-44-5**	**3.20E-01**		**3.0E-04**	**I**		**1.02E+00**			**6.40E+00**	**3.20E+01**
Phosphine	**7803-51-2**	**3.20E-01**		**3.0E-04**	**I**		**1.02E+00**			**6.40E+00**	**3.20E+01**
Phosphoric Acid	7664-38-2	1.05E+01		1.0E-02	I		1.01E+00			2.10E+02	1.05E+03
Bis(2-ethylhexyl)phthalate	117-81-7	1.02E+01	2.4E-06		C			1.01E-05		2.04E+02	1.02E+03
Phthalic Anhydride	85-44-9	2.10E+01		2.0E-02	C		1.01E+00			4.20E+02	2.10E+03
Polybrominated Biphenyls	59536-65-1	2.90E-03	8.6E-03		C			1.02E-05		5.80E-02	2.90E-01
Aroclor 1016	**12674-11-2**	**1.22E+00**	**2.0E-05**		**S**			**1.00E-05**		**2.44E+01**	**1.22E+02**
Aroclor 1221	**11104-28-2**	**4.30E-02**	**5.7E-04**		**S**			**1.01E-05**		**8.60E-01**	**4.30E+00**
Aroclor 1232	**11141-16-5**	**4.30E-02**	**5.7E-04**		**S**			**1.01E-05**		**8.60E-01**	**4.30E+00**
Aroclor 1242	**53469-21-9**	**4.30E-02**	**5.7E-04**		**S**			**1.01E-05**		**8.60E-01**	**4.30E+00**
Aroclor 1248	**12672-29-6**	**4.30E-02**	**5.7E-04**		**S**			**1.01E-05**		**8.60E-01**	**4.30E+00**
Aroclor 1254	**11097-69-1**	**4.30E-02**	**5.7E-04**		**S**			**1.01E-05**		**8.60E-01**	**4.30E+00**
Aroclor 1260	**11096-82-5**	**4.30E-02**	**5.7E-04**		**S**			**1.01E-05**		**8.60E-01**	**4.30E+00**
~Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	**39635-31-9**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	**52663-72-6**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	**69782-90-7**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	**38380-08-4**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	**32774-16-6**	**2.22E-05**	**1.1E+00**	**1.3E-06**			**1.64E-02**	**1.00E-05**		**4.44E-04**	**2.22E-03**
~Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	**65510-44-3**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	**31508-00-6**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	**32598-14-4**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	**74472-37-0**	**2.22E-02**	**1.1E-03**	**1.3E-03**			**1.64E-02**	**1.00E-05**		**4.44E-01**	**2.22E+00**
~Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	**57465-28-8**	**6.50E-06**	**3.8E+00**	**4.0E-07**			**1.56E-02**	**1.02E-05**		**1.30E-04**	**6.50E-04**
~Polychlorinated Biphenyls (high risk)	**1336-36-3**	**4.30E-02**	**5.7E-04**		**I**			**1.01E-05**		**8.60E-01**	**4.30E+00**
~Polychlorinated Biphenyls (low risk)	**1336-36-3**	**2.45E-01**	**1.0E-04**		**I**			**1.01E-05**		**4.90E+00**	**2.45E+01**
~Polychlorinated Biphenyls (lowest risk)	**1336-36-3**	**1.22E+00**	**2.0E-05**		**I**			**1.00E-05**		**2.44E+01**	**1.22E+02**
~Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	6.50E-03	3.8E-03	4.0E-04			1.56E-02	1.02E-05		1.30E-01	6.50E-01
~Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	**70362-50-4**	**2.22E-03**	**1.1E-02**	**1.3E-04**			**1.64E-02**	**1.00E-05**		**4.44E-02**	**2.22E-01**
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	6.30E-01		6.0E-04			1.01E+00			1.26E+01	6.30E+01
Benz[a]anthracene	**56-55-3**	**4.10E-01**	**6.0E-05**		**E**	**M**		**1.01E-05**		**8.20E+00**	**4.10E+01**
Benzo(j)fluoranthene	205-82-3	2.22E-01	1.1E-04		C			1.00E-05		4.44E+00	2.22E+01
Benzo[a]pyrene	50-32-8	2.10E-03	6.0E-04	2.0E-06	I	**M**	1.01E+00	5.18E-07		4.20E-02	2.10E-01
Benzo[b]fluoranthene	205-99-2	4.10E-01	6.0E-05		E	**M**		1.01E-05		8.20E+00	4.10E+01
Benzo[k]fluoranthene	207-08-9	4.10E+00	6.0E-06		E	**M**		1.01E-05		8.20E+01	4.10E+02
Chrysene	218-01-9	4.10E+01	6.0E-07		E	**M**		1.01E-05		8.20E+02	4.10E+03
Dibenz[a,h]anthracene	53-70-3	4.10E-02	6.0E-04		E	**M**		1.01E-05		8.20E-01	4.10E+00
Dibenzo(a,e)pyrene	192-65-4	2.22E-02	1.1E-03		C			1.00E-05		4.44E-01	2.22E+00
Dimethylbenz(a)anthracene, 7,12-	57-97-6	3.50E-04	7.1E-02		C	**M**		1.02E-05		7.00E-03	3.50E-02
Indeno[1,2,3-cd]pyrene	193-39-5	4.10E-01	6.0E-05		E	**M**		1.01E-05		8.20E+00	4.10E+01

Table 1 -Residential Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Naphthalene	**91-20-3**	**7.20E-01**	**3.4E-05**	**3.0E-03**	**C**		**2.30E-01**	**1.01E-05**		**1.44E+01**	**7.20E+01**
Nitropyrene, 4-	57835-92-4	2.22E-01	1.1E-04		C			1.00E-05		4.44E+00	2.22E+01
Propionaldehyde	**123-38-6**	**8.40E+00**		**8.0E-03**	**I**		**1.01E+00**			**1.68E+02**	**8.40E+02**
Propyl benzene	**103-65-1**	**1.05E+03**		**1.0E+00**			**1.01E+00**			**2.10E+04**	**1.05E+05**
Propylene	**115-07-1**	**3.20E+03**		**3.0E+00**	**C**		**1.02E+00**			**6.40E+04**	**3.20E+05**
Propylene Glycol Dinitrate	6423-43-4	2.85E-01		2.7E-04	C		1.01E+00			5.70E+00	2.85E+01
Propylene Glycol Monomethyl Ether	**107-98-2**	**2.10E+03**		**2.0E+00**	**A**		**1.01E+00**			**4.20E+04**	**2.10E+05**
Propylene Oxide	**75-56-9**	**6.60E+00**	**3.7E-06**	**3.0E-02**	**I**		**2.11E-01**	**1.00E-05**		**1.32E+02**	**6.60E+02**
Refractory Ceramic Fibers	E715557	3.15E+01		3.0E-02	A		1.01E+00			6.30E+02	3.15E+03
Safrole	94-59-7	3.90E-01	6.3E-05		C	**M**		1.01E-05		7.80E+00	3.90E+01
Selenium	7782-49-2	2.10E+01		2.0E-02	C		1.01E+00			4.20E+02	2.10E+03
Selenium Sulfide	7446-34-6	2.10E+01		2.0E-02	C		1.01E+00			4.20E+02	2.10E+03
Silica (crystalline, respirable)	7631-86-9	3.20E+00		3.0E-03	C		1.02E+00			6.40E+01	3.20E+02
Sodium Fluoride	7681-49-4	1.37E+01		1.3E-02	C		1.01E+00			2.74E+02	1.37E+03
Styrene	**100-42-5**	**1.05E+03**		**1.0E+00**	**I**		**1.01E+00**			**2.10E+04**	**1.05E+05**
Sulfolane	126-33-0	2.10E+00		2.0E-03	P		1.01E+00			4.20E+01	2.10E+02
Sulfur Trioxide	**7446-11-9**	**1.05E+00**		**1.0E-03**	**C**		**1.01E+00**			**2.10E+01**	**1.05E+02**
Sulfuric Acid	7664-93-9	1.05E+00		1.0E-03	C		1.01E+00			2.10E+01	1.05E+02
Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	140-57-8	3.50E+00	7.1E-06		I			1.02E-05		7.00E+01	3.50E+02
Tetrachloroethane, 1,1,1,2-	**630-20-6**	**3.30E+00**	**7.4E-06**					**1.00E-05**		**6.60E+01**	**3.30E+02**
Tetrachloroethane, 1,1,2,2-	**79-34-5**	**4.20E-01**	**5.8E-05**					**1.00E-05**		**8.40E+00**	**4.20E+01**
Tetrachloroethylene	**127-18-4**	**4.20E+01**	**2.6E-07**	**4.0E-02**	**I**		**1.01E+00**	**4.49E-06**		**8.40E+02**	**4.20E+03**
Tetrafluoroethane, 1,1,1,2-	**811-97-2**	**8.40E+04**		**8.0E+01**	**I**		**1.01E+00**			**1.68E+06**	**8.40E+06**
Tetrahydrofuran (Furans)	**109-99-9**	**2.10E+03**		**2.0E+00**	**I**		**1.01E+00**			**4.20E+04**	**2.10E+05**
Titanium Tetrachloride	**7550-45-0**	**1.05E-01**		**1.0E-04**	**A**		**1.01E+00**			**2.10E+00**	**1.05E+01**
Toluene	**108-88-3**	**5.30E+03**		**5.0E+00**	**I**		**1.02E+00**			**1.06E+05**	**5.30E+05**
Toluene-2,4-diisocyanate	**584-84-9**	**8.40E-03**		**8.0E-06**	**C**		**1.01E+00**			**1.68E-01**	**8.40E-01**
Toluene-2,6-diisocyanate	**91-08-7**	**8.40E-03**		**8.0E-06**	**C**		**1.01E+00**			**1.68E-01**	**8.40E-01**
Toluidine, o- (Methylaniline, 2-)	95-53-4	4.80E-01	5.1E-05		C			1.01E-05		9.60E+00	4.80E+01
Total Petroleum Hydrocarbons (Aliphatic Low)	**E1790666**	**6.30E+02**		**6.0E-01**	**P**		**1.01E+00**			**1.26E+04**	**6.30E+04**
Total Petroleum Hydrocarbons (Aliphatic Medium)	**E1790668**	**1.05E+02**		**1.0E-01**	**P**		**1.01E+00**			**2.10E+03**	**1.05E+04**
Total Petroleum Hydrocarbons (Aromatic Low)	**E1790672**	**3.20E+01**		**3.0E-02**	**P**		**1.02E+00**			**6.40E+02**	**3.20E+03**
Total Petroleum Hydrocarbons (Aromatic Medium)	**E1790674**	**3.20E+00**		**3.0E-03**	**P**		**1.02E+00**			**6.40E+01**	**3.20E+02**
Toxaphene	8001-35-2	7.70E-02	3.2E-04		I			1.01E-05		1.54E+00	7.70E+00
Trichloro-1,2,2-trifluoroethane, 1,1,2-	**76-13-1**	**5.24E+03**		**5.0E+00**	**P**		**1.00E+00**			**1.05E+05**	**5.24E+05**
Trichlorobenzene, 1,2,4-	**120-82-1**	**2.10E+00**		**2.0E-03**	**P**		**1.01E+00**			**4.20E+01**	**2.10E+02**
Trichloroethane, 1,1,1-	**71-55-6**	**5.30E+03**		**5.0E+00**	**I**		**1.02E+00**			**1.06E+05**	**5.30E+05**
Trichloroethane, 1,1,2-	**79-00-5**	**2.10E-01**	**1.6E-05**	**2.0E-04**	**I**		**1.01E+00**	**1.38E-06**		**4.20E+00**	**2.10E+01**
Trichloroethylene	**79-01-6**	**2.10E+00**	**4.1E-06**	**2.0E-03**	**I**	**M**	**1.01E+00**	**3.54E-06**	**8.96E-06**	**4.20E+01**	**2.10E+02**
Trichlorofluoromethane	75-69-4	7.30E+02		7.0E-01	H		1.00E+00			1.46E+04	7.30E+04
Trichlorophenol, 2,4,6-	88-06-2	7.90E+00	3.1E-06		I			1.01E-05		1.58E+02	7.90E+02
Trichloropropane, 1,2,3-	**96-18-4**	**3.20E-01**		**3.0E-04**	**I**	**M**	**1.02E+00**			**6.40E+00**	**3.20E+01**
Trichloropropene, 1,2,3-	**96-19-5**	**3.20E-01**		**3.0E-04**	**P**		**1.02E+00**			**6.40E+00**	**3.20E+01**
Triethylamine	**121-44-8**	**7.30E+00**		**7.0E-03**	**I**		**1.00E+00**			**1.46E+02**	**7.30E+02**
Trifluoroethane, 1,1,1-	**420-46-2**	**2.10E+04**		**2.0E+01**	**P**		**1.01E+00**			**4.20E+05**	**2.10E+06**
Trimethylbenzene, 1,2,3-	**526-73-8**	**6.30E+01**		**6.0E-02**	**I**		**1.01E+00**			**1.26E+03**	**6.30E+03**
Trimethylbenzene, 1,2,4-	**95-63-6**	**6.30E+01**		**6.0E-02**	**I**		**1.01E+00**			**1.26E+03**	**6.30E+03**
Trimethylbenzene, 1,3,5-	**108-67-8**	**6.30E+01**		**6.0E-02**	**I**		**1.01E+00**			**1.26E+03**	**6.30E+03**
Tris(2,3-dibromopropyl)phosphate	**126-72-7**	**3.70E-02**	**6.6E-04**		**C**			**1.00E-05**		**7.40E-01**	**3.70E+00**
Uranium (Soluble Salts)	E715565	4.20E-02		4.0E-05	A		1.01E+00			8.40E-01	4.20E+00
Urethane	51-79-6	3.40E-02	2.9E-04		C	**M**		4.05E-06	1.03E-05	6.80E-01	3.40E+00
Vanadium Pentoxide	1314-62-1	3.00E-03	8.3E-03	7.0E-06	P		4.11E-01	1.02E-05		6.00E-02	3.00E-01
Vanadium and Compounds	7440-62-2	1.05E-01		1.0E-04	A		1.01E+00			2.10E+00	1.05E+01
Vinyl Acetate	**108-05-4**	**2.10E+02**		**2.0E-01**	**I**		**1.01E+00**			**4.20E+03**	**2.10E+04**
Vinyl Bromide	**593-60-2**	**7.70E-01**	**3.2E-05**	**3.0E-03**	**I**		**2.46E-01**	**1.01E-05**		**1.54E+01**	**7.70E+01**
Vinyl Chloride	**75-01-4**	**1.70E+00**	**4.4E-06**	**1.0E-01**	**I**	**M**	**1.63E-02**	**3.07E-06**	**1.06E-05**	**3.40E+01**	**1.70E+02**
Xylene, m-	**108-38-3**	**1.05E+02**		**1.0E-01**	**I**		**1.01E+00**			**2.10E+03**	**1.05E+04**

Table 1 -Residential Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Residential	Toxicity and Chemical-Specific Information				RESIDENTIAL TARGET RISK			RESIDENTIAL - Target Soil Gas	
			IUR	RfCi				CR			
Analyte (Bold = Volatiles)	CAS No.	Concentration (ug/m3)	$(ug/m^3)^{-1}$	(mg/m^3)	key	mutagen	HI	Non-Mutagenic	Mutagenic	TIER 1 (20X)(ug/m3)	TIER 2 (100X)(ug/m3)
Xylene, o-	95-47-6	1.05E+02		1.0E-01	I		1.01E+00			2.10E+03	1.05E+04
Xylene, P-	106-42-3	1.05E+02		1.0E-01	I		1.01E+00			2.10E+03	1.05E+04
Xylenes	1330-20-7	1.05E+02		1.0E-01	I		1.01E+00			2.10E+03	1.05E+04

Table 2 - Commercial Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Commercial	Toxicity and Chemical-Specific Information						COMMERCIAL TARGET RISK		COMMERCIAL - Target Soil Gas	
Analyte (Bold = Volatiles)	**CAS No.**	**Concentration (ug/m3)**	**IUR $(ug/m^3)^{-1}$**	**key**	**RfCi (mg/m^3)**	**key**	**voc**	**mutagen**	**HI**	**CR**	**TIER 1 (100X)(ug/m3)**	**TIER 2 (500X)(ug/m3)**
Acetaldehyde	**75-07-0**	**4.00E+01**	**2.2E-06**	**I**	**9.0E-03**	**I**	**V**		**1.01E+00**	**7.18E-06**	**4.00E+03**	**2.00E+04**
Acetone	**67-64-1**	**1.37E+05**			**3.1E+01**	**A**	**V**		**1.01E+00**		**1.37E+07**	**6.85E+07**
Acetone Cyanohydrin	75-86-5	8.80E+00			2.0E-03	X			1.00E+00		**8.80E+02**	**4.40E+03**
Acetonitrile	**75-05-8**	**2.68E+02**			**6.0E-02**	**I**	**V**		**1.02E+00**		**2.68E+04**	**1.34E+05**
Acetylaminofluorene, 2-	53-96-3	9.50E-02	1.3E-03	I		C				1.01E-05	**9.50E+00**	**4.75E+01**
Acrolein	**107-02-8**	**8.80E-02**			**2.0E-05**	**I**	**V**		**1.00E+00**		**8.80E+00**	**4.40E+01**
Acrylamide	79-06-1	1.25E+00	1.0E-04	H	6.0E-03	I		**M**	4.76E-02	1.02E-05	**1.25E+02**	**6.25E+02**
Acrylic Acid	**79-10-7**	**4.40E+00**			**1.0E-03**	**I**	**V**		**1.00E+00**		**4.40E+02**	**2.20E+03**
Acrylonitrile	**107-13-1**	**1.81E+00**	**6.8E-05**	**I**	**2.0E-03**	**I**	**V**		**2.07E-01**	**1.00E-05**	**1.81E+02**	**9.05E+02**
Adiponitrile	111-69-3	2.63E+01			6.0E-03	P			1.00E+00		**2.63E+03**	**1.32E+04**
Aldrin	**309-00-2**	**2.51E-02**	**4.9E-03**			**I**	**V**			**1.00E-05**	**2.51E+00**	**1.26E+01**
Allyl Alcohol	**107-18-6**	**4.40E-01**			**1.0E-04**	**I**	**V**		**1.00E+00**		**4.40E+01**	**2.20E+02**
Allyl Chloride	**107-05-1**	**4.40E+00**	**6.0E-06**		**1.0E-03**	**I**	**V**		**1.00E+00**	**2.15E-06**	**4.40E+02**	**2.20E+03**
Aluminum	7429-90-5	2.20E+01			5.0E-03	P			1.00E+00		**2.20E+03**	**1.10E+04**
Aminobiphenyl, 4-	92-67-1	2.10E-02	6.0E-03			C				1.03E-05	**2.10E+00**	**1.05E+01**
Ammonia	**7664-41-7**	**2.20E+03**			**5.0E-01**	**I**	**V**		**1.00E+00**		**2.20E+05**	**1.10E+06**
Amyl Alcohol, tert-	**75-85-4**	**1.32E+01**			**3.0E-03**	**X**	**V**		**1.00E+00**		**1.32E+03**	**6.60E+03**
Aniline	62-53-3	4.40E+00	1.6E-06	I	1.0E-03	I			1.00E+00	5.74E-07	**4.40E+02**	**2.20E+03**
Antimony Trioxide	1309-64-4	8.80E-01		I	2.0E-04	I			1.00E+00		**8.80E+01**	**4.40E+02**
Arsenic, Inorganic	7440-38-2	2.90E-02	4.3E-03	I	1.5E-05	C			4.41E-01	1.02E-05	**2.90E+00**	**1.45E+01**
Arsine	7784-42-1	2.20E-01		I	5.0E-05	I			1.00E+00		**2.20E+01**	**1.10E+02**
Auramine	492-80-8	5.00E-01	2.5E-04	I		C				1.02E-05	**5.00E+01**	**2.50E+02**
Azinphos-methyl	86-50-0	4.40E+01		I	1.0E-02	A			1.00E+00		**4.40E+03**	**2.20E+04**
Azobenzene	**103-33-3**	**4.00E+00**	**3.1E-05**	**I**		**I**	**V**			**1.01E-05**	**4.00E+02**	**2.00E+03**
Azodicarbonamide	123-77-3	3.10E-02		I	7.0E-06	P			1.01E+00		**3.10E+00**	**1.55E+01**
Barium	7440-39-3	2.19E+00		I	5.0E-04	H			1.00E+00		**2.19E+02**	**1.10E+03**
Benzene	**71-43-2**	**1.60E+01**	**7.8E-06**	**I**	**3.0E-02**	**I**	**V**		**1.22E-01**	**1.02E-05**	**1.60E+03**	**8.00E+03**
Benzidine	92-87-5	1.85E-03	6.7E-02	H	3.0E-03	I		**M**	1.41E-04	1.01E-05	**1.85E-01**	**9.25E-01**
Benzyl Chloride	**100-44-7**	**2.51E+00**	**4.9E-05**	**I**	**1.0E-03**	**P**	**V**		**5.73E-01**	**1.00E-05**	**2.51E+02**	**1.26E+03**
Beryllium and Compounds	744041-7	5.20E-02	2.4E-03	I	2.0E-05	I			5.94E-01	1.02E-05	**5.20E+00**	**2.60E+01**
Biphenyl, 1,1'-	**92-52-4**	**1.76E+00**			**4.0E-04**	**X**	**V**		**1.00E+00**		**1.76E+02**	**8.80E+02**
Bis(2-chloro-1-methylethyl) ether	**108-60-1**	**1.23E+01**	**1.0E-05**	**H**			**V**			**1.00E-05**	**1.23E+03**	**6.15E+03**
Bis(2-chloroethyl)ether	**111-44-4**	**3.80E-01**	**3.3E-04**	**I**		**I**	**V**			**1.02E-05**	**3.80E+01**	**1.90E+02**
Bis(chloromethyl)ether	**542-88-1**	**2.00E-03**	**6.2E-02**	**I**		**I**	**V**			**1.01E-05**	**2.00E-01**	**1.00E+00**
Boron and Borates	7440-42-8	8.80E+01		I	2.0E-02	H			1.00E+00		**8.80E+03**	**4.40E+04**
Boron Trichloride	**10294-34-5**	**8.80E+01**			**2.0E-02**	**P**	**V**		**1.00E+00**		**8.80E+03**	**4.40E+04**
Boron Trifluoride	**7637-07-2**	**5.70E+01**			**1.3E-02**	**C**	**V**		**1.00E+00**		**5.70E+03**	**2.85E+04**
Bromo-2-chloroethane, 1-	**107-04-0**	**2.05E-01**	**6.0E-04**			**X**	**V**			**1.00E-05**	**2.05E+01**	**1.03E+02**
Bromobenzene	**108-86-1**	**2.64E+02**			**6.0E-02**	**H**	**V**		**1.00E+00**		**2.64E+04**	**1.32E+05**
Bromochloromethane	**74-97-5**	**1.76E+02**			**4.0E-02**	**X**	**V**		**1.00E+00**		**1.76E+04**	**8.80E+04**
Bromodichloromethane	**75-27-4**	**3.32E+00**	**3.7E-05**	**I**		**C**	**V**			**1.00E-05**	**3.32E+02**	**1.66E+03**
Bromoform	**75-25-2**	**1.12E+02**	**1.1E-06**	**I**		**I**	**V**			**1.00E-05**	**1.12E+04**	**5.60E+04**
Bromomethane	**74-83-9**	**2.20E+01**			**5.0E-03**	**I**	**V**		**1.00E+00**		**2.20E+03**	**1.10E+04**
Bromopropane, 1-	**106-94-5**	**4.40E+02**			**1.0E-01**	**A**	**V**		**1.00E+00**		**4.40E+04**	**2.20E+05**
Butadiene, 1,3-	**106-99-0**	**4.10E+00**	**3.0E-05**	**I**	**2.0E-03**	**I**	**V**		**4.68E-01**	**1.00E-05**	**4.10E+02**	**2.05E+03**
Butyl alcohol, sec-	**78-92-2**	**1.32E+05**			**3.0E+01**	**I**	**V**		**1.00E+00**		**1.32E+07**	**6.60E+07**
Buytlated hydroxyanisole	25013-16-5	2.20E+03	5.7E-08	I		C				1.02E-05	**2.20E+05**	**1.10E+06**
Cadmium (Water)	7440-43-9	6.90E-02	1.8E-03	I	1.0E-05	I			1.58E+00	1.01E-05	**6.90E+00**	**3.45E+01**
Caprolactam	105-60-2	9.70E+00		I	2.2E-03	C			1.01E+00		**9.70E+02**	**4.85E+03**
Captafol	2425-06-1	2.90E+00	4.3E-05	I		C				1.02E-05	**2.90E+02**	**1.45E+03**
Captan	133-06-2	1.86E+02	6.6E-07	I		C				1.00E-05	**1.86E+04**	**9.30E+04**
Carbon Disulfide	**75-15-0**	**3.10E+03**			**7.0E-01**	**I**	**V**		**1.01E+00**		**3.10E+05**	**1.55E+06**
Carbon Tetrachloride	**56-23-5**	**2.05E+01**	**6.0E-06**	**I**	**1.0E-01**	**I**	**V**		**4.68E-02**	**1.00E-05**	**2.05E+03**	**1.03E+04**
Carbonyl Sulfide	**463-58-1**	**4.40E+02**			**1.0E-01**	**I**	**V**		**1.00E+00**		**4.40E+04**	**2.20E+05**
Ceric oxide	1306-38-3	4.00E+00			9.0E-04	I			1.01E+00		**4.00E+02**	**2.00E+03**
Chlordane	**12789-03-6**	**1.23E+00**	**1.0E-04**	**I**	**7.0E-04**	**I**	**V**		**4.01E-01**	**1.00E-05**	**1.23E+02**	**6.15E+02**
Chlordecone (Kepone)	143-50-0	2.70E+03	4.6E-03	I		I				1.01E+00	**2.70E+05**	**1.35E+06**
Chlorine	**7782-50-5**	**6.60E-01**			**1.5E-04**	**I**	**V**		**1.00E+00**		**6.60E+01**	**3.30E+02**
Chlorine Dioxide	**10049-04-4**	**8.80E-01**			**2.0E-04**	**I**	**V**		**1.00E+00**		**8.80E+01**	**4.40E+02**
Chloro-1,1-difluoroethane, 1-	**75-68-3**	**2.21E+05**			**5.0E+01**	**I**	**V**		**1.01E+00**		**2.21E+07**	**1.11E+08**

Table 2 - Commercial Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Commercial	Toxicity and Chemical-Specific Information						COMMERCIAL TARGET RISK		COMMERCIAL - Target Soil Gas	
Analyte (Bold = Volatiles)	**CAS No.**	**Concentration (ug/m3)**	**IUR $(ug/m^3)^{-1}$**	**key**	**RfCi (mg/m^3)**	**key**	**voc**	**mutagen**	**HI**	**CR**	**TIER 1 (100X)(ug/m3)**	**TIER 2 (500X)(ug/m3)**
Chloro-1,3-butadiene, 2-	**126-99-8**	**4.10E-01**	**3.0E-04**		**2.0E-02**	**H**	**V**		**4.68E-03**	**1.00E-05**	**4.10E+01**	**2.05E+02**
Chloro-2-methylaniline, 4-	95-69-2	1.60E+00	7.7E-05	I		C				1.00E-05	**1.60E+02**	**8.00E+02**
Chloroacetophenone, 2-	532-27-4	1.32E-01			3.0E-05	I			1.00E+00		**1.32E+01**	**6.60E+01**
Chlorobenzene	**108-90-7**	**2.20E+02**			**5.0E-02**	**P**	**V**		**1.00E+00**		**2.20E+04**	**1.10E+05**
Chlorobenzilate	510-15-6	4.00E+00	3.1E-05	I		C				1.01E-05	**4.00E+02**	**2.00E+03**
Chlorobenzotrifluoride, 4-	**98-56-6**	**1.32E+03**			**3.0E-01**	**P**	**V**		**1.00E+00**		**1.32E+05**	**6.60E+05**
Chlorodifluoromethane	**75-45-6**	**2.20E+05**			**5.0E+01**	**I**	**V**		**1.00E+00**		**2.20E+07**	**1.10E+08**
Chloroform	**67-66-3**	**5.40E+00**	**2.3E-05**	**I**	**9.8E-02**	**A**	**V**		**1.26E-02**	**1.01E-05**	**5.40E+02**	**2.70E+03**
Chloromethane	**74-87-3**	**4.00E+02**		**H**	**9.0E-02**	**I**	**V**		**1.01E+00**		**4.00E+04**	**2.00E+05**
Chloromethyl Methyl Ether	**107-30-2**	**1.80E-01**	**6.9E-04**			**C**	**V**			1.01E-05	**1.80E+01**	**9.00E+01**
Chloronitrobenzene, o-	88-73-3	4.40E-02		H	1.0E-05	I			1.00E+00		**4.40E+00**	**2.20E+01**
Chloronitrobenzene, p-	100-00-5	8.80E+00		H	2.0E-03	I			1.00E+00		**8.80E+02**	**4.40E+03**
Chloropicrin	**76-06-2**	**1.76E+00**			**4.0E-04**	**C**	**V**		**1.00E+00**		**1.76E+02**	**8.80E+02**
Chlorothalonil	1897-45-6	1.38E+02	8.9E-07	I		C				1.00E-05	**1.38E+04**	**6.90E+04**
Chlorozotocin	54749-90-5	1.80E-03	6.9E-02	I		C				1.01E-05	**1.80E-01**	**9.00E-01**
Chromium(VI)	18540-29-9	1.47E-03	8.4E-02	H	1.0E-04	I		**M**	3.36E-03	1.01E-05	**1.47E-01**	**7.35E-01**
Cobalt	7440-48-4	1.37E-02	9.0E-03		6.0E-06	P			5.21E-01	1.01E-05	**1.37E+00**	**6.85E+00**
Coke Oven Emissions	**8007-45-2**	**2.00E-01**	**6.2E-04**	**H**		**I**	**V**	**M**		**1.01E-05**	**2.00E+01**	**1.00E+02**
Cresol, m-	108-39-4	2.63E+03			6.0E-01	C			1.00E+00		**2.63E+05**	**1.32E+06**
Cresol, o-	95-48-7	2.63E+03			6.0E-01	C			1.00E+00		**2.63E+05**	**1.32E+06**
Cresol, p-	106-44-5	2.63E+03			6.0E-01	C			1.00E+00		**2.63E+05**	**1.32E+06**
Cresols	1319-77-3	2.63E+03			6.0E-01	C			1.00E+00		**2.63E+05**	**1.32E+06**
Cumene (Isopropylbenzene)	**98-82-8**	**1.76E+03**			**4.0E-01**	**I**	**V**		**1.00E+00**		**1.76E+05**	**8.80E+05**
Cupferron	135-20-6	3.90E-01	3.2E-04			C				1.02E-05	**3.90E+01**	**1.95E+02**
Cyanide (CN-)	**57-12-5**	**3.52E+00**			**8.0E-04**	**S**			**1.00E+00**		**3.52E+02**	**1.76E+03**
Cyanide, Hydrogen	**74-90-8**	**3.52E+00**			**8.0E-04**	**I**			**1.00E+00**		**3.52E+02**	**1.76E+03**
Cyclohexane	**110-82-7**	**2.65E+04**			**6.0E+00**	**I**	**V**		**1.01E+00**		**2.65E+06**	**1.33E+07**
Cyclohexanone	**108-94-1**	**3.10E+03**			**7.0E-01**	**P**	**V**		**1.01E+00**		**3.10E+05**	**1.55E+06**
Cyclohexene	**110-83-8**	**4.40E+03**			**1.0E+00**	**X**	**V**		**1.00E+00**		**4.40E+05**	**2.20E+06**
DDD, p,p'	72-54-8	1.80E+00	6.9E-05			C				1.01E-05	**1.80E+02**	**9.00E+02**
DDE, p,p'	**72-55-9**	**1.27E+00**	**9.7E-05**			**C**	**V**			**1.00E-05**	**1.27E+02**	**6.35E+02**
DDT	50-29-3	1.27E+00	9.7E-05			I				1.00E-05	**1.27E+02**	**6.35E+02**
Daminozide	1596-84-5	2.41E+01	5.1E-06			C				1.00E-05	**2.41E+03**	**1.21E+04**
Dibromo-3-chloropropane, 1,2-	**96-12-8**	**2.05E-02**	**6.0E-03**	**P**	**2.0E-04**	**I**	**V**	**M**	**2.34E-02**	**1.00E-05**	**2.05E+00**	**1.03E+01**
Dibromochloromethane	**124-48-1**	**4.60E+00**	**2.7E-05**				**V**			**1.01E-05**	**4.60E+02**	**2.30E+03**
Dibromoethane, 1,2-	**106-93-4**	**2.05E-01**	**6.0E-04**	**I**	**9.0E-03**	**I**	**V**		**5.20E-03**	**1.00E-05**	**2.05E+01**	**1.03E+02**
Dibromomethane (Methylene Bromide)	**74-95-3**	**1.76E+01**			**4.0E-03**	**X**	**V**		**1.00E+00**		**1.76E+03**	**8.80E+03**
Dichloro-2-butene, 1,4-	**764-41-0**	**3.00E-02**	**4.2E-03**	**H**		**P**	**V**			**1.03E-05**	**3.00E+00**	**1.50E+01**
Dichloro-2-butene, cis-1,4-	**1476-11-5**	**3.00E-02**	**4.2E-03**			**P**	**V**			**1.03E-05**	**3.00E+00**	**1.50E+01**
Dichloro-2-butene, trans-1,4-	**110-57-6**	**3.00E-02**	**4.2E-03**			**P**	**V**			**1.03E-05**	**3.00E+00**	**1.50E+01**
Dichlorobenzene, 1,2-	**95-50-1**	**8.76E+02**			**2.0E-01**	**H**	**V**		**1.00E+00**		**8.76E+04**	**4.38E+05**
Dichlorobenzene, 1,4-	**106-46-7**	**1.12E+01**	**1.1E-05**	**C**	**8.0E-01**	**I**	**V**		**3.20E-03**	**1.00E-05**	**1.12E+03**	**5.60E+03**
Dichlorobenzidine, 3,3'-	91-94-1	3.62E-01	3.4E-04			C				1.00E-05	**3.62E+01**	**1.81E+02**
Dichlorodifluoromethane (Freon 12)	**75-71-8**	**4.40E+02**			**1.0E-01**	**X**	**V**		**1.00E+00**		**4.40E+04**	**2.20E+05**
Dichloroethane, 1,1-	**75-34-3**	**7.70E+01**	**1.6E-06**	**C**		**C**	**V**			**1.00E-05**	**7.70E+03**	**3.85E+04**
Dichloroethane, 1,2-	**107-06-2**	**4.80E+00**	**2.6E-05**	**I**	**7.0E-03**	**P**	**V**		**1.57E-01**	**1.02E-05**	**4.80E+02**	**2.40E+03**
Dichloroethylene, 1,1-	**75-35-4**	**8.80E+02**			**2.0E-01**	**I**	**V**		**1.00E+00**		**8.80E+04**	**4.40E+05**
Dichloroethylene, 1,2-cis-	**156-59-2**	**1.54E+02**			**3.5E-02**		**V**		**1.00E+00**		**1.54E+04**	**7.70E+04**
Dichloroethylene, 1,2-trans-	**156-60-5**	**3.10E+02**			**7.0E-02**		**V**		**1.01E+00**		**3.10E+04**	**1.55E+05**
Dichloropropane, 1,2-	**78-87-5**	**1.76E+01**	**3.7E-06**	**C**	**4.0E-03**	**I**	**V**		**1.00E+00**	**5.31E-06**	**1.76E+03**	**8.80E+03**
Dichloropropene, 1,3-	**542-75-6**	**3.07E+01**	**4.0E-06**	**I**	**2.0E-02**	**I**	**V**		**3.50E-01**	**1.00E-05**	**3.07E+03**	**1.54E+04**
Dichlorvos	62-73-7	1.50E+00	8.3E-05	I	5.0E-04	I			6.85E-01	1.02E-05	**1.50E+02**	**7.50E+02**
Dicyclopentadiene	**77-73-6**	**1.32E+00**			**3.0E-04**	**P**	**V**		**1.00E+00**		**1.32E+02**	**6.60E+02**
Dieldrin	60-57-1	2.70E-02	4.6E-03			I				1.01E-05	**2.70E+00**	**1.35E+01**
Diesel Engine Exhaust	E17136615	4.10E-01	3.0E-04	I	5.0E-03	I			1.87E-02	1.00E-05	**4.10E+01**	**2.05E+02**
Diethylanolamine	111-42-2	8.80E-01			2.0E-04	P			1.00E+00		**8.80E+01**	**4.40E+02**
Diethylene Glycol Monobutyl Ether	112-34-5	4.40E-01			1.0E-04	P			1.00E+00		**4.40E+01**	**2.20E+02**
Diethylene Glycol Monoethyl Ether	111-90-0	1.32E+00			3.0E-04	P			1.00E+00		**1.32E+02**	**6.60E+02**
Diethylstilbestrol	56-53-1	1.24E-03	1.0E-01			C				1.01E-05	**1.24E-01**	**6.20E-01**
Difluoroethane, 1,1-	**75-37-6**	**1.76E+05**			**4.0E+01**	**I**	**V**		**1.00E+00**		**1.76E+07**	**8.80E+07**

Table 2 - Commercial Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Commercial	Toxicity and Chemical-Specific Information						COMMERCIAL TARGET RISK		COMMERCIAL - Target Soil Gas	
Analyte (Bold = Volatiles)	**CAS No.**	**Concentration (ug/m3)**	**IUR $(ug/m^3)^{-1}$**	**key**	**RfCi (mg/m^3)**	**key**	**voc**	**mutagen**	**HI**	**CR**	**TIER 1 (100X)(ug/m3)**	**TIER 2 (500X)(ug/m3)**
Difluoropropane, 2,2-	**420-45-1**	**1.32E+05**			**3.0E+01**	**I**	**V**		**1.00E+00**		**1.32E+07**	**6.60E+07**
Dihydrosafrole	**94-58-6**	**9.50E+00**	**1.3E-05**			**C**	**V**			**1.01E-05**	**9.50E+02**	**4.75E+03**
Diisopropyl Ether	**108-20-3**	**3.10E+03**			**7.0E-01**	**P**	**V**		**1.01E+00**		**3.10E+05**	**1.55E+06**
Dimethylamino azobenzene [p-]	60-11-7	9.50E-02	1.3E-03			C				1.01E-05	**9.50E+00**	**4.75E+01**
Dimethylformamide	**68-12-2**	**1.32E+02**			**3.0E-02**	**I**	**V**		**1.00E+00**		**1.32E+04**	**6.60E+04**
Dimethylhydrazine, 1,1-	**57-14-7**	**8.80E-03**			**2.0E-06**	**X**	**V**		**1.00E+00**		**8.80E-01**	**4.40E+00**
Dimethylhydrazine, 1,2-	**540-73-8**	**7.80E-04**	**1.6E-01**			**X**	**V**			**1.02E-05**	**7.80E-02**	**3.90E-01**
Dimethylvinylchloride	**513-37-1**	**9.50E+00**	**1.3E-05**			**C**	**V**			**1.01E-05**	**9.50E+02**	**4.75E+03**
Dinitrotoluene, 2,4-	121-14-2	1.38E+00	8.9E-05			C				1.00E-05	**1.38E+02**	**6.90E+02**
Dioxane, 1,4-	**123-91-1**	**2.50E+01**	**5.0E-06**	**I**	**3.0E-02**	**I**	**V**		**1.90E-01**	**1.02E-05**	**2.50E+03**	**1.25E+04**
Hexachlorodibenzo-p-dioxin		9.50E-05	1.3E+00			I				**1.01E-05**	**9.50E-03**	**4.75E-02**
TCDD, 2,3,7,8-	**1746-01-6**	**3.30E-06**	**3.8E+01**	**I**	**4.0E-08**	**I**	**V**		**1.88E-02**	**1.02E-05**	**3.30E-04**	**1.65E-03**
Diphenyl Ether	**101-84-8**	**1.76E+00**			**4.0E-04**	**X**	**V**		**1.00E+00**		**1.76E+02**	**8.80E+02**
Diphenylhydrazine, 1,2-	122-66-7	5.60E-01	2.2E-04			I				1.00E-05	**5.60E+01**	**2.80E+02**
Direct Black 38	1937-37-7	8.80E-04	1.4E-01			C				1.00E-05	**8.80E-02**	**4.40E-01**
Direct Blue 6	2602-46-2	8.80E-04	1.4E-01			C				1.00E-05	**8.80E-02**	**4.40E-01**
Direct Brown 95	16071-86-6	8.80E-04	1.4E-01			C				1.00E-05	**8.80E-02**	**4.40E-01**
Epichlorohydrin	**106-89-8**	**4.40E+00**	**1.2E-06**	**I**	**1.0E-03**	**I**	**V**		**1.00E+00**	**4.31E-07**	**4.40E+02**	**2.20E+03**
Epoxybutane, 1,2-	**106-88-7**	**8.80E+01**			**2.0E-02**	**I**	**V**		**1.00E+00**		**8.80E+03**	**4.40E+04**
Ethoxyethanol Acetate, 2-	**111-15-9**	**2.64E+02**			**6.0E-02**	**P**	**V**		**1.00E+00**		**2.64E+04**	**1.32E+05**
Ethoxyethanol, 2-	**110-80-5**	**8.80E+02**			**2.0E-01**	**I**	**V**		**1.00E+00**		**8.80E+04**	**4.40E+05**
Ethyl Acetate	**141-78-6**	**3.10E+02**			**7.0E-02**	**P**	**V**		**1.01E+00**		**3.10E+04**	**1.55E+05**
Ethyl Acrylate	**140-88-5**	**3.60E+01**			**8.0E-03**	**P**	**V**		**1.03E+00**		**3.60E+03**	**1.80E+04**
Ethyl Chloride (chloroethane)	**75-00-3**	**4.40E+04**			**1.0E+01**	**I**	**V**		**1.00E+00**		**4.40E+06**	**2.20E+07**
Ethyl Methacrylate	**97-63-2**	**1.33E+03**			**3.0E-01**	**P**	**V**		**1.01E+00**		**1.33E+05**	**6.65E+05**
Ethylbenzene	**100-41-4**	**5.00E+01**	**2.5E-06**	**C**	**1.0E+00**	**I**	**V**		**1.14E-02**	**1.02E-05**	**5.00E+03**	**2.50E+04**
Ethylene Glycol	107-12-1	1.76E+03			4.0E-01	C			1.00E+00		**1.76E+05**	**8.80E+05**
Ethylene Glycol Monobutyl Ether	111-76-2	7.01E+03			1.6E+00	I			1.00E+00		**7.01E+05**	**3.51E+06**
Ethylene Oxide	**75-21-8**	**4.10E-02**	**3.0E-03**	**C**	**3.0E-02**	**I**	**V**	**M**	**3.12E-04**	**1.00E-05**	**4.10E+00**	**2.05E+01**
Ethylene Thiourea	96-45-7	9.50E+00	1.3E-05							1.01E-05	**9.50E+02**	**4.75E+03**
Ethyleneimine	**151-56-4**	**6.50E-03**	**1.9E-02**				**V**			**1.01E-05**	**6.50E-01**	**3.25E+00**
Fluoride	16984-48-8	5.70E+01			1.3E-02	C			1.00E+00		**5.70E+03**	**2.85E+04**
Fluorine (Soluble Fluoride)	7782-41-4	5.70E+01			1.3E-02	C			1.00E+00		**5.70E+03**	**2.85E+04**
Formaldehyde	**50-00-0**	**9.50E+00**	**1.3E-05**	**C**	**9.8E-03**	**I**	**V**		**2.21E-01**	**1.01E-05**	**9.50E+02**	**4.75E+03**
Formic Acid	**64-18-6**	**1.32E+00**			**3.0E-04**	**X**	**V**		**1.00E+00**		**1.32E+02**	**6.60E+02**
Furfural	**98-01-1**	**2.20E+02**			**5.0E-02**	**H**	**V**		**1.00E+00**		**2.20E+04**	**1.10E+05**
Furium	531-82-8	2.90E-01	4.3E-04			C				1.02E-05	**2.90E+01**	**1.45E+02**
Furmecyclox	60568-05-0	1.44E+01	8.6E-06			C				1.01E-05	**1.44E+03**	**7.20E+03**
Glutaraldehyde	111-30-8	3.60E-01			8.0E-05	C			1.03E+00		**3.60E+01**	**1.80E+02**
Glycidyl	**765-34-4**	**4.40E+00**			**1.0E-03**	**H**	**V**		**1.00E+00**		**4.40E+02**	**2.20E+03**
Heptachlor	**76-44-8**	**9.50E-02**	**1.3E-03**			**I**	**V**			**1.01E-05**	**9.50E+00**	**4.75E+01**
Heptachlor Epoxide	**1024-57-3**	**4.80E-02**	**2.6E-03**			**I**	**V**			**1.02E-05**	**4.80E+00**	**2.40E+01**
Heptanol, n-	**111-71-7**	**1.33E+01**			**3.0E-03**	**X**	**V**		**1.01E+00**		**1.33E+03**	**6.65E+03**
Heptane, N-	**142-85-5**	**1.76E+03**			**4.0E-01**	**P**	**V**		**1.00E+00**		**1.76E+05**	**8.80E+05**
Hexachlorobenzene	**118-74-1**	**2.70E-01**	**4.6E-04**			**I**	**V**			**1.01E-05**	**2.70E+01**	**1.35E+02**
Hexachlorobutadiene	**87-68-3**	**5.60E+00**	**2.2E-05**			**I**	**V**			**1.00E-05**	**5.60E+02**	**2.80E+03**
Hexachlorocyclohexane, Alpha-	319-84-6	6.90E-02	1.8E-03			I				1.01E-05	**6.90E+00**	**3.45E+01**
Hexachlorocyclohexane, Beta-	319-85-7	2.32E-01	5.3E-04			I				1.00E-05	**2.32E+01**	**1.16E+02**
Hexachlorocyclohexane,Gamma- (Lindane)	58-89-9	4.00E-01	3.1E-04			C				1.01E-05	**4.00E+01**	**2.00E+02**
Hexachlorocyclohexane, Technical	608-73-1	2.43E-01	5.1E-04			I				1.01E-05	**2.43E+01**	**1.22E+02**
Hexachlorocyclopentadiene	**77-47-4**	**8.80E-01**			**2.0E-04**	**I**	**V**		**1.00E+00**		**8.80E+01**	**4.40E+02**
Hexachloroethane	**67-72-1**	**1.12E+01**	**1.1E-05**	**I**	**3.0E-02**	**I**	**V**			**1.00E-05**	**1.12E+03**	**5.60E+03**
Hexamethylene Diisocyanate, 1,6-	**822-06-0**	**4.40E-02**			**1.0E-05**	**I**	**V**		**1.00E+00**		**4.40E+00**	**2.20E+01**
Hexane, N-	**110-54-3**	**3.08E+03**			**7.0E-01**	**I**	**V**		**1.00E+00**		**3.08E+05**	**1.54E+06**
Hexanone, 2-	**591-78-6**	**1.32E+02**			**3.0E-02**	**I**	**V**		**1.00E+00**		**1.32E+04**	**6.60E+04**
Hydrazine	**302-01-2**	**2.51E-02**	**4.9E-03**	**I**	**3.0E-05**	**I**	**V**			**1.00E-05**	**2.51E+00**	**1.26E+01**
Hydrazine Sulfate	10034-93-2	2.51E-02	4.9E-03	I		I				1.00E-05	**2.51E+00**	**1.26E+01**
Hydrogen Chloride	**7647-01-0**	**8.80E+01**			**2.0E-02**	**I**	**V**		**1.00E+00**		**8.80E+03**	**4.40E+04**
Hydrogen Fluoride	**7664-39-3**	**6.20E+01**			**1.4E-02**	**C**	**V**		**1.01E+00**		**6.20E+03**	**3.10E+04**
Hydrogen Sulfide	**7783-06-4**	**8.80E+00**			**2.0E-03**	**I**	**V**		**1.00E+00**		**8.80E+02**	**4.40E+03**

Table 2 - Commercial Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Commercial	Toxicity and Chemical-Specific Information						COMMERCIAL TARGET RISK		COMMERCIAL - Target Soil Gas	
Analyte (Bold = Volatiles)	**CAS No.**	**Concentration (ug/m3)**	**IUR $(ug/m^3)^{-1}$**	**key**	**RfCi (mg/m^3)**	**key**	**voc**	**mutagen**	**HI**	**CR**	**TIER 1 (100X)(ug/m3)**	**TIER 2 (500X)(ug/m3)**
Isophorone	78-59-1	8.80E+03			2.0E+00	I			1.00E+00		**8.80E+05**	**4.40E+06**
Isopropanol	**67-63-0**	**8.80E+02**			**2.0E-01**	**P**	**V**		**1.00E+00**		**8.80E+04**	**4.40E+05**
JP-7	**NA**	**1.32E+03**			**3.0E-01**	**A**	**V**		**1.00E+00**		**1.32E+05**	**6.60E+05**
Lead Phosphate	7446-27-7	1.03E+01	1.2E-05	I		C				1.01E-05	**1.03E+03**	**5.15E+03**
Lead Acetate	301-04-2	1.03E+01	1.2E-05	I		C				1.01E-05	**1.03E+03**	**5.15E+03**
Lead Subacetate	1335-32-6	1.03E+01	1.2E-05	I		C				1.01E-05	**1.03E+03**	**5.15E+03**
Maleic Anhydride	108-31-6	3.10E+00			7.0E-04	C			1.01E+00		**3.10E+02**	**1.55E+03**
Manganese (Non-diet)	7439-96-5	2.20E-01			5.0E-05	I			1.00E+00		**2.20E+01**	**1.10E+02**
Mercuric Chloride	7487-94-7	1.32E+00			3.0E-04	I			1.00E+00		**1.32E+02**	**6.60E+02**
Mercury (elemental)	**7439-97-6**	**1.32E+00**			**3.0E-04**	**I**	**V**		**1.00E+00**		**1.32E+02**	**6.60E+02**
Methacrylonitrile	**126-98-7**	**1.32E+02**			**3.0E-02**	**P**	**V**		**1.00E+00**		**1.32E+04**	**6.60E+04**
Methanol	**67-56-1**	**8.80E+04**			**2.0E+01**	**I**	**V**		**1.00E+00**		**8.80E+06**	**4.40E+07**
Methoxy-5-nitroaniline, 2-	99-59-2	8.80E+00	1.4E-05	I		C				1.00E-05	**8.80E+02**	**4.40E+03**
Methoxyethanol Acetate, 2-	**110-49-6**	**4.40E+00**			**1.0E-03**	**P**	**V**		**1.00E+00**		**4.40E+02**	**2.20E+03**
Methoxyethanol, 2-	**109-86-4**	**8.80E+01**			**2.0E-02**	**I**	**V**		**1.00E+00**		**8.80E+03**	**4.40E+04**
Methyl Acrylate	**96-33-3**	**8.80E+01**			**2.0E-02**	**P**	**V**		**1.00E+00**		**8.80E+03**	**4.40E+04**
Methyl Ethyl Ketone (2-Butanone)	**78-93-3**	**2.20E+04**			**5.0E+00**	**I**	**V**		**1.00E+00**		**2.20E+06**	**1.10E+07**
Methyl Hydrazine	**60-34-4**	**8.80E-02**	**1.0E-03**	**I**	**2.0E-05**	**I**	**V**		**1.00E+00**	**7.18E-06**	**8.80E+00**	**4.40E+01**
Methyl Isobutyl Ketone (4-methyl-2-pentanone)	**108-10-1**	**1.32E+04**			**3.0E+00**	**I**	**V**		**1.00E+00**		**1.32E+06**	**6.60E+06**
Methyl Isocyanate	**624-83-9**	**4.40E+00**			**1.0E-03**	**C**	**V**		**1.00E+00**		**4.40E+02**	**2.20E+03**
Methyl Methacrylate	**80-62-6**	**3.10E+03**			**7.0E-01**	**I**	**V**		**1.01E+00**		**3.10E+05**	**1.55E+06**
Methyl Styrene (Mixed Isomers)	**25013-15-4**	**1.76E+02**			**4.0E-02**	**H**	**V**		**1.00E+00**		**1.76E+04**	**8.80E+04**
Methyl methanesulfonate	66-27-3	4.40E+00	2.8E-05	I		C				1.00E-05	**4.40E+02**	**2.20E+03**
Methyl tert-Butyl Ether (MTBE)	**1634-04-4**	**4.72E+02**	**2.6E-07**	**C**	**3.0E+00**	**I**	**V**		**3.59E-02**	**1.00E-05**	**4.72E+04**	**2.36E+05**
Methyl-2-Pentanol, 4-	**80-62-6**	**1.32E+04**			**3.0E+00**	**X**	**V**		**1.00E+00**		**1.32E+06**	**6.60E+06**
Methyl-N-nitro-N-nitrosoguanidine, N-	70-25-7	5.13E-02	2.4E-03	I		C				1.00E-05	**5.13E+00**	**2.57E+01**
Methylaniline Hydrochloride, 2-	636-21-5	3.34E+00	3.7E-05	I		C				1.01E-05	**3.34E+02**	**1.67E+03**
Methylcholanthrene, 3-	56-49-5	1.97E-02	6.3E-03	I		I		**M**		1.01E-05	**1.97E+00**	**9.85E+00**
Methylene Chloride	**75-09-2**	**2.65E+03**	**1.0E-08**	**I**	**6.0E-01**	**I**	**V**	**M**	**1.01E+00**	**2.16E-06**	**2.65E+05**	**1.33E+06**
Methylene-bis(2-chloroaniline), 4,4'-	101-14-4	2.86E-01	4.3E-04	I		C		**M**		1.00E-05	**2.86E+01**	**1.43E+02**
Methylene-bis(N,N-dimethyl) Aniline, 4,4'-	101-61-1	9.50E+00	1.3E-05	I		C				1.01E-05	**9.50E+02**	**4.75E+03**
Methylenebisbenzenamine, 4,4'-	101-77-9	2.70E-01	4.6E-04	C	2.0E-02	C			3.08E-03	1.01E-05	**2.70E+01**	**1.35E+02**
Methylene Diisocyanate	101-68-8	2.65E+00			6.0E-04	I			1.01E+00		**2.65E+02**	**1.33E+03**
Mirax	**2385-85-5**	**2.43E-02**	**5.1E-03**	**I**		**C**	**V**			**1.01E-05**	**2.43E+00**	**1.22E+01**
Naphtha, High Flash Aromatic (HFAN)	**64724-95-6**	**4.38E+02**			**1.0E-01**	**P**	**V**		**1.00E+00**		**4.38E+04**	**2.19E+05**
Nickel Acetate	373-02-4	6.20E-02	2.6E-04	C	1.4E-05	C			1.01E+00	1.31E-06	**6.20E+00**	**3.10E+01**
Nickel Carbonate	3333-67-3	6.20E-02	2.6E-04	C	1.4E-05	C			1.01E+00	1.31E-06	**6.20E+00**	**3.10E+01**
Nickel Carbonyl	**13463-39-3**	**6.20E-02**	**2.6E-04**	**C**	**1.4E-05**	**C**	**V**		**1.01E+00**	**1.31E-06**	**6.20E+00**	**3.10E+01**
Nickel Hydroxide	12054-48-7	6.20E-02	2.6E-04	C	1.4E-05	C			1.01E+00	1.31E-06	**6.20E+00**	**3.10E+01**
Nickel Oxide	1313-99-1	8.80E-02	2.6E-04	C	2.0E-05	C			1.00E+00	1.87E-06	**8.80E+00**	**4.40E+01**
Nickel Soluble Salts	7440-02-0	4.00E-01	2.6E-04	C	9.0E-05	C			1.01E+00	8.48E-06	**4.00E+01**	**2.00E+02**
Nickel Subsulfide	12035-72-2	6.20E-02	4.8E-04		1.4E-05				1.01E+00	2.43E-06	**6.20E+00**	**3.10E+01**
Nickelocene	1271-28-9	6.20E-02	2.6E-04	C	1.4E-05	C			1.01E+00	1.31E-06	**6.20E+00**	**3.10E+01**
Nitroaniline, 2-	88-74-4	2.20E-01			5.0E-05	X			1.00E+00		**2.20E+01**	**1.10E+02**
Nitroaniline, 4-	100-01-6	2.64E+01			6.0E-03	P			1.00E+00		**2.64E+03**	**1.32E+04**
Nitrobenzene	**98-95-3**	**3.10E+00**	**4.0E-05**		**9.0E-03**	**H**	**V**		**7.86E-02**	**1.01E-05**	**3.10E+02**	**1.55E+03**
Nitrofurazone	59-87-0	3.33E-01	3.7E-04			C				1.00E-05	**3.33E+01**	**1.67E+02**
Nitromethane	**75-52-5**	**1.40E+01**	**8.8E-06**	**P**	**5.0E-03**	**P**	**V**		**6.39E-01**	**1.00E-05**	**1.40E+03**	**7.00E+03**
Nitropropane, 2-	**79-46-9**	**4.60E-02**	**2.7E-03**	**H**	**2.0E-02**	**I**	**V**		**5.25E-04**	**1.01E-05**	**4.60E+00**	**2.30E+01**
Nitroso-N-ethylurea, N-	759-73-9	1.60E-02	7.7E-03	I		C		**M**		1.00E-05	**1.60E+00**	**8.00E+00**
Nitroso-N-methylurea, N-	684-93-5	3.62E-03	3.4E-02	I		C		**M**		1.00E-05	**3.62E-01**	**1.81E+00**
Nitroso-di-N-butylamine, N-	**924-16-3**	**7.70E-02**	**1.6E-03**	**I**		**I**	**V**			**1.00E-05**	**7.70E+00**	**3.85E+01**
Nitroso-di-N-propylamine, N-	621-64-7	6.20E-02	2.0E-03	I		C				1.01E-05	**6.20E+00**	**3.10E+01**
Nitrosodiethanolamine, N-	1116-54-7	1.55E-01	8.0E-04	I		C				1.01E-05	**1.55E+01**	**7.75E+01**
Nitrosodiethylamine, N-	55-18-5	2.86E-02	4.3E-03	I		I		**M**		1.00E-05	**2.86E+00**	**1.43E+01**
Nitrosodimethylamine, N-	**62-75-9**	**8.80E-03**	**1.4E-02**	**C**	**4.0E-05**	**C**	**V**	**M**	**5.02E-02**	**1.00E-05**	**8.80E-01**	**4.40E+00**
Nitrosodiphenylamine, N-	86-30-6	4.74E+01	2.6E-06	I		C				1.00E-05	**4.74E+03**	**2.37E+04**
Nitrosomethylethylamine, N-	**10595-95-6**	**1.95E-02**	**6.3E-03**	**C**		**C**	**V**			**1.00E-05**	**1.95E+00**	**9.75E+00**
Nitrosomorpholine [N-]	59-89-2	6.50E-02	1.9E-03	I		C				1.01E-05	**6.50E+00**	**3.25E+01**
Nitrosopiperidine [N-]	100-75-4	4.60E-02	2.7E-03	I		C				1.01E-05	**4.60E+00**	**2.30E+01**

Table 2 - Commercial Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Commercial	Toxicity and Chemical-Specific Information						COMMERCIAL TARGET RISK		COMMERCIAL - Target Soil Gas	
Analyte (Bold = Volatiles)	**CAS No.**	**Concentration (ug/m3)**	**IUR $(ug/m^3)^{-1}$**	**key**	**RfCi (mg/m^3)**	**key**	**voc**	**mutagen**	**HI**	**CR**	**TIER 1 (100X)(ug/m3)**	**TIER 2 (500X)(ug/m3)**
Nitrosopyrrolidine, N-	930-55-2	2.02E-01	6.1E-04	I		C				1.00E-05	**2.02E+01**	**1.01E+02**
Nonane, n-	**111-84-2**	**8.80E+01**			**2.0E-02**	**P**	**V**		**1.00E+00**		**8.80E+03**	**4.40E+04**
Pentachlorophenol	87-86-5	2.41E+01	5.1E-06	I		C				1.00E-05	**2.41E+03**	**1.21E+04**
Pentane, n-	**109-66-0**	**4.40E+03**			**1.0E+00**	**P**	**V**		**1.00E+00**		**4.40E+05**	**2.20E+06**
Phenacetin	62-44-2	1.95E+02	6.3E-07	I		C				1.00E-05	**1.95E+04**	**9.75E+04**
Phenol	108-95-2	8.80E+02			2.0E-01	C			1.00E+00		**8.80E+04**	**4.40E+05**
Phosgene	**75-44-5**	**1.32E+00**			**3.0E-04**	**I**	**V**		**1.00E+00**		**1.32E+02**	**6.60E+02**
Phosphine	**7803-51-2**	**1.32E+00**			**3.0E-04**	**I**	**V**		**1.00E+00**		**1.32E+02**	**6.60E+02**
Phosphoric Acid	7664-38-2	4.40E+01			1.0E-02	I			1.00E+00		**4.40E+03**	**2.20E+04**
Bis(2-ethylhexyl)phthalate	117-81-7	5.20E+01	2.4E-06	I		C				1.02E-05	**5.20E+03**	**2.60E+04**
Phthalic Anhydride	85-44-9	8.80E+01			2.0E-02	C			1.00E+00		**8.80E+03**	**4.40E+04**
Polybrominated Biphenyls	59536-65-1	1.43E-02	8.6E-03	I		C				1.00E-05	**1.43E+00**	**7.15E+00**
Aroclor 1016	**12674-11-2**	**6.20E+00**	**2.0E-05**	**I**		**S**	**V**			**1.01E-05**	**6.20E+02**	**3.10E+03**
Aroclor 1221	**11104-28-2**	**2.16E-01**	**5.7E-04**	**I**		**S**	**V**			**1.00E-05**	**2.16E+01**	**1.08E+02**
Aroclor 1232	**11141-16-5**	**2.16E-01**	**5.7E-04**	**I**		**S**	**V**			**1.00E-05**	**2.16E+01**	**1.08E+02**
Aroclor 1242	**53469-21-9**	**2.16E-01**	**5.7E-04**	**I**		**S**	**V**			**1.00E-05**	**2.16E+01**	**1.08E+02**
Aroclor 1248	**12672-29-6**	**2.16E-01**	**5.7E-04**	**I**		**S**	**V**			**1.00E-05**	**2.16E+01**	**1.08E+02**
Aroclor 1254	**11097-69-1**	**2.16E-01**	**5.7E-04**	**I**		**S**	**V**			**1.00E-05**	**2.16E+01**	**1.08E+02**
Aroclor 1260	**11096-82-5**	**2.16E-01**	**5.7E-04**	**I**		**S**	**V**			**1.00E-05**	**2.16E+01**	**1.08E+02**
~Heptachlorobiphenyl, 2,3,3',4,4',5,5'- (PCB 189)	**39635-31-9**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Hexachlorobiphenyl, 2,3',4,4',5,5'- (PCB 167)	**52663-72-6**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Hexachlorobiphenyl, 2,3,3',4,4',5'- (PCB 157)	**69782-90-7**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Hexachlorobiphenyl, 2,3,3',4,4',5- (PCB 156)	**38380-08-4**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Hexachlorobiphenyl, 3,3',4,4',5,5'- (PCB 169)	**32774-16-6**	**1.12E-01**	**1.1E+00**	**P**	**1.3E-06**		**V**		**1.97E+01**	**1.00E-02**	**1.12E+01**	**5.60E+01**
~Pentachlorobiphenyl, 2',3,4,4',5- (PCB 123)	**65510-44-3**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Pentachlorobiphenyl, 2,3',4,4',5- (PCB 118)	**31508-00-6**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Pentachlorobiphenyl, 2,3,3',4,4'- (PCB 105)	**32598-14-4**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Pentachlorobiphenyl, 2,3,4,4',5- (PCB 114)	**74472-37-0**	**1.12E-01**	**1.1E-03**	**P**	**1.3E-03**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+01**	**5.60E+01**
~Pentachlorobiphenyl, 3,3',4,4',5- (PCB 126)	**57465-28-8**	**3.30E-05**	**3.8E+00**	**P**	**4.0E-07**		**V**		**1.88E-02**	**1.02E-05**	**3.30E-03**	**1.65E-02**
~Polychlorinated Biphenyls (high risk)	**1336-36-3**	**2.20E-01**	**5.7E-04**	**P**		**I**	**V**			**1.02E-05**	**2.20E+01**	**1.10E+02**
~Polychlorinated Biphenyls (low risk)	**1336-36-3**	**1.23E+00**	**1.0E-04**	**P**		**I**	**V**			**1.00E-05**	**1.23E+02**	**6.15E+02**
~Polychlorinated Biphenyls (lowest risk)	**1336-36-3**	**6.20E+00**	**2.0E-05**	**P**		**I**	**V**			**1.01E-05**	**6.20E+02**	**3.10E+03**
~Tetrachlorobiphenyl, 3,3',4,4'- (PCB 77)	32598-13-3	3.30E-02	3.8E-03	P	4.0E-04				1.88E-02	1.02E-05	**3.30E+00**	**1.65E+01**
~Tetrachlorobiphenyl, 3,4,4',5- (PCB 81)	**70362-50-4**	**1.12E-02**	**1.1E-02**	**P**	**1.3E-04**		**V**		**1.97E-02**	**1.00E-05**	**1.12E+00**	**5.60E+00**
Polymeric Methylene Diphenyl Diisocyanate (PMDI)	9016-87-9	2.64E+00		P	6.0E-04				1.00E+00		**2.64E+02**	**1.32E+03**
Benz[a]anthracene	**56-55-3**	**2.05E+00**	**6.0E-05**			**E**		**M**		**1.00E-05**	**2.05E+02**	**1.03E+03**
Benzo(j)fluoranthene	205-82-3	1.12E+00	1.1E-04			C				1.00E-05	**1.12E+02**	**5.60E+02**
Benzo[a]pyrene	50-32-8	8.80E-03	6.0E-04		2.0E-06	I		**M**	1.00E+00	4.31E-07	**8.80E-01**	**4.40E+00**
Benzo[b]fluoranthene	205-99-2	2.05E+00	6.0E-05			E		**M**		1.00E-05	**2.05E+02**	**1.03E+03**
Benzo[k]fluoranthene	207-08-9	2.05E+01	6.0E-06			E		**M**		1.00E-05	**2.05E+03**	**1.03E+04**
Chrysene	218-01-9	2.05E+02	6.0E-07			E		**M**		1.00E-05	**2.05E+04**	**1.03E+05**
Dibenz[a,h]anthracene	53-70-3	2.05E-01	6.0E-04			E		**M**		1.00E-05	**2.05E+01**	**1.03E+02**
Dibenzo(a,e)pyrene	192-65-4	1.12E-01	1.1E-03			C				1.00E-05	**1.12E+01**	**5.60E+01**
Dimethylbenz(a)anthracene, 7,12-	57-97-6	1.73E-03	7.1E-02			C		**M**		1.00E-05	**1.73E-01**	**8.65E-01**
Indeno[1,2,3-cd]pyrene	193-39-5	2.05E+00	6.0E-05			E		**M**		1.00E-05	**2.05E+02**	**1.03E+03**
Naphthalene	**91-20-3**	**3.61E+00**	**3.4E-05**	**P**	**3.0E-03**	**C**	**V**		**2.75E-01**	**1.00E-05**	**3.61E+02**	**1.81E+03**
Nitropyrene, 4-	57835-92-4	1.12E+00	1.1E-04	P		C				1.00E-05	**1.12E+02**	**5.60E+02**
Propionaldehyde	**123-38-6**	**3.52E+01**			**8.0E-03**	**I**	**V**		**1.00E+00**		**3.52E+03**	**1.76E+04**
Propyl benzene	**103-65-1**	**4.40E+03**			**1.0E+00**		**V**		**1.00E+00**		**4.40E+05**	**2.20E+06**
Propylene	**115-07-1**	**1.32E+04**			**3.0E+00**	**C**	**V**		**1.00E+00**		**1.32E+06**	**6.60E+06**
Propylene Glycol Dinitrate	6423-43-4	1.20E+00			2.7E-04	C			1.01E+00		**1.20E+02**	**6.00E+02**
Propylene Glycol Monomethyl Ether	**107-98-2**	**8.80E+03**			**2.0E+00**	**A**	**V**		**1.00E+00**		**8.80E+05**	**4.40E+06**
Propylene Oxide	**75-56-9**	**3.33E+01**	**3.7E-06**	**I**	**3.0E-02**	**I**	**V**		**2.53E-01**	**1.00E-05**	**3.33E+03**	**1.67E+04**
Refractory Ceramic Fibers	E715557	1.32E+02			3.0E-02	A			1.00E+00		**1.32E+04**	**6.60E+04**
Safrole	94-59-7	1.95E+00	6.3E-05			C		**M**		1.00E-05	**1.95E+02**	**9.75E+02**
Selenium	7782-49-2	8.80E+01			2.0E-02	C			1.00E+00		**8.80E+03**	**4.40E+04**
Selenium Sulfide	7446-34-6	8.80E+01			2.0E-02	C			1.00E+00		**8.80E+03**	**4.40E+04**
Silica (crystalline, respirable)	7631-86-9	1.32E+01			3.0E-03	C			1.00E+00		**1.32E+03**	**6.60E+03**
Sodium Fluoride	7681-49-4	5.70E+01			1.3E-02	C			1.00E+00		**5.70E+03**	**2.85E+04**
Styrene	**100-42-5**	**4.40E+03**			**1.0E+00**	**I**	**V**		**1.00E+00**		**4.40E+05**	**2.20E+06**

Table 2 - Commercial Scenario

Based on EPA Regional Screening Level Table May 2019

Contaminant		Indoor Air Commercial	Toxicity and Chemical-Specific Information						COMMERCIAL TARGET RISK		COMMERCIAL - Target Soil Gas	
Analyte (Bold = Volatiles)	**CAS No.**	**Concentration (ug/m3)**	**IUR $(ug/m^3)^{-1}$**	**key**	**RfCi (mg/m^3)**	**key**	**voc**	**mutagen**	**HI**	**CR**	**TIER 1 (100X)(ug/m3)**	**TIER 2 (500X)(ug/m3)**
Sulfolane	126-33-0	8.80E+00			2.0E-03	P			1.00E+00		**8.80E+02**	**4.40E+03**
Sulfur Trioxide	**7446-11-9**	**4.40E+00**			**1.0E-03**	**C**	**V**		**1.00E+00**		**4.40E+02**	**2.20E+03**
Sulfuric Acid	7664-93-9	4.40E+00			1.0E-03	C			1.00E+00		**4.40E+02**	**2.20E+03**
Sulfurous acid, 2-chloroethyl 2-[4-(1,1-dimethylethyl)phenoxy]-1-methylethyl ester	140-57-8	1.73E+01	7.1E-06	P		I				1.00E-05	**1.73E+03**	**8.65E+03**
Tetrachloroethane, 1,1,1,2-	**630-20-6**	**1.66E+01**	**7.4E-06**	**I**			**V**			**1.00E-05**	1.66E+03	**8.30E+03**
Tetrachloroethane, 1,1,2,2-	**79-34-5**	**2.12E+00**	**5.8E-05**	**I**			**V**			**1.00E-05**	2.12E+02	**1.06E+03**
Tetrachloroethylene	**127-18-4**	**1.80E+02**	**2.6E-07**	**C**	**4.0E-02**	**I**	**V**		**1.03E+00**	**3.82E-06**	1.80E+04	**9.00E+04**
Tetrafluoroethane, 1,1,1,2-	**811-97-2**	**3.52E+05**			**8.0E+01**	**I**	**V**		**1.00E+00**		3.52E+07	**1.76E+08**
Tetrahydrofuran (Furans)	**109-99-9**	**8.80E+03**			**2.0E+00**	**I**	**V**		**1.00E+00**		8.80E+05	**4.40E+06**
Titanium Tetrachloride	**7550-45-0**	**4.40E-01**			**1.0E-04**	**A**	**V**		**1.00E+00**		4.40E+01	**2.20E+02**
Toluene	**108-88-3**	**2.20E+04**			**5.0E+00**	**I**	**V**		**1.00E+00**		2.20E+06	**1.10E+07**
Toluene-2,4-diisocyanate	**584-84-9**	**3.52E-02**			**8.0E-06**	**C**	**V**		**1.00E+00**		3.52E+00	**1.76E+01**
Toluene-2,6-diisocyanate	**91-08-7**	**3.52E-02**			**8.0E-06**	**C**	**V**		**1.00E+00**		3.52E+00	**1.76E+01**
Toluidine, o- (Methylaniline, 2-)	95-53-4	2.41E+00	5.1E-05	P		C				1.00E-05	**2.41E+02**	**1.21E+03**
Total Petroleum Hydrocarbons (Aliphatic Low)	**E1790666**	**2.63E+03**			**6.0E-01**	**P**	**V**		**1.00E+00**		2.63E+05	**1.32E+06**
Total Petroleum Hydrocarbons (Aliphatic Medium)	**E1790668**	**4.40E+02**			**1.0E-01**	**P**	**V**		**1.00E+00**		4.40E+04	**2.20E+05**
Total Petroleum Hydrocarbons (Aromatic Low)	**E1790672**	**1.32E+02**			**3.0E-02**	**P**	**V**		**1.00E+00**		1.32E+04	**6.60E+04**
Total Petroleum Hydrocarbons (Aromatic Medium)	**E1790674**	**1.32E+01**			**3.0E-03**	**P**	**V**		**1.00E+00**		1.32E+03	**6.60E+03**
Toxaphene	8001-35-2	3.85E-01	3.2E-04	P		I				1.00E-05	**3.85E+01**	**1.93E+02**
Trichloro-1,2,2-trifluoroethane, 1,1,2-	**76-13-1**	**2.20E+04**			**5.0E+00**	**P**	**V**		**1.00E+00**		2.20E+06	**1.10E+07**
Trichlorobenzene, 1,2,4-	**120-82-1**	**8.80E+00**			**2.0E-03**	**P**	**V**		**1.00E+00**		8.80E+02	**4.40E+03**
Trichloroethane, 1,1,1-	**71-55-6**	**2.20E+04**			**5.0E+00**	**I**	**V**		**1.00E+00**		2.20E+06	**1.10E+07**
Trichloroethane, 1,1,2-	**79-00-5**	**8.80E-01**	**1.6E-05**	**I**	**2.0E-04**	**I**	**V**		**1.00E+00**	**1.15E-06**	8.80E+01	**4.40E+02**
Trichloroethylene	**79-01-6**	**8.80E+00**	**4.1E-06**	**C**	**2.0E-03**	**I**	**V**	**M**	**1.00E+00**	**2.94E-06**	8.80E+02	**4.40E+03**
Trichlorofluoromethane	75-69-4	3.10E+03			7.0E-01	H			1.01E+00		**3.10E+05**	**1.55E+06**
Trichlorophenol, 2,4,6-	88-06-2	4.00E+01	3.1E-06	P		I				1.01E-05	**4.00E+03**	**2.00E+04**
Trichloropropane, 1,2,3-	**96-18-4**	**1.32E+00**			**3.0E-04**	**I**	**V**	**M**	**1.00E+00**		1.32E+02	**6.60E+02**
Trichloropropene, 1,2,3-	**96-19-5**	**1.32E+00**			**3.0E-04**	**P**	**V**		**1.00E+00**		1.32E+02	**6.60E+02**
Triethylamine	**121-44-8**	**3.10E+01**			**7.0E-03**	**I**	**V**		**1.01E+00**		3.10E+03	**1.55E+04**
Trifluoroethane, 1,1,1-	**420-46-2**	**8.80E+04**			**2.0E+01**	**P**	**V**		**1.00E+00**		8.80E+06	**4.40E+07**
Trimethylbenzene, 1,2,3-	**526-73-8**	**2.64E+02**			**6.0E-02**	**I**	**V**		**1.00E+00**		2.64E+04	**1.32E+05**
Trimethylbenzene, 1,2,4-	**95-63-6**	**2.64E+02**			**6.0E-02**	**I**	**V**		**1.00E+00**		2.64E+04	**1.32E+05**
Trimethylbenzene, 1,3,5-	**108-67-8**	**2.64E+02**			**6.0E-02**	**I**	**V**		**1.00E+00**		2.64E+04	**1.32E+05**
Tris(2,3-dibromopropyl)phosphate	**126-72-7**	**1.88E-01**	**6.6E-04**	**P**		**C**	**V**			**1.01E-05**	1.88E+01	**9.40E+01**
Uranium (Soluble Salts)	E715565	1.76E-01			4.0E-05	A			1.00E+00		**1.76E+01**	**8.80E+01**
Urethane	51-79-6	**4.25E-01**	2.9E-04	C		C		**M**		1.00E-05	**4.25E+01**	**2.13E+02**
Vanadium Pentoxide	1314-62-1	**1.50E-02**	8.3E-03	I	7.0E-06	P			4.89E-01	1.02E-05	**1.50E+00**	**7.50E+00**
Vanadium and Compounds	7440-62-2	4.40E-01			1.0E-04	A			1.00E+00		**4.40E+01**	**2.20E+02**
Vinyl Acetate	**108-05-4**	**8.80E+02**			**2.0E-01**	**I**	**V**		**1.00E+00**		8.80E+04	**4.40E+05**
Vinyl Bromide	**593-60-2**	**3.90E+00**	**3.2E-05**		**3.0E-03**	**I**	**V**		**2.97E-01**	**1.02E-05**	3.90E+02	**1.95E+03**
Vinyl Chloride	**75-01-4**	**2.80E+01**	**4.4E-06**	**I**	**1.0E-01**	**I**	**V**	**M**	**6.39E-02**	**1.00E-05**	2.80E+03	**1.40E+04**
Xylene, m-	**108-38-3**	**4.40E+02**			**1.0E-01**	**I**	**V**		**1.00E+00**		4.40E+04	**2.20E+05**
Xylene, o-	**95-47-6**	**4.40E+02**			**1.0E-01**	**I**	**V**		**1.00E+00**		4.40E+04	**2.20E+05**
Xylene, P-	**106-42-3**	**4.40E+02**			**1.0E-01**	**I**	**V**		**1.00E+00**		4.40E+04	**2.20E+05**
Xylenes	**1330-20-7**	**4.40E+02**			**1.0E-01**	**I**	**V**		**1.00E+00**		4.40E+04	**2.20E+05**