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# LOS ALAMOS CANYON LOW-HEAD WEIR MONITORING SITE

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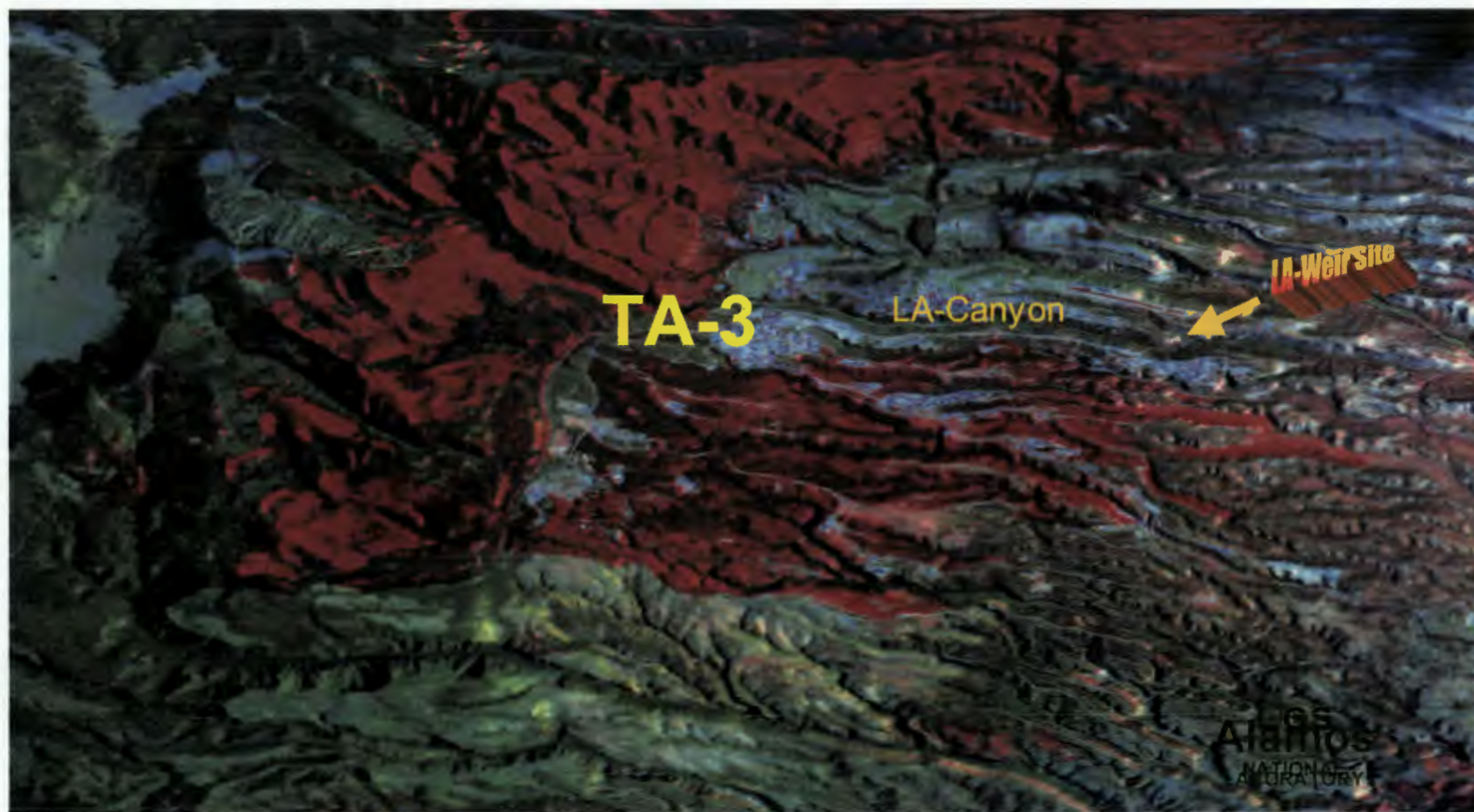
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<sup>(2)</sup> ENVIRONMENTAL SAFETY AND HEALTH DIVISION

LOS ALAMOS NATIONAL LABORATORY



# The Cerro Grande Fire: Watershed Damage





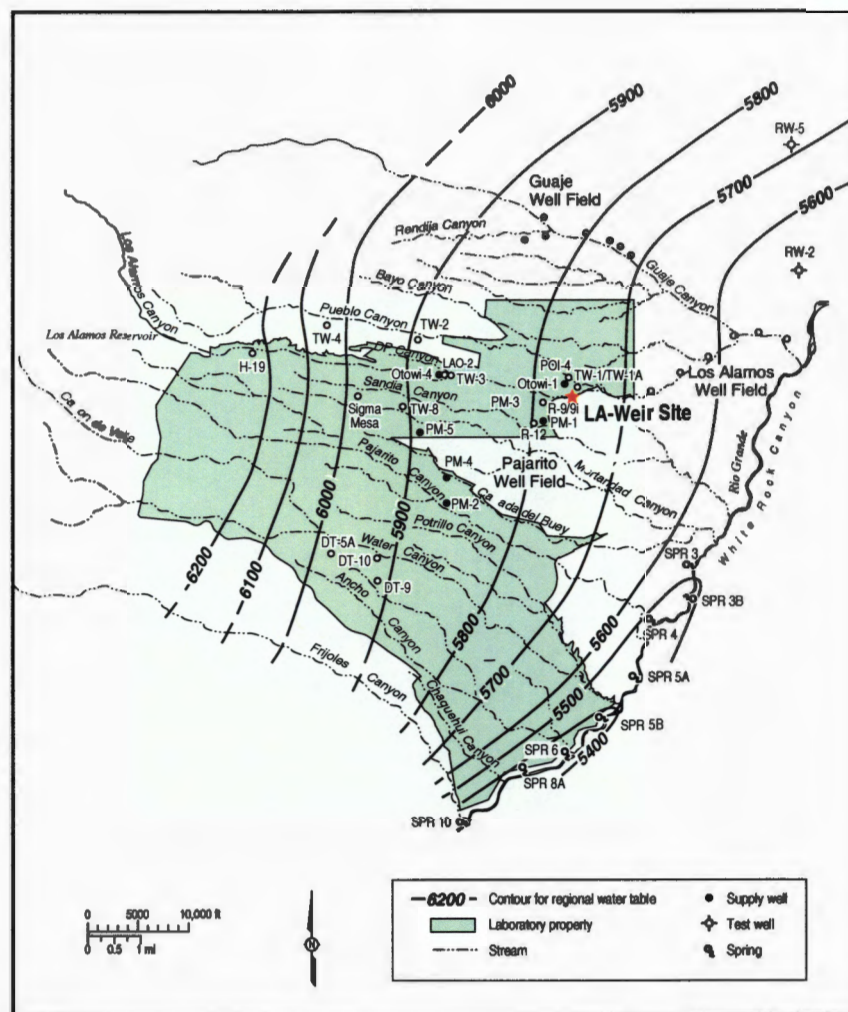
# Construction of Los Alamos Canyon Weir June-July 2000



# LA-Weir Monitoring Site: August 2000



# LA-Weir Location Map



# LA-Weir Monitoring Objectives

- Monitor infiltrating waters and contaminant chemistry through vadose zone
- Monitor hydrologic and hydrochemical characteristics of perched waters
- Characterize the hydrochemical evolution of the vadose zone and assess the impact of flooding in LA-Canyon





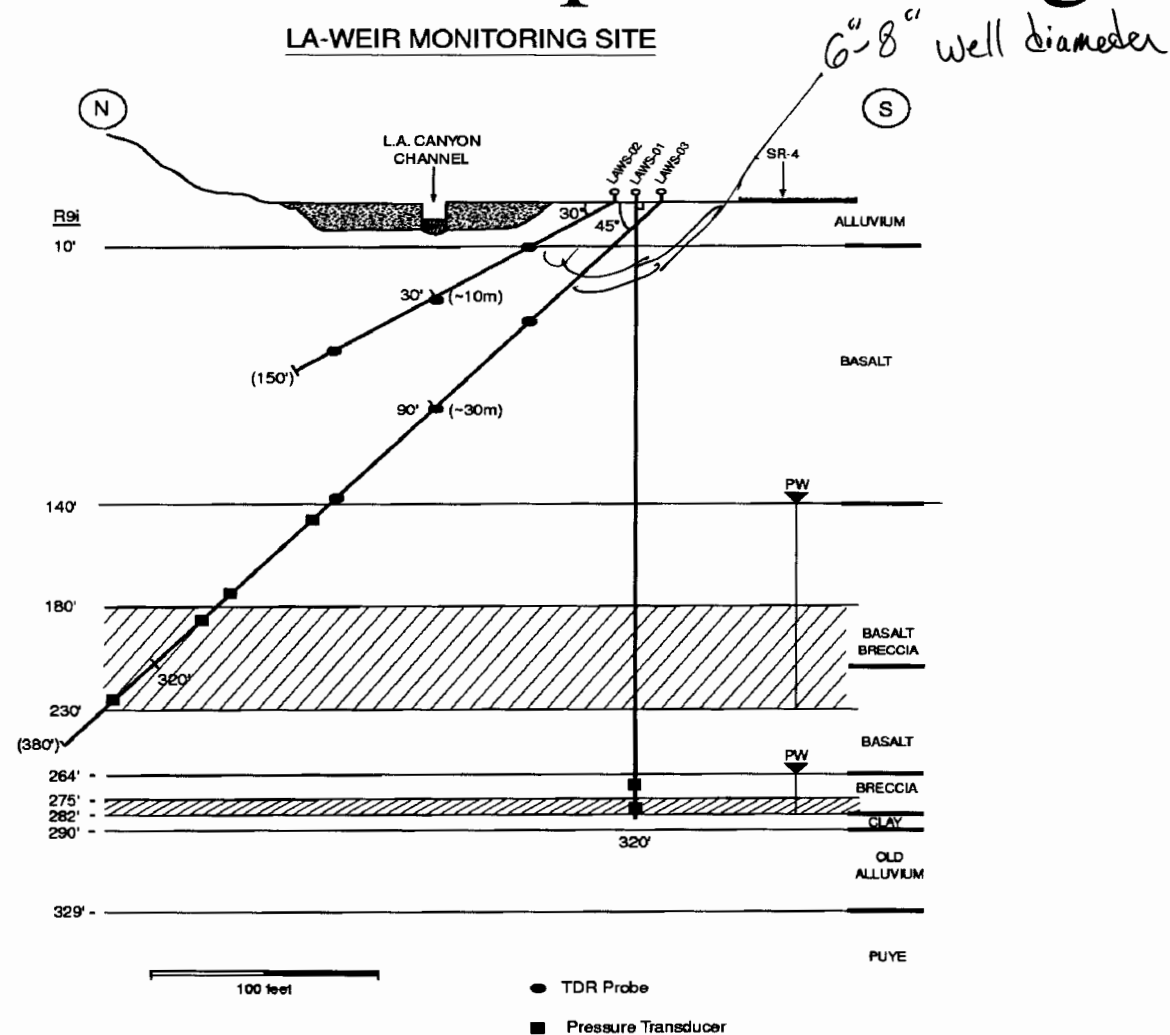
# LA-Weir Monitoring Objectives (continued)

- Verify and validate models of flow and transport through Cerros del Rio basalt
- Integrate findings with Regional well characterization program
- Assess surface contaminant redistribution and the impact on subsurface migration
- Provide recommendation on viability of low-head weir



# LA-Weir Conceptual Design

## LA-WEIR MONITORING SITE





# LA-Weir Monitoring: Construction Plan

(1) 09-04-00 to 09-29-00:

- Finalize Drilling and Construction Contracts
- SOW, FIP and SHASPs

(2) 10-04-00 to 10-18-00:

- Obtain Permits (Safety, Land etc..)
- Equipment procurements



# LA-Weir Monitoring: Construction Plan (Continued)

(3) 10-16-00 to 11-22-00:

- Construction of 3 Wells:
  - LAWS-01: cased 320 ft. vertical well
  - LAWS-02: open-hole 150 ft. 30° slant well
  - LAWS-03: open-hole 380 ft. 45° slant well
- Core sample collection, LAWS-01
- Geophysical and video well logs



# LA-Weir Monitoring: Construction Plan (Continued)

(3) 10-16-00 to 11-22-00 (cont'd):

- Construction of membranes and data-logging systems (FLUTe, Inc., and SEA<sup>mist</sup>)
- Interpretation of hydrologic system from cores, geophysics and drilling data
- Installation of surface monitoring stations



# LA-Weir Monitoring: Construction Plan (Continued)

(4) 11-27-00 to 12-18-00:

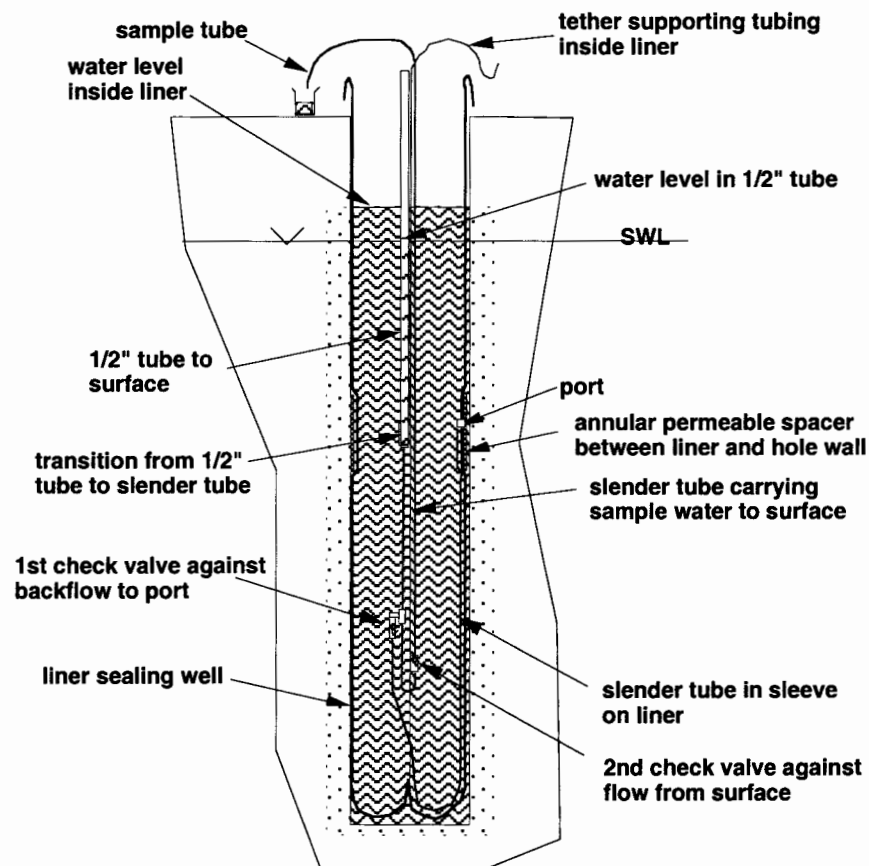
- Mapping of vadose zone
- Installation of LAWS-01 perched water sampling well
- Installation of LAWS-02, 03 vadose and perched water monitoring stations





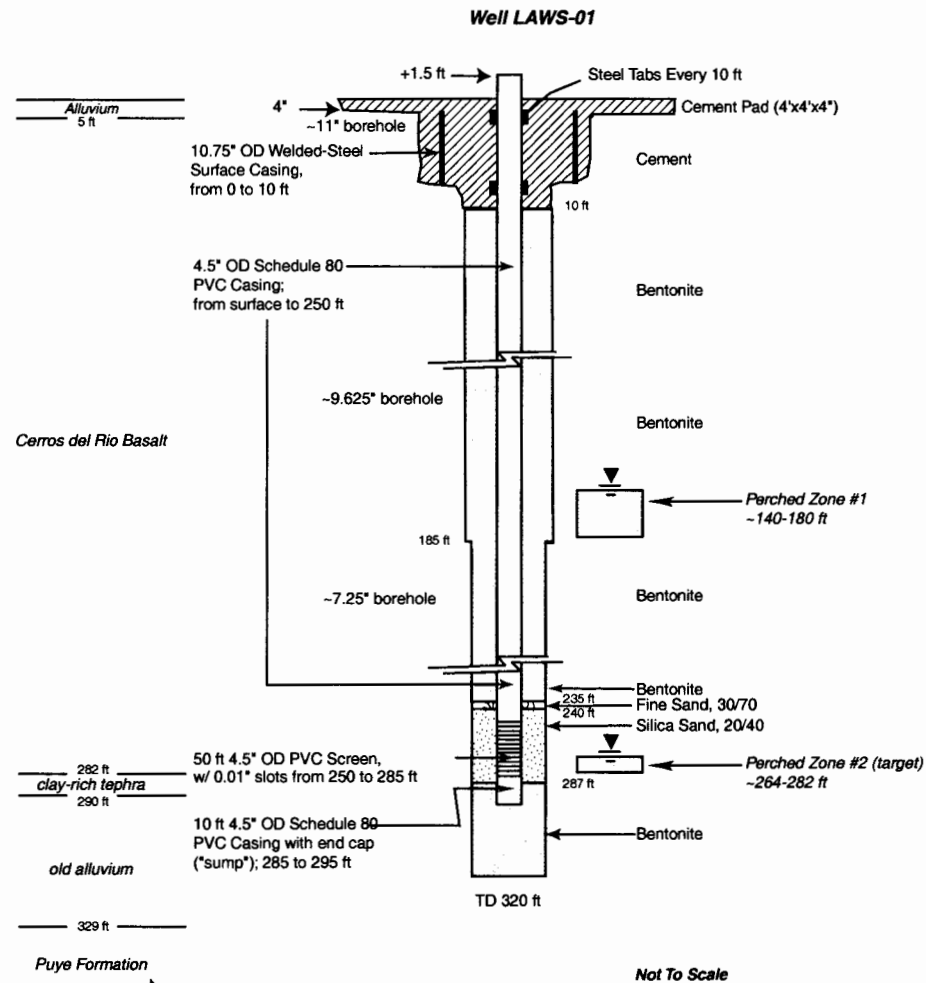
# Water Sampling System

(only one port system shown for clarity)

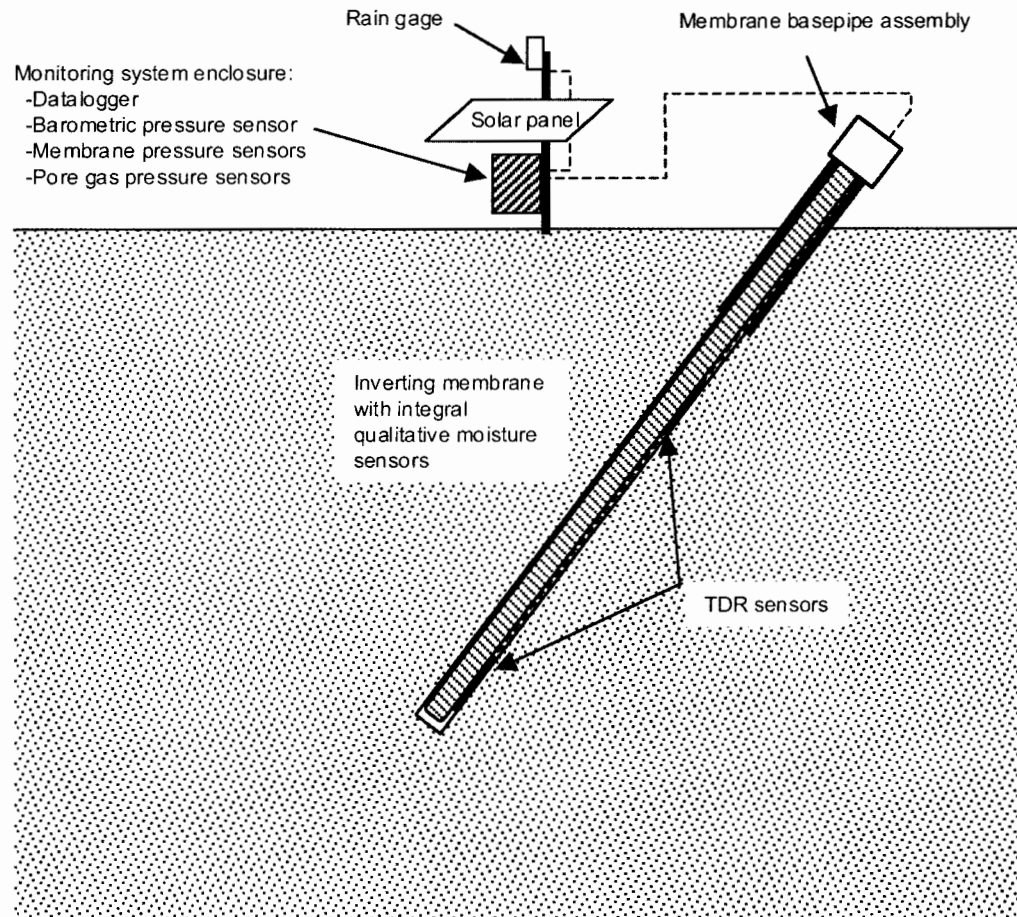


*FALUTE Inc.*

# LA-Weir Well Design: LAWS-01



# LA-Weir Slant Well Installation



LAWS-02: 150 ft., 30°  
LAWS-03: 380 ft., 45°