Manhole Entry Pre-Entry Checklist

Telecom outside plant. Complete top to bottom. Any NO or any failed reading means nobody enters.

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DATE / TIME	LOCATION / STRUCTURE ID	CREW	ENTRY SUPERVISOR

1 BEFORE YOU LEAVE THE TRUCK

- [ ] Which framework governs this job today: construction work (1926 Subpart AA), telecom field work (1910.268 with 1910.146 filling gaps), or full permit program (1910.146)? If nobody on the crew can answer, call your supervisor before the cover comes off.
- [ ] Entry permit or employer entry procedure in hand, signed by the entry supervisor where required
- [ ] Gas meter bump tested today, in calibration, sample pump and line working A bump test proves the alarms fire. It does not prove accuracy.
- [ ] Blower, duct, harness, retrieval line, tripod or davit with winch on the truck and serviceable
- [ ] Rescue arrangement confirmed reachable for THIS location, contact method tested Retrieval often fails on offset drops. Arranged rescue is the plan, not the backup.
- [ ] Joint-use structure? YES ☐ NO ☐ If yes: first-aid-trained person assigned to the immediate vicinity; nobody touches the power side, ever
- [ ] Lead-sheathed cable or transite (asbestos-cement) duct possible in this structure? YES ☐ NO ☐ UNKNOWN ☐ Unknown = ask before entry. Pulled lead leaves contamination behind for the next crew.

2 SURFACE SETUP

- [ ] Work zone set per MUTCD: advance signs, taper, cones; hi-vis on everyone; attendant post protected by the zone
- [ ] Cover broken loose with hook or lever tool, feet and fingers clear, cover staged away from the opening
- [ ] Opening guarded immediately: rail, guard or barrier around the open hole (1910.268(o)(1))
- [ ] Tools, spoil and equipment staged back from the throat so nothing can fall on the entrant

3 TEST THE AIR BEFORE VENTILATING

- [ ] Probe lowered in stages: top, middle, bottom. Slow enough for the pump and sensors to answer Rule of thumb: about 2 seconds per foot of sample line plus sensor response time.
- [ ] Order: oxygen, then combustible, then toxic
- [ ] Standing water? YES ☐ NO ☐ If yes: pump out, confirm where discharge is allowed to go, then RE-TEST the air

ANY READING OUT OF RANGE

Nobody enters. Ventilate from a clean upwind air source, duct to the bottom, re-test. If it will not come into range, close it up and escalate.

ACCEPTABLE ENTRY CONDITIONS

Oxygen	**19.5% to 23.5%**
Combustible gas or vapor	**below 10% LEL**
Hydrogen sulfide	**0 ppm expected**
Carbon monoxide	**0 ppm expected**

Ranges per the 1910.146(b) hazardous-atmosphere definition. Any H2S or CO reading: stop and consult your employer procedure and the PEL.

CONTINUOUS FORCED AIR IS REQUIRED WHEN

- Combustible gas was found, then reduced
- Organic solvents in use below
- Open flame torch in use below
- **Manhole is in a vehicular traffic area**
- Any toxic gas or oxygen deficiency found

1910.268(o)(2). The traffic trigger covers nearly every street manhole.

During Entry, and the Log

The attendant owns this page while anyone is below grade.

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4 VENTILATION AND ENTRY

- [ ] Blower intake upwind, in clean air, clear of every engine and generator exhaust on the job
- [ ] Duct delivers to the BOTTOM of the space; blower runs continuously for the whole entry
- [ ] Air re-tested after purge and in range before the first boot goes on the ladder
- [ ] Meter stays below with the entrant, continuous monitoring, alarms audible topside
- [ ] Ladder in place for any structure over 4 ft deep (1910.268(o)(4)); throat and ladder path kept clear
- [ ] Harness on, retrieval line attached at the center of the back, line rigged to the winch for the WHOLE entry
- [ ] Attendant posted, and stays posted. The attendant does not enter to rescue The narrow exception in the Note to 1910.146(i)(4) needs an employer program that allows it, rescue training and equipment per (k)(1), AND relief by another attendant. On a small crew, assume none apply.
- [ ] Hot work below? YES ☐ NO ☐ If yes: combustible test immediately before lighting and at least once per hour; no fuel tank in the space unless in actual use (1910.268(o)(5))
- [ ] Opening a pressurized splice case? Expect the oxygen reading to move. Falling O2 with no other alarm can be released nitrogen

5 ATMOSPHERIC READINGS LOG

Time	Level tested	O2 %	LEL %	CO ppm	H2S ppm	By (initials)	Action

6 EVACUATE IMMEDIATELY IF

- [ ] **Any gas alarm, or any reading trending toward its limit**
- [ ] **The blower stops, for any reason, for any length of time**
- [ ] **Smoke, buzzing, crackling, oil sheen, hot smell, or anything wrong on the power side of a joint-use structure**
- [ ] **Water rising, or anything changes that the permit did not allow for**
- [ ] **The entrant feels dizzy, off, or slow to answer. Do not talk yourself out of it**

IF THE ENTRANT GOES DOWN

Summon your arranged rescue FIRST. Work the retrieval winch from the top. The attendant does not enter. About 60 percent of confined space deaths in NIOSH's landmark study were would-be rescuers. One emergency stays one emergency.

Entry rescue belongs to people trained and equipped for it under 1910.146(k)(1). If that is not you, your job is the alarm, the line, and scene control.

ENTRY SUPERVISOR SIGNATURE

ATTENDANT SIGNATURE

ENTRY COMPLETED / PERMIT CLOSED (TIME)