

See



# Lawrence Livermore National Laboratory

WM DOCKET CONTROL CENTER

WM Record File  
102.2

WM Project 11  
Docket No. \_\_\_\_\_

January 9, 1986

PDR  w/o rpt.  
LPDR  w/o rpt.

'86 JAN 14 P2:23

Distribution:  
Albrahim \_\_\_\_\_  
J. Linehan \_\_\_\_\_  
R. Stablein \_\_\_\_\_  
(Return to WM, 623-SS) \_\_\_\_\_

See

Enclosure located in NRC's Lib.

Enclosure is a published report.

log 1762  
UCRL-86803

Mr. A. K. Ibrahim  
Nuclear Regulatory Commission  
623 SS  
Washington, D.C. 20555

Dear Mr. Ibrahim,

Enclosed is the material you requested about the seismic reflection data gathered by LLNL in support of the LLNL Nuclear Test Containment Program. I apologize for the delay in getting this to you. We have gathered excellent quality reflection data in several different areas of the Nevada Test Site. From this data, we are able to successfully site large (8-10 ft) diameter nuclear test emplacement holes which, upon drilling, have been proved to be good sites. Over the past 7 years, we have steadily improved our techniques so that many of the original problems which are called out in the enclosed reprint are no longer problems.

We have been able to refine our data acquisition parameters to successfully gather high quality data at a very reasonable acquisition cost. For example, we are able to gather 48 fold CDP data on 82.5 ft group intervals at about \$8000 per mile. This figure is from a very short term contract. The cost per mile would be even smaller for a longer term contract.

The enclosed sections are Xerox reproductions of small scale film sections of some typical lines which we have shot (please excuse the poor quality reproductions). We have "tuned" our surveys for shallow structure (200-3000 ft depth) as this is the zone of interest for the Nuclear Test Containment Program. The geologic section consists of an alluvium overburden, a complete volcanic section, and a Paleozoic basement.

I would be personally interested in organizing and running a seismic reflection program for the NRC that would gather reflection data that would actually address the important questions surrounding the siting of a repository at Yucca Mountain. I continue to gather data for the Nuclear Test Containment Program at LLNL because I am able to address and provide real answers to the critical questions and problems that this LLNL program has. LLNL does not fund this effort because I merely have an interest in this area. Rather, funding has continued only because we provide real answers to real problems on a cost effective timely basis.

I personally believe that the work conducted at Yucca Mountain before had not be carefully planned or executed. The USGS personel involved did not know very much about seismic reflection work (I advised them for a day at the beginning but "bailed" out when it became clear that their

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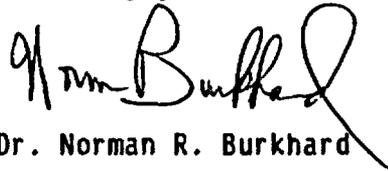
86100177

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expertise was not really adequate for the job and that they did not really want any advice from us at LLNL.). I would be interested in conducting a program at Yucca Mountain that would actually address the questions of importance for the repository siting. ]

If you have any further questions and/or are interested in having LLNL carry out a program, please call me at (415) 422-6483 or at FTS 532-6483. I appreciate your interest in our work in this area.

Sincerely yours,

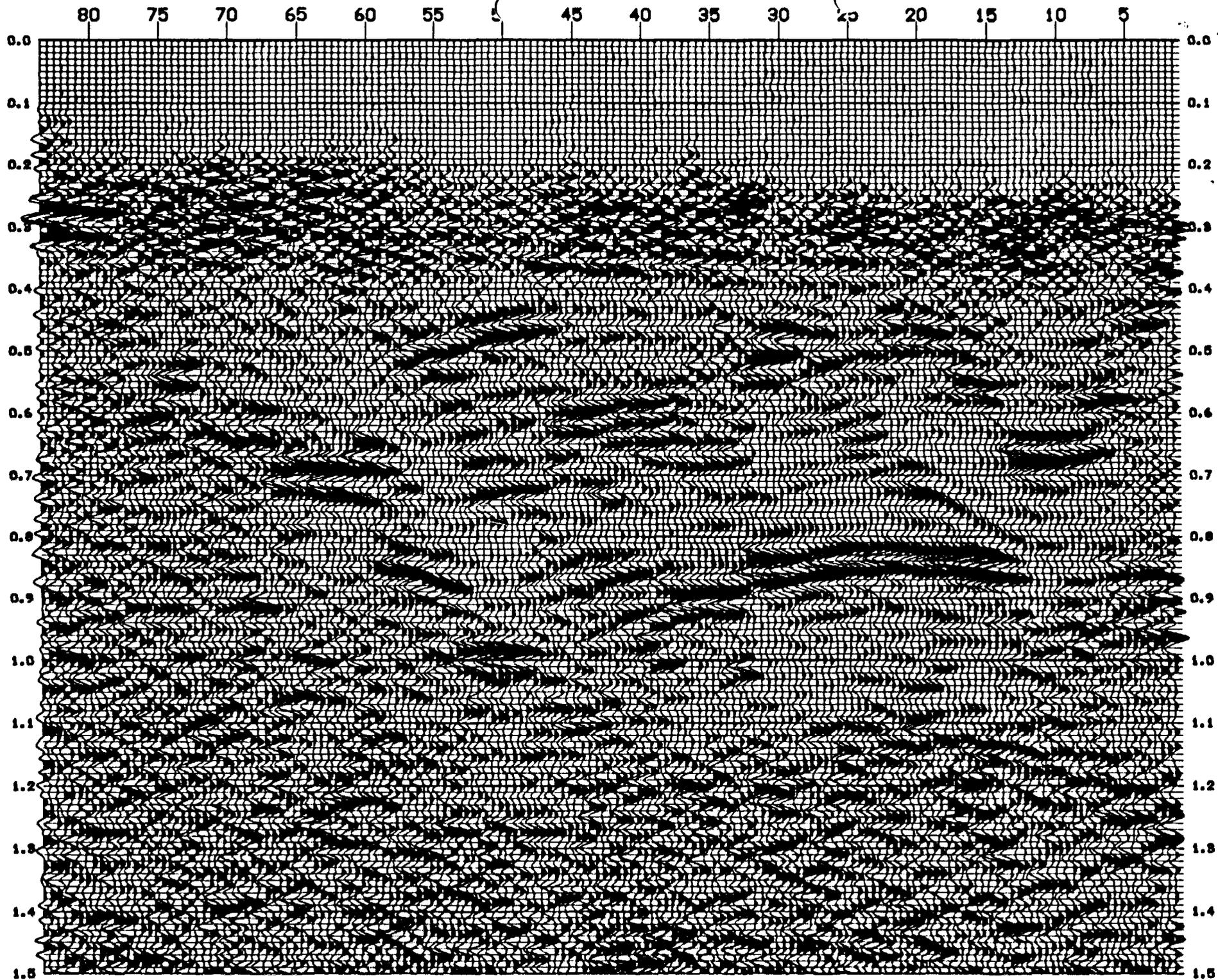
A handwritten signature in black ink, appearing to read "Norm Burkhard". The signature is written in a cursive style with a large, looping flourish at the end.

Dr. Norman R. Burkhard

Enclosure

# LLNL LINE 5 NYE CO NEVADA

DEPTH FOOT

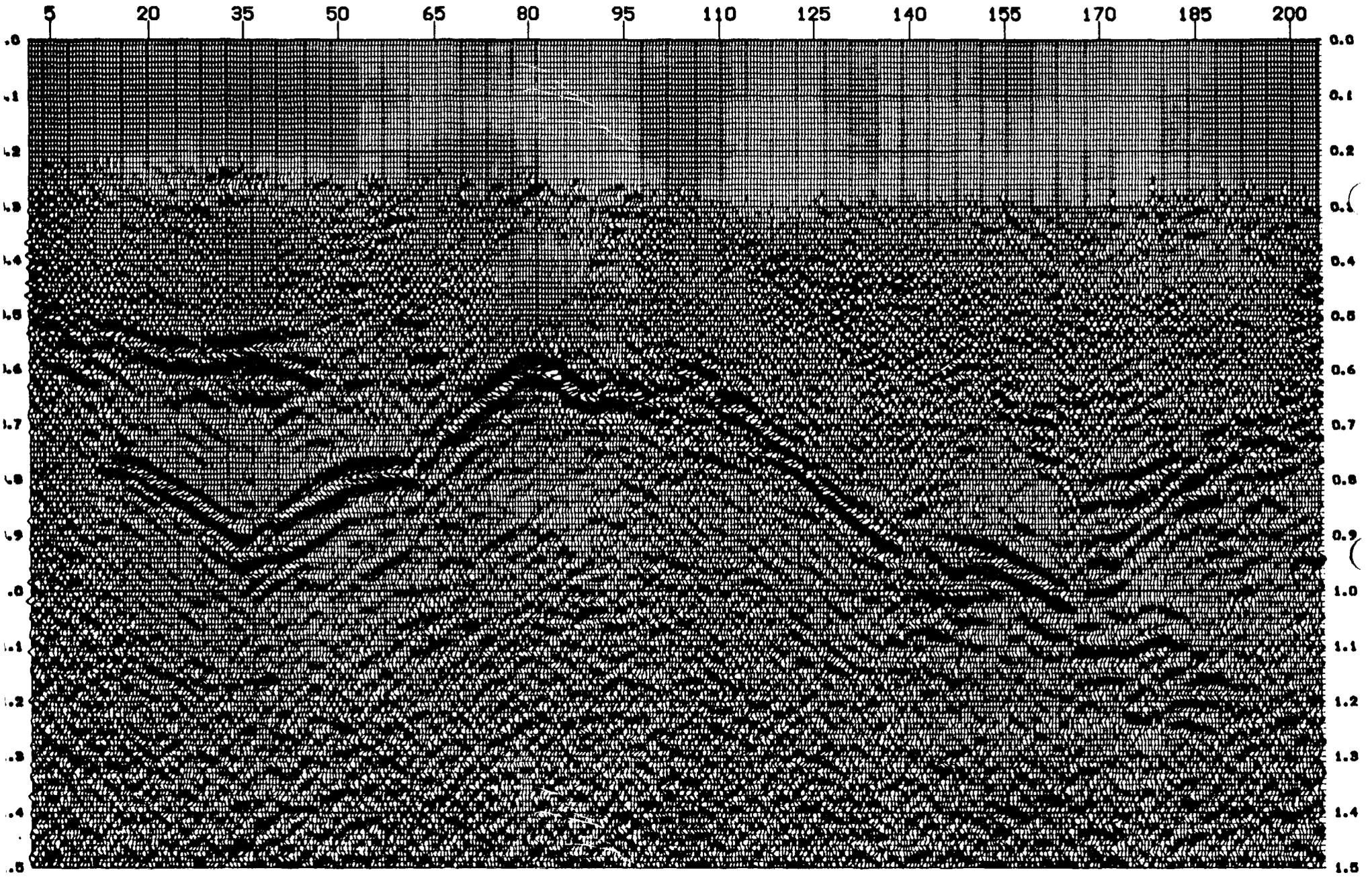


LLNL LINE I

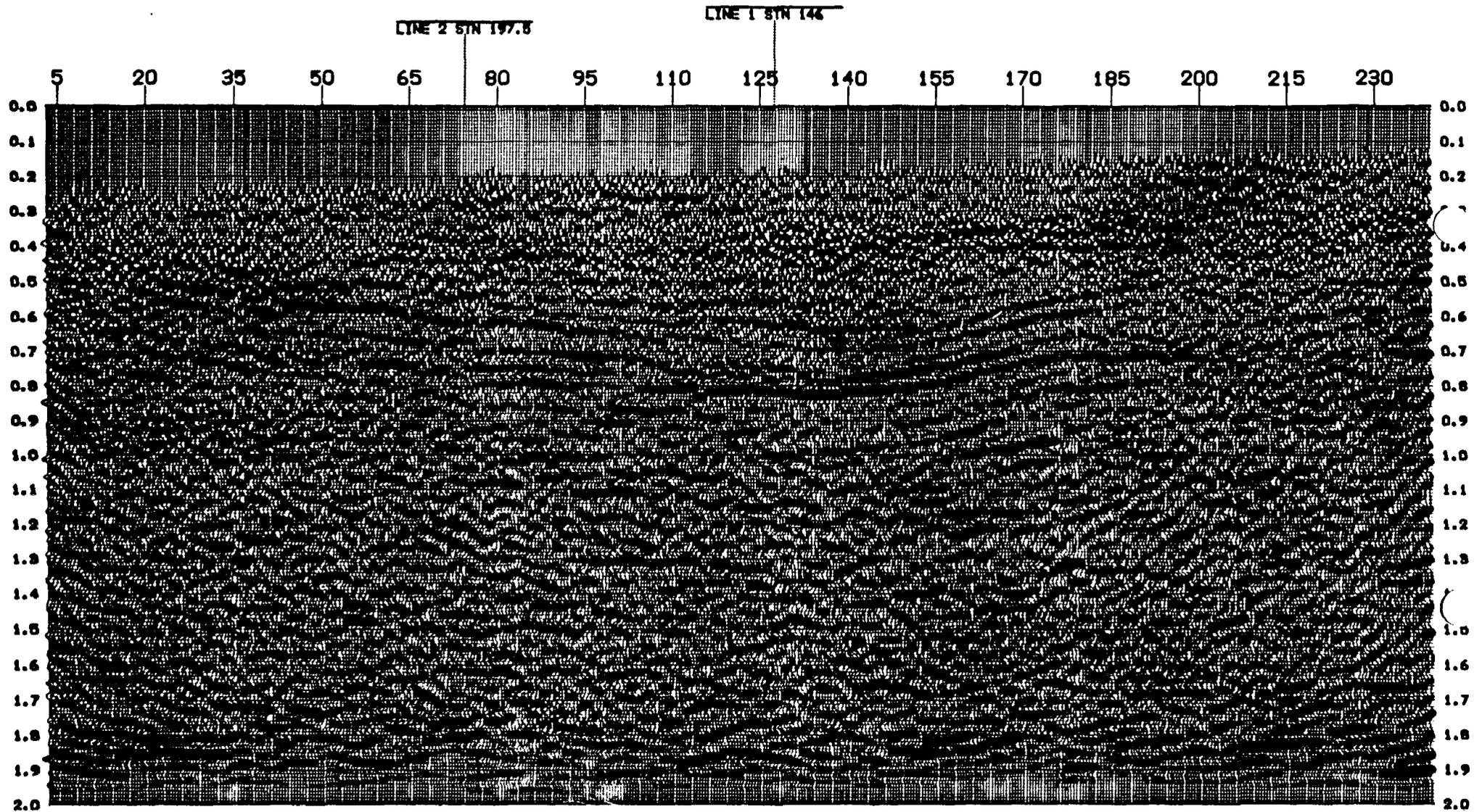
NYE CO

NEVADA

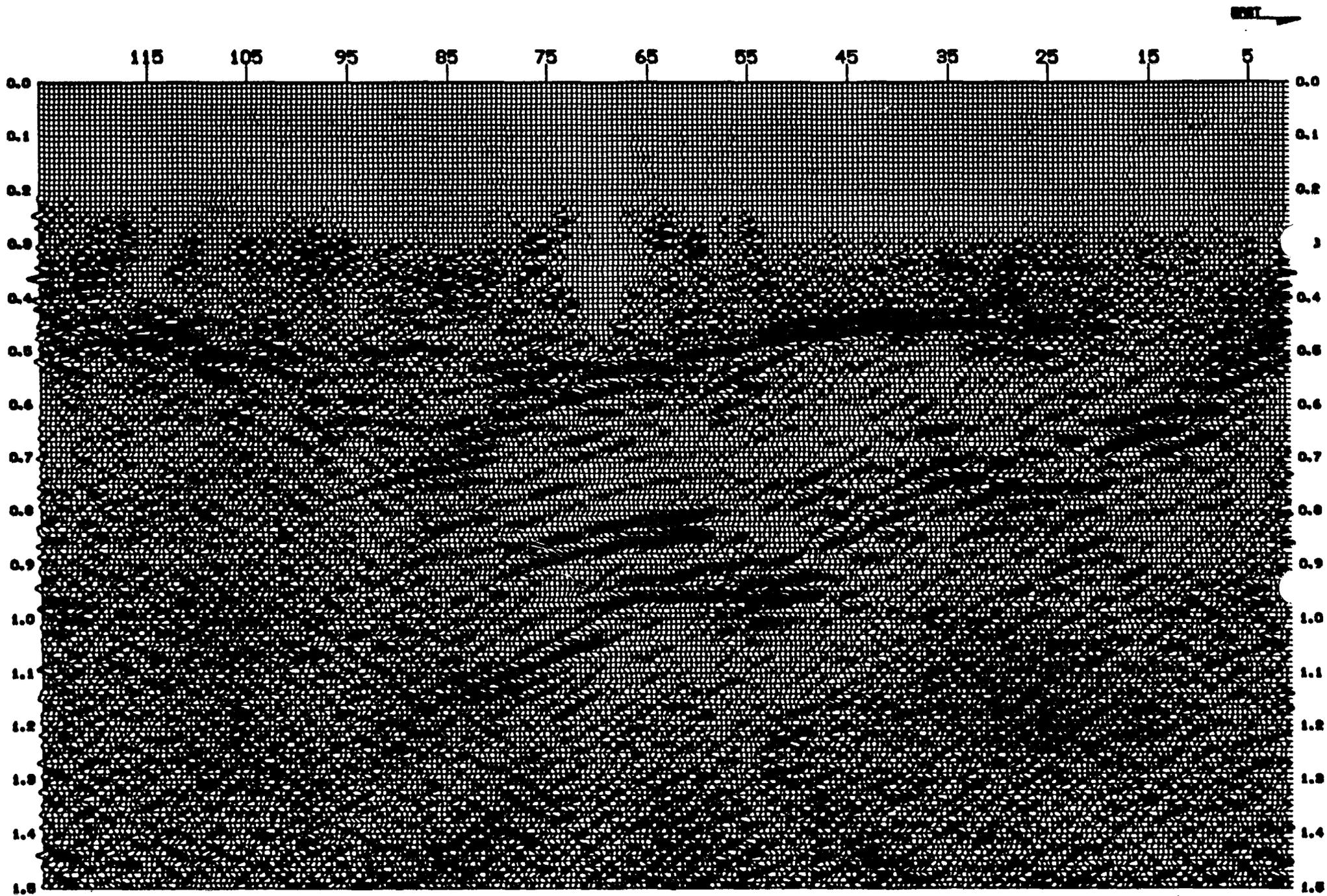
WEST



# MIGRATION - LINE 3



LLNL LINE 6 NYE CO. NEVADA



WAVE MIGRATION- LINE 4

