

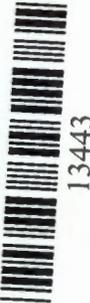
LIBRARY COPY

LOS ALAMOS CANYON LOW-HEAD WEIR MONITORING SITE

GILLES BUSSOD⁽¹⁾
CHARLIE NYLANDER⁽²⁾
BILL STONE⁽¹⁾

(1) EARTH AND ENVIRONMENTAL SCIENCES DIVISION
(2) ENVIRONMENTAL SAFETY AND HEALTH DIVISION

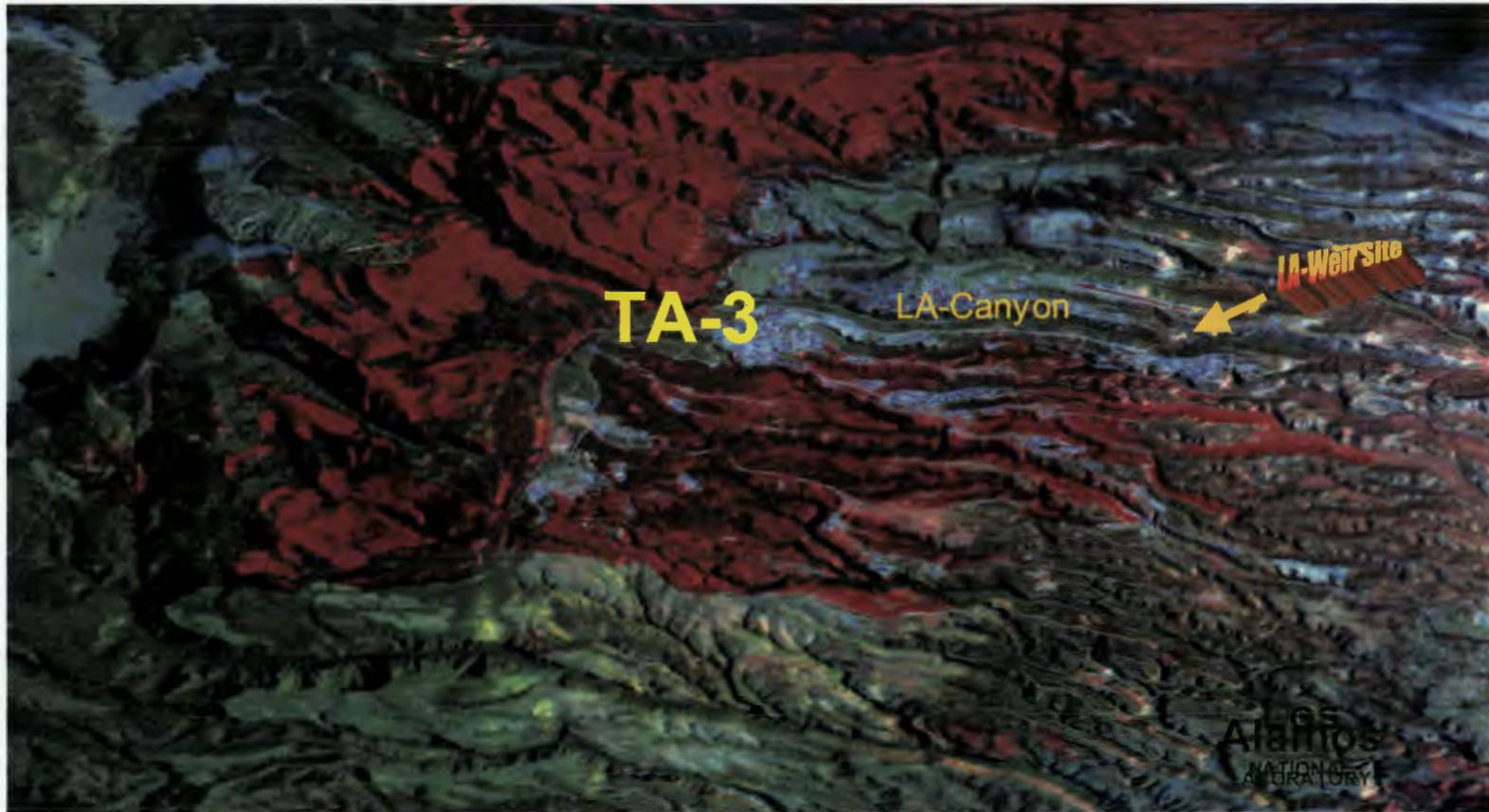
LOS ALAMOS NATIONAL LABORATORY



13443



The Cerro Grande Fire: Watershed Damage



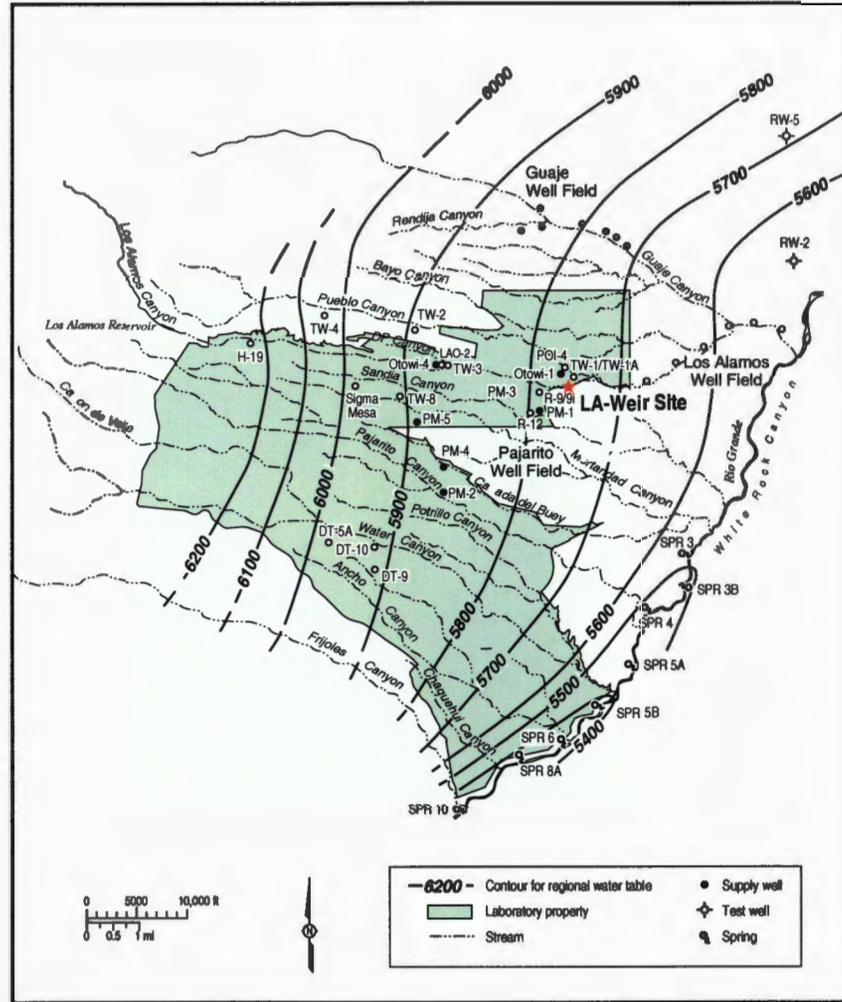
Construction of Los Alamos Canyon Weir June-July 2000



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

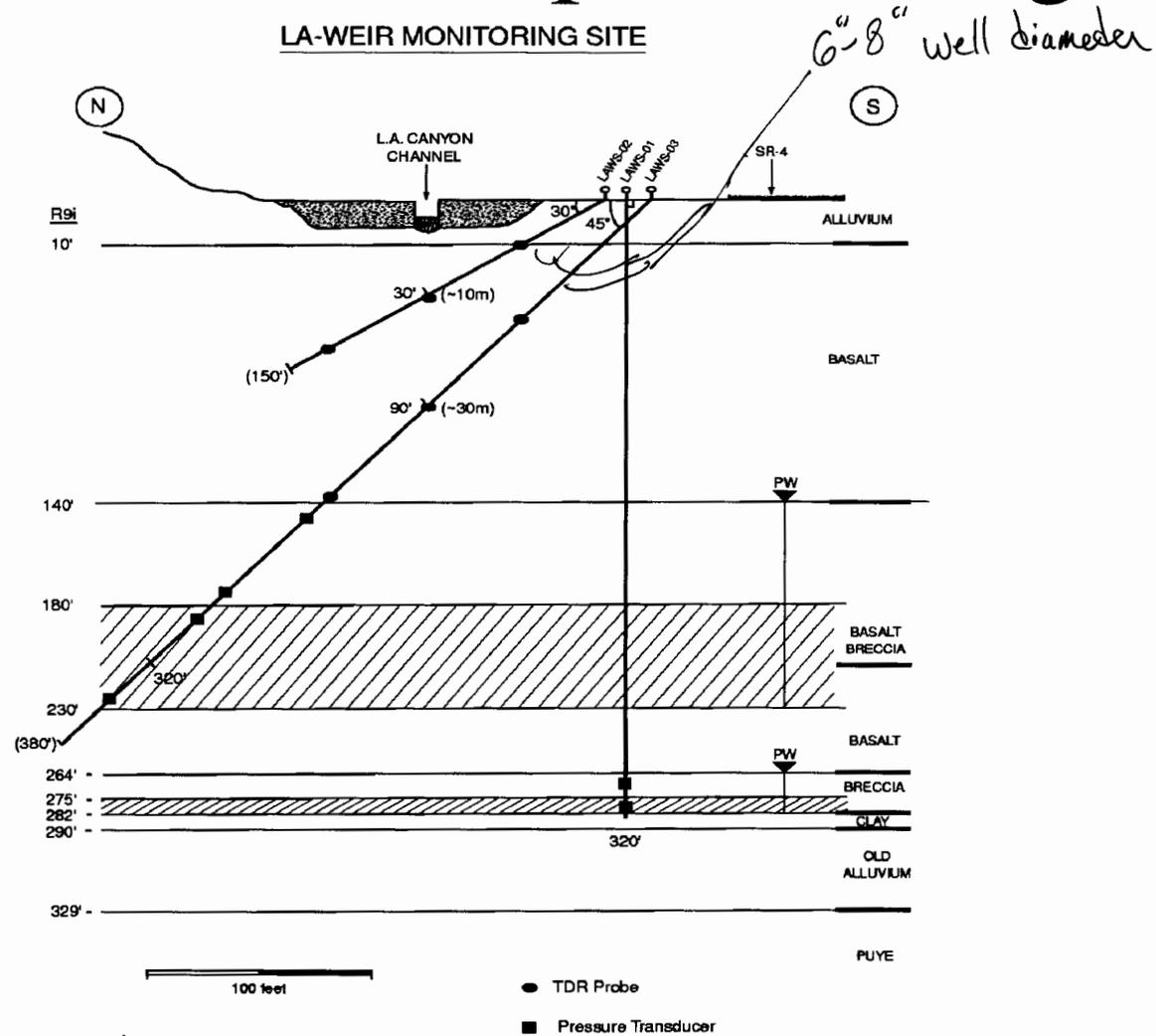
(continued)

- 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^{mist})
- Interpretation of hydrologic system from cores, geophysics and drilling data
- Installation of surface monitoring stations



LA-Weir Monitoring: Construction Plan (Continued)

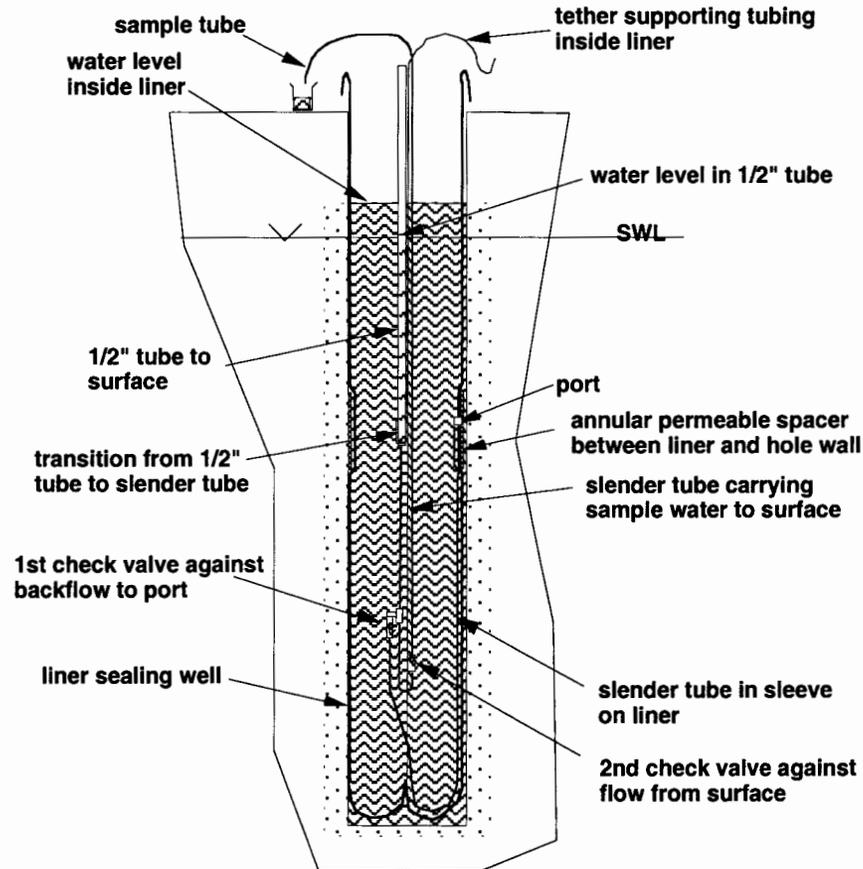
(4) 11-27-00 to 12-18-00:

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



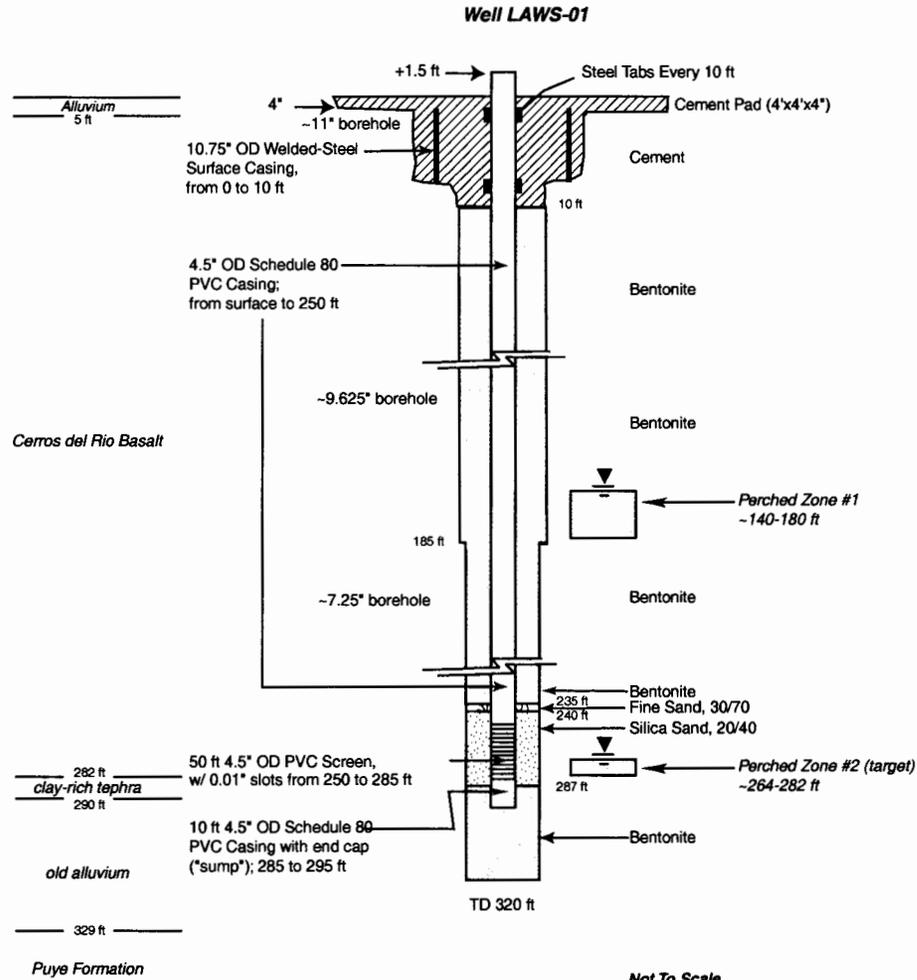
Water Sampling System

(only one port system shown for clarity)

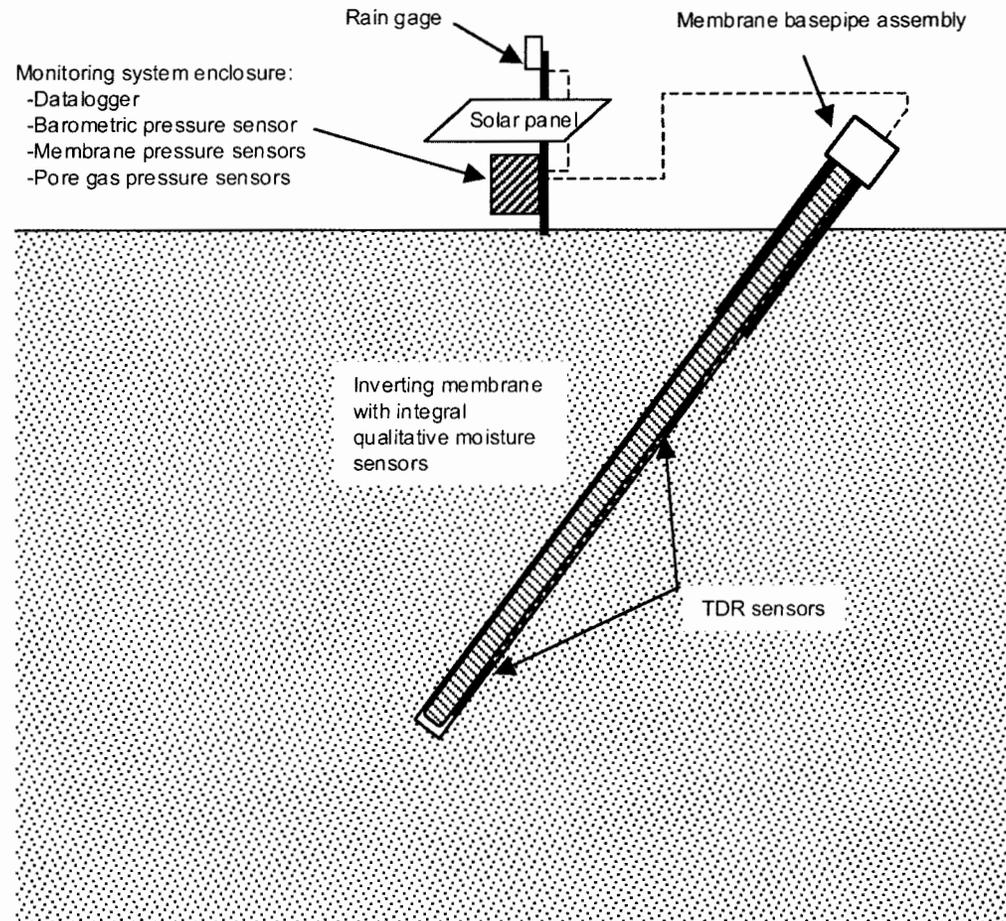


FLUTE Inc.

LA-Weir Well Design: LAWS-01



LA-Weir Slant Well Installation



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