

MODIFICATIONS TO THE
OU 2 SUBSURFACE IM/IRA PLAN
IN THE DRAFT PILOT TEST PLAN
FOR THE EAST TRENCHES AREA

The pilot test program presented in the Draft Pilot Test Plan for vapor extraction testing at the East Trenches Area reflects several modifications to the conceptual program presented in the Subsurface IM/IRA Plan (EG&G, 1992). Per Observational/Streamlined Approach methodology, these modifications were made based on new information regarding the proposed test site that became available since publication of the final Subsurface IM/IRA Plan. Enhancements were also made to the proposed system design as work progressed. The significant modifications are noted below, along with the rationale behind the changes. It is important to note that additional modifications to those listed below may be incorporated into future drafts of the Test Plan as new data become available.

- 1) This Test Plan specifies that the vapor treatment process (i.e., HEPA filters, GAC units, etc.) is to operate at less than atmospheric pressure as opposed to the positive pressure scenario presented in the IM/IRA Plan. Negative pressures are achieved by placing the extraction blower(s) towards the end of the treatment train. Such a configuration has the advantage of preventing contaminated vapor leaks prior to HEPA filtration and GAC adsorption treatment. Instead, if a breach (i.e., crack) in the process piping occurs, the negative pressure will cause atmospheric air to be "pulled" into the treatment train. The Test Plan also specifies a dual blower configuration (rather than a single blower) for increased operating efficiency.
- 2) The Pilot Test Plan presents an expected ground-water recovery rate at the East Trenches Area test site (i.e., IHSS No. 111.1) of 5 gpm in contrast to a 1 gpm extraction rate discussed in the Subsurface IM/IRA Plan. This upward revision is based on pump test data for the East Trenches Area that became available after the IM/IRA Plan was finalized.
- 3) The Pilot Test Plan specifies that the process gas stream is to be sampled at the exhaust stack to verify the absence of radioactive species as opposed to just downstream of the in-line HEPA filters. This modification has two primary advantages. First, the vapors at the exhaust stack (i.e., downstream of the GAC adsorption units) will be free of VOCs. This configuration thus represents an advantage from a health and safety standpoint. Operators will not be exposed to fugitive VOCs when removing sample filters for subsequent measurement of radioactivity. Second, sampling at the exhaust stack requires a lower duty pump since the stream is at essentially atmospheric pressure rather than at negative pressure.
- 4) The Test Plan includes pilot tests involving passive and active air injection. The active air injection specified in the Test Plan involves air that is heated by virtue of the energy imparted by the injection blower. In contrast, the Subsurface IM/IRA Plan proposes the testing of active air injection only, and that separate tests would be conducted to examine injection of air at ambient temperature and air heated by an indirect-fired heater.

Modification of the strategy proposed in the Subsurface IM/IRA Plan was based on the following rationale. The heat imparted to the air stream by the blower eliminates the necessity for a heater. In addition, cooling the air stream leaving the blower to achieve an ambient temperature defeats the goal of enhancing volatilization.

MODIFICATIONS TO THE
OU 2 SUBSURFACE PILOT TEST PLAN
FOR THE EAST TRENCHES AREA
NOT INCLUDED IN THE DRAFT TEST PLAN

Modifications to the Final Pilot Test Plan- East Trenches Area OU 2 are also needed. These modifications include decreasing sampling and measurement frequency by a factor of four, while adding the ability to increase the test duration. The test duration will be more contingent of reaching a near steady-state condition as opposed to the durations listed in the draft test plan. The rationale behind this change is that a reevaluation of our objectives revealed that our data needs were better met with these changes. It was not physically possible to make the number of measurements indicated in the draft test plan and the additional measurements were not providing enough useful information to justify redesign of the test plan. However, ensuring that the operating system reaches a near steady-state condition would yield data that might not otherwise be recorded.