

Initial Site Entry

FSOP 1.1 (April 12, 2010)

Ohio EPA Division of Environmental Response and Revitalization

1.0 Scope and Applicability

This field standard operating procedure (FSOP) helps ensure the safety of Division of Environmental Response and Revitalization (DERR) and other Ohio EPA personnel during initial entry into uncontrolled hazardous waste sites. While this FSOP is intended to address health and safety concerns generally associated with uncontrolled hazardous waste sites, it does not necessarily address every health and safety concern that may be encountered at a specific site and is not intended to serve as a substitute for a site-specific health and safety plan (HASP). Additional precautions, equipment, and procedures may be needed in addition to those prescribed in this procedure to provide a safe working environment. The FSOP assumes the following circumstances and conditions for initial entry into uncontrolled hazardous waste sites, including initial entry for Phase I site reconnaissance:

- 1.1. Ohio EPA has obtained permission to access the site from the owner and tenant (or operator) as applicable following DERR's February 28, 1997 Revised Site Access Legal Protocol.
- 1.2. An ongoing emergency response situation is not occurring at the site.
- 1.3. Level D personal protective equipment (PPE) will provide adequate protection for Ohio EPA personnel entering the site based on the review of available site information related to health and safety concerns (i.e., conditions necessitating Level A, B, or C PPE cannot exist or be reasonably expected to occur during site entry).
- 1.4. During the initial site visit Ohio EPA will not be performing any subsurface sampling deeper than 12 inches. Sampling deeper than 12 inches constitutes "excavation" per Ohio Revised Code (ORC) 3781.25(H) and requires utility clearance as described in FSOP 1.2, Utility Clearance.
- 1.5. Radioactivity exceeding the Ohio Department of Health (ODH) dose limit of 0.02 millisievert (mSv)/hour or 0.002 rem/hour [2 millirem (mrem)/hour] for the general public [Ohio Administrative Code (OAC) 3701:1-38-13(A)(2)] is not present at the site.

2.0 Definitions

Not applicable

3.0 Health and Safety Considerations

Never enter an OSHA-defined confined space for any reason during an initial site entry or during any other field activity event. Only Ohio EPA Office of Special Investigation (OSI) staff or other appropriately trained staff are qualified to enter confined spaces for

reconnaissance or sampling activities, and will perform such work as necessary in accordance with Ohio EPA's Confined Space Entry Policy (OEPA-SM-10-002).

4.0 Procedure Cautions

Not applicable

5.0 Personnel Qualifications

Ohio EPA personnel entering the site must meet DERR's qualifications for performing work at uncontrolled hazardous waste sites.

6.0 Equipment and Supplies

6.1 Field Communication / Field Documentation / Health and Safety References

- 6.1.1 Camera
- 6.1.2 Cell phone
- 6.1.3 Emergency contact information (hospital, police, fire department, etc.)
- 6.1.4 Field logbook or unbound log sheets
- 6.1.5 Site access agreement or documentation
- 6.1.6 Site background information (documenting the conditions expected)
- 6.1.7 Site contact information
- 6.1.8 Site Entry Atmospheric Action Levels (Table 1) and other reference guides (e.g., [National Institute for Occupational Safety and Health \(NIOSH\) Pocket Guide to Chemical Hazards](#))
- 6.1.9 Site-specific HASP, if available

6.2 Level D PPE

- 6.2.1 Clothing appropriate for anticipated field conditions
- 6.2.2 Eye protection (to be worn when necessary)
- 6.2.3 First aid kits with skin protection (sunscreen, insect repellent, etc.)
- 6.2.4 Hard hat (to be worn when necessary)
- 6.2.5 Hearing protection (to be worn when necessary)
- 6.2.6 Protective gloves appropriate for expected field conditions or potential hazards
- 6.2.7 Safety boots

6.3 Atmospheric Monitoring Instruments (to evaluate site safety as necessary based on conditions anticipated or encountered)

- 6.3.1 Gamma radiation survey meter or dosimeter
- 6.3.2 Lower explosive limit (LEL)/oxygen (O₂) meter
- 6.3.3 Photoionization detector (PID) or flame ionization detector (FID)
- 6.3.4 Other monitoring instruments appropriate for the expected site conditions, e.g., a carbon monoxide meter, colorimetric (chemical compound-specific) detector tubes, hydrogen sulfide meter, and/or a particulate meter.

7.0 Procedures

- 7.1 If a site-specific health and safety plan (HASP) has been prepared, review the HASP prior to the initial site entry to understand the hazards associated with the site.
- 7.2 If a site-specific HASP has not been prepared, review all available site information related to health and safety to evaluate the potential hazards that may be associated with the site.
- 7.3 If required, ensure that atmospheric monitoring instruments are calibrated and operating properly; refer to instrument-specific equipment manuals and/or FSOPs as necessary.
- 7.4 Include at least two persons on the initial site entry team, preferably both Ohio EPA staff members.
- 7.5 Systematically search the site for potential physical, chemical, biological, and radiological hazards as necessary and use air monitoring equipment as needed to ensure that atmospheric conditions do not exceed Site Entry Atmospheric Action Levels (Table 1) or any action levels provided in the [NIOSH Pocket Guide to Chemical Hazards](#).
- 7.6 If Level D PPE is adequate, perform additional tasks as necessary (e.g., marking sampling locations, GPS surveying, photographing site features).
- 7.7 If the site conditions encountered require a greater degree of protection than that provided by Level D PPE:
 - 7.7.1 Leave the site immediately.
 - 7.7.2 Revise the site-specific HASP (or develop a site-specific HASP) before reentering the site.
- 7.8 If radioactive materials are encountered during the initial site entry or gamma radiation measured at any location exceeds 2 mrem/hr (0.02 mSv), leave the site immediately and contact ODH before reentering the site.

8.0 Data and Records Management

Refer to [FSOP 1.3, Field Documentation](#).

9.0 Quality Control and Quality Assurance

Not applicable

10.0 Attachments

Table 1, Site Entry Atmospheric Action Levels

11.0 References

DERR's February 28, 1997 Revised Site Access Legal Protocol

FSOP 1.2, Utility Clearance

FSOP 1.3, Field Documentation

Ohio Administrative Code 3701:1-38-13(A)(2)

Ohio EPA's Confined Space Entry Policy (OEPA-SM-10-002)

Ohio Revised Code 3781.25(H)

National Institute for Occupational Safety and Health Pocket Guide to Chemical Hazards
(available online at <http://www.cdc.gov/niosh/npg/>)

TABLE 1, SITE ENTRY ATMOSPHERIC ACTION LEVELS

Atmospheric Hazard	Monitoring Equipment	Action Level	Response
Explosive Atmosphere	Lower Explosive Level (LEL) Meter (a.k.a. Combustible Gas Indicator, or CGI)	< 10% LEL	Continue monitoring.
		10%-25% LEL	If <u>outdoors</u> , continue monitoring with caution. If <u>within a structure</u> , explosion hazard. Exit structure.
		> 25% LEL	Explosion hazard, leave site.
O₂ Deficient Atmosphere	Oxygen (O ₂) Meter	< 19.5% O ₂	Leave site, LEL readings are not valid; toxic vapors or explosive gas may be displacing oxygen.
O₂ Enriched Atmosphere		> 23.5% O ₂	Leave site, LEL readings are not valid.
Volatile Organic Compounds (e.g., benzene, methyl-ethyl ketone, vinyl chloride)	Photoionization Detector (PID) or Flame Ionization Detector (FID)	1 ppm > background in breathing zone	Leave site. (Reenter with appropriate PPE if qualified.)
Hydrogen Sulfide (H₂S)	Hydrogen Sulfide (H ₂ S) Meter	10 ppm	Leave site.
Carbon Monoxide (CO)	Carbon Monoxide (CO) Meter	35 ppm	Leave site.
Other Inorganic & Organic Gasses & Vapors	Compound-specific monitoring equipment; consult the NIOSH Pocket Guide to Chemical Hazards for action levels and responses.		
Particulate Matter	Particulate Meter	Compound-specific monitoring equipment and site-specific circumstances; consult the NIOSH Pocket Guide to Chemical Hazards for action levels and responses.	
Radiation	Gamma Radiation Survey Meter or Dosimeter	< 2 millirem (mrem)/hr	Continue monitoring.
		> 2 millirem (mrem)/hr	Leave site and notify ODH.