



TA 54

Solid Waste Regulatory Compliance
P.O. Box 1663, Mail Stop K490
Los Alamos, New Mexico 87545
(505) 667-0666/Fax (505) 667-5224

Date: September 2, 2004
Refer To: RRES- SWRC:04-064

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Edward Hansen
Solid Waste Bureau
New Mexico Environment Department
Harold Runnels Building
1190 St. Francis Drive
P.O. Box 26110
Santa Fe, New Mexico, 87502

**SUBJECT: Methane Monitoring revision to the Area J Solid Waste Landfill
Closure/ Post Closure Plan**

Dear Mr. Hansen,

In a June 29, 2004 letter, Connie Pasteris of the New Mexico Environment Department requested Los Alamos National Laboratory (LANL) to submit a work plan for continued soil methane monitoring at the closed Area J Solid Waste Landfill. LANL requested and was granted a stay in the deadline for submittal of a work plan until the issue on continued monitoring could be discussed. Representatives from the LANL Risk Reduction Environmental Stewardship and the Facilities and Waste Operations Division met with you and your staff on August 18, 2004 to discuss the soil methane monitoring requirements of the previously NMED-approved Area J Closure/ Post Closure Plan. At the conclusion of that meeting it was agreed that LANL would submit a minor revision to the Area J Closure/Post Closure Plan, which will provide for two additional annual methane-monitoring events for calendar years 2005 and 2006. It was further agreed that the monitoring would occur at four locations near the inside fence perimeter. Lastly, it was agreed that if the two additional annual sampling events reported methane results at negligible levels (at or near 0% methane), LANL would again request approval from NMED to delete the methane-monitoring requirement from the Area J Closure/ Post Closure Plan.

Accordingly, attached is a proposed minor revision to the approved Area J Closure/ Post Closure Plan, which provides for two additional annual methane sampling events, information on the sampling methods, and a map on the proposed sampling locations. If the proposal is acceptable to NMED please replace the Area J Closure/ Post Closure Plan title page and page 14 with the enclosed updated title page and pages 14 and 14a. If the proposal is not acceptable to NMED, then please contact Albert Dye of RRES-SWRC as soon as possible at 667-4715.



Thank you and your staff for the time and consideration given to this request.

Sincerely,



Albert Dye
Solid Waste Regulatory Compliance

AD/vc

Att: 1) Proposed Revision to the Approved Area J Closure/Post Closure Plan

Cy: Connie Pasteris, w/enc.
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IM-5, LANL, w/o enc., MS A150



**Los Alamos National Laboratory
Technical Area 54, Area J Solid Waste Facility
Closure Plan**

Revision to the Methane Monitoring Post-Closure Plan
This section replaces section III D in the Closure Plan dated August 2000.

September, 2004

III. Post-Closure Plan

D. Methane Monitoring

Methane monitoring is not a concern for Area J, due to the non-putrescent nature of the waste disposed there (See Section I.C. Waste Composition and Volume). The waste does not have sufficient organic content to break down into gaseous products when covered with tuff.

In order to demonstrate that methane monitoring should not be required during the post-closure period, LANL personnel performed gas monitoring within Area J Pits 1 through 6 in March 1999. Methane (CH₄) and carbon dioxide (CO₂) were monitored in ten locations using an AMS^R Manual Soil Gas Vapor Probe. Samples were taken in two locations each from Pits 1 through 4, and at the base of Pits 5 and 6. One sample at 3 feet (1 m) and one sample at 5 feet (1.5 m) were obtained for most locations.

A Landtec^R GEM-500 hand-held Infrared Gas Analyzer was connected to the soil gas vapor probe to measure CH₄ and CO₂ concentrations. Sample locations and data are given in Appendix C. Out of 17 samples taken, only 4 showed minor traces of CH₄. Pit 2, which was covered in 1982, had one reading of 0.20 %. Measurements in Pit 3 through cracks in the asphalt pad showed 0.10 % CH₄. Active Pit 4 had results of 0.10 to 0.20%. CO₂ concentrations were also low, ranging from 0.0% to 3.2%. The highest concentrations of CO₂ were measured in Pit 3, which is currently covered with an asphalt pad.

These measurements demonstrate that the waste disposed in Area J does not generate significant gaseous byproducts that require monitoring to protect human health and the environment. Samples were taken from active pits with little more than a foot of cover above the waste. Samples were also taken from Pits 1, 2, and 3 that have been covered for 33, 17, and 8 years, respectively, so the wastes would have had ample time to break down into gaseous byproducts, if that were to occur.

Methane samples will be taken using the same equipment and locations as the 1999 sampling event once after the cover is installed and once again a year after that sampling event.

Additional methane samples will be taken three and four years after completion of closure during the winter months (January or February timeframe). The locations of these samples will be along the fence-line, inside the fence. The samples will be taken at a depth of approximately 1-2 feet below ground surface. If a minimum of 1 foot depth can not be achieved, samples will be taken adjacent to the proposed locations in a suitable area to achieve desired depth. The proposed locations are shown in Figure 1, 2005 and 2006 Bio-gas Sampling Locations. These samples will be taken using the Landtec[®] GEM-500 hand-held Infrared Gas Analyzer. Permanent soil vapor nested wells will be installed for the 3rd and 4th year (2005 and 2006) sampling events. One probe will be implanted in each well. A bentonite grout seal will be installed in the borehole above each probe to prevent surface air from being drawn through the well into the vapor implant, which would result in inaccurate sampling results.

These results will be sent to the Solid Waste Bureau. If methane levels continue to be negligible, LANL will submit a request to discontinue methane monitoring.

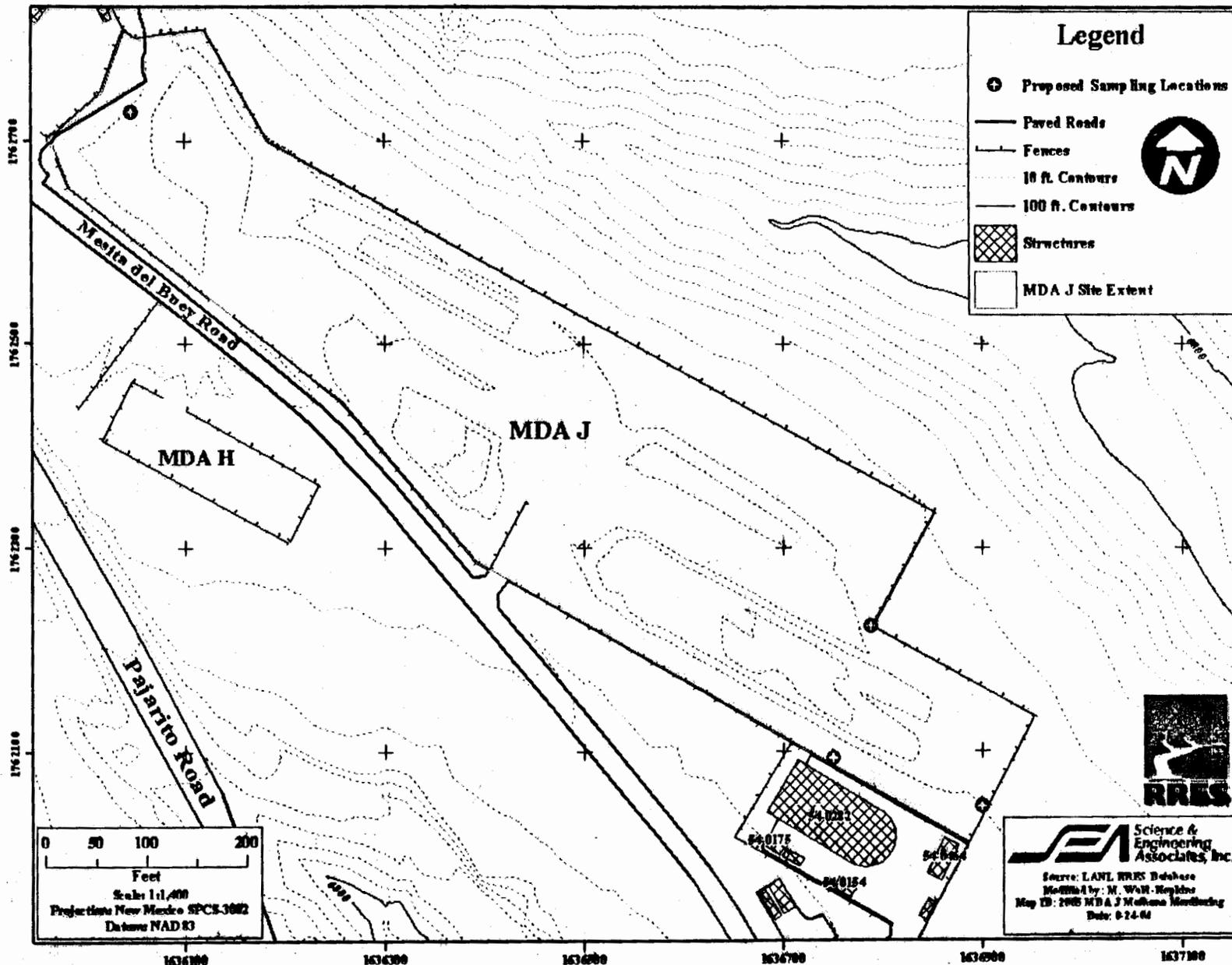


Figure 1: 2005 and 2006 Soil Methane Sampling Locations.