



TA50
DEPARTMENT OF ENERGY
National Nuclear Security Administration
Los Alamos Site Office
Los Alamos, New Mexico 87544

JUL 06 2007



John Kieling
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Subject: Update to Figure A-5 in the "Los Alamos National Laboratory (LANL) Technical Area (TA) 50 Part B Permit Renewal Application, Revision 3.0", August 2002, EPA ID# NM890010515-1

Dear Mr. Kieling:

This letter submits a new version of Figure A-5 (LA-UR-07-4253) to replace one previously submitted in the above referenced Resource Conservation and Recovery Act (RCRA) Part B permit application. The need for a new figure was noted as part of the information review for the new TA-52 Transuranic Waste Facility. The old Figure A-5, *Regional Surface Faulting*, depicts the Guaje Mountain fault trending approximately through the new facility to be located at TA-52. The revised figure correctly locates the fault.

The figure included in the LANL TA-50 Part B Permit Renewal Application (LA-UR-02-4739) for the RCRA hazardous waste facility permit renewal was developed from information available at the time. This figure was generated using unpublished data gathered by Jamie N. Gardner, of the Environmental Geology and Spatial Analysis Group at LANL in 1985. The figure depicted a Los Alamos area fault model projecting the southern termini of the Rendija Canyon and Guaje Mountain faults into sensitive LANL sites, including the TA-55 area.

Since the development of the early model of the Parajito fault system, a great deal of high-precision geologic mapping has been completed on the southern extent of the Rendija Canyon and Guaje Mountain faults. Studies by Gardner et al. (1999, 2001), Lewis et al. (2002), Lavine et al. (2003), and Lewis et al. (in review) provide detailed geologic data, particularly with respect to structure (Figure A-5, attached), which therefore supersedes the early information presented in the original figure.

The new studies Gardner et al. (1999) showed that the Rendija Canyon fault, moving along-strike from north to south, begins to bend southwest away from the projected line for TA-52 and TA-55 at Pueblo Canyon, runs beneath the Los Alamos townsite, and continues beneath LANL's main technical area (TA-3) where a series of small en-echelon faults connect the Rendija Canyon fault with the master Pajarito fault. Along-strike from north to south, the last clear surficial expression of the Guaje Mountain fault is at Bayo Canyon in the northern part of the Los Alamos townsite (Gardner et al., 2003). The high-precision surveys and geologic mapping of Gardner et al. (1998, 1999, 2003) have also shown no vestige of the Guaje Mountain fault in the TA-55, TA-50, or TA-52 areas.



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This explanation as well as the enclosed updated figure should address your office's concerns. If you have any questions about this submittal please contact Gene Turner of my staff at (505) 667-5794 or Gian Bacigalupa, LANL, at (505) 667-1579.

Sincerely,



Daniel E. Glenn
Acting Manager

EO: 2GT-036

Enclosure

cc w/enclosure:

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Referenced documents: See page 3

Referenced Documents:

- Gardner, J.N., Lavine, A., Vaniman, D., and WoldeGabriel, G. 1998. High-precision geologic mapping to evaluate the potential for seismic surface rupture at TA-55, Los Alamos National Laboratory. Los Alamos National Laboratory report LA-13456-MS, 13 pp.
- Gardner, J.N., Lavine, A., WoldeGabriel, G., Krier, D., Vaniman, D., Caporuscio, F., Lewis, C.J., Reneau, P., Kluk, E., and Snow, M.J. 1999. Structural geology of the northwestern portion of Los Alamos National Laboratory, Rio Grande rift, New Mexico: Implications for seismic surface rupture potential from TA-3 to TA-55. Los Alamos National Laboratory report LA-13589-MS, 112 pp.
- Gardner, J.N., Reneau, S.L., Lewis, C.J., Lavine, A., Krier, D., WoldeGabriel, G., and Guthrie, G. 2001. Geology of the Pajarito fault zone in the vicinity of S-Site (TA-16), Los Alamos National Laboratory, Rio Grande rift, New Mexico. Los Alamos National Laboratory report LA-13831-MS, 86 pp.
- Gardner, J.N., Reneau, S.L., Lavine, A., Lewis, C.J., Katzman, D., McDonald, E.V., Wilson, J., Goodwin, L., Kelson, K.I., Lepper, K., and Wilson, C. 2003. Paleoseismic trenching in the Guaje Mountain fault zone, Pajarito fault system, Rio Grande rift, New Mexico. Los Alamos National Laboratory report LA-14087-MS, 68 pp.
- Lavine, A., Lewis, C.J., Katcher, D., and Wilson, J. 2003. Geology of the north-central to northeastern portion of Los Alamos National Laboratory, New Mexico. Los Alamos National Laboratory report LA-14043-MS, 44 pp.
- Lewis, C.J., Lavine, A., Reneau, S.L., Gardner, J.N., Channell, R., and Criswell W. 2002. Geology of the western part of Los Alamos National Laboratory (TA-3 to TA-16), Rio Grande rift, New Mexico. Los Alamos National Laboratory report LA-13960-MS, 98 pp.
- Lewis, C.J., Gardner, J.N., Schultz-Fellenz, E.S., Lavine, A., Olig, S., and Reneau, S.L. In review. Lateral displacement variation and fault interaction in the Pajarito fault system, Rio Grande rift, New Mexico; submitted to *Geosphere*.

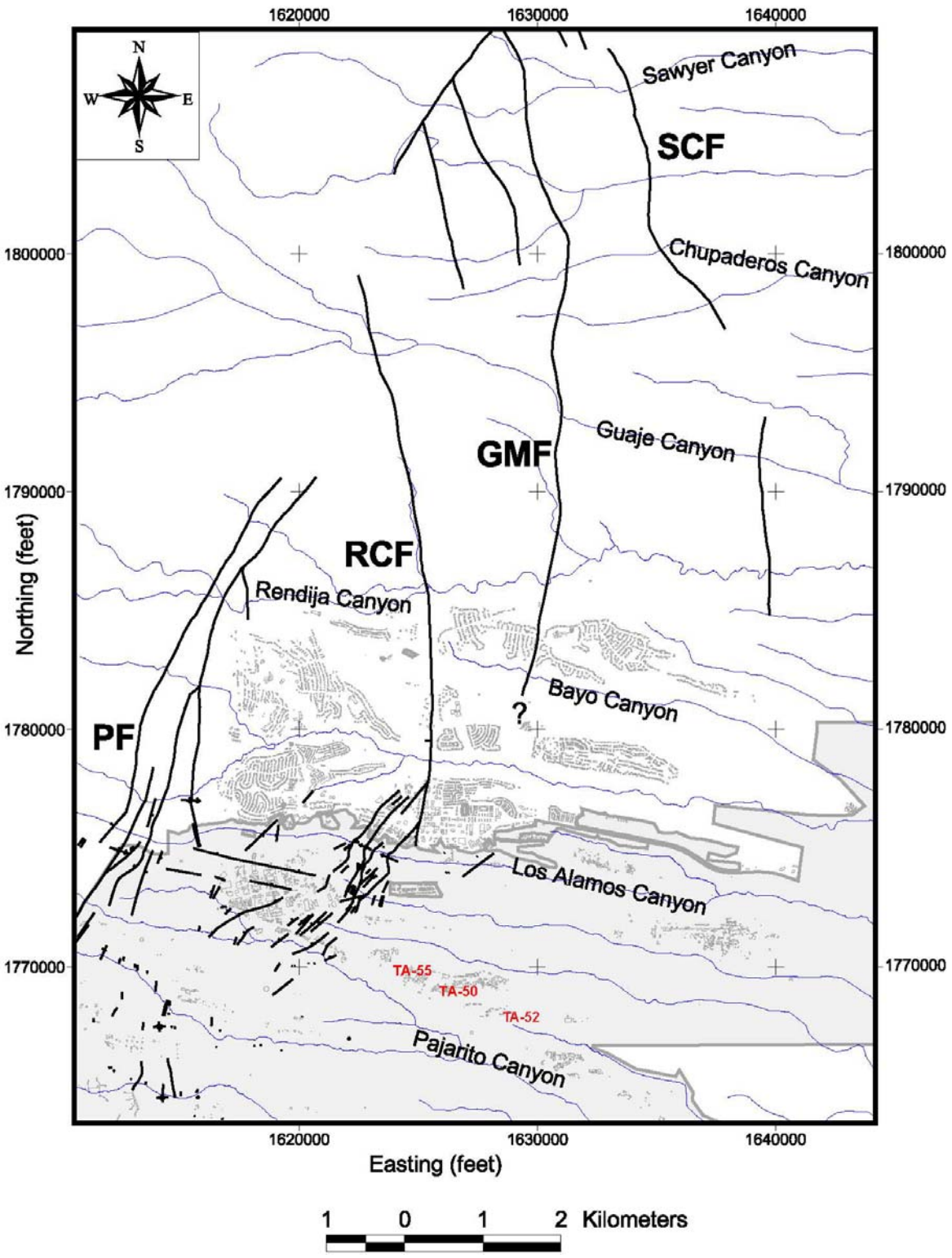
LA-UR-07-4253

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<i>Title:</i>	Update to Figure A-5 in the Los Alamos National Laboratory (LANL) Technical Area (TA) 50 Part B Permit Renewal Application
<i>Author(s):</i>	Water Quality and RCRA Group
	June 2007
<i>Intended for:</i>	New Mexico Environment Department- Hazardous Waste Bureau



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Fault map of structures associated with the Pajarito fault (PF) in the Los Alamos area, modified from Gardner et al. (2003). RCF = Rendija Canyon fault; GMF = Guaje Mountain fault; SCF = Sawyer Canyon fault. Coordinates are in the State Plane coordinate system. Gray shaded region indicates LANL. Approximate locations of TAs 50, 52, & 55 are labeled in red.

Figure A-5
Regional Surface Faulting

Document: Figure A-5 TA-50 Part B Update
Date: June 2007

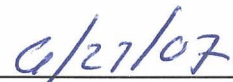
CERTIFICATION

Updated Figure A-5
Los Alamos National Laboratory
Technical Area 50 Part B Permit Renewal Application
June 2007

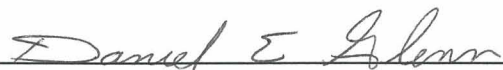
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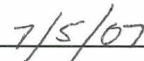
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