

# EIM Help – Air, Vapor, and Soil Gas Data

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## BEFORE YOU BEGIN

### What Data Should You Submit?

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#### Environmental conditions data

- ✓ Soil gas monitoring (including landfill sites).
- ✓ Ambient indoor and outdoor air monitoring.
- ✓ Air deposition data.

#### NOT data from

- ✗ Treatment or collection systems.
- ✗ Personal health monitoring devices like badges.
- ✗ Other publically available sources like [Washington's Air Quality Monitoring Network](#).

### Download EIM Templates and Help

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Use the EIM Location and Results Help documents along with this document when you fill out the data templates.

- [Location Template](#) and [Location Help document](#).
- [Results Template](#) and [Results Help document](#).

## SOIL GAS DATA

Soil gas is from spaces between soil particles, above the water table. Field staff drill holes directly into soil, through pavement, or through indoor slabs (sub slab). They install temporary or permanent probes and with active or passive collection methods. They take field measurements and collect samples for lab analysis.

### Soil gas from cleanup sites

Ecology requires soil gas monitoring on certain sites, usually where soil or groundwater contamination can volatilize and affect indoor air quality.

#### Submit data from

- ✓ Soil gas probes (usually temporary).
- ✓ Sub-slab sampling.

#### DON'T submit data from

- ✗ Field screening.
- ✗ Air stripping or sparging and soil vapor extraction systems.

### Soil gas from landfills

#### What types of landfills require EIM submittal?

Submit data for landfills as indicated in the table. Follow the monitoring plan approved by the local health authority.

Landfill regulation	Submit to EIM?
WAC 173-351 (Criteria for Municipal Solid Waste Landfills)	Yes
WAC 173-350 (Solid Waste Handling Standards)	Yes
WAC 173-304 (Minimum Functional Standards for Solid Waste Handling)	Optional
WAC 173-306 (Special Incinerator Ash Management Standards)	Optional
WAC 173-340 (Model Toxics Control Act, MTCA)	Some (ask your site manager and follow cleanup site instructions)

## Submit data from

Submit field meter and sample data from the following types of locations.

- ✓ Soil gas probes (usually permanent).
- ✓ On- and offsite structures (buildings, vaults, and manholes). See [“Ambient air”](#) section, below.
- ✓ Landfill vents ONLY when data supports a post-closure care termination request.
- ✓ Compliance monitoring LEL’s, in addition to other required data.
- ✓ Barometric Pressure. See [“Ambient air”](#) section, below.
- ✓ For groundwater monitoring, leachate, or hydraulic gradient control system data, download our guidance for [Landfill Monitoring Data](#).

## DON’T submit data from

- ✗ Landfill gas extraction and collection systems.
- ✗ Landfill vents UNLESS data supports a post-closure care termination request.
- ✗ Landfill pressure or emissions estimates.

## How to enter soil gas locations

Use the EIM Location Template and follow the Location Help document and these examples.

Type of data	Location ID Examples (Column A)	Location Setting Valid Values (Column C)	Is Location A Well? Valid values (Column F)
Temporary soil gas probe*	VCSW0001-SGT1	Land	Y
Permanent soil gas probe*	VCSW0001-SGP1	Land	Y
Soil gas from GW monitoring well*	VCSW0001-MW1	Land	Y
Soil gas from Environmental Investigation Wells (EIWs)*	VCSW0001-B1	Land	Y
Indoor sub-slab probe	VCSW0001-SS1	Source- ManMade	N or leave blank
Landfill vent	VCSW0001-V1	Source- ManMade	N or leave blank

\*Requires additional information; see below.

## Probes or groundwater monitoring wells

We need additional information for soil gas from temporary or permanent probes or groundwater (GW) monitoring wells. Use the EIM Location Template and follow the Location Help document and these examples.

R = Required, RA = Required if available, O = Optional.

Col- umn	Well-related fields	Soil gas from permanent GW monitoring well	Soil gas from permanent probe	Soil gas from temporary probe	Valid values
F	Is Location A Well	R	R	R	Y
AH	Elevation of	R	O	Leave blank	Land Surface Top of Well Casing Well Water Level Measuring Point
AI	Elevation	R	O	Leave blank	
AJ	Elevation Units	R	O	Leave blank	FT
AK	Elevation Datum	R	O	Leave blank	NAVD88
AL	Elevation Accuracy	R	O	Leave blank	
AM	Elevation Collection Method	R	O	Leave blank	
AO	Well Water Level Measuring Point or TOC ID	R	Leave blank	Leave blank	TOC 1 MP1
AP	Well Water Level Measuring Point or TOC Description	R	Leave blank	Leave blank	
AQ	Well Water Level Measuring Point or TOC Height	RA	Leave blank	Leave blank	
AR	Well Water Level Measuring Point or TOC Height Units	RA	Leave blank	Leave blank	

Column	Well-related fields	Soil gas from permanent GW monitoring well	Soil gas from permanent probe	Soil gas from temporary probe	Valid values
AS	Well Water Level Measuring Point or TOC Start Date	O	Leave blank	Leave blank	
AT	Well Tag ID	RA	RA	Leave blank	
AU	Well Owner Organization Name	RA	RA	Leave blank	
AV	Well Owner Last Name	RA	RA	Leave blank	
AW	Well Owner First Name	RA	RA	Leave blank	
AX	Groundwater Location Type	R	R	R	Soil Gas Probe Monitoring Well (if also a GW well) Temporary Well - EIW
AY	Well Completion Depth	R	RA	Leave blank	
AZ	Well Completion Depth Units	R	RA	Leave blank	
BA	Well Completion Type	R	RA	Leave blank	Cased, Open Interval
BB	Well Open Interval Upper Depth	R	RA*	Leave blank	
BC	Well Open Interval Lower Depth	R	RA*	Leave blank	
BD	Well Open Interval Units	R	RA	Leave blank	
BE	Well Maximum Casing Diameter	O	O	O	

Column	Well-related fields	Soil gas from permanent GW monitoring well	Soil gas from permanent probe	Soil gas from temporary probe	Valid values
BF	Well Maximum Casing Diameter Units	O	O	O	
BG	Well Casing Material	O	O	O	PVC Steel, Stainless
BH	Well Construction End Date	RA	RA	O	
BI	Well Construction Method	RA	RA	RA	BA (bored/augered) DR (driven/direct push)
BJ	Well Construction Comment	O	O	O	
BK	Is Well Upgradient of a Facility/Site	O	O	O	
BM	Naturally Flowing Well	Leave blank	Leave blank	Leave blank	

\* Make Upper and Lower Depth the same if you used a port or very short opening (<= 6 inches) in the drive casing.

## How to enter soil gas results

Use the EIM Results Template and follow the Results Help document and these examples. [See common collection and result methods and units below.](#)

Type of data	Location ID Examples (Column B)	Field Collection Type Valid values (Column D)	Sample Matrix Valid values (Column X)	Sample Source Valid values (Column Y)
Temporary soil gas probe	VCSW0001-SGT1	Sample	Air/Gas	Soil Gas
Permanent soil gas probe	VCSW0001-SGP1	Sample or Measurement*	Air/Gas	Soil Gas

Type of data	Location ID Examples (Column B)	Field Collection Type Valid values (Column D)	Sample Matrix Valid values (Column X)	Sample Source Valid values (Column Y)
Soil gas from GW monitoring well	VCSW0001-MW1	Sample or Measurement *	Air/Gas	Soil Gas
Soil gas from Environmental Investigation Wells (EIWs)	VCSW0001-B1	Sample	Air/Gas	Soil Gas
Indoor sub-slab probe	VCSW0001-SS1	Sample	Air/Gas	Soil Gas
Landfill vent	VCSW0001-V1	Sample or Measurement*	Air/Gas	Soil Gas

\* Routine landfill soil gas measurements by field meter.

## How to choose Field Collection Type (column D)

- **Measurement:** Vapor or gas concentrations and barometric pressure, measured in the field with meter, probe, or kit.
- **Sample:** Air, vapor, or gas sample sent to lab for analyses or analyzed by a mobile lab.
- **Observation:** Attempted to get a measurement or sample but couldn't. For help, download our guidance for [Entering Observations](#).

## Sample depth or height

If you took samples below or above the land or floor surface, enter field collection depths in Columns M-P of result template. Depths are required for temporary soil gas probes and EIWs. [Download guidance for Field Collection Depth or Height](#).

## AMBIENT AIR OR AIR DEPOSITION DATA

Field staff sample ambient air and conduct air deposition studies at or above land or floor surface.

### Submit data collected from

- ✓ Outside of buildings.
- ✓ Inside of buildings.
- ✓ In crawl spaces.
- ✓ In vaults and manholes.

### How to enter air locations

Use the EIM Location Template and follow the Location Help document and these examples.

Type of data	Location ID Examples (Column A)	Location Setting Valid values (Column C)
Outdoor air	VCSW0001-OA1	Air/Climate
Indoor air, including crawlspaces, vaults, and manholes	VCSW0001-IA1	Source-ManMade
Air deposition	VCSW0001-AD1	Air/Climate
Barometric Pressure	VCSW0001-BP1	Air/Climate

### How to enter air results

Use the EIM Results Template and follow the Results Help document and this table.

Type of data	Location ID Examples (Column B)	Field Collection Type Valid values (Column D)	Sample Matrix Valid values (Column X)	Sample Source Valid values (Column Y)	Sample Collection Method* Valid value examples (Column AA)	Result Method* Valid value examples (Column AY)
Outdoor air, field meter	VCSW0001-OA1	Measurement	Air/Gas	Outdoor Air	Leave blank	IFGA-METER

Type of data	Location ID Examples (Column B)	Field Collection Type Valid values (Column D)	Sample Matrix Valid values (Column X)	Sample Source Valid values (Column Y)	Sample Collection Method* Valid value examples (Column AA)	Result Method* Valid value examples (Column AY)
Indoor air, field meter	VCSW0001-IA1	Measurement	Air/Gas	Indoor Air	Leave blank	IFGA-METER
Outdoor air, lab sample	VCSW0001-OA1	Sample	Air/Gas	Outdoor Air	SummaCanister	EPA-TO-15
Indoor air, lab sample	VCSW0001-IA1	Sample	Air/Gas	Indoor Air	TedlarBag	SW8260C
Air deposition	VCSW0001-AD1	Sample	Air/Gas	Outdoor Air	No examples yet	EPA-TO-4A
Barometric pressure	VCSW0001-BP1	Measurement	Air/Gas	Outdoor Air	Leave Blank	BARO

[\\*See more EIM air collection and result methods below.](#)

## How to choose Field Collection Type (column D)

- **Measurement:** Vapor or gas concentrations and barometric pressure, measured in the field with meter, probe, or kit.
- **Sample:** Air, vapor, or gas sample sent to lab for analyses or analyzed by a mobile lab.
- **Observation:** Attempted to get a measurement or sample but couldn't. For help, download our guidance for [Entering Observations](#).

## Sample depth or height

If you took samples below or above the land or floor surface, enter the depth or height information in Columns M through P. For help, download our guidance for [Field Collection Depth or Height](#)

## COMMON METHODS AND UNITS

Following are common examples of methods and units for air, vapor, and soil gas. If you don't see the valid value you need, [search for more methods or units online](#) or ask your EIM Data Coordinator.

## Sample collection methods

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These methods go in the Sample Collection Method field (Column AA) of the Results Template. See common examples below. If you have two Sample Collection Methods, put one in the Sample Method Other (AC) column.

Method category	Valid value examples (Column AA, Results Template)	Description
Collection	SummaCanister	Summa Canister
Collection	PassDiffAirTube	Passive Diffusive Axial (Tube-Style) Air Sampler
Collection	PassDiffAirRadial	Passive Diffusive Radiello (Radial-Style) Air Sampler
Collection	TedlarBag	Tedlar Bag Air/Gas Grab Sampler
Collection	DirectPush (usually combined with other soil gas collection methods)*	Direct Push (like Geoprobe)

[Search for more Sample Collection Methods online.](#)

## Result methods

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These methods go in the Result Method field (Column AY) of the Results Template. They can be measurement (field) or sample (lab) methods. See common examples below.

### Result measurement (field meter) methods

Method category	Valid value examples (Column AY, Results Template)	Description
Measurement	IFGA-METER	Infrared Dual Wavelength Internal Cell Gas Analyzer, Field Meter (associated with CH <sub>4</sub> and CO <sub>2</sub> )
Measurement	LTGEM5000	Landtec GEM 5000 Portable Infrared Gas Analyzer/Field Meter
Measurement	LTGEM2000	Landtec GEM 2000 Portable Infrared Gas Analyzer/Field Meter
Measurement	BARO	Barometric pressure using aneroid barometer

[Search for more Result Methods online.](#)

## Result sample (lab) methods

Method category	Valid values (Column AY, Results Template)	Description
Sample	EPA-TO-15	Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS)
Sample	EPA-TO-15SIM	Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), Select Ion Monitoring (SIM) mode
Sample	EPA-TO-15M	Determination of Volatile Organic Compounds (VOCs) in Air Collected in Specially-Prepared Canisters and Analyzed by Gas Chromatography/Mass Spectrometry (GC/MS), modified method
Sample	SW8260B or SW8260C	Volatile Organic Compounds (VOCs) by Gas Chromatography/Mass Spectrometry (GC/MS), Revision 2(B) or 3(C)
Sample	ASTM-D1946-90	Standard Practice for Analysis of Reformed Gas by Gas Chromatography
Sample	MASSDEP-APH-01	Method for the Determination of Air-Phase Petroleum Hydrocarbons (APH) by GC/MS, Rev 1

[Search for more Result Methods online.](#)

## Result units

Result Value Units go in column AN of the Results Template. See common examples below.

Valid value examples (Column AN, Results Template)	Description
ug/m3	Micrograms per cubic meter
mg/m3	Milligrams per cubic meter
Ppbv	Parts per billion by volume
vol%	Percent volume

Valid value examples (Column AN, Results Template)	Description
% LEL	Percent of Lower Explosive Limit (LEL)

[Search for more units online.](#)

## DOCUMENT REVISION HISTORY

Revision date	Revision no.	Summary of changes	Reviser(s)
1/16/2019	1.0	Original draft.	EF, CN
2/21/2019	1.1	Added landfill vents to examples. Updated links.	EF, CN
12/2/2020	1.2	Updated format and links, added table of contents, moved soil gas section to beginning.	CN
11/17/2021	1.3	Added information about Environmental Investigation Wells (EIWs) to the Soil Gas section, including the requirement for Field Collection Depths. Integrated the “How to choose Field Collection Type” and “Sample depth or height” paragraphs into both the Soil Gas and Air sections, and fixed bookmarks.	KC