

APPENDIX C
OPERATONS AND MAINTENANCE PLAN

**INTERIM REMEDIAL ACTION
OPERATION AND MAINTENANCE PLAN**

for

**OPERABLE UNIT 2
B BUILDING SOLVENT STORAGE SHED AREA**

**MOUND PLANT
MIAMISBURG, OHIO**

Prepared for

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1. INTRODUCTION

1.1. PROJECT DESCRIPTION

Soil vapor concentrations of Freon 113, Trans-1,2-Dichloroethene (trans-12DCE), Cis-1,2-Dichloroethene (cis-12DCE), 1,1,1-Trichloroethane (111TCA), Trichloroethene (TCE), and Toluene were found to be elevated in a 1992 soil gas survey of the B Building Solvent Storage Shed Area. Because of the elevated concentrations of soil vapor, EG&G Mound Applied Technologies (EG&G MAT) has decided to remediate the soils as an Interim Remedial Action. This remedial action is being conducted under the Department of Energy (DOE) SAFER program. An Engineering Evaluation/Cost Analysis (EE/CA), conducted by ICF Kaiser Engineers (ICF KE), determined that Soil Vapor Extraction (SVE) was the most suitable and cost effective remedial method. An SVE system will be installed and sampling will occur to verify operational efficiency of the SVE system and verify remediation of soils. This will allow ICF KE to make any necessary modifications to the system.

The scope of the field activities at B Building include the installation of an SVE system, operation of a 30 day pilot study, and operation of the SVE system for six (6) months.

1.2. PROJECT OBJECTIVES

The objective of this plan is to describe all activities and requirements for the operation, maintenance and sampling during the six (6) month operation period.

inspection of all well heads, well piping and fittings, water tanks and backup switches. During each visit the following preventative maintenance activities will be performed:

- Vacuum and injection filters will be inspected,
- The sample pump will be inspected,
- The water level in the vacuum manifold will be checked,
- The belts will be inspected,
- The seals on the blowers will be inspected for leakage,
- The blowers will be greased if required, and
- The carbon unit will be inspected.

The carbon absorption unit (CAU) will be monitored for volatile organic carbon breakthrough. The airstream after the CAU will be monitored and the CAU replaced when the airstream contains concentrations of volatile organic compounds in excess of 1 ppm.

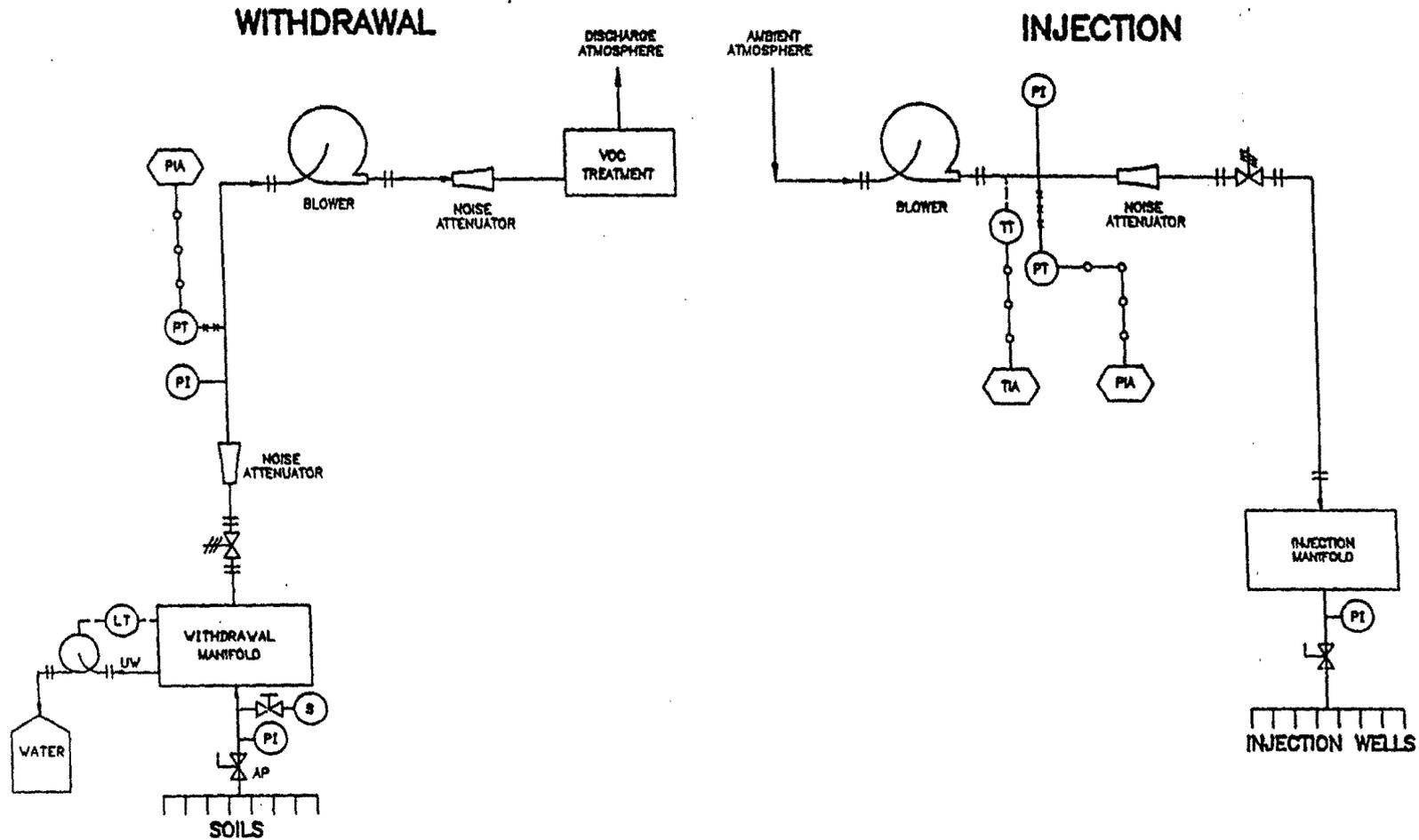
2.5. DESCRIPTION OF EQUIPMENT

The basic pump station specifications (300 Series) are as follows:

- Explosion-proof pumps, motors, starters and wiring throughout with interior and exterior system shut-offs.
- Matched, positive-displacement blowers, 150 scfm, each driven by 10-HP motors.
- Large and small-particle filters upstream of pumps.
- Intake and discharge silencers on the positive displacement blowers.
- Sample withdrawal pump and manifold for recovering gas-phase samples from each of the withdrawal taps.
- Condensate and large particle knock-down receiver with automatic vacuum relief and pump-out and overflow protection that shuts down the entire system in the event of condensate pump-out failure.
- Mechanical sensor linkage to critical pump operating conditions for automatic shutdown. Electronic pump station sensor system.
- Entire pumping system pre-assembled, pre-tested and contained. Installation requires connection of withdrawal and injection taps to quick-connect manifold fittings and electrical connection to overhead weather head.
- Stations require 480-volt, three-phase, 100-amp service.

The SVE system will be run in two modes: closed and open loop. Closed loop involves reinjection of the treated gas while open loop involves off-gassing the treated gas. Process and Instrument Diagrams for both modes are shown in Figures 2.1 and 2.2.

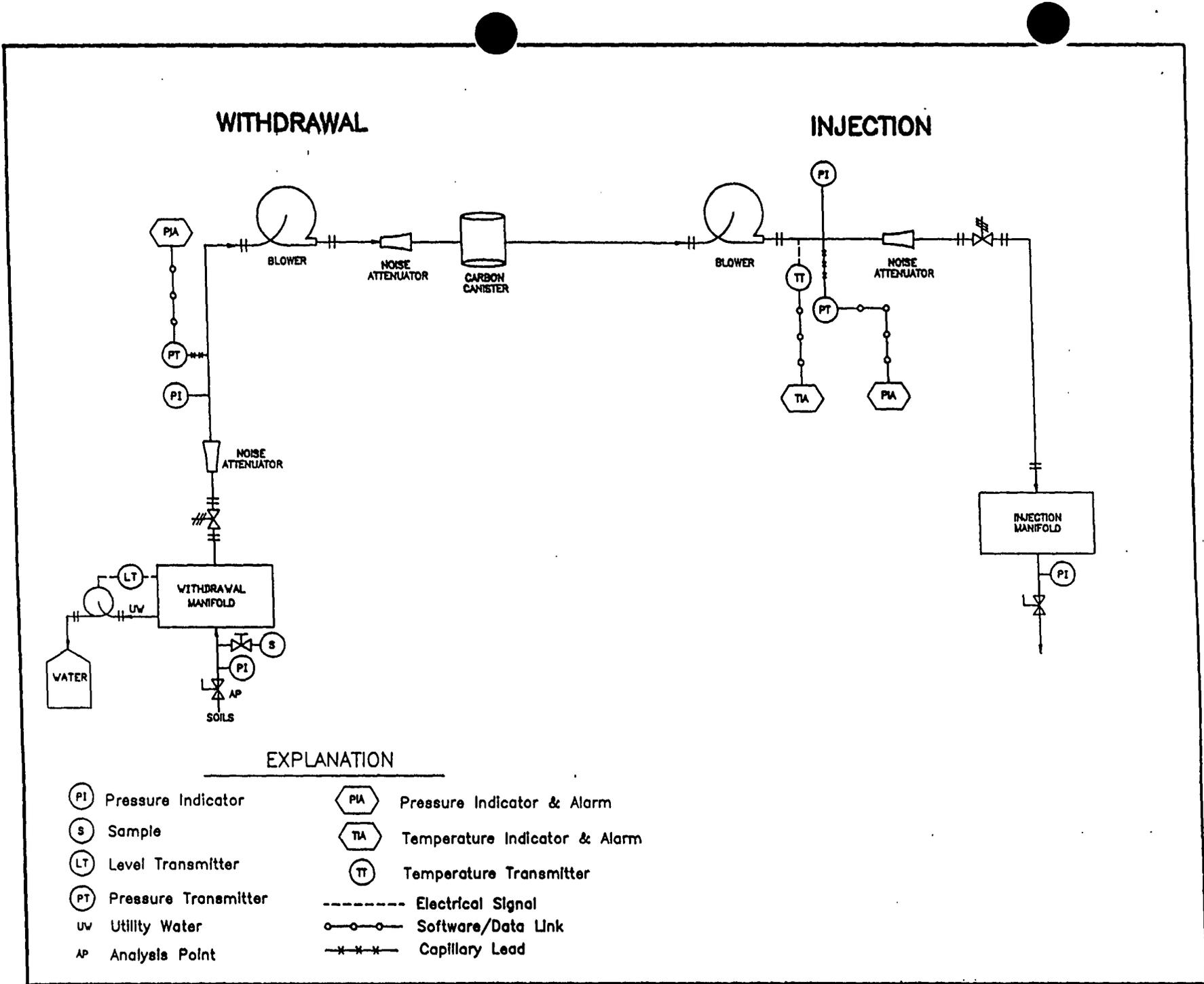
Figure 2.1. SVE Process and Instrument Diagram, Open Loop Configuration



EXPLANATION

- | | |
|---------------------------|------------------------------------|
| (PI) Pressure Indicator | (PIA) Pressure Indicator & Alarm |
| (S) Sample | (TA) Temperature Indicator & Alarm |
| (LT) Level Transmitter | (TT) Temperature Transmitter |
| (PT) Pressure Transmitter | ----- Electrical Signal |
| UW Utility Water | ○-○-○ Software/Data Link |
| AP Analysis Point | -*-*- Capillary Lead |

Figure 2.2. SVE Process and Instrument Diagram, Closed Loop Configuration



2.6. SPARE PARTS

Replacement parts and maintenance items for the SVE pump system will be kept at Mound. These include oil, air filters, PVC piping and fittings, belts, and vacuum and pressure gauges. These parts will be kept to decrease the downtime associated with maintenance.

2.7. REPAIR SCHEDULE

In the event of a major component failure, the SVE system will be repaired within 14 days of the failure. In the event the entire SVE pump system fails, the system will be replaced within 30 days.

2.8. EMERGENCY SHUTDOWN PROCEDURES

The SVE pumping system includes high temperature, high vacuum, high pressure, and high water level sensors that are connected to the motor control circuit. In the event that the sensors indicate a temperature, vacuum, pressure or water level is at or above the action level, the power to the SVE pump system will be turned off.

In the event of an emergency, power can be shut off at the station or the breaker box located behind the station. Operating instructions are permanently mounted on the SVE pump system.

3. SITE VISIT REPORTING

3.1. SITE VISIT CHECK LIST

Following each visit, a Site Visit Check List and Operations Report will be completed and given to the ETG Project Manager. These reports detail all activities conducted during the visits, all measurements, and required materials or work for future visits. These reports will be included in the System Monitoring Reports. Copies of the Site Visit Check List and the Operation Report are included.

SITE VISIT CHECK LIST

Client: _____ Date of Visit: _____
Location: _____ Technician: _____
Job #: _____ Station #: _____
Electrical Service: _____ Station Hours: _____

A) GENERAL APPEARANCE:

Barrier Tape and Fence Intact _____ Site Clear of Debris _____
No Signs of Unauthorized Entry _____ Clean Floor in Station _____
Site Cap Intact _____

B) SAFETY:

Signs Present: 1) Authorized Personnel _____
2) Eye/Ear Protection _____
3) Propane/Diesel _____
4) Other _____

Fire Extinguishers: 1) Present Y N
2) Card Up to Date Y N
3) Charged Y N

General: 1) Site Safety Plan Y N
2) Padlocks Y N

C) SITE WALK:

1) Well Heads _____ 5) Water Pumps _____
2) Pipes _____ 6) Vacuum Break Solenoid _____
3) Fittings _____ 7) Kunkel Valve _____
4) Water Holding Tank _____ 8) Light Bulbs and Fixtures _____

Figure 3.1. Site Visit Check List

D) INITIAL READINGS

Pump Station: Active Vacuum Taps _____

Temps: Ambient: _____ Vac. _____ Inj. _____

Vac. Blower: Inlet _____ Hg Outlet _____ PSI

Inj. Blower: Inlet _____ Hg Outlet _____ PSI

RPM _____ Current Draw _____

RPM _____ Current Draw _____

Air Flow Measurements _____

Water Displacement:

Wells Yielding Water _____

External Tank Capacity Used _____ Remaining _____

Manual Trip of Drexelbrook Sensors:

Bottom Y N

Middle Y N

Top Y N

E) PREVENTATIVE MAINTENANCE

Filters (Vac and Inj)

Manifold (no silt or H2O)

Sample Pump

Belts (good shape and in place)

F) BLOWER SEALS

Seals Checked for Leakage _____ Blowers Greased _____

G) CARBON

Units Checked for Damage _____ Hoses & Fittings _____

Spent Units on Site _____

H) FINAL READINGS

Pump Station: Active Vacuum Taps _____

Temps: Ambient: _____ Vac. _____ Inj. _____

Vac. Blower: Inlet _____ Hg Outlet _____ PSI

Inj. Blower: Inlet _____ Hg Outlet _____ PSI

RPM _____ Current Draw _____

RPM _____ Current Draw _____

Air Flow Measurements _____

Carbon Dioxide Measurements _____

I) PARTS NEEDED

J) CLIENT COMMENTS

