

Site: Parker Landfill
Break: 3.6
Other: _____

Parker Landfill Project
Lyndonville, Vermont
Project No. 4905024



SDMS DocID 461457

REMEDIAL INVESTIGATION REPORT

VOLUME 4 OF 10
APPENDIX A

Prepared on Behalf of:

THE PARKER LANDFILL TASK GROUP
LYNDONVILLE, VERMONT

Prepared By:

ENVIRONMENTAL SCIENCE &
ENGINEERING, INC. (ESE)

Submitted To:

U.S. EPA REGION 1
BOSTON, MASSACHUSETTS

DRAFT: NOVEMBER 12, 1992
FINAL: JANUARY 18, 1994
REVISED: APRIL 2, 1994



APPENDIX A
WESTON PHASE 1A GEOPHYSICAL REPORT

GEOPHYSICAL INVESTIGATION

**Parker Landfill
Lyndonville, Vermont**

Prepared for

ENVIRONMENTAL SCIENCE & ENGINEERING, INC.

November 1991

Weston Geophysical
CORPORATION





January 16, 1992

Mr. Keith DuBois
ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
One Overlook Drive, Unit 16
Amherst, NH 03031

Subject: Addendum to Geophysical Survey Report
Parker Landfill Site
Lyndonville, Vermont

Dear Mr. DuBois:

Weston Geophysical is pleased to submit this response to your questions regarding certain details of geophysical surveys conducted at the Parker Landfill during 1991. In particular, we understand that you require clarification regarding the geophone spacings used during the seismic refraction survey, and the relationship between some magnetic anomalies detected in the SWDA area and visible surface metal objects.

GEPHONE SPACINGS

Seismic refraction spread lengths depend upon the survey objectives, with longer spreads required to map deeper refracting layers. In general, depth of investigation can be assumed to be approximately one quarter to one third of the seismic spread length. Once a geophone spread length is determined, then the number of geophone channels available on the recording seismograph dictates the geophone spacings. Those spacings can be constant, or may vary within an individual geophone spread. Variable spacings can be used to an advantage; closer geophone spacings in the vicinity of a seismic shot point provide enhanced resolution of shallow refractors (e.g. shallow water table or overburden strata).

Seismic Lines on the Landfill

During the Parker Landfill survey, seismic refraction Lines A, B, and C were oriented across the landfill with the objective of estimating landfill thickness. These traverses utilized seismic spread lengths greater than 1,000 feet due to anticipated deep bedrock and thick landfill materials. Geophone intervals of 20 and 50 feet were initially anticipated, and it was assumed that end-to-end or overlapping geophone spreads would be required to complete the long traverses. Drilled shotholes were also anticipated, to permit use of several pounds of dynamite as a seismic energy source.

Site conditions during the survey necessitated modifications to the planned field program. Drill rig access (for shothole emplacement) was limited by topography and wet, slippery dirt roads, especially at the north, east, and south sides of the landfill. Consequently, some anticipated shotholes could not be accessed by the drill rig.



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Each drilled shothole was loaded with two to eight pounds of dynamite to enable generation of acceptable seismograms through the landfill materials. Vibration measurements conducted throughout the survey indicated that the vibration levels generated by these charges would be irritating to the nearby residents, particularly at the mobile home park, thus it was decided to conduct each traverse as a single geophone spread to minimize the number of shot holes and thus minimize disturbing the site abutters. A letter discussing the vibration monitoring results was provided to ESE on April 26, 1991.

Line A-A' was completed as a 24-channel spread, totaling 1,730 feet in length. Geophone spacings were 30, 50, and 100 feet. The shortest geophone spacings were deliberately placed at off-landfill positions to enable accurate measurement of overburden velocities. Longer geophone spacings on the landfill were sufficient for the given survey objective, namely estimation of landfill thickness by delay time analysis. A supplemental 24-channel geophone spread of 250-foot length (constant 10-foot geophone spacings) was located within the landfill portion of Line A-A' to estimate landfill compressional seismic velocities needed for the delay time analysis of Lines A, B, and C.

Line B-B' consisted of 20, 40, 70, and 100-foot geophone spacings totaling 1,030 feet. The shortest geophone spacings were once again located at each end of the traverse for better resolution of overburden or bedrock refractors.

Line C-C' was 1,110 feet long, and utilized 10, 20, 40, 50, and 100-foot geophone spacings. The shortest geophone spacings were located at the ends and middle (near a center shot) of the traverse.

Seismic Lines at Off-landfill Sites

Seismic refraction Lines D, F, G, and H generally utilized seismic spread lengths of 400 feet, with geophone spacings of 10 and 20 feet. These geophone arrays were sufficient for mapping bedrock at the interpreted depth ranges of 30 to 115 feet. Shallow bedrock conditions requiring shorter geophone spreads were not anticipated or observed.

Due to deep bedrock encountered at Line G between Stations 7+00 to 10+00 and Line F Stations -4+00 to 7+00, additional shot points were placed beyond the endpoints of the geophone spreads. Adequate resolution of the bedrock surface was obtained using these offset shots to increase the effective seismic spread length and thereby increase the depth of investigation. In anticipation of possibly continued deep bedrock at Line G, an 800-foot geophone spread with geophone spacings of 20 and 40 feet was employed between Stations 4+00 to -4+00.

Line E was located on thick, unsaturated overburden and required a seismic spread length greater than 600 feet with geophone spacings of 10 to 30 feet. The endpoints of Line E were constrained by ground surface topography and dense woods.



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MAGNETIC ANOMALIES AT THE SWDA

Magnetic survey field notes confirmed the positions of three dumpsters that may be partly responsible for a magnetic anomaly at the northern portion of the SWDA. The dumpsters were located at the following stations: 1) Line 14, four feet north of Station Q, 2) Line 15, four feet west of Station R, and 3) Line 16 in the vicinity of Station R.

The magnetic anomaly detected in the vicinity of Line 7, Station M (within IWS-1) may be partly attributed to above-ground metallic objects such as tires and metal scraps. However, these visible metal objects do not account for the anomaly amplitude (approximately 4,000 gammas), thus buried metal objects are still interpreted at this location.

Please contact either of the undersigned at (508) 366-9191 if there are any further questions or comments regarding our report.

Sincerely,

WESTON GEOPHYSICAL CORPORATION

Fil J. Filipkowski
Geophysicist

Mark Blackey
Manager, Geophysical Services

FJF/MB:fej - 18292-04



Weston Geophysical CORPORATION

November 19, 1991

Mr. Keith DuBois
ENVIRONMENTAL SCIENCE & ENGINEERING, INC.
One Overlook Drive, Unit 16
Amherst, NH 03031

Subject: Geophysical Survey Results
Parker Landfill
Lyndonville, Vermont

Dear Mr. DuBois:

In accordance with your authorization, Weston Geophysical has conducted magnetic, ground penetrating radar (GPR) and seismic refraction surveys at the Parker Landfill Site to assist Environmental Science & Engineering's site characterization efforts. Preliminary results from this survey were submitted previously. This submittal is a formal presentation of our investigative methods and results, and includes correlation of the geophysical interpretations with preliminary boring and test pit results provided by ESE.

We will be pleased to provide you with any additional information that you may require, and appreciate the opportunity to provide Environmental Science & Engineering, Inc. with geophysical services.

Sincerely

WESTON GEOPHYSICAL CORPORATION

Doria L. Kutrubes (KS)

Doria L. Kutrubes
Geophysicist

M. Blackey
Mark E. Blackey
Manager, Geophysical Services

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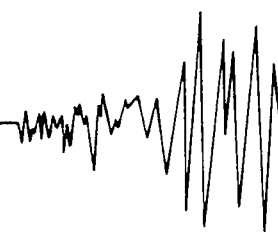


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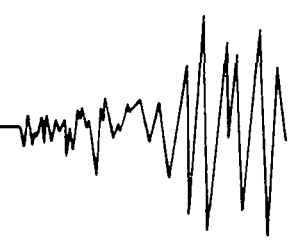
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Section 1

SECTION 1

EXECUTIVE SUMMARY

Geophysical investigations conducted by Weston Geophysical at the Parker Landfill Site were designed to characterize:

- bedrock depths and overburden stratigraphy in the vicinity of the Parker Landfill, and thickness of the landfill;
- the lateral and (where possible) vertical extent of backfilling at disposal areas IWS1, IWS2, IWS3, and the DDA;
- buried objects and materials within the disposal areas.

Maximum thickness of the Parker Landfill was interpreted to be 60 feet based on seismic refraction results. Fractured bedrock was indicated, by seismic velocities of 10,000 to 12,000 ft/sec, at Line H between Stations 0+00 and 11+00. Bedrock velocities along the remainder of the seismic refraction traverses were typically greater than 14,000 ft/sec, indicative of generally sound, competent bedrock.

Saturated thickness ranged from zero to 150 feet. The greatest saturated thickness, and deepest bedrock, was observed to the west and southwest of the Parker Landfill at Line A Station 0+00, Line C Station 0+00, and Line E Station 0+00.

Ferrous metallic objects were detected throughout most of the SWDA and DDA, and in portions of IWS1, IWS2, and IWS3. Buried drums and possible backfilled lagoons were interpreted from GPR and magnetic data; some of these interpretations were confirmed by ESE's test pits, particularly at IWS3 (per telecons with ESE).

INTRODUCTION AND PURPOSE

A geophysical investigation was conducted for Environmental Science & Engineering, Inc. (ESE) from April 8 through April 26, 1991 on the Parker Landfill Site in Lyndonville, Vermont (Figure 1). Seismic refraction, ground penetrating radar, and magnetic surveys were conducted to assist ESE's site characterization efforts.

A total of nearly 13,000 feet of seismic refraction profiles were acquired along eight traverses. Specific objectives of the seismic refraction survey, as defined in the ESE Scope of Work, consisted of the following:

- to provide depth and thickness of subsurface geologic layers (bedrock, unconsolidated materials, water table);
- to determine integrity of bedrock and general locations of fracture zones;
- to help characterize the landfill thickness.

Magnetometry and ground penetrating radar (GPR) were utilized in disposal areas IWS1, IWS2, IWS3, and the demolition debris area (DDA). A magnetic survey was also conducted in the solid waste disposal area (SWDA). The objectives of the GPR and magnetic investigations were to:

- determine the vertical and horizontal extent of backfilling;
- help characterize subsurface materials within the disposal areas;
- delineate zones in which buried drums and other ferrous metallic objects may be present;
- identify buried materials which could impede intrusive exploration by borings or test pits.

METHODS OF INVESTIGATION

Survey Control

The general area of investigation is shown on Figure 1. Specific lines of seismic refraction coverage were staked by Weston Geophysical personnel and are shown on Figure 2. Magnetic and GPR data acquired in disposal areas IWS1, IWS2, IWS3, SWDA and the DDA were referenced to a site grid provided by ESE.

Seismic Refraction Profiling

Seismic refraction data were acquired along the traverses shown on Figure 2 using a digital 24-channel seismograph (ABEM Terraloc) with 10 to 100-foot geophone spacings. Typically, geophone spreads were 400 feet in length. Lines A, B and C were up to 1,800 feet in length, and utilized variable geophone spacings of 20 to 100 feet to accommodate irregular ground surface topography and the extended spread lengths. Seismic energy was generated by small explosive charges placed in shallow (3 to 4 feet) holes driven with a bar and sledge hammer, except for selected end shotpoints on Lines A, B and C which were emplaced by a drill rig. The drilled shotholes were approximately 20 feet deep. Each shot location was screened with a LEL meter prior to installation of an explosive charge.

Seismic data were recorded on hardcopy and magnetic diskette to provide permanent, duplicate copies of each seismogram. Data analysis was accomplished using the crossover distance method described in Appendix A, augmented by delay time analysis on Lines A, B, and C.

Seismic refraction data are presented as profiles showing depths to refracting interfaces such as groundwater and bedrock. Ground surface elevations shown on the seismic profiles were derived from a plan map and surveyed elevations provided by ESE, and field notes from Weston Geophysical's personnel.

Magnetometry

Magnetic field measurements were collected using a digital total-field magnetometer (Geometrics model G-856). Over 1,300 magnetic measurements were obtained in the IWS1, IWS2, IWS3, and DDA areas. Diurnal variations were measured at a minimum of 60 minute intervals. Magnetic data were acquired at 10-foot gridded intervals in areas IWS-1, IWS-2, IWS-3, and the DDA, and 50-foot gridded intervals in the SWDA.

A magnetometer measures the total magnetic field of the earth. Ferrous metallic objects, such as drums, generate high frequency and amplitude perturbations to the earth's total magnetic field. These perturbations are measurable by the instrumentation used during this survey. Appendix B includes an expanded discussion of the magnetometry method.

Ground Penetrating Radar

The GPR survey method was used to determine the locations and approximate size and depth of buried metallic objects. A digital ground penetrating radar system (GSSI model SIR-10) with filtering and color amplitude plotting capabilities was used to acquire the radar data. A 500 MHz antenna was used throughout most of the GPR survey; GPR data was acquired at selected portions of the SWDA and DDA using a 300 MHz antenna to provide a greater investigative depth with some sacrifice in resolution.

Microwave energy, transmitted into the ground, is reflected back to the surface from the interface of materials with differing electrical properties (dielectric constant and conductivity). Typically, reflections occur from metallic objects and from lithologic changes. Internal soil structures, such as slump features caused by excavation and subsequent backfilling, may also be detected. Reflected GPR energy is detected by the radar antenna and recorded on digital magnetic tape. Metallic objects, such as a buried tank, produce a characteristically strong parabolic signal on the radar record. Appendix C includes an example of a GPR anomaly associated with a large buried tank from another site, as well as an expanded discussion on GPR.

1000



Section 2

SECTION 2

RESULTS

Seismic Refraction

Results of the seismic refraction survey are presented as seismic profiles on Figures 3 and 4. The profiles show seismic velocities and layer thicknesses calculated using the cross-over distance technique outlined in Appendix A. Based on available geologic information provided by ESE, the seismic velocities shown on Figures 3 and 4 are anticipated to correlate with materials listed in the table below:

Velocity (Ft/sec)	Material Correlation
800-1,900	Unconsolidated and unsaturated overburden, possibly including sand, gravel, silt, cobbles, and fill materials. Seismic velocities of landfill material were approximately 1,200 ft/sec. Velocities at the lowest end of this range may represent very loose, fine-grained overburden or possibly organic materials.
3,000 - 4,600	Silty or clayey overburden materials as described above.
4,600-6,000	Water-saturated overburden (especially 4,600 to 5,000 ± ft/sec) or moderately dense glacial till (5,000 ± to 6,000 ft/sec)
6000 +	Probably dense glacial till.
10,000-18,000	Bedrock, probably exhibiting weathering or fracturing at the lower end of this velocity range.

Landfill Coverage

Seismic refraction Lines A, B, and C were positioned to traverse the existing Parker Landfill, as shown on Figure 2. Each of these lines consisted of a single 24-channel spread, with geophone spacings of 20 to 100 feet. A short section of Line A (Stations 11+30 to

13+80) was re-shot with 10-foot geophone spacings to measure average landfill seismic velocities. Shotholes drilled to depths of approximately 20 feet were located at Line A Stations 0+00 and 16+50, Line B Station 0+00 and Line C Station 0+00. The remaining shotholes were placed with a steel bar and sledge hammer, and were two to four feet deep.

Lines A through C (Figure 3) were designed to enable estimation of landfill thickness without emplacement of a boring directly through the fill material. This was accomplished by using a long geophone spread, and measuring delays in seismic arrival time from a refracting interface (water table or bedrock surface). This "delay time" analysis was augmented by correlating the nearest borings with seismically-inferred depths to groundwater and bedrock.

Bedrock depths along Line A are based solely on the boring logs provided by ESE, because the limited number of geophones which could be placed on natural ground were insufficient for detection of the relatively deep bedrock. The water table depth shown near Line A Station 0+00 was determined independently by boring B-107 and seismic refraction.

Interpreted landfill thickness along Line A is 50 to 60 feet between Stations 6+00 and 13+50. The landfill materials gradually thin to the south of Station 6+00, and pinch out near Station 1+20. The northern extent of the landfill is interpreted to be near Station 14+30, based on a combination of visual observation and the seismic refraction results. The landfill probably thins rapidly between Stations 13+70 and 14+30. Low-velocity (1,200 ft/sec) overburden measured between Stations 14+30 and 16+30 may represent clean fill used to level the mobile home park.

The Line B seismic profile shows a maximum landfill thickness of approximately 55 feet between Stations 5+30 and 7+00. The landfill thins abruptly to the west of Station 5+30, and gradually to the east of Station 7+00. The bedrock surface shown on the Line B profile is based on borings B-112, B-114, and a minimum bedrock depth (computed from seismic data) near Station 0+00. Geophone spread length between Lily Pond Road and the visible landfill was insufficient to enable an accurate bedrock depth computation near Line B Station 0+00, and actual bedrock depth may be much greater than is shown.

The seismically-inferred bedrock depth of 235 feet near Line C Station 0+00 is in good agreement with boring B-118. The lowest measured bedrock elevation along Line C is approximately 550 feet near Station 0+00; landfill thickness is 50 to 60 feet between

Stations 7+30 and 8+80. The landfill thins abruptly to the west of Station 6+50, and gradually pinches out east of Station 8+80.

Off-Landfill Coverage

Refraction traverses D through H (Figures 3 and 4) were designed to measure depths to groundwater, bedrock, and any identifiable overburden stratigraphy. Geophone spread lengths for this off-landfill coverage were 680 feet (geophone intervals of 20 and 40 feet) along Line E and 400 feet (geophone intervals of 10 and 20 feet) along Lines D, F, G, and H.

Line D (Figure 3) was located along a powerline easement south and east of the Parker Landfill. Saturated thickness along this traverse is interpreted to range from 20 to 85 feet. Bedrock depth varies between 30 and 100 feet, and bedrock velocities of 13,000 to 18,000 ft/sec indicate that bedrock is relatively unweathered. Bedrock velocities are less certain to the north of Line D Station 21+50, where the line crossed very irregular topography and landfill materials. Elevations of the bedrock surface along Line D range between 645 feet and 710 feet, with the lowest bedrock elevations in the vicinity of Stations 12+00 and 19+50.

Line E (Figure 4) was located on a hill south of the Parker Landfill. A thick section of unsaturated overburden (100 to 130 feet) overlies the water table at this area. Saturated thickness is interpreted to be 85 to 150 feet, and bedrock depths are 220 to 250 feet. The lowest interpreted bedrock elevation along Line E was approximately 540 feet near Station 0+00.

Line F (Figure 4) was located approximately 2,000 feet south of the Parker Landfill. Two to twenty feet of unsaturated overburden overlies the interpreted water table along Line F. Interpreted saturated thickness along this traverse is 55 to 115 feet, with the greatest saturated thickness near Station -1+00. Bedrock velocities of 14,000 to 15,000 ft/sec indicate intact bedrock with little weathering or fracturing. Bedrock elevations ranged from 580 to 640 feet; the deepest bedrock was observed near Station -1+00.

Line G (Figure 4) was located 2,000 to 3,000 feet south of the Parker Landfill along Red Village Road (Figure 2). Ten to 25 feet of unsaturated overburden is interpreted above the water table along Line G. Maximum interpreted saturated thickness is approximately 100 feet near Station 9+00; the water-saturated overburden layer thins significantly to the

north, and may pinch out near Station 14+50. Measured bedrock velocities along Line G are relatively high, 15,200 to 16,000 ft/sec, indicative of sound bedrock with little weathering or fracturing. The Line G seismic profile shows a prominent bedrock trough between Stations 4+50 and 10+50; this trough probably represents the position of a preglacial river channel with a minimum observed bedrock elevation of 570 feet.

Line H (Figure 4) was located approximately 1,500 feet south of the Parker Landfill (Figure 2). Unsaturated overburden thickness along Line H is ten to 25 feet, and saturated thickness is 25 to 75 feet. Bedrock velocities along Line H span a broad range from 10,000 to 14,000 ft/sec. Velocities of 10,000 to 12,000 ft/sec measured between Stations 0+00 and 11+00 may represent significant weathering or fracturing at bedrock. The lowest interpreted bedrock elevation of 615 feet is coincident with the lowest bedrock seismic velocities (10,000 ft/sec).

Magnetometry and Ground Penetrating Radar

SWDA Area

Magnetic data contoured on Figure 5 indicate that ferrous metal objects are present throughout the SWDA up to the survey limits, with the exception of the southern-most portion. Metallic objects appear to have a shallower depth of burial and/or are more concentrated in the west and north-central portions of the site as evidenced by high amplitude and frequency magnetic anomaly patterns. Metallic objects are buried deeper or are less massive in the central portion of the site, based on the relatively smooth low-amplitude magnetic contours.

Magnetic anomalies indicative of large masses of buried metal are not present south of Line WW (8350N). However, some localized metal may be present in the vicinity of Lines UU+00 through UU+20 (8240N-8270N), Stations 8 through 9 (9850E-9900E) within area IWS-2. The approximate fill boundary is shown on Figure 5.

Suggested test pit locations for confirmation of the geophysical interpretations are provided on Figure 5.

IWS1

Magnetic Survey

Magnetic data obtained in "background" areas of the Parker Landfill site (i.e., areas interpreted to be relatively free of ferrous metal) ranged from 54,600 to 54,800 gammas. Magnetic values measured in the IWS1 area, south of Line L, were typically more than 58,000 gammas. Contoured magnetic data are shown on Figure 6. These consistently high values are indicative of large concentrations of ferrous metal objects. The zone in which the steepest magnetic gradient was observed (i.e. where the contour lines are the most closely spaced) is interpreted to correspond to the maximum extent of buried metal fill. The greatest concentration of buried metallic objects, interpreted from magnetic contour line density, is interpreted to be in the south and west portion of the IWS1 area.

Ground Penetrating Radar Survey

The GPR system was calibrated at a culvert (located 3 feet below grade to the north of IWS1) where "background" GPR soil velocities were anticipated. Figure 6 is a GPR record showing the culvert and approximate depth scale. Note that metallic objects such as a culvert typically appear as parabolic reflectors or "point targets" in cross section.

Interpreted GPR results, summarized on Figure 7, indicate that numerous objects are buried below grade. The region of disturbed soil (evidenced by the lack of continuous soil horizons and the presence of strong "point targets") corresponds well with the approximate fill boundary defined by magnetic results. GPR data show that the greatest concentration of buried objects is to the south and southwest portion of IWS1 (Figure 6).

The majority of these "point targets" are interpreted to be metallic, because of their high amplitude reflections, and were detected at depths of approximately 5 to 7 feet. Some targets were observed as deep as 11 feet below grade. The objects appear variable in size and irregularly shaped (possibly crushed drums or other scraps of metal), as indicated by the lack of distinct parabolic GPR reflectors. In some instances, the approximate size and

shape of objects could not be defined because of overlapping reflections from multiple targets within the same area.

GPR anomalies indicative of conductive soils and/or groundwater, evidenced by the severe attenuation of radar signals, were observed in three localized areas. These areas, shown on Figure 7, occur in the vicinity of interpreted drums or in areas where concentrations of metal objects were detected. Figure 8 is a GPR record of Line 7 + 10 showing the extent of disturbed or fill material and areas of severe attenuation.

A continuous reflector located at an approximate 5 foot depth (possibly a perched water table or a stratigraphic horizon) was detected north of Line K, in the vicinity of Stations 6 + 40 through 8 + 40. Although some "point targets" were detected within this area, the presence of this continuous reflector may indicate that only the upper few feet of material has been disturbed.

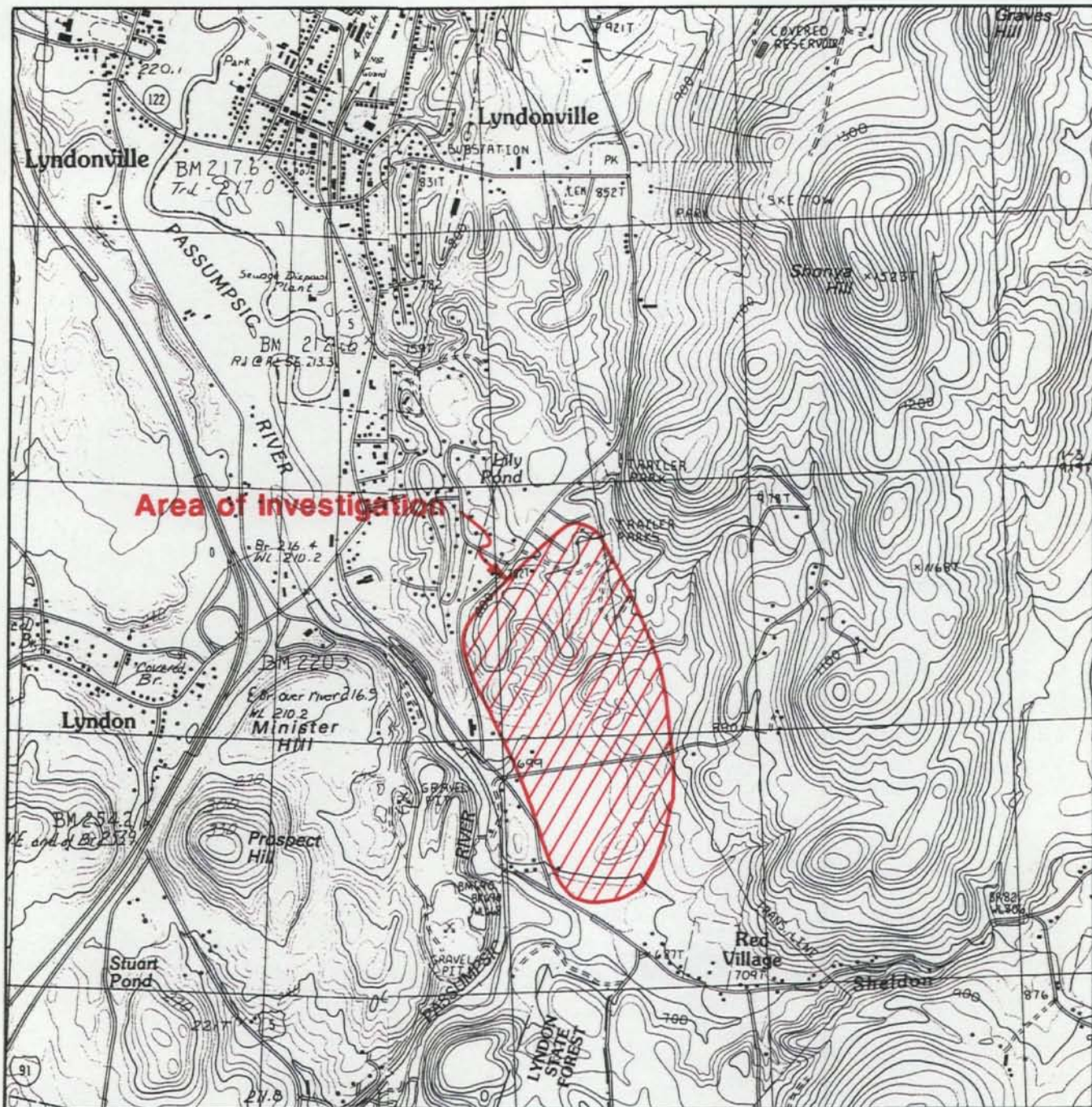
IWS2

Magnetic Survey

IWS2 magnetic data, shown on Figure 9, indicate that the majority of buried ferrous metallic objects are located south of Line TT + 30. Anomalies are located in two zones, from Stations 8 + 00 through 9 + 00 and Stations 9 + 20 through 10 + 30. Ferrous metal objects are not interpreted to the north of Line TT + 30.

Ground Penetrating Radar Survey

GPR results (Figure 9) show that the interpreted zone of disturbed material is roughly coincident with the observed magnetic anomalies. The majority of buried objects detected within the IWS2 area are south of Line UU. Disturbed zones are often coincident with areas of severe GPR signal attenuation, indicating possible groundwater or soil contamination. Figure 10 is a GPR record showing an example of this zone of severe attenuation as well as a possible drum near Station 9 + 00. Other targets were detected north of Line UU, however, these "point target" reflectors may be attributed to non-ferrous metallic objects.



Basemap: U.S.G.S. 7.5 Minute Series (Topographic)
 Lyndonville and Burke Mountain, VT Quadrangles.
 Provisional Editions
 Contour Interval: 6 Meters

prepared by <i>MB</i>
checked by V.J.M.
reviewed by <i>[Signature]</i>

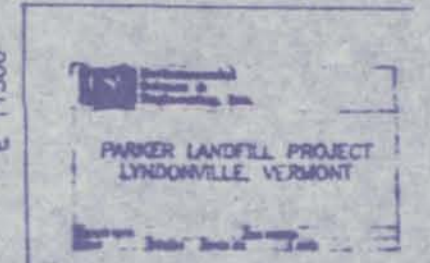
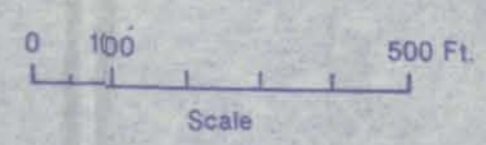
GEOPHYSICAL INVESTIGATION
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Area of Investigation	
Weston Geophysical	Fig. 1

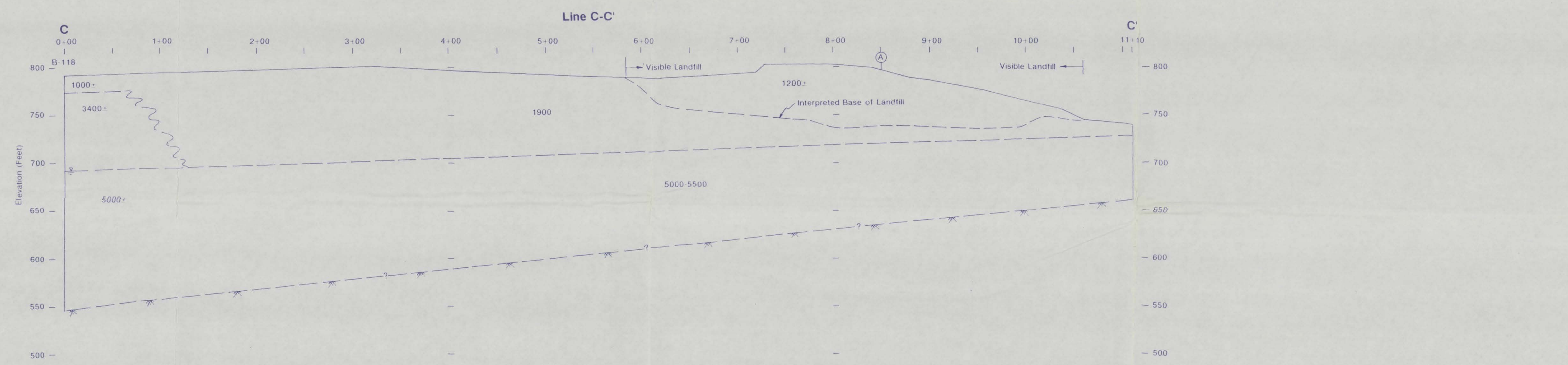
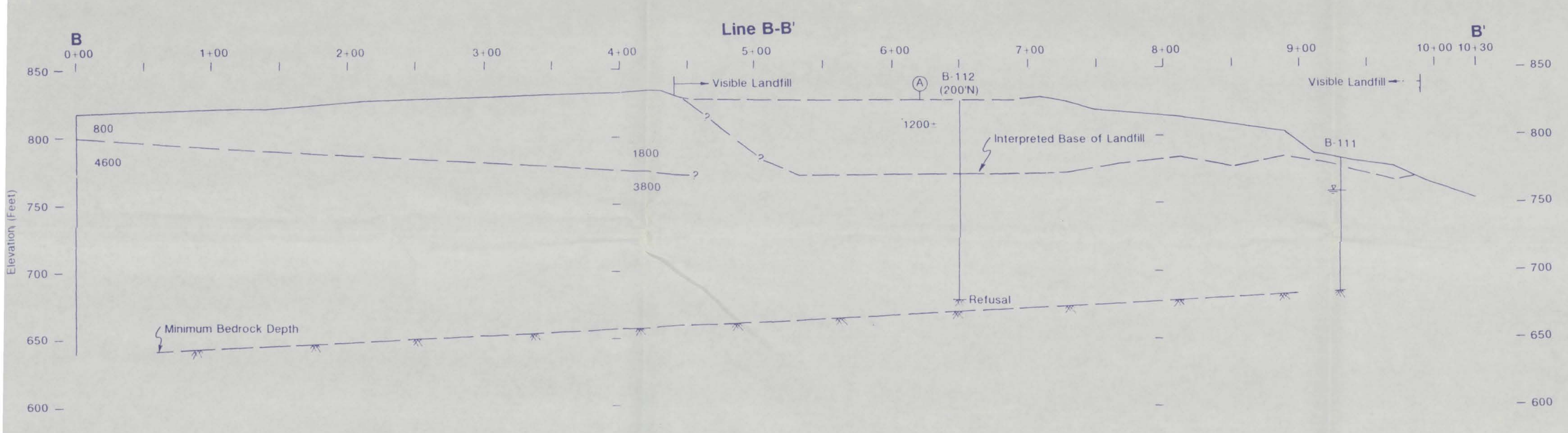
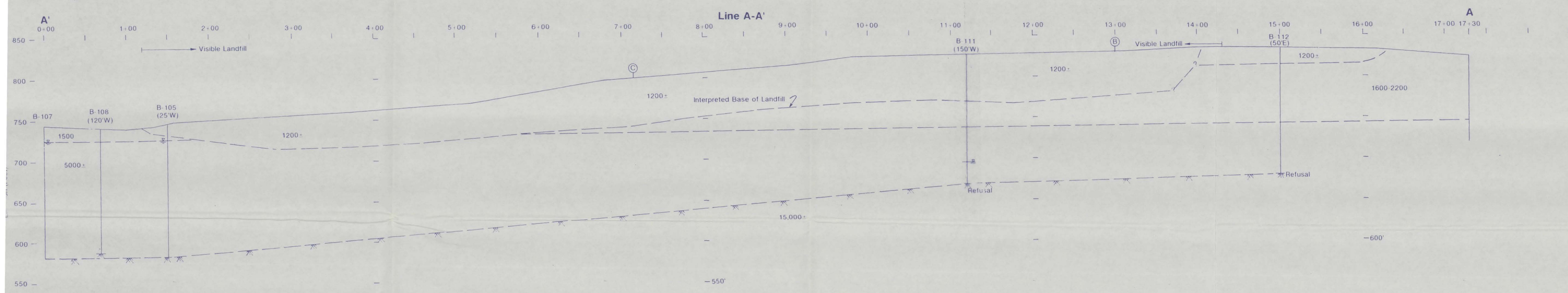
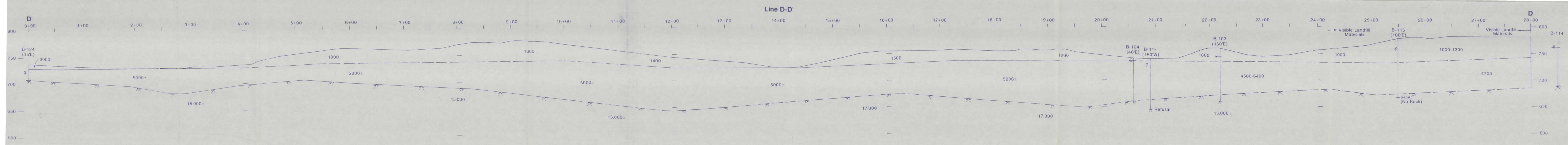


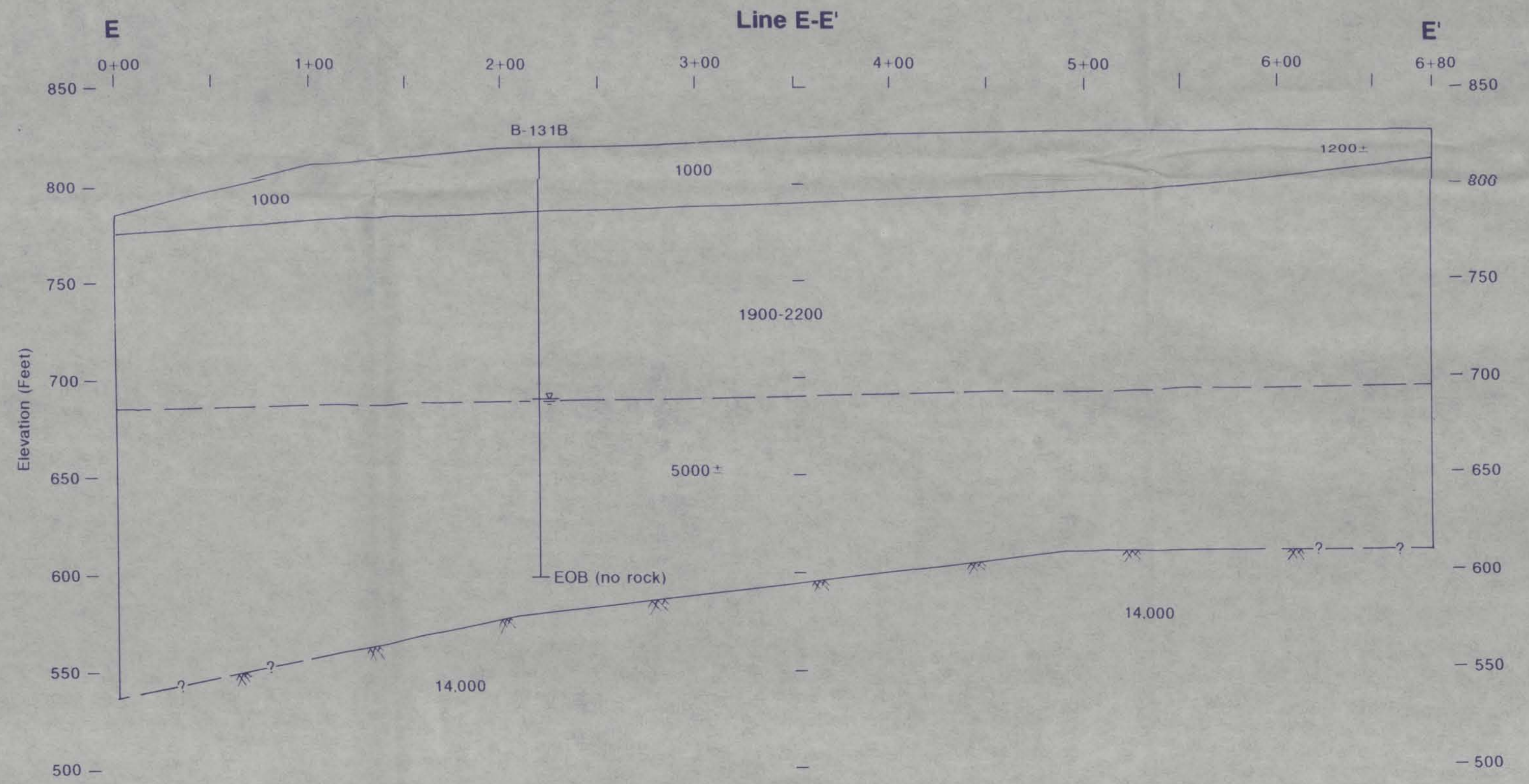
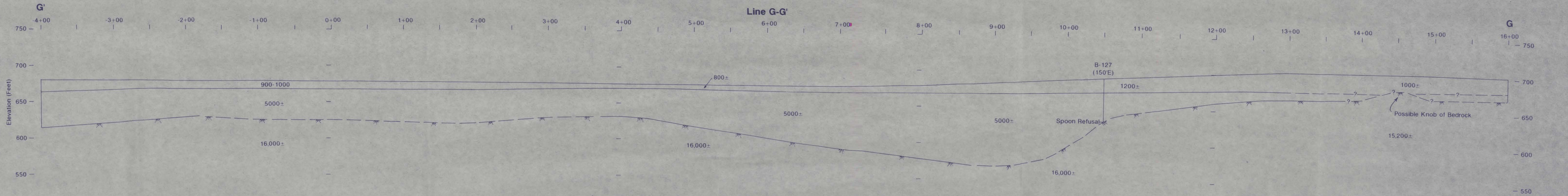
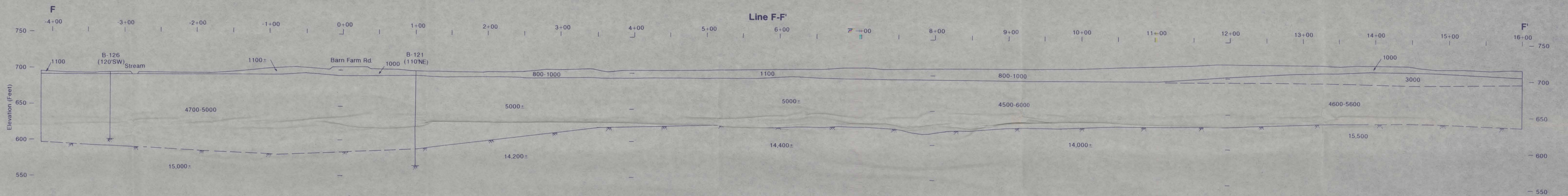
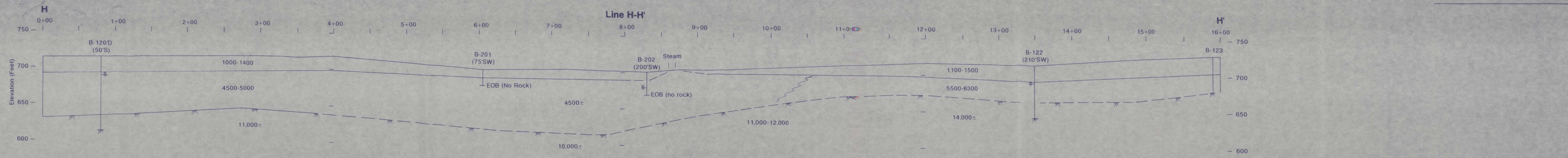
NOTE: THIS MAP AND DATA REPRESENTATION OF THE PARKER LANDFILL PROJECT IS BASED ON AERIAL PHOTOGRAPHY AND FIELD SURVEY DATA. THE ACCURACY OF THIS MAP IS AS STATED ON THE TITLE SHEET OF THIS PROJECT.

- EXPLANATION**
- B101A(MW) ○ Monitoring Well Location
 - 124 ○ Boring Location
 - A—A' Seismic Line Location

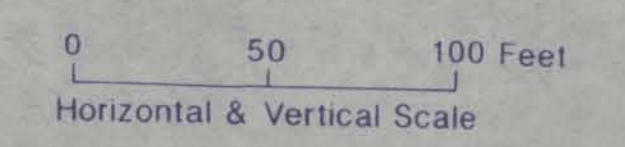


prepared by <i>MS</i> checked by V.J.M. reviewed by <i>[Signature]</i>	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	Seismic Refraction Line Locations Weston Geophysical Fig. 2
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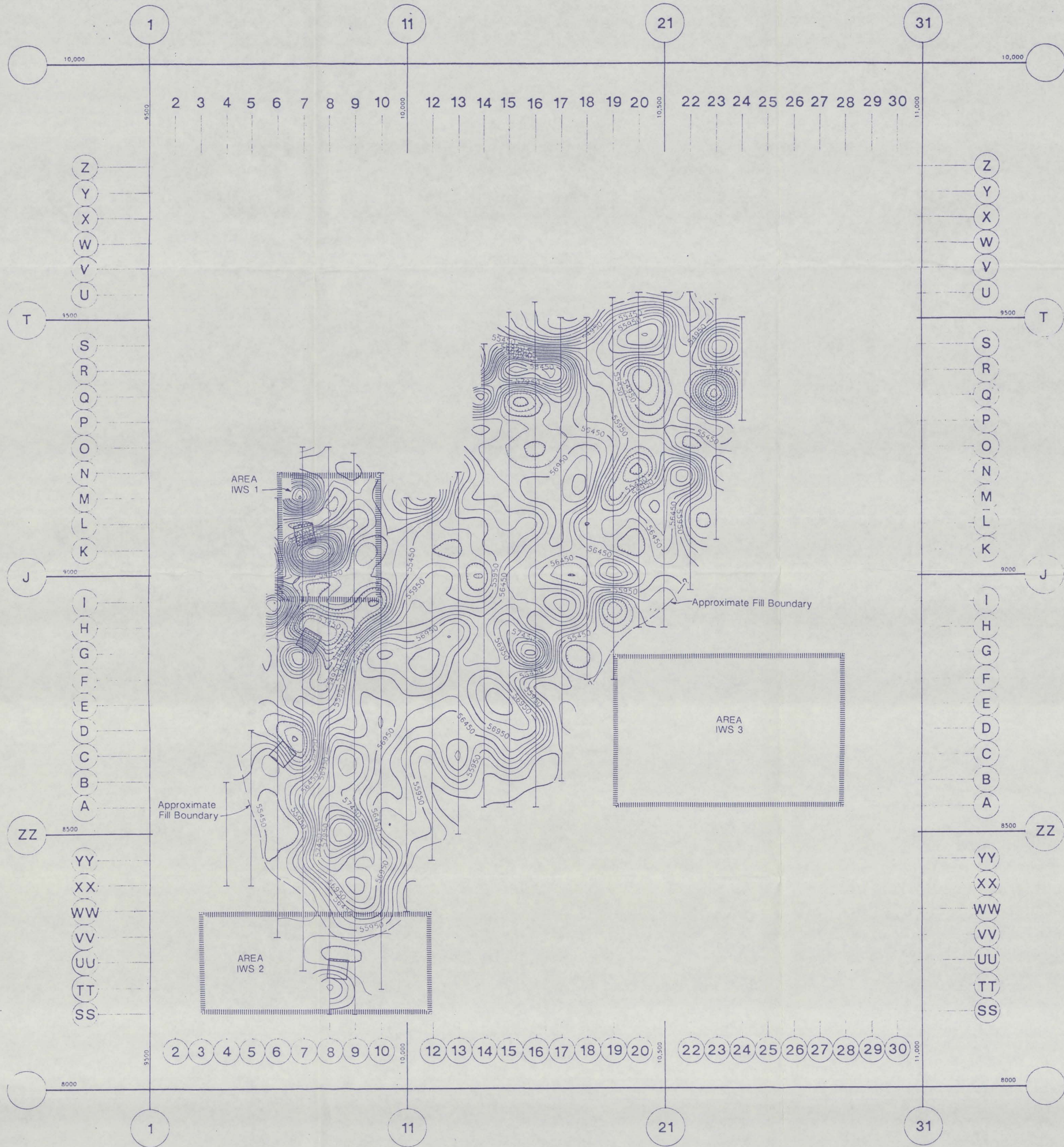




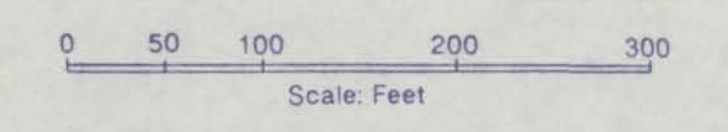
- Notes:
1. Ground surface topography is based on field observations, shotpoint elevations provided by ESE, and a topographic contour map provided by ESE.
 2. Seismic refraction velocity values are shown in feet/second.
 3. Dashed lines indicate velocity interfaces of uncertain geometries.
- ⊗ Represents groundwater elevations from ESE's preliminary boring logs.
 - ⊗ Represents bedrock determined by seismic refraction or ESE's preliminary boring logs.



prepared by MJS	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT	Seismic Refraction Profiles Lines E through H	
checked by V.J.M.		Weston Geophysical	Fig. 4
reviewed by ESE	ENVIRONMENTAL SCIENCE & ENGINEERING, INC.		



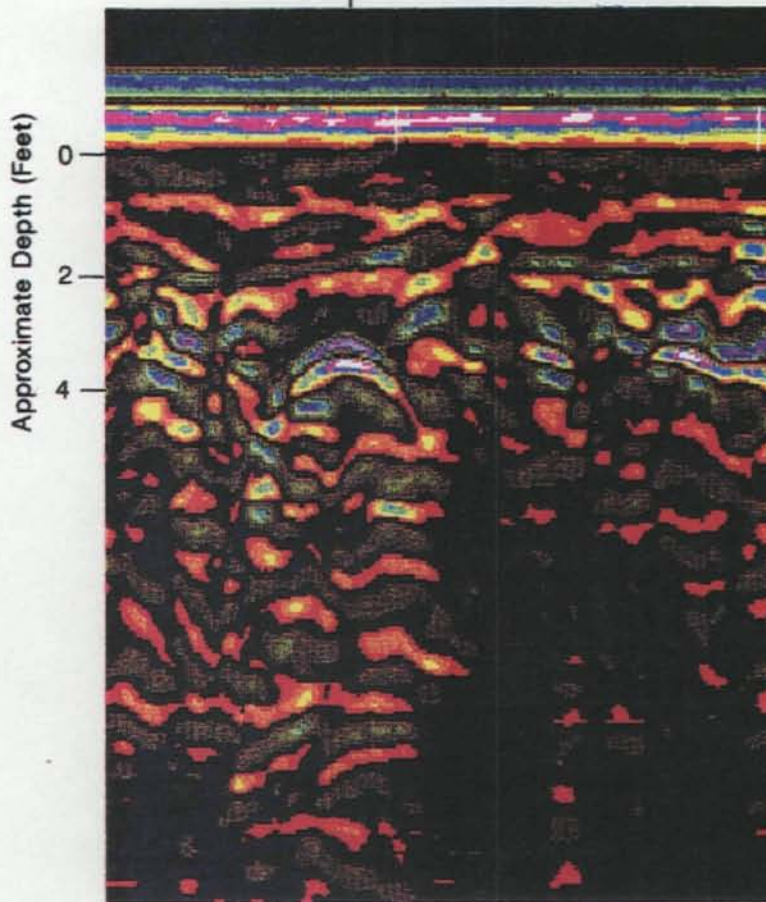
- EXPLANATION
- Magnetometer Survey Line Location
 - Magnetic Contour
Contour Interval 250 Gammas
 - Suggested Test Pit Location



Basemap: Grid Layout, Parker Landfill, Lyndonville, Vermont,
Dufrense-Henry Engineers.

prepared by DK checked by MS reviewed by [Signature]	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	Magnetic Coverage and Contour Map, SWDA
	Weston Geophysical Fig. 5	

Culvert
3' Below Grade



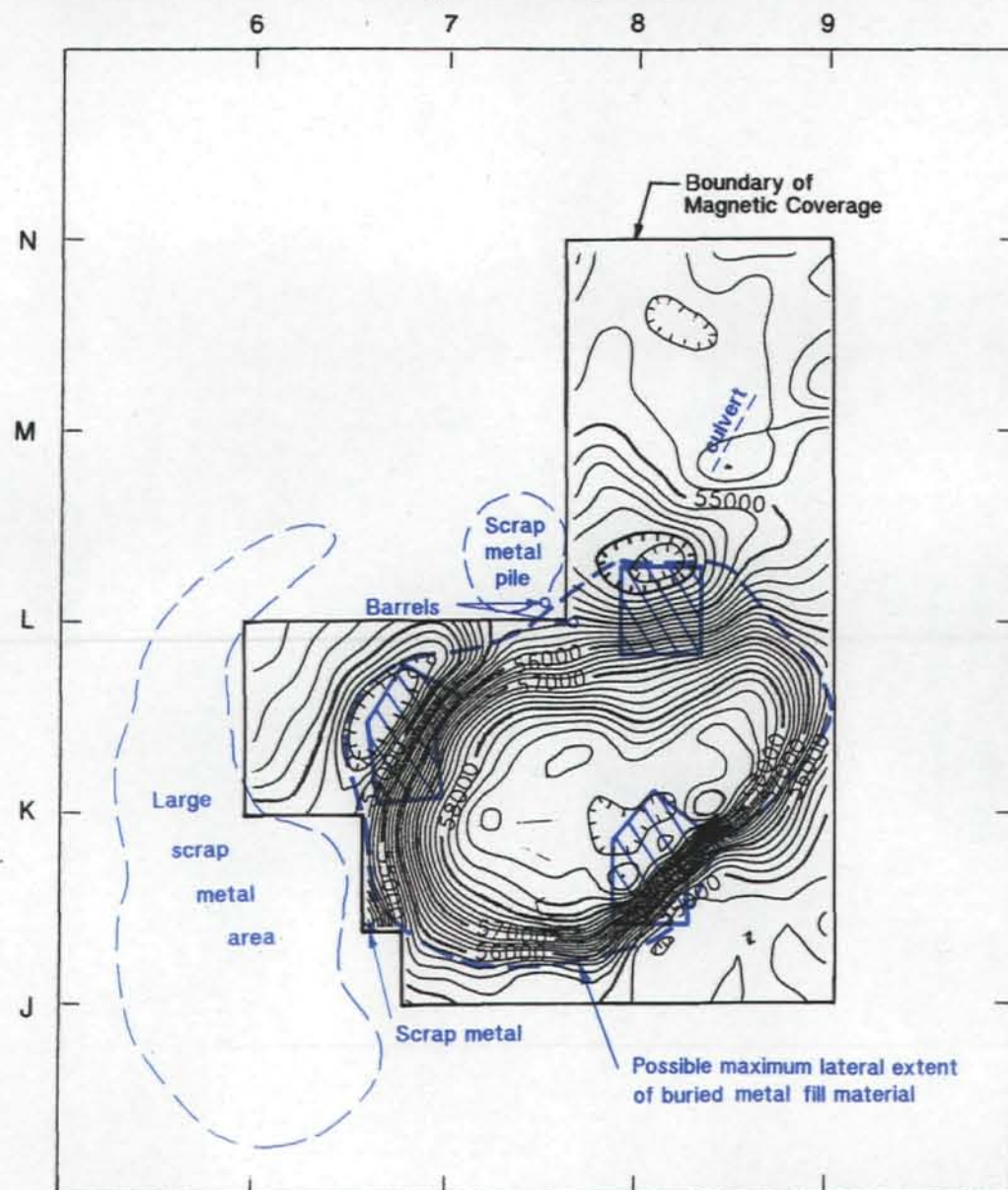
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 Analog high pass F=1
 Vert. IIR low pass N=1 F=100
 Vert. IIR high pass N=1 F=5
 Horiz. low pass TC=5

500 MHz Antenna

ESE Parker Landfill
 IWS1 AREA 4/24/91
 DLK JHW
 CALIBRATION LINE

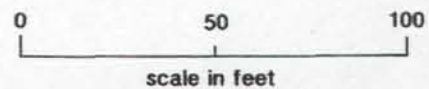
prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	GPR Calibration Record	
checked by MB		Weston Geophysical	Fig. 6
reviewed by JWZ			

Magnetic Survey Results

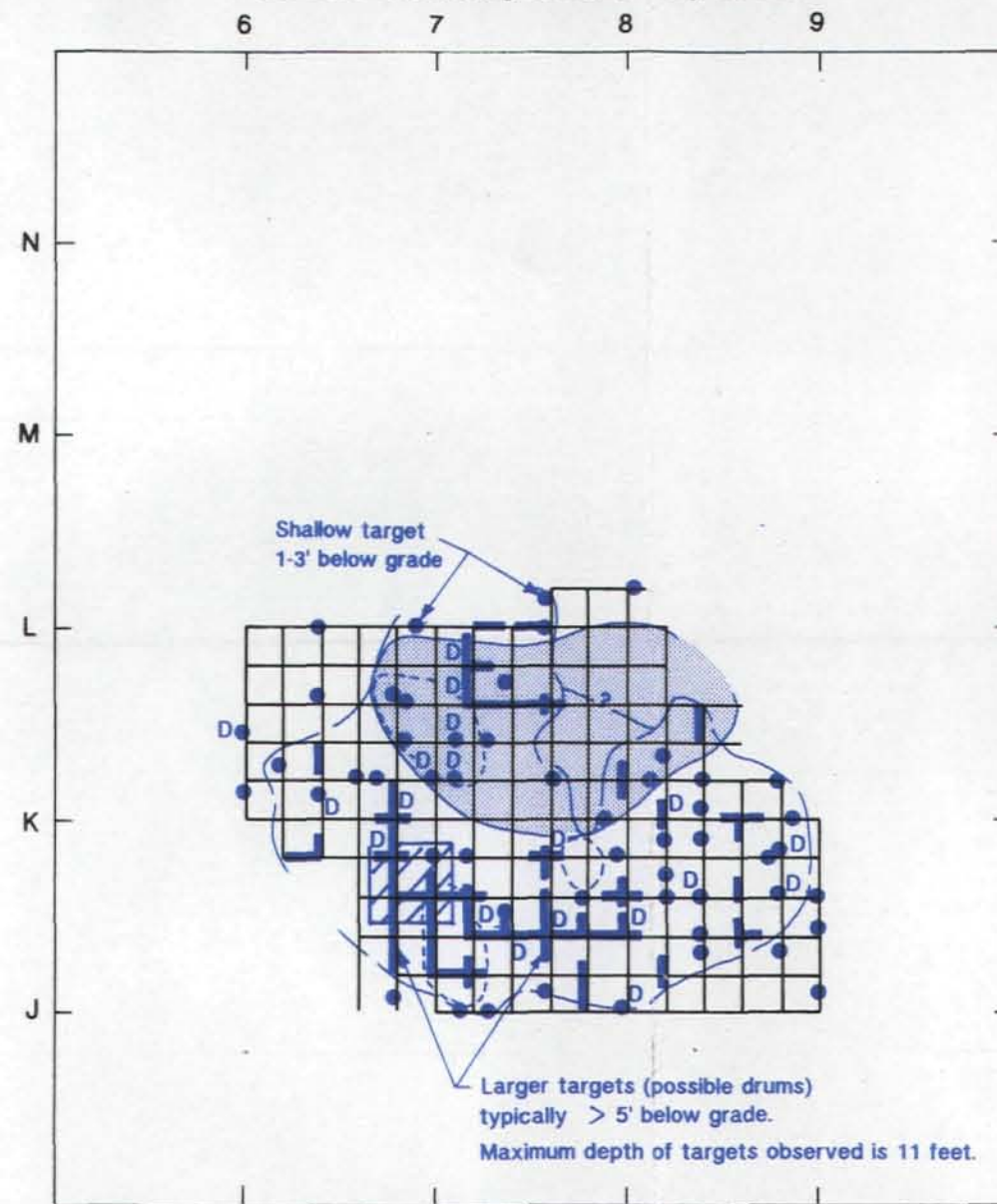


EXPLANATION

- Magnetic contour
Contour interval: 200 gammas
- Suggested test pit location



Ground Penetrating Radar Survey Results



EXPLANATION

- GPR survey line location
- Area of disturbed soil
- Area of severe attenuation indicative of conductive soils/groundwater
- Area of perched water table or other stratigraphic horizon at approx. 5' below grade
- Point target (probable metal)
- Concentration of objects
- Possible buried drum
- Suggested Test Pit Location

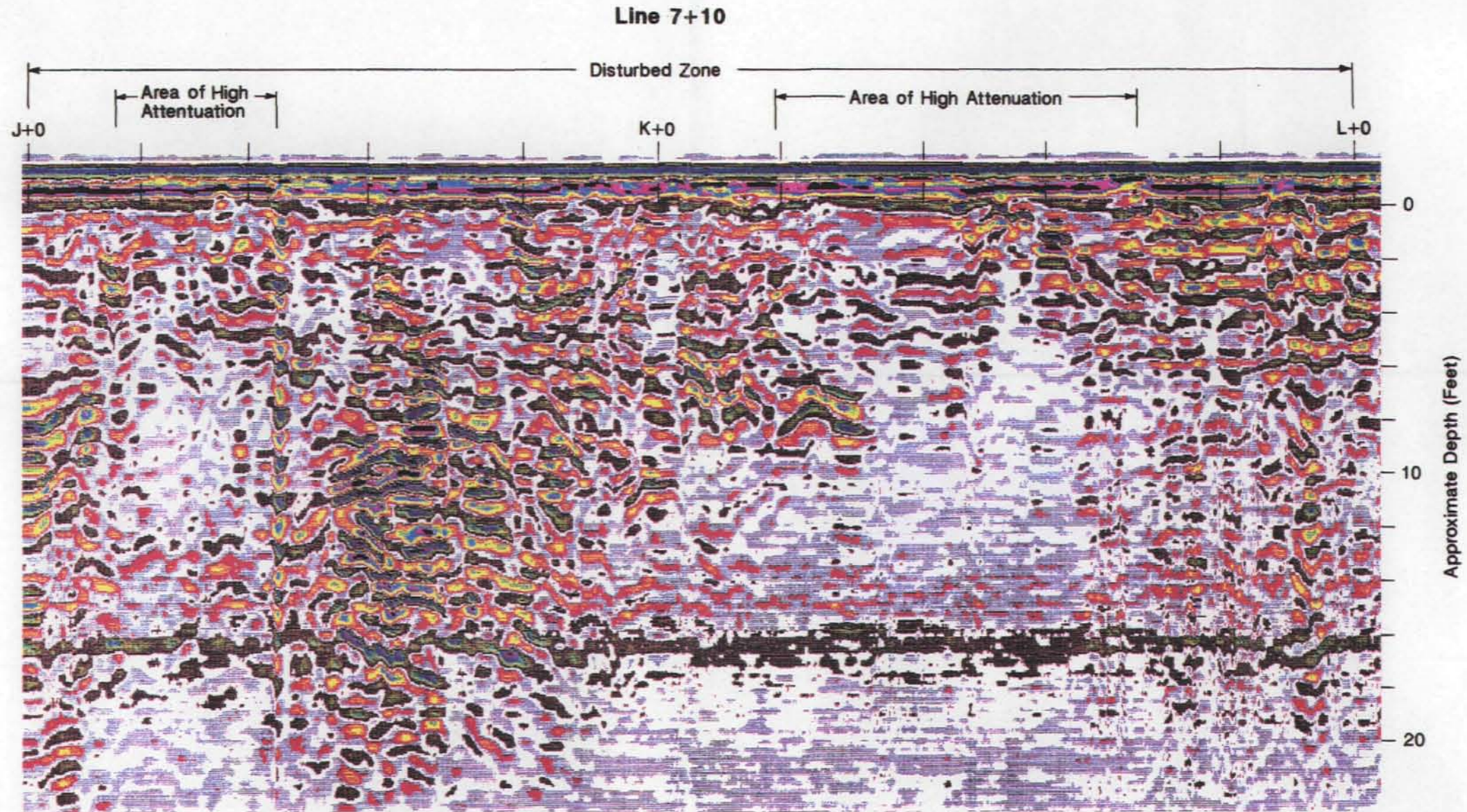
prepared by
D.K.
checked by
MB
reviewed by
SW

GEOPHYSICAL INVESTIGATION
PARKER LANDFILL
LYNDONVILLE, VERMONT
prepared for
ENVIRONMENTAL SCIENCE &
ENGINEERING, INC.

**Magnetic and GPR Coverage
and Anomaly Map, IWS1**

Weston Geophysical

Fig. 7

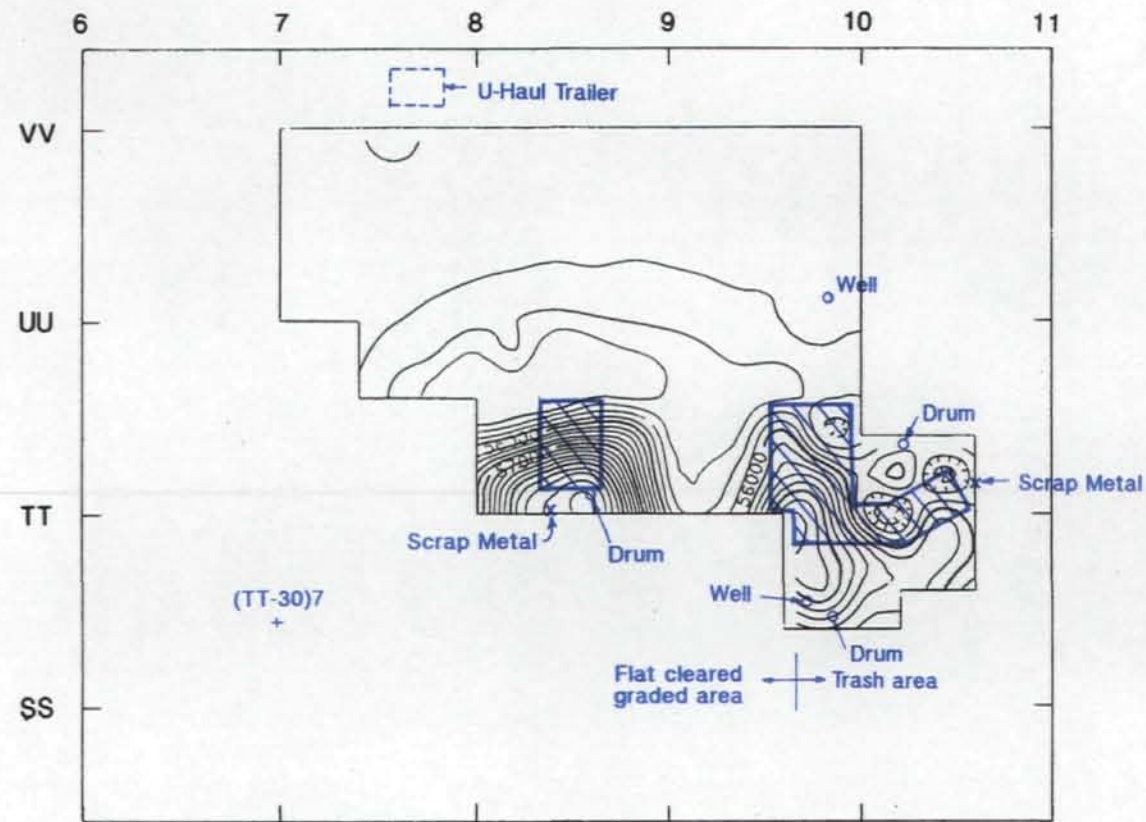


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 500 MHz Antenna

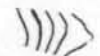

ESE Parker Landfill
 IWS1 AREA 4/24/91
 DLK JHW
 LINE 7+10
 START J

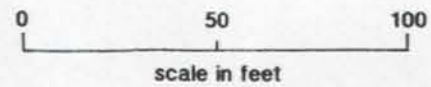
prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	GPR Record of Line 7 + 10, IWS1	
checked by <i>MB</i>		Weston Geophysical	Fig. 8
reviewed by <i>JHW</i>			

Magnetic Survey Results

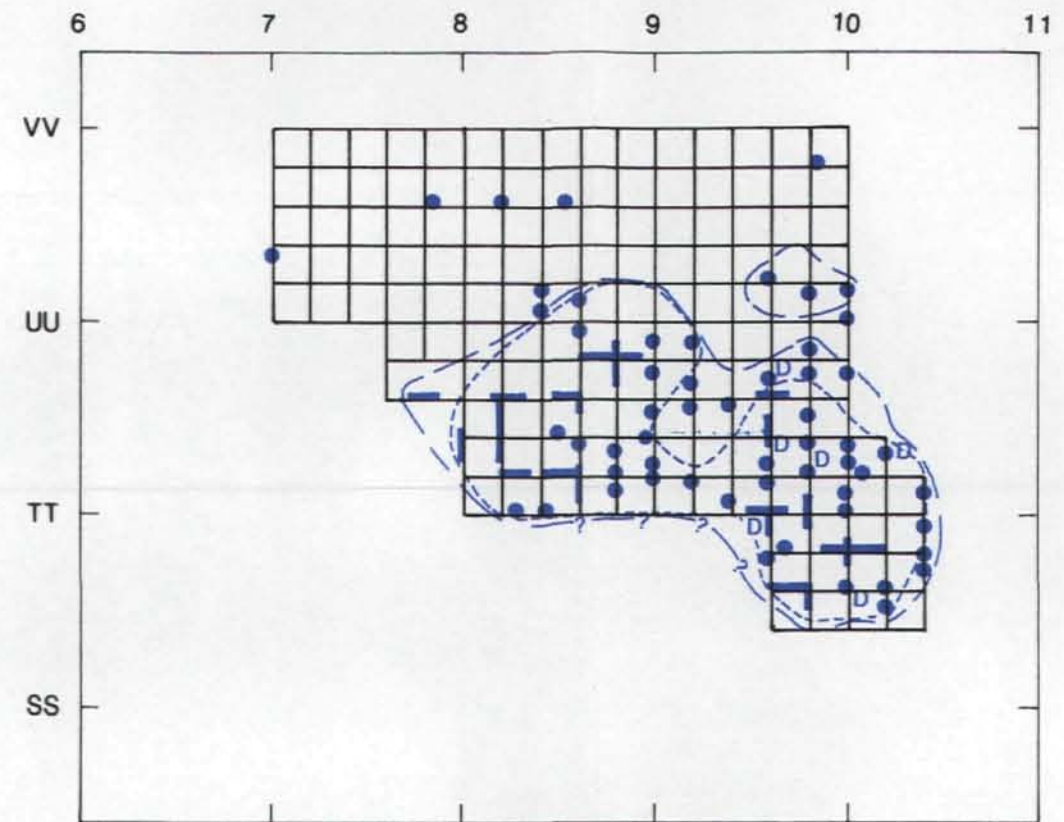


EXPLANATION







-  Magnetic contour
Contour interval: 200 gammas
-  Suggested test pit location



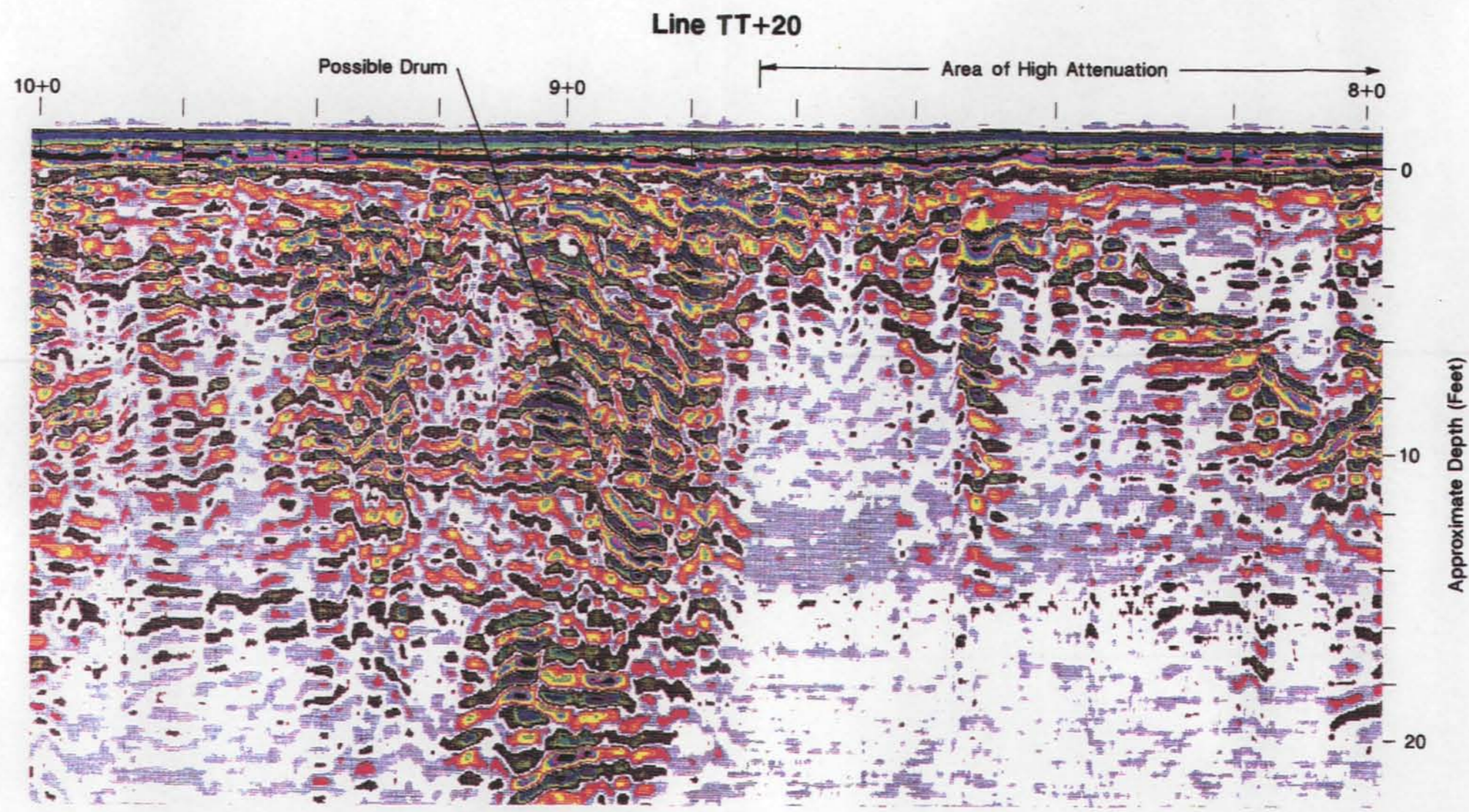
Ground Penetrating Radar Survey Results



EXPLANATION

-  GPR survey line
-  Point target (probable metal)
-  Possible buried drum
-  Concentration of objects
-  Disturbed area
-  Area of severe attenuation indicative of conductive soils/groundwater

prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	Magnetic and GPR Coverage and Anomaly Map, ISW2	
checked by <i>MBS</i>			
reviewed by <i>SPZ</i>		Weston Geophysical	Fig. 9

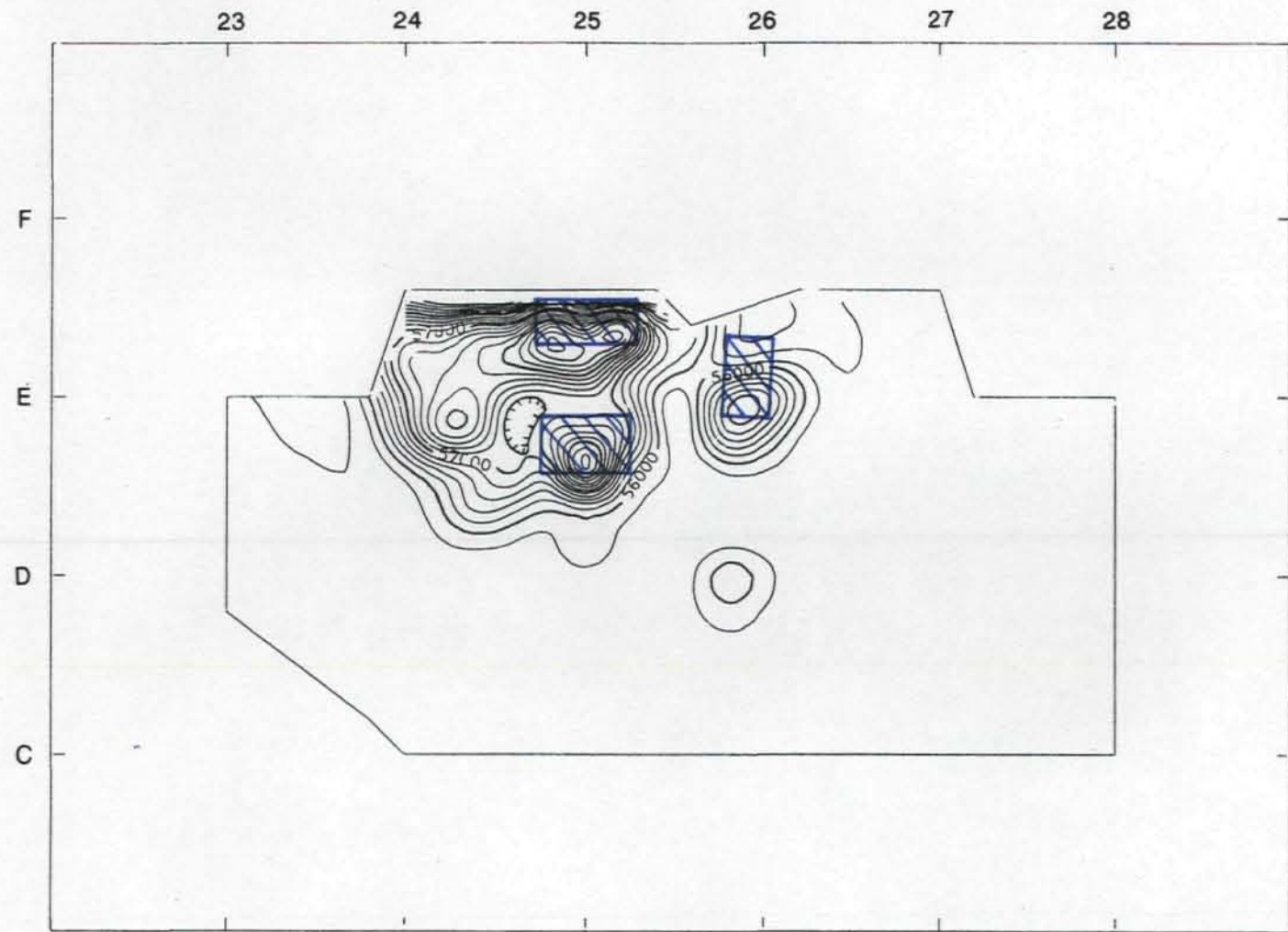




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 Horiz. low pass TC=5
 500 MHz Antenna

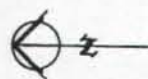
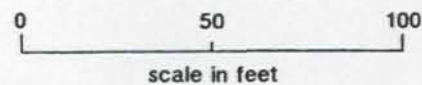
ESE Parker Landfill
 IWS2 AREA 4/24/91
 DLK JHW
 LINE tt+20 N=1 F=100
 Vert. IIR high pass N=1 F=5
 Horiz. low pass TC=5

prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	GPR Record of Line TT + 20, IWS2	
checked by <i>MB</i>		Weston Geophysical	Fig. 10
reviewed by <i>[Signature]</i>			

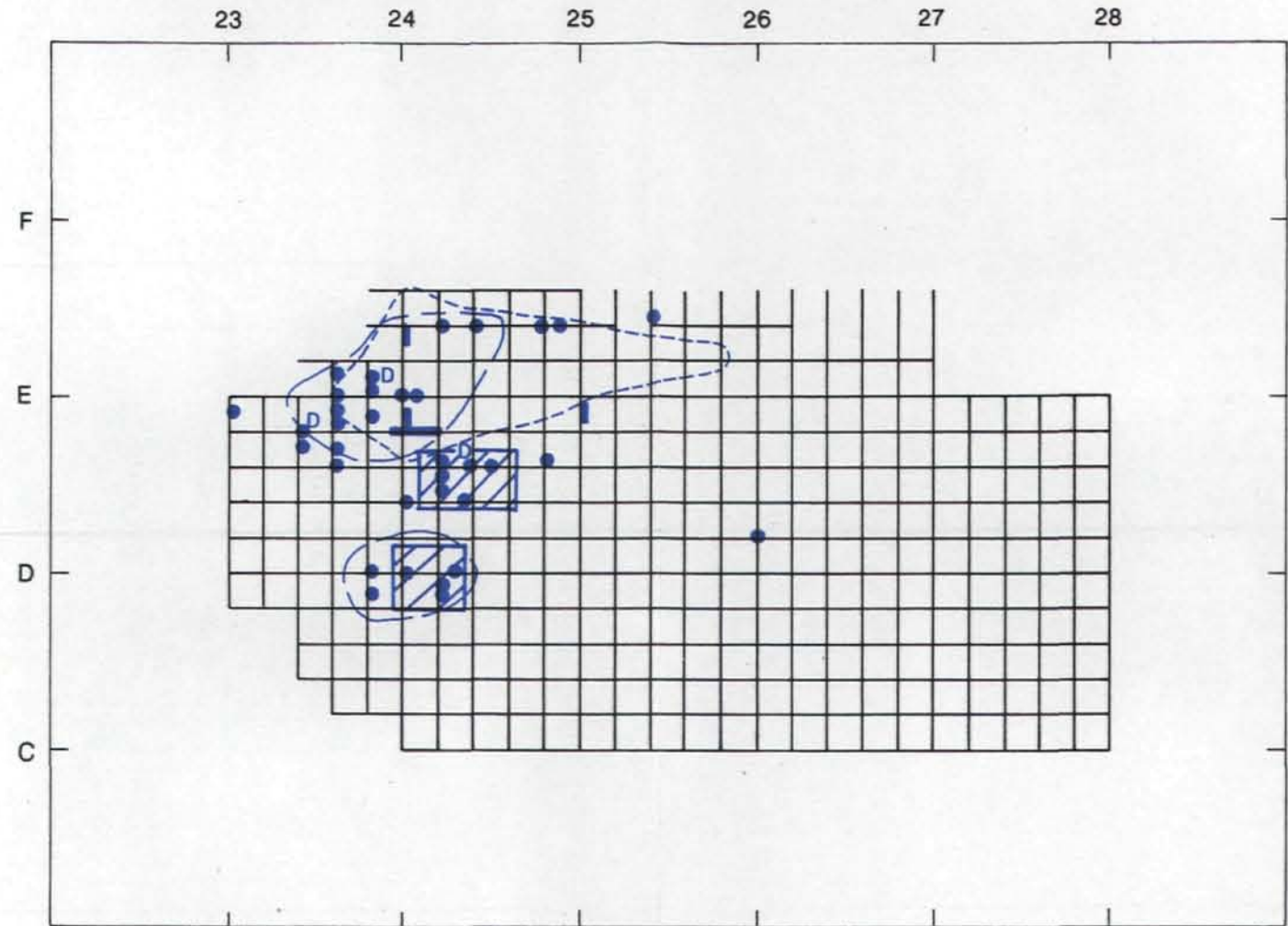
Magnetic Survey Results










- EXPLANATION**
-  Magnetic contour
Contour interval: 200 gammas
 -  Suggested test pit location



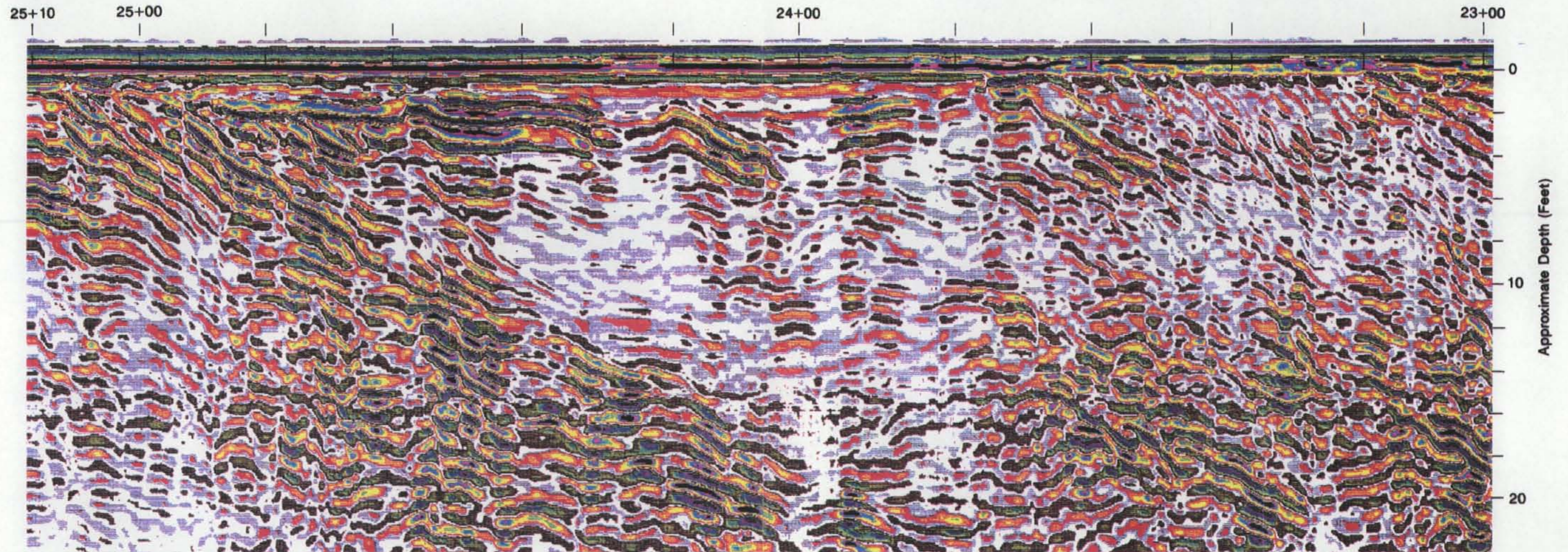
Ground Penetrating Radar Survey Results



- EXPLANATION**
-  GPR survey line
 -  Point target (probable metal)
 -  Possible drum
 -  Concentration of metallic objects
 -  Disturbed area
 -  Area of severe attenuation indicative of conductive soils/groundwater
 -  Suggested test pit location

prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	Magnetic and GPR Coverage and Anomaly Map, IWS3	
checked by <i>MS</i>		Weston Geophysical	Fig. 11
reviewed by <i>FW</i>			

Line C+40
GPR Record of Undisturbed Soil

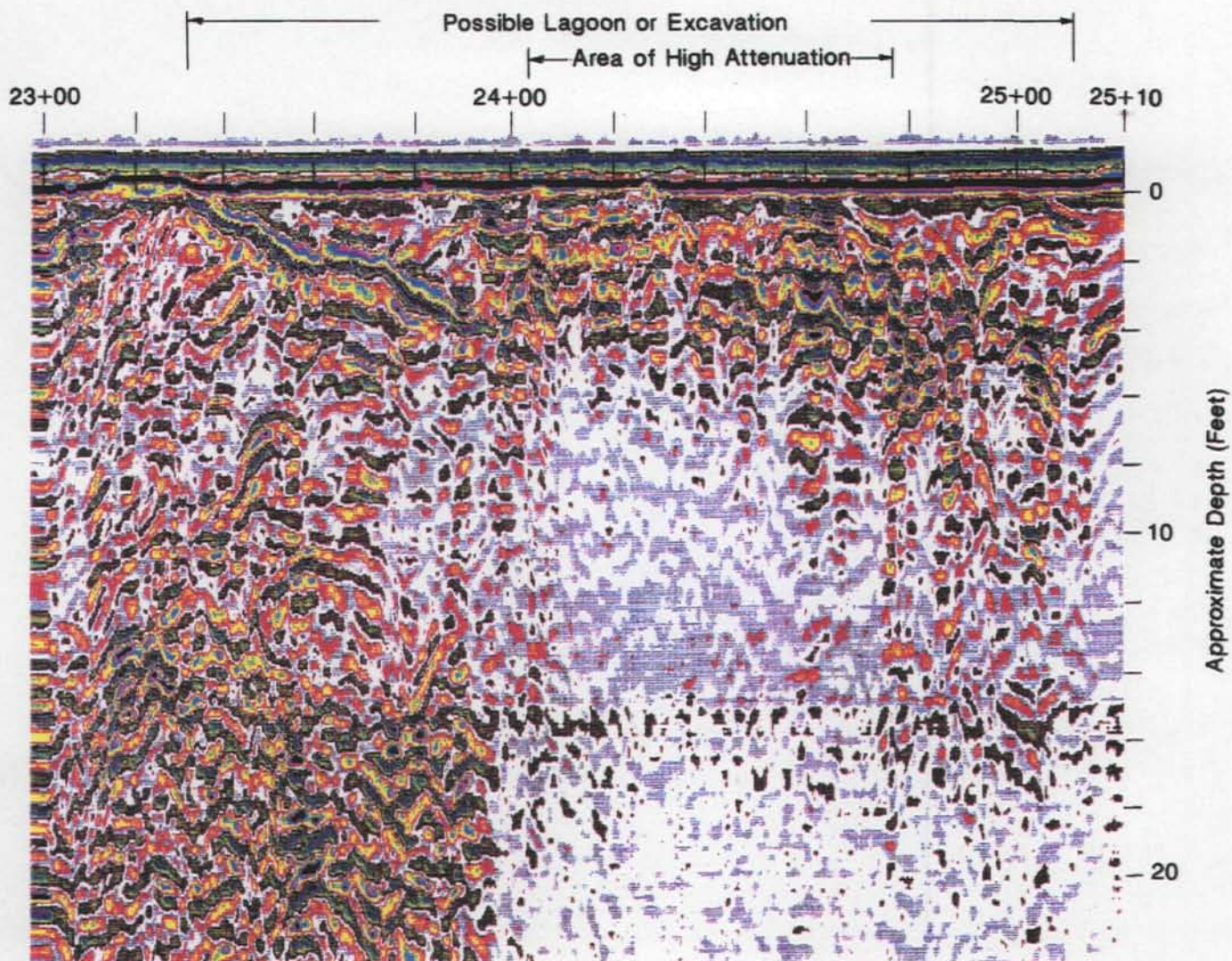


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 Vert. IIR high pass N=1 F=5
 Horiz. low pass TC=5
 500 MHz Antenna

ESE Parker Landfill
 IWS3 AREA 4/24/91
 DLK JHW
 LINE c+40

prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	GPR Record of Undisturbed Soil, IWS3	
checked by <i>MIS</i>		Weston Geophysical	Fig. 12
reviewed by <i>[Signature]</i>			

Line D+40

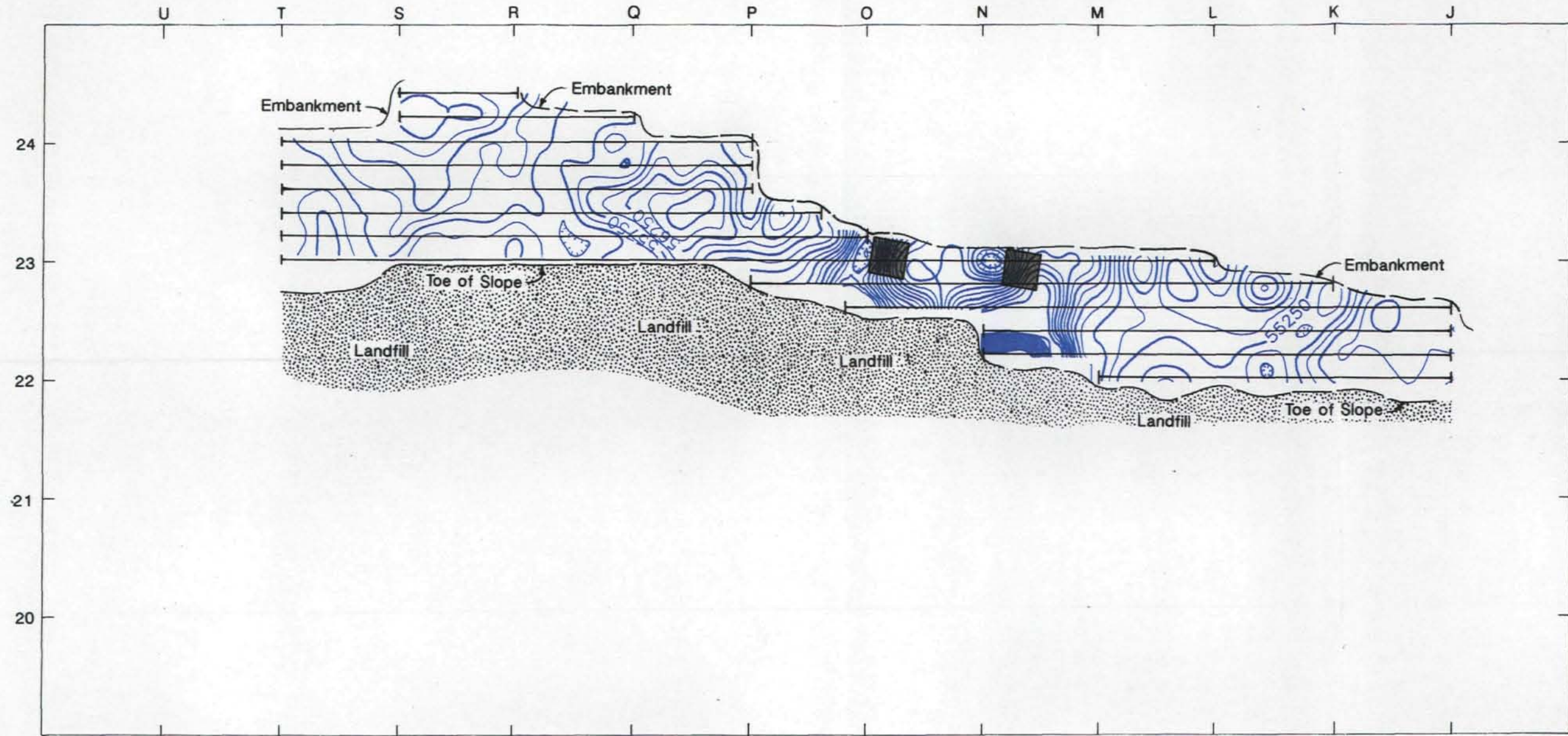


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 Horiz. low pass TC=5
 500 MHz Antenna



ESE Parker Landfill
 IWS3 AREA 4/24/91
 DLK JHW
 LINE d+40

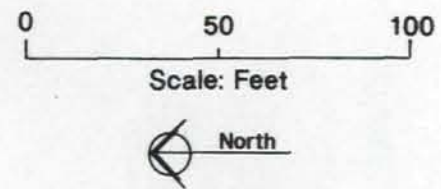
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checked by <i>MB</i>		Weston Geophysical	Fig. 13
reviewed by <i>[Signature]</i>			

Magnetometer Survey Results



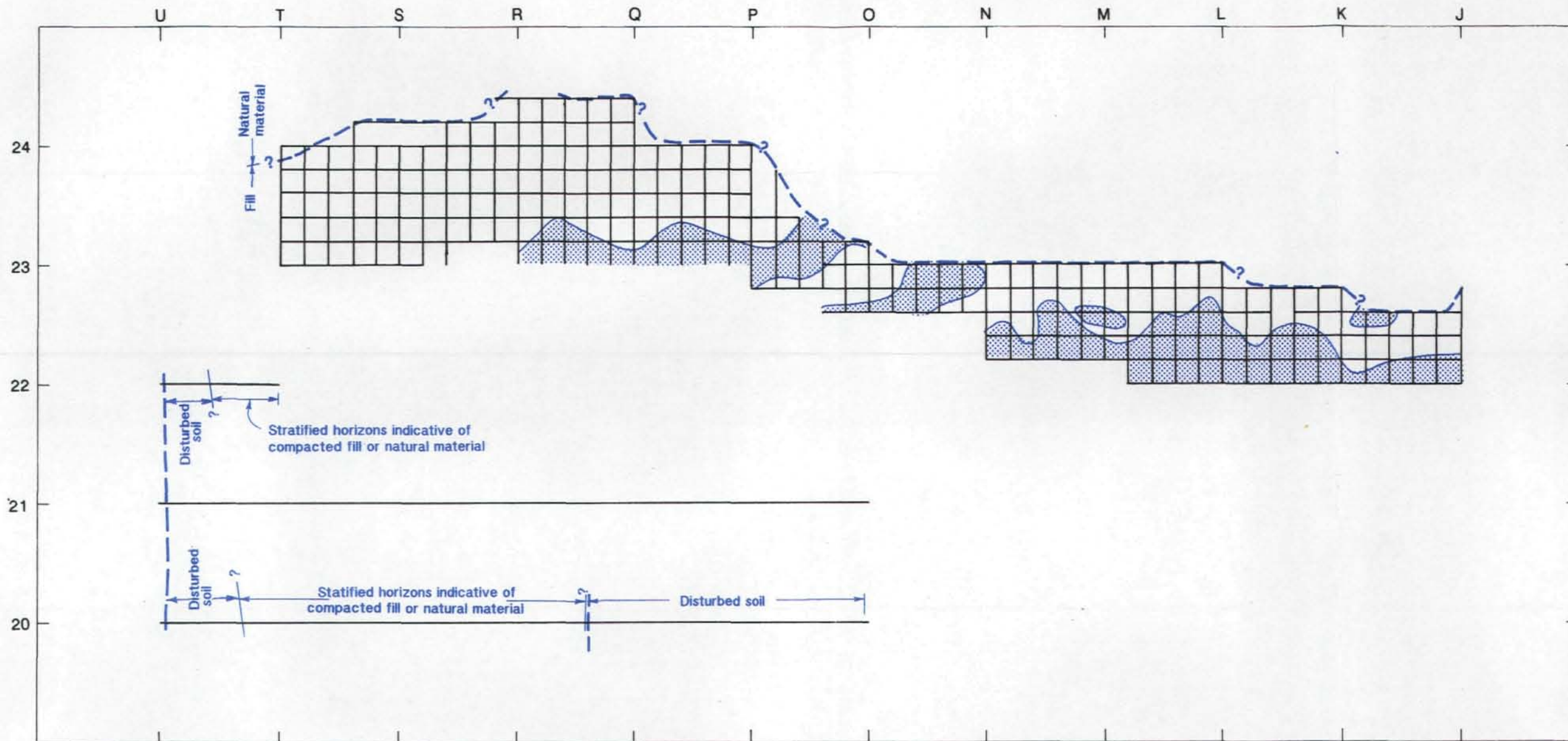
EXPLANATION

- Magnetometer survey line location
-  Magnetic contour
Contour interval: 250 gammas
-  Suggested test pit location




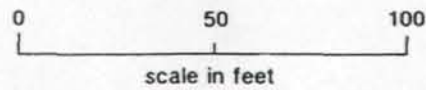
prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	Magnetic Coverage and Contour Map, DDA	
checked by <i>MB</i>			
reviewed by <i>[Signature]</i>		Fig. 14	

Ground Penetrating Radar Survey Results

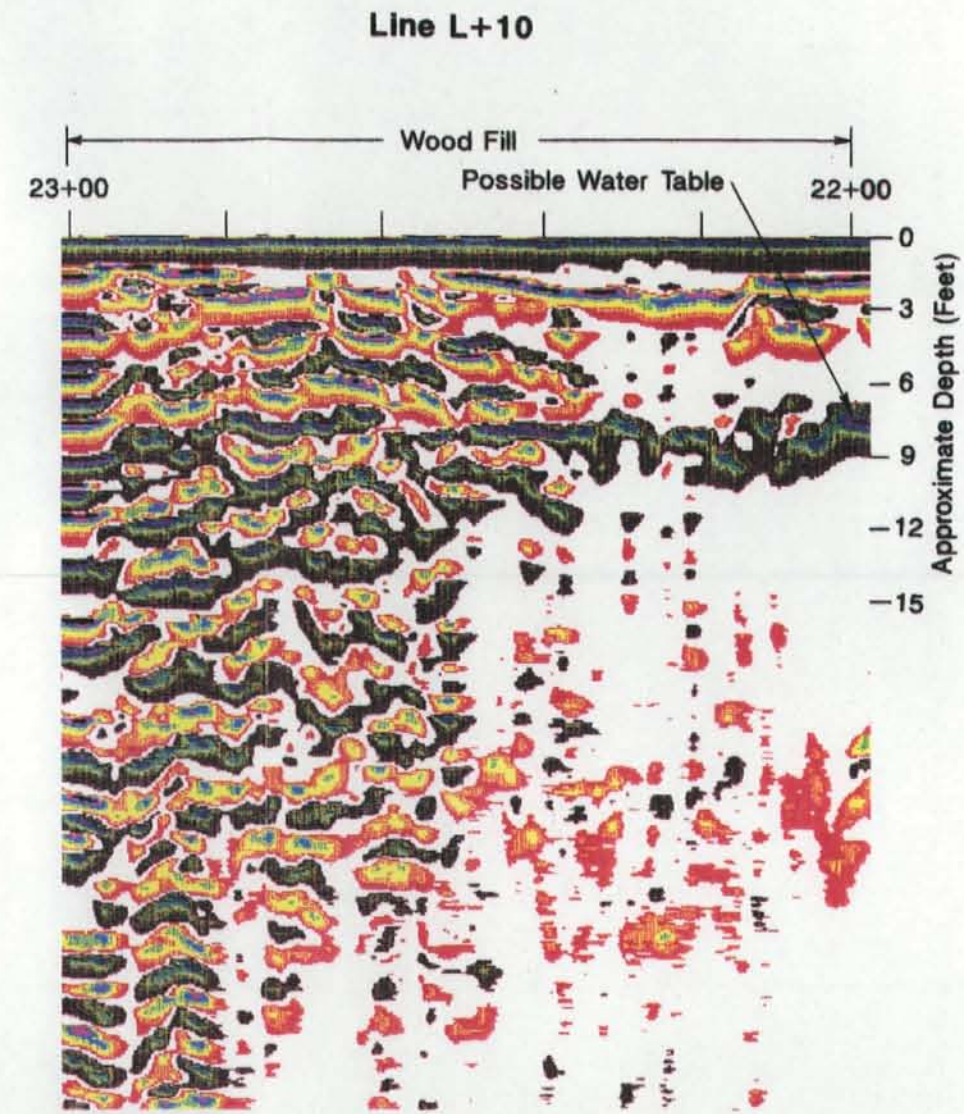
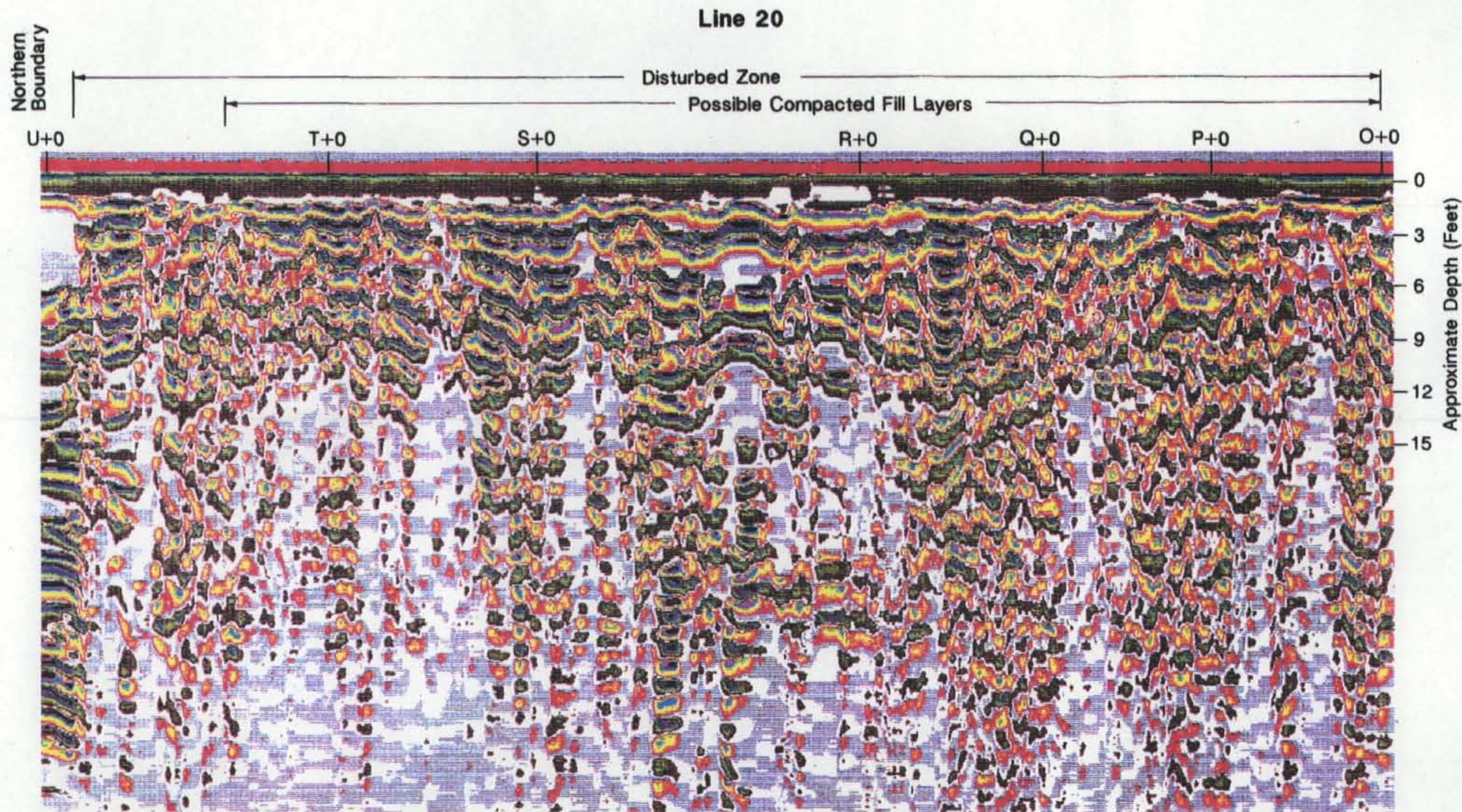


EXPLANATION

- GPR survey line
- - - - - Fill boundary
-  Anomaly indicative of high concentrations of non-reflective objects (i.e. wood, paper)



prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	GPR Coverage and Anomaly Map, DDA	
checked by <i>MB</i>		Weston Geophysical	Fig. 15
reviewed by <i>ES</i>			



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 Vert. IIR high pass N=1 F=10
 Horiz. low pass TC=10
 Horiz. Triangle low pass N=10
 Vert. Boxcar high pass N=35
 300 MHz Antenna
 dda 4/25/91 LINE 20 start u

LINE10B Created Apr 26, 1991 14:03 Modified Date Unknown
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 Vert. IIR low pass N=1 F=150
 Vert. IIR high pass N=1 F=10
 Horiz. low pass TC=10
 Horiz. Triangle low pass N=10
 300 MHz Antenna
 dda 4/25/91 LINE L+10 Analog high pass F=1
 Vert. IIR low pass N=1 F=150
 Vert. IIR high pass N=1 F=10
 Horiz. low pass TC=10
 Horiz. Triangle low pass N=10

prepared by D.K.	GEOPHYSICAL INVESTIGATION PARKER LANDFILL LYNDONVILLE, VERMONT prepared for ENVIRONMENTAL SCIENCE & ENGINEERING, INC.	GPR Records of Lines 20 and L + 10, DDA	
checked by <i>MB</i>		Weston Geophysical	Fig. 16
reviewed by <i>MT</i>			

APPENDIX A

SEISMIC REFRACTION
METHOD OF INVESTIGATION

GENERAL CONSIDERATIONS

The seismic refraction survey method is a means of determining the depths to a refracting horizon and the thickness of major seismic discontinuities overlying the high-velocity refracting horizon. The seismic velocities measured by this technique can be used to calculate the mechanical properties of subsurface materials [moduli values], as well as for material identification and stratigraphic correlation.

Interpretations are made from travel time curves showing the measurement of the time required for a compressional seismic wave to travel from the source ["shot"] point to each of a group of vibration sensitive devices [seismometers or geophones]. The geophones are located at known intervals along the ground surface, as shown in Diagram A. Various seismic sources may be used, including a drop weight, an air gun, and small explosive charges.

FIELD PROCEDURE FOR DATA ACQUISITION

Weston Geophysical Corporation uses a seismic recording technique of continuous profiling and overlapping spreads for engineering and ground water investigations. The seismic refraction equipment consists of a Weston Geophysical trace amplifier, Model USA780, with either a WesComp™ [a field computer system developed by Weston Geophysical], or a recording oscillograph.

Continuous profiling is accomplished by having the end shot-point of one spread coincident with the end or intermediate position shot-point of the succeeding spread. The spread length used in a refraction survey is determined by the required depth of penetration to the refracting horizon. It is generally possible to obtain adequate penetration when the depth to the refracting horizon is approximately one-third to one-quarter of the spread length.

In general, "shots" are located at each end and at the center of the seismic spread, Diagram B. The configuration of the geophone array and the shot point positions are dependent upon the objectives of the seismic array.

As mentioned above, seismic energy can be generated by one or more of several sources.

The seismometer or geophone is in direct contact with the earth and converts the earth motion resulting from the shot energy into electric signals; a moving coil electromagnetic geophone is generally used. This type of detector consists of a magnet permanently attached to a spiked base which can be rigidly fixed to the earth's surface. Suspended within the magnet is a coil-wrapped mass. Relative motion between the magnet and coil produces an electric current, with a voltage proportional to the particle velocity of the ground motion.

The electric current is carried by cable to the recording device which provides simultaneous monitoring of each of the individual geophones. The operator can amplify and filter the seismic signals to minimize background interference. For each shot the seismic signals detected by a series of geophones are recorded on either photographic paper or magnetic tape, depending on job requirements. Included on each shot record is a "time break" representing the instant at which the shot was detonated.

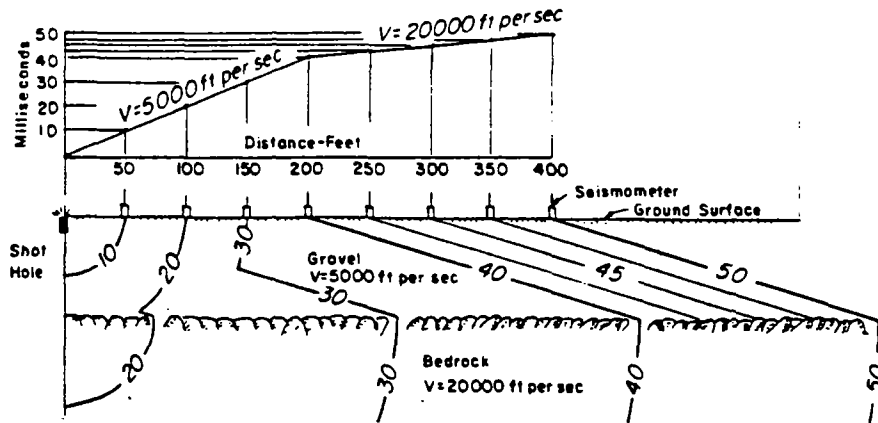
INTERPRETATION THEORY

The elastic wave measured in the seismic refraction method, the "P" or compressional wave, is the first arrival of energy from the source at the detector. This elastic wave travels from the energy source in a path causing adjacent solid particles to oscillate in the direction of wave propagation. Diagram A shows a hypothetical subsurface consisting of a lower velocity material above a higher velocity material. At smaller distances between source and detector the first arriving waves will be direct waves that travel near the ground surface through the lower velocity material. At greater distance, the first arrival at the detector will be a refracted wave that has taken an indirect path through the two layers. The refracted wave will arrive before the direct wave at a greater distance along the spread because the time gained in travel through the higher-speed material compensates for the longer path. Depth computations are based on the ratio of the layer velocities and the horizontal distance from the energy source to the point at which the refracted wave overtakes the direct wave.

Generally the interpretation is by one or more of several methods [W.M. Telford, et al., 1976] ray-tracing, wave front methods, delay times, critical distances. etc. In addition, either a forward or inverse interpretation can be performed using Weston's computer. Since successful refraction interpretation is based on experience, all interpretation of refraction data is performed or thoroughly reviewed by a senior staff geophysicist.

Reference

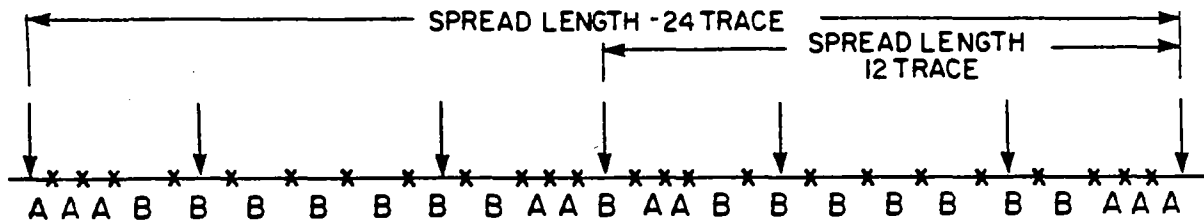
Telford, W.M.; Geldart, L.P.; Sheriff, R.E. and Keys, D.A., 1976, Applied Geophysics: Cambridge University Press.



Plot of Wave Front Advance in Two Layered Problem

Linehan, Daniel, Seismology Applied to Shallow Zone Research, Symposium on Surface and Subsurface Reconnaissance, Special Technical Publication No. 122, American Society for Testing Materials, 1951.

Diagram A



SPREAD LENGTH
400' - 24 TRACE or 200' - 12 TRACE
600' - 24 TRACE or 300' - 12 TRACE
1000' - 24 TRACE or 500' - 12 TRACE

GEOPHONE LOCATION	
A	B
10	20
15	30
25	50

LEGEND

- ↓ = GENERAL LOCATION OF "SHOT" POINT
- x = GEOPHONE LOCATION

Geophone Interval-Spread Length Relationship

Diagram B

APPENDIX B

**MAGNETOMETRY
METHOD OF INVESTIGATION**

APPENDIX B

**MAGNETOMETRY
METHOD OF INVESTIGATION**

INTRODUCTION

The magnetic method is a versatile, relatively inexpensive, geophysical exploration technique. Aeromagnetic surveys and deep water marine studies are commonly used as a reconnaissance tool for tracing large-scale geologic structure. Land and coastal water marine data are more useful in tracing smaller, more localized geologic structures, such as mineral and ore deposits. Land and marine surveys yield more detail and higher resolution, since the measurements are taken closer to the anomaly source. Land and shallow water magnetic data is commonly used to locate larger buried, man-made objects such as pipelines, barrels or other buried metal objects, and smaller objects such as involved in archaeological prospecting.

EARTH MAGNETISM

Magnetics is a "potential field" method. For a given magnetic field, the magnetic force in a given direction is equal to the derivative of the magnetic potential in that direction. The source of the earth's magnetic potential is its own magnetic field and the induction effect this field has on magnetic objects or bodies above and below the surface. The earth's field is a vector quantity having a unique magnitude and direction at every point on the earth's surface. This magnetic field is defined in three dimensions by angular quantities known as declination and inclination. Declination is defined as the angle between geographic north and magnetic north, and inclination is the angle between the direction of the earth's field and the horizontal [Figure 1]. The earth's magnetic field is measured in "gammas" [where 1 gamma = 10^{-5} Oersted]; the total field ranges from about 25,000 gammas near the equator to 70,000 gammas near the poles.

The earth's magnetic field is not completely stable. It undergoes long-term [secular] variations over centuries; small, daily [diurnal] variations [less than 1% of the total field magnitude]; and transient fluctuations called magnetic storms resulting from solar flare phenomena.

The earth's ambient magnetic field is modified locally by both naturally- occurring and man-made magnetic materials. Iron or steel objects act as "local" dipoles, which are generally oriented differently than the earth's external magnetic field.

The iron or steel objects represents a local perturbation in the main earth field. The net field in the vicinity of this perturbation is simply the vector sum of the induced and earth fields. Thus, the induced field is a function of the "susceptibility" of the material, or its ability to act like a magnet.

Remanent magnetization is produced in materials which have been heated above the Curie point allowing magnetic minerals in the material to become aligned with the earth's field before cooling. The remanent field direction is not always parallel to the earth's present field, and can often be completely reversed. The remanent field combines vectorially with the ambient and induced field components. The contribution of the remanent components must be considered in magnetic interpretations.

INSTRUMENTATION

At present, the most widely used magnetometer is the "proton precession" type. This device utilizes the precession of spinning protons of the hydrogen atoms in a sample of fluid [kerosene, alcohol, or water] to measure total magnetic field intensity.

Protons spinning in an atomic nucleus behave like magnetic dipoles, which are aligned [polarized] in a uniform magnetic field. The protons initially aligned themselves parallel to the earth's field. A second, much stronger magnetic field is produced approximately perpendicular to the earth's field by introducing currents through a coil of wire. The protons become temporarily aligned with this stronger secondary field. When this secondary field is removed, the protons tend to realign [precess] themselves parallel to the earth's field direction. The precessing protons will generate a small electric signal in the same coil used to polarize them with a frequency [about 2,000 Hz]

proportional to the total magnetic field intensity but independent of the coil orientation. By measuring the signal frequency, the absolute value of the total earth field intensity can be obtained to a 1 gamma accuracy. The total magnetic field value measured by the proton precession magnetometer is the net vector sum of the ambient earth's field and any local induced and/or remanent perturbations.

A total field proton precession magnetometer can be made portable and does not require orientation or leveling. There are a few limitations associated with the precession system. The precession signal can be severely degraded in the presence of large field gradients [greater than 200 gammas per foot] near 60-cycle A/C power lines.- Also, the interpretation of total field data is sometimes more complicated than vertical field data which, however, is more time consuming to take.

FIELD TECHNIQUES

The field operator must avoid or note any sources of high magnetic gradients and alternating currents, such as power lines, buildings, and any large iron or steel objects. Readings are taken at a predetermined interval which depends on the nature of the survey, the accuracy required, and the gradients encountered. Base station readings, if required, are usually made several times a day to check for diurnal variations and magnetic storms.

INTERPRETATION

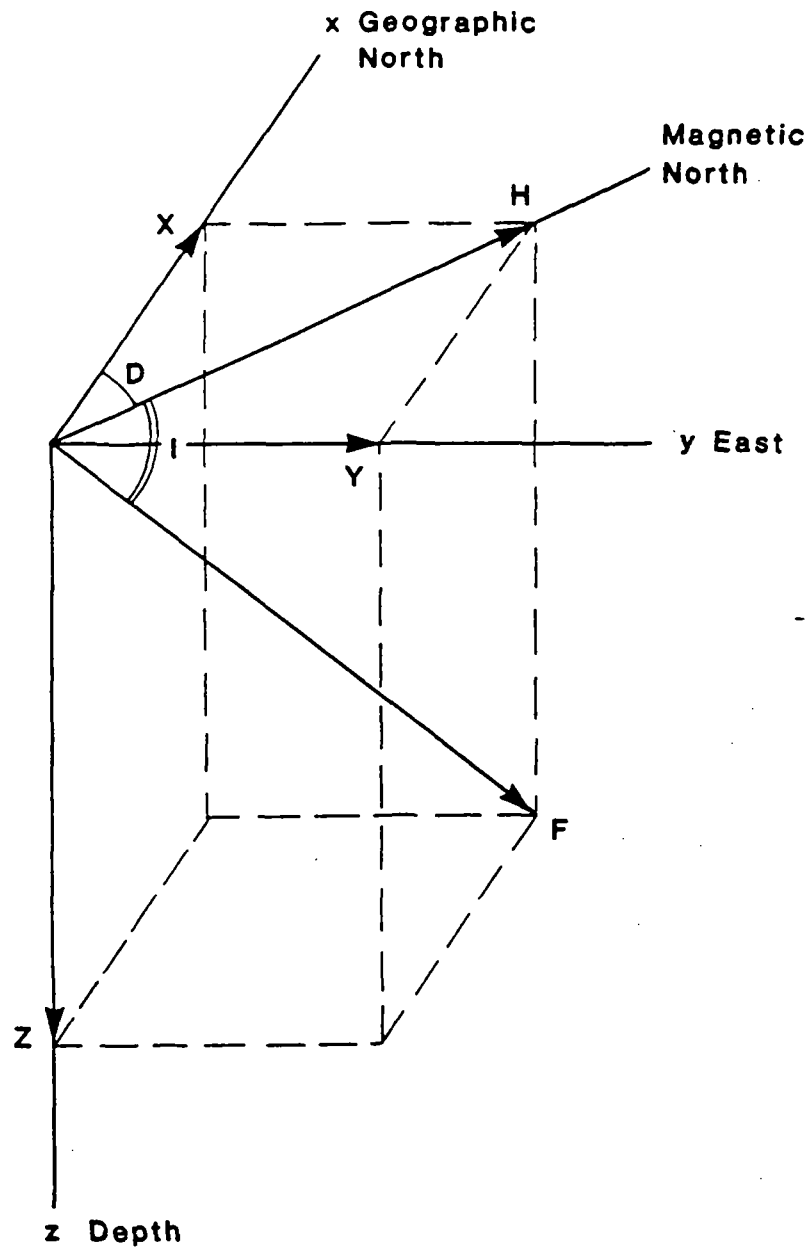
Lateral variations in susceptibility and/or remanent magnetization in crustal rocks give rise to localized anomalies in the measured total magnetic field intensity. Geologic structural features [faults, contacts, intrusions, etc.] and metal objects will cause magnetic anomalies, which can be interpreted to define the location of the causative source.

After diurnal effects and regional gradients have been removed, magnetic anomalies can be studied in detail with derivative operations and frequency filtering employed to define depth and shape.

Because it is a potential field method, there are a number of possible source configurations for any given magnetic anomaly. There is also an inherent complexity in magnetic dipole behavior. If the various magnetic field parameters [inclination, declination, and susceptibility] are well defined, and some reasonable assumptions can be made regarding the nature of the source, an accurate source model can generally be derived.

Magnetic anomalies can be analyzed both qualitatively and quantitatively. The physical dimensions of an anomaly [slope, wave-length, amplitude, etc.] often reveal enough to draw some general qualitative conclusions regarding the location and depth of the causative source.

Precise interpretation must be done quantitatively and requires prior knowledge of earth and remanent magnetic field parameters. Modeling can be performed by various approximation methods, whereby one reduces the source to a system of poles or dipoles, or assumes it to be one of several simple, geometric forms [vertical prism, horizontal slab, step, etc.]. The magnetic properties for this simplified model can be rather easily defined mathematically. Simple formulas can be derived which relate readily measurable anomaly parameters, such as slope, width, and amplitude ratios, to the general dimensions of the anomaly source, including depth to top, thickness, dip, and width normal to strike. Since these methods involve very limiting geometric assumptions, the results can be treated as good approximations only for very simplified sources.



- I = Inclination
- D = Declination
- H = Horizontal Field Strength
- F = Total Magnetic Force

ELEMENTS OF THE EARTH'S MAGNETIC FIELD

FIGURE 1

APPENDIX C
GROUND PENETRATING RADAR
METHOD OF INVESTIGATION

GENERAL CONSIDERATIONS

Ground penetrating radar is an electromagnetic survey technique that reveals a graphic cross-sectional view of earth stratigraphy and point targets (i.e., drums, pipelines, utilities, boulders, etc.) below the ground surface. It is a reflection technique similar to the single-trace seismic reflection method commonly used in marine subbottom profiling. The two techniques differ in that the acoustic method uses audio frequency sound waves, while the radar method uses electromagnetic waves at frequencies of 80 to 1,000 megahertz (MHz).

In a radar system (Figure 1), high-frequency impulses of electromagnetic energy are generated by a transmitter in the antenna. Each impulse propagates downward through the ground surface and into the material below. At interfaces, part of the signal is reflected while part is transmitted still deeper to be reflected by other layers or isolated bodies. After transmitting the outgoing pulse, the antenna instantly switches from a transmitting mode to a receiving mode in order to detect the reflected signals.

During data acquisition, a graphic recorder provides an immediate view of the data. Radar impulses are transmitted in sync with a swept-stylus type graphic recorder. The graphic recorder stylus sweeps across the paper at a uniform speed and reflected signals above a user-selected threshold cause the paper to be darkened at points proportional to the amplitude of the reflection. Because the antenna is being pulled forward slowly, each pass of the stylus represents a slightly different antenna position. As the recorder paper advances, a continuous cross-section of reflections from subsurface stratigraphy and point targets is generated.

Data are recorded as a function of distance along the traverse versus time. Detected reflections are represented as the two way travel time to the reflector at a specific station location. Data enhancement is possible if the data are recorded on magnetic tape or diskette for later computer processing.

DATA INTERPRETATION

Figure 2 shows a GPR record of a buried river channel from a Weston Geophysical project in the northeastern United States. The dipping reflectors are indicative of the bedrock surface, while the nearly horizontal reflectors are from the overlying stratified fine sands.

Data is plotted as a function of antenna position versus time. Accurate determination of the depth to any layer requires calibration of the radar system. Calibration is performed by moving the antenna over a metal target with a known depth, such as a buried metal plate or pipe. Metallic objects typically are depicted by a characteristic hyperbolic anomaly. Figure 3 shows a GPR record over three buried fuel tanks. The time scale can then be converted to a depth scale by determining the location of the known reflector on the GPR record. If the depth to an observed reflector is not known, a borehole can be drilled or an excavation conducted to establish its depth. This is a more costly procedure, but it provides an exact depth calibration.

An approximation of the depth to a reflector can be made by estimating the velocity of the medium and by directly reading the travel times of the radar signals on the GPR recording. Velocity can be estimated by the equation:

$$V_m \approx C/\sqrt{K'}$$

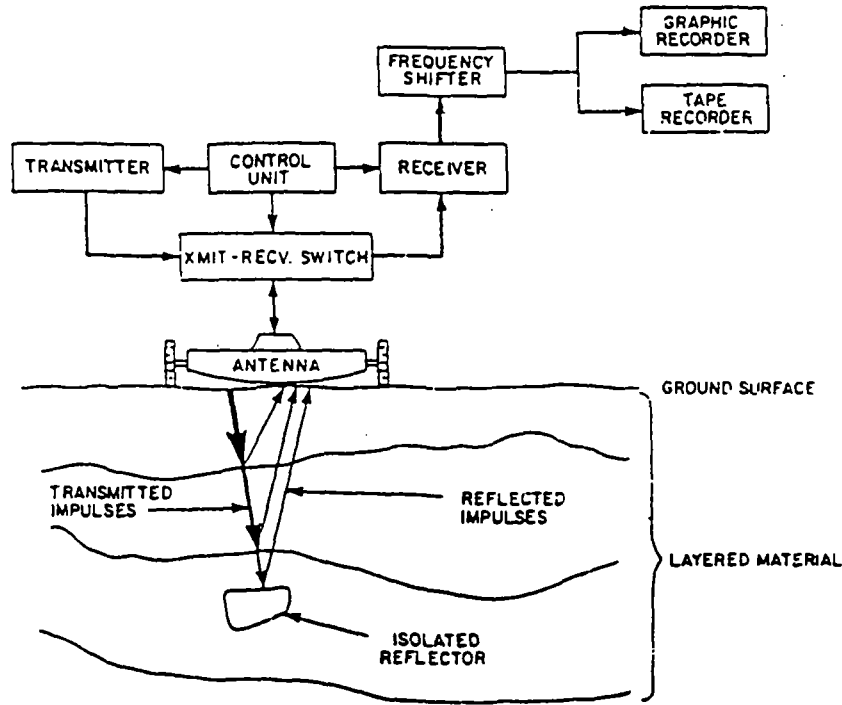
where

V_m is the velocity of the radar signals through the medium
C is the speed of light (2.998×10^8 m/s)

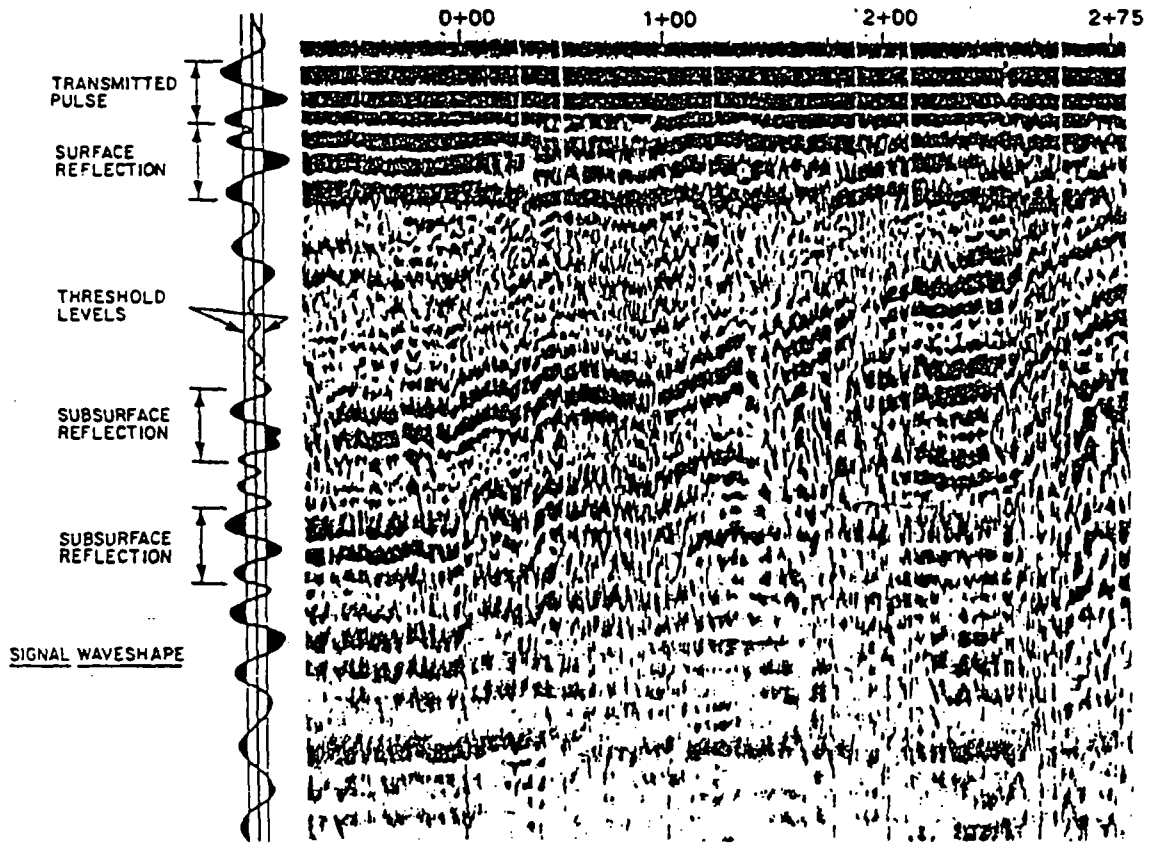
and K' is the dielectric constant (the real term at the relative dielectric permittivity). The values of the dielectric constant (electrical properties) for earth materials vary considerably and are affected by such conditions as porosity, degree of saturation, mineral composition, etc.

Depth of penetration in a given material is limited by attenuation of the signal. Attenuation is controlled by the amount of water and clay present in a material, the conductivity of the material and saturation fluids, and the degree of scattering of the electromagnetic signals. Penetration of up to 75 feet has been reported for water-saturated sands in a Massachusetts glacial delta. Signal penetration in saturated clays, however, is less than a few feet; signal penetration in sea water is less than one foot. It is important to note that in a layered material a single, highly reflective layer alone can limit penetration by preventing the propagation of energy past it. In this case, apparent loss of energy is caused by reflection rather than by signal attenuation.

Ground penetrating radar can be used to locate underground pipes and tanks, foundations, voids, sand, gravel, peat, and archeological artifacts. Layered structures in soils and hard rock can be charted accurately in continuous profiles. The effectiveness and speed with which modern systems can be used makes ground penetrating radar a logical choice where rapid and accurate shallow surveys are required.



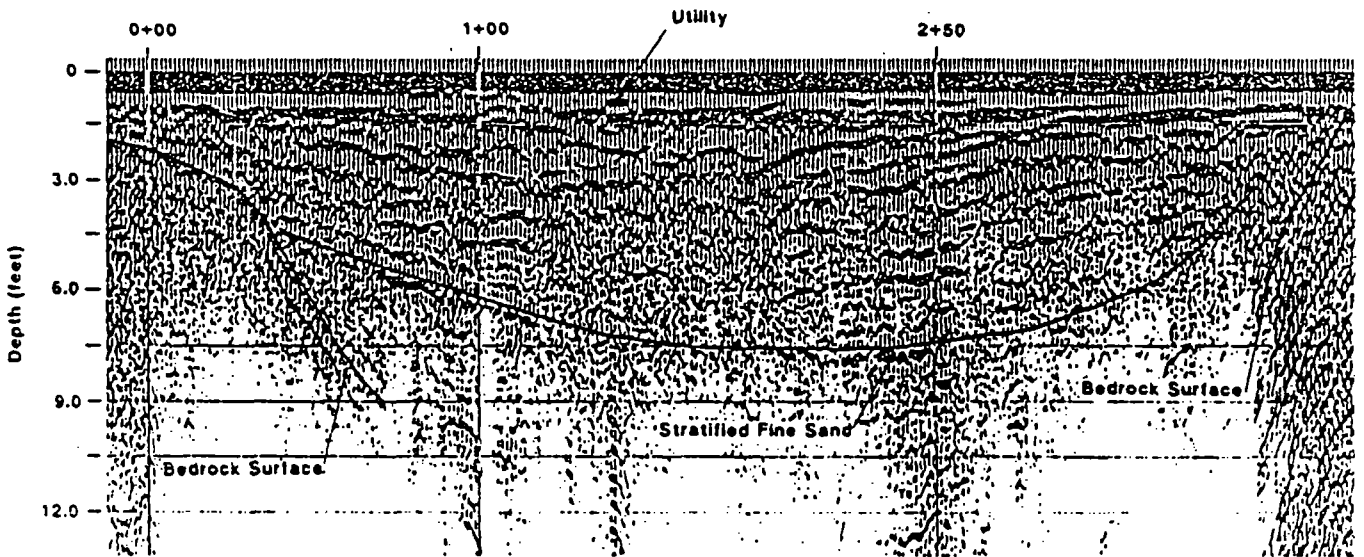
RADAR SYSTEM BLOCK DIAGRAM



TYPICAL RADAR RECORD

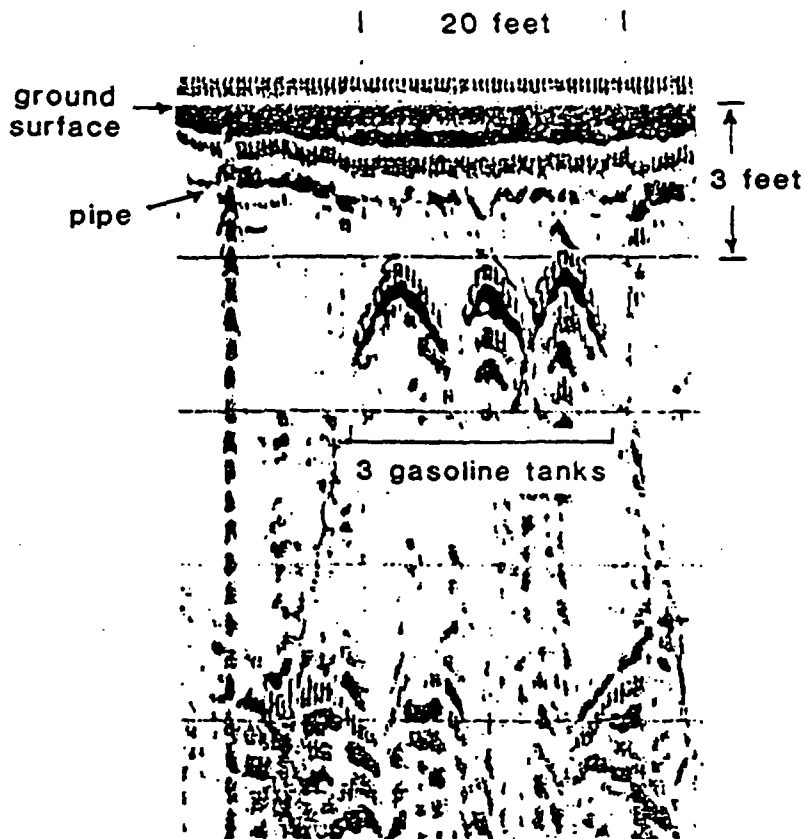
GROUND PENETRATING RADAR SET-UP

FIGURE 1



GROUND PENETRATING RADAR RECORD
OF A BURIED RIVER CHANNEL

FIGURE 2



GROUND PENETRATING RADAR RECORD
OF BURIED FUEL TANKS

FIGURE 3

APPENDIX D

SEISMIC REFRACTION DATA AND FIELD NOTES

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
1 0+00	6 sticks 8 lbs.	20'	4	350	"Clay"	11:47
1 16+45	8 sticks 4 lbs	20'	4	351	" "	13:11

77-DAT

LINE	A-A' (Profile 4)	
LOCATION	Farmer Across Land Fill Lyndon, VT	
JOB NO.	TECHNICIAN	DATE
18292-01	EE/MB/TB	20A1891
SEISMOGRAPH NO.	AMPLIFIER NO.	
Alpen 83240.1		
SPREAD LENGTH	FILTERS	
1720'	LOW AP HIGH	
RECORD NUMBER	TO	

17+20 STATION

N
W | E
S

RECORDS CHECKED BY

RECORDS READ BY

N
W | E
S

STATION 0+00

TOTAL CAPS INSTRUMENTATION LOCATED AT STATION B+75

TOTAL POWDER 12 lbs. INCLUDE RESHOTS

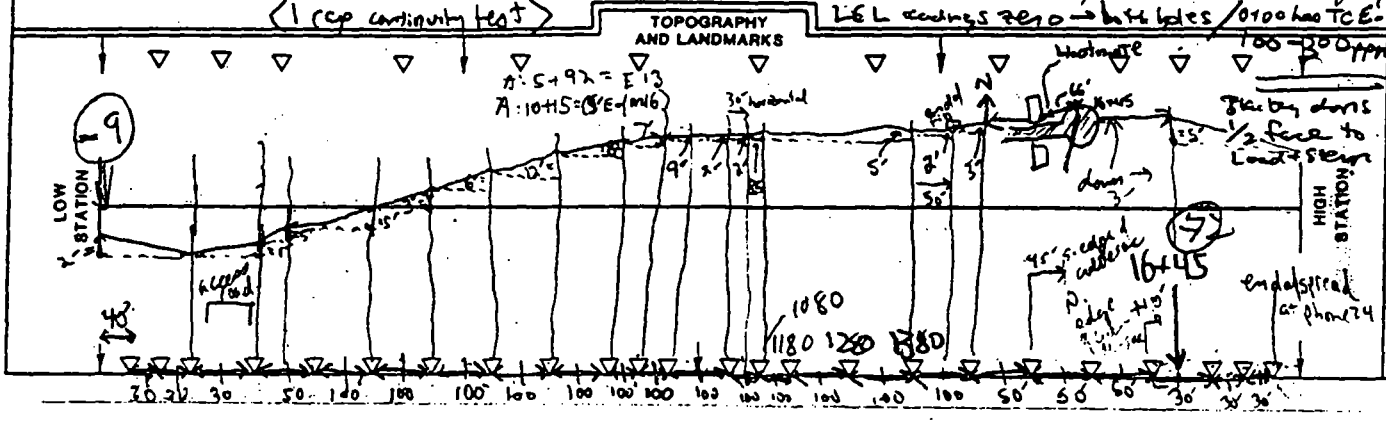
3 Redyne 365's - 1 rec
non AN - dynamite

< 1 cap continuity test >

drill holes: North edge of cut-de-sac (Trailer park) 16+45
IWS 2 southern edge e toe of slope (0+00)

Weather = overcast + 40° + little wind

Both holes uncased / hole @ 16+45 collapsing
L&L readings zero → both holes / 0100 has TCE!



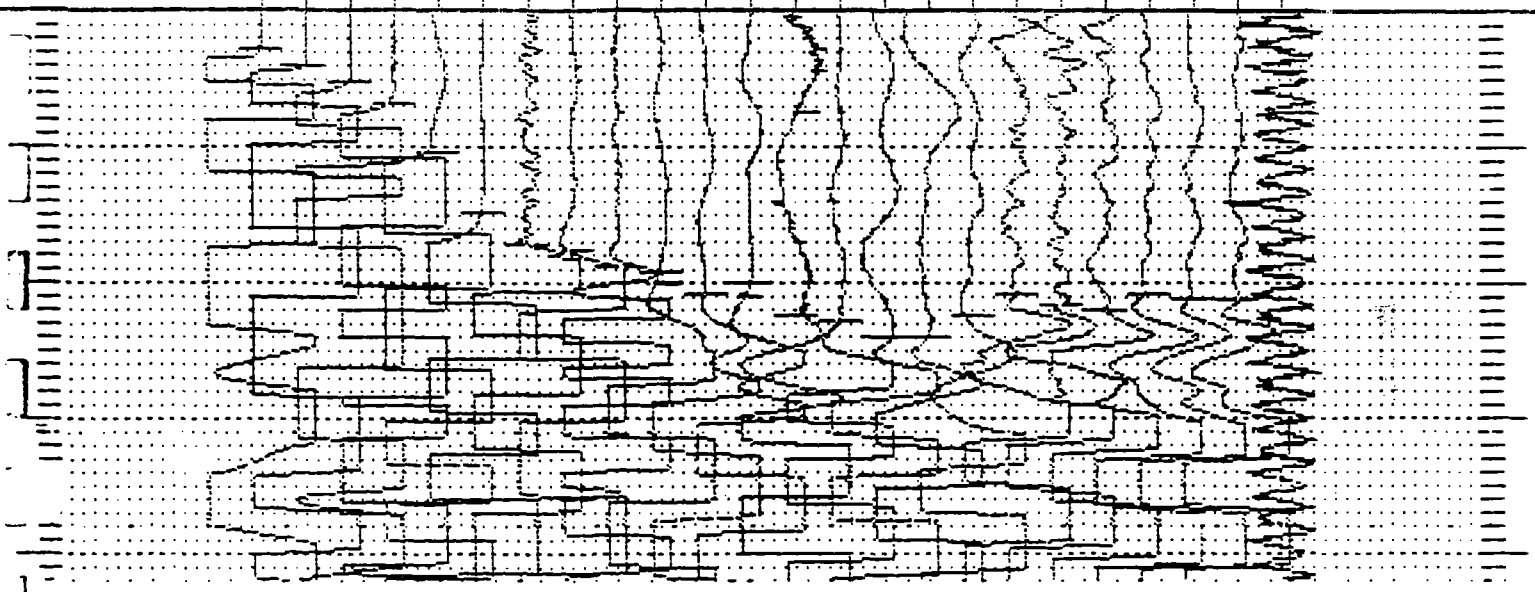
Shot pos.: 000 Layout start: 000 Layout end: 1750

Profile No.: 4 Note: 18292-04 Operator: 00001

Record time: 1000 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

CH	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
0a	08	10	10	12	14	15	15	15	15	15	15	15	16	16	16	16	15	15	15	15	15	15	15	15



Listing of markers: Record-000350 Date-910420 Time-11:47

Trace No	Marker time (ms)	Field notes
----------	------------------	-------------

01	160	
02	176	
03	210	

Record time: 1000 ms
 Delay time: 0000 ms
 Shot pos.: 000
 Layout start: 000
 Layout end: 1750
 Profile No.: 4
 Note: 18292-04
 Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
13780	1/3 KP	2'	10	434	H	
1255	1/3 KP	2'	↓	435	↓	
95	1/6 KP	2'	↓	436	↓	
11430	1/3 KP	2'	↓	437	↓	

Short section along A-A'

LINE A1 (parallel 9)

LOCATION _____

JOB NO. 18092-04 TECHNICIAN FF/JW DATE 26 APR 91

SEISMOGRAPH NO. Adem 8124007 AMPLIFIER NO. _____

SPREAD LENGTH 250' FILTERS LOW AP HIGH _____

RECORD NUMBER _____ TO _____

13 + 80

STATION (N)

W E

S

RECORDS CHECKED BY _____

RECORDS READ BY _____

W E

STATION (S)

11 + 30

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

methane exceeds LEL @ 13715
IN fill area (thicket portion)

TOTAL CAPS 4

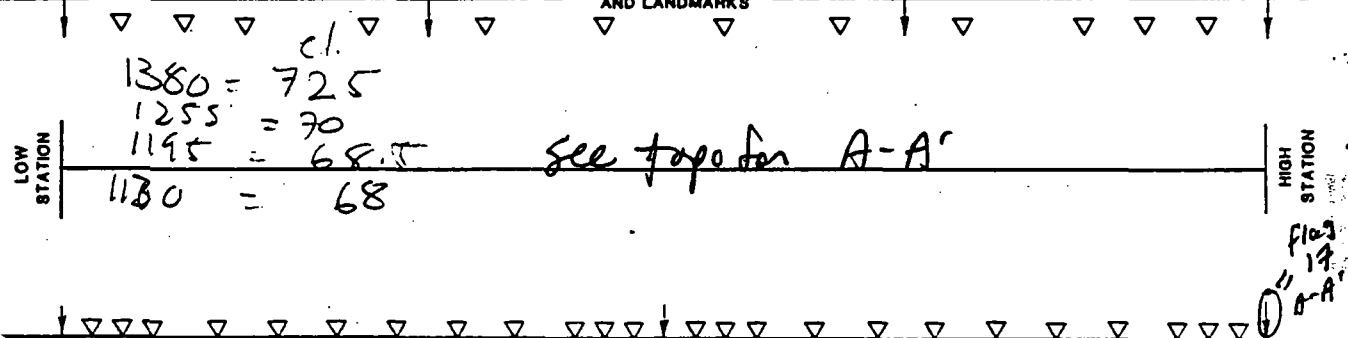
TOTAL POWDER 15

INCLUDE RESHOTS _____

INSTRUMENTATION LOCATED AT STATION _____

1 KP destroyed

TOPOGRAPHY AND LANDMARKS



Terraloc Seismic System

Record-000434

Date-910426

Time-11:54

not pos.: 13+80

Layout start: 11+30

Layout end: 13+80

Profile No.: 9

Note: 18292-04

Operator: 00001

Record time: 200 ms

Delay time: 0000 ms

Analog filter: Off

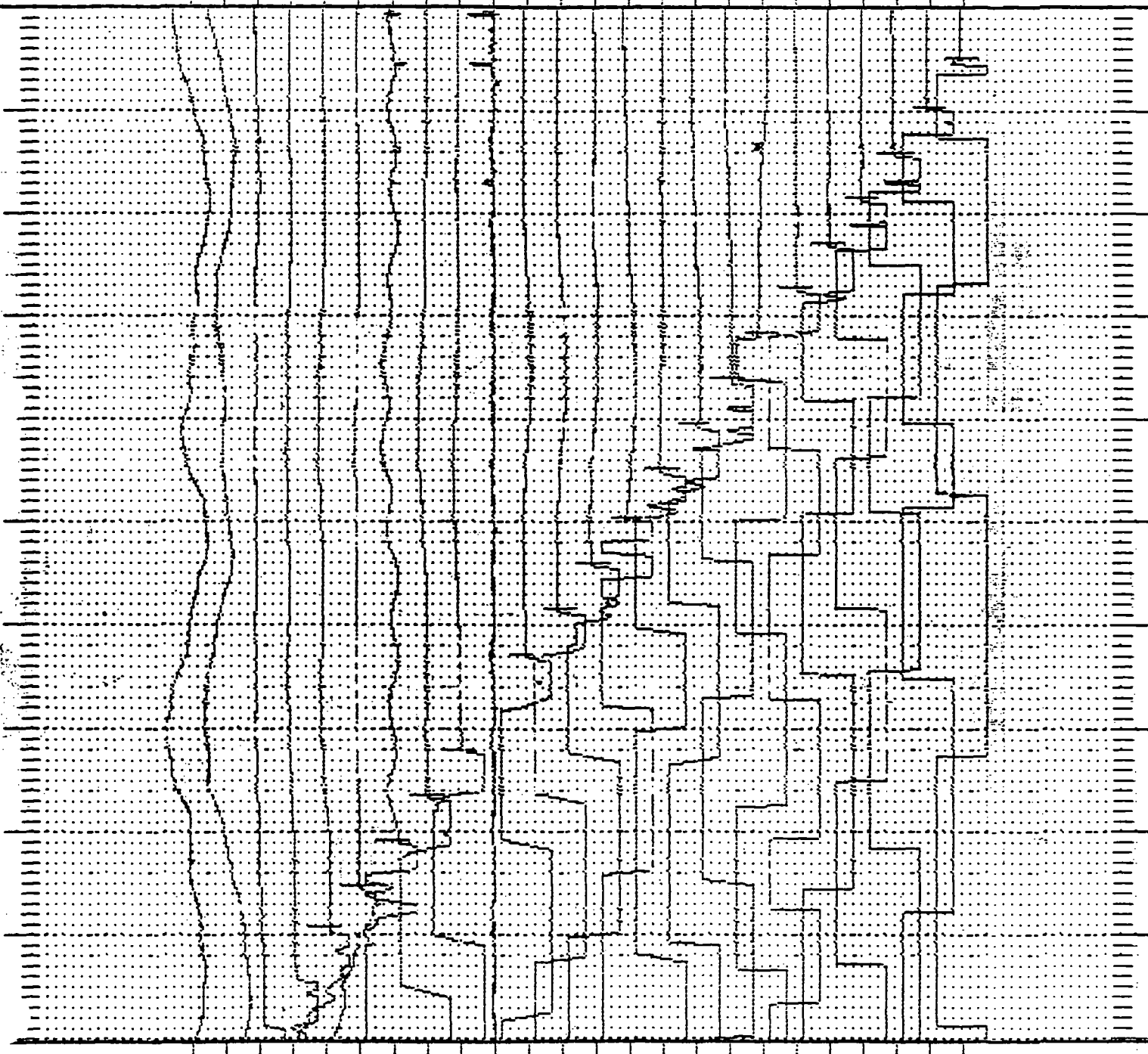
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ga	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Shot pos.: 12+55

Layout start: 11+30

Layout end: 13+00

Profile No.: 9

Note: 18292-04

Operator: 00001

Record time: 500 ms

Delay time: 0000 ms

Analog filter: Off

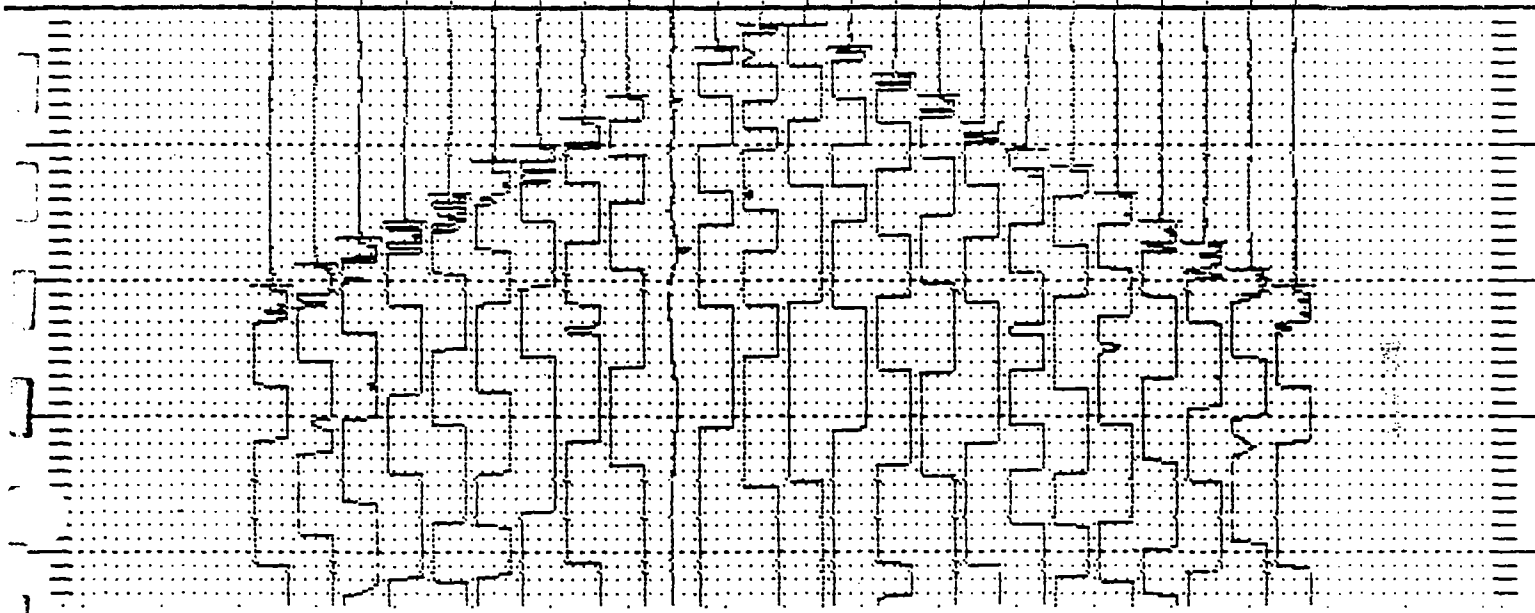
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers:

Record-000435

Date-910426

Time-12:22

Trace No	Marker time (ms)	Field notes
1	1000	Record time: 500 ms
1	1000	Delay time: 0000 ms
1	1000	Shot pos.: 12+55
1	1000	Layout start: 11+30
1	1000	Layout end: 13+00
1	1000	Profile No.: 9
1	1000	Note: 18292-04
1	1000	Operator: 00001

Shot pos.: 11+95

Layout start: 11+30

Layout end: 13+00

Profile No.: 9

Note: 18292-04

Operator: 00001

Record time: 500 ms

Delay time: 0000 ms

Analog filter: Off

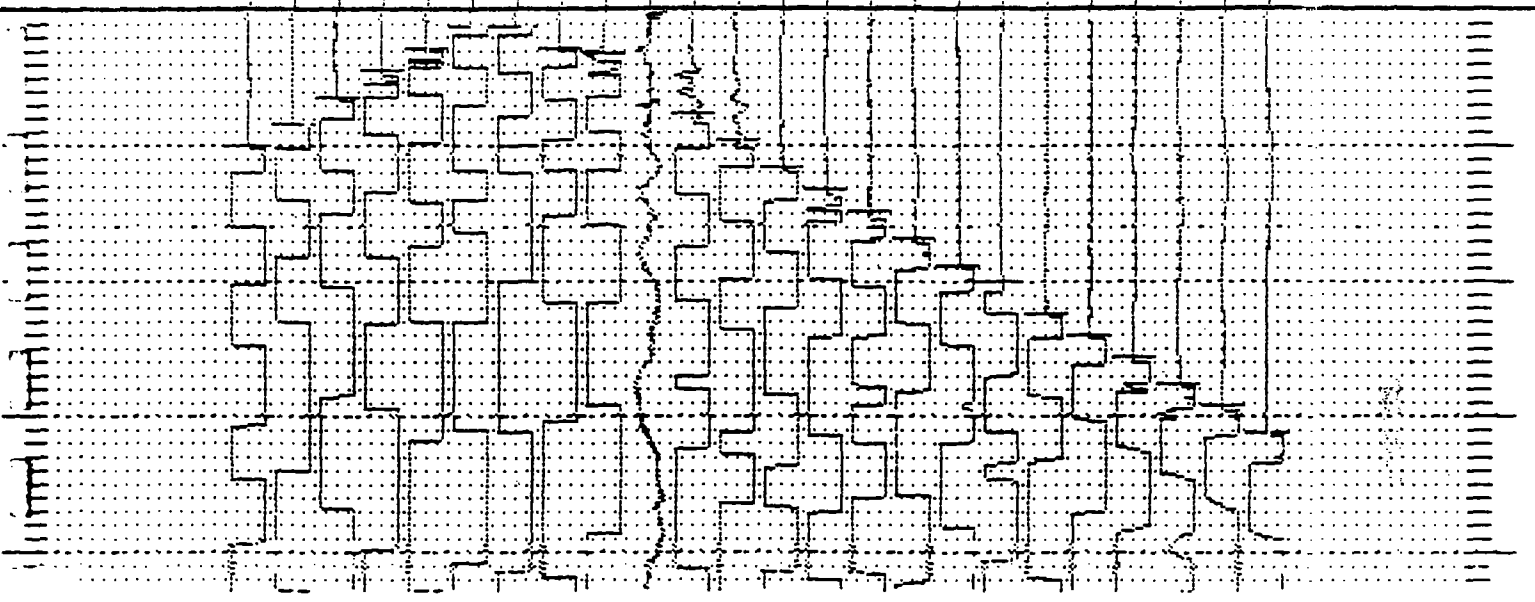
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
0a	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers:

Record-000436

Date-910426

Time-12:33

Trace No	Marker time (ms)	Field notes
----------	------------------	-------------

Record time: 500 ms

Delay time: 0000 ms

Shot pos.: 11+95

Layout start: 11+30

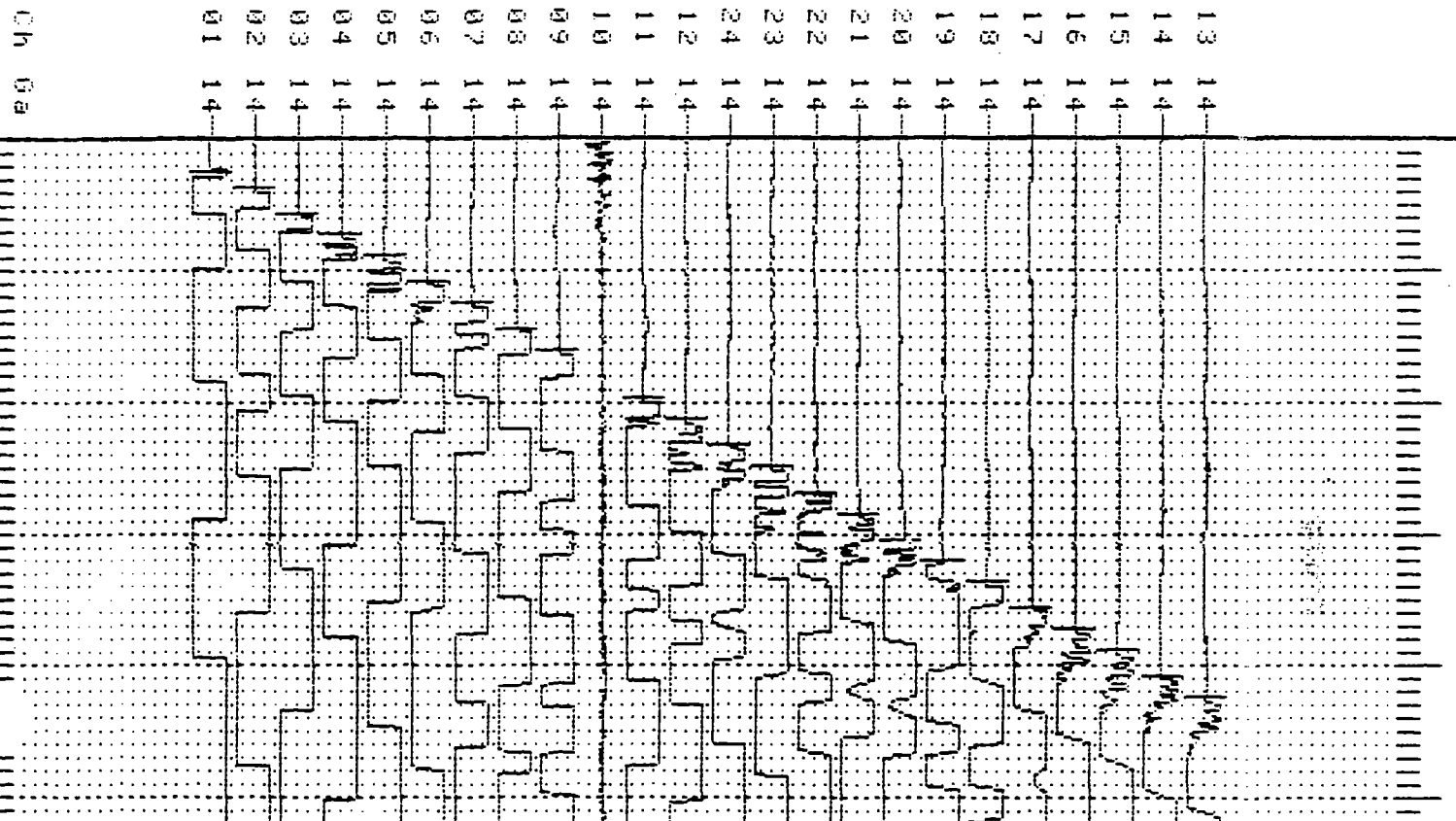
Layout end: 13+00

Profile No.: 9

Note: 18292-04

Operator: 00001

ABEM Terraloc Seismic System Record-000437 Date-910426 Time-12:41
 Shot pos.: 11+00 Layout start: 11+00 Layout end: 13+00
 Profile No.: 0 Note: 10292-04 Operator: 00001
 Record time: 500 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000437 Date-910426 Time-12:41

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 500 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 11+00
04	0000	Layout start: 11+00
05	0000	Layout end: 13+00
06	0000	Profile No.: 0
07	0000	Note: 10292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	

11 5:25 45 11

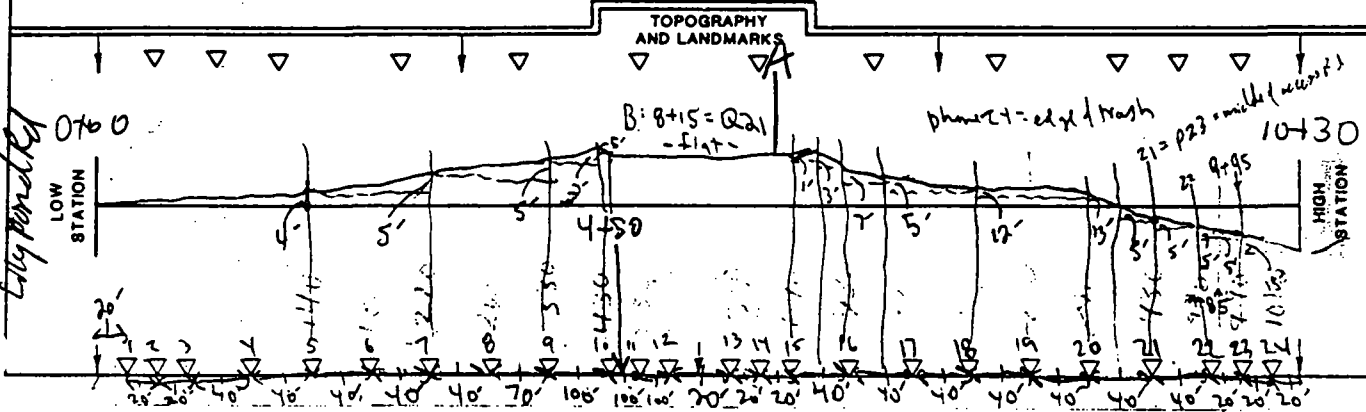
SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
1	3 lbs 20 sticks	20'	4	352	Dilled BAR	15:49
4+50	2 lbs 4 sticks	4'	4	353	M. BAR	16:23
4	4 lbs 8 sticks	4'	4	354	S BAR	16:58

LINE <u>B-B' (pr. file 5)</u>		
LOCATION <u>Through Newton Park taken Lynch, VT</u> <u>East from Lily Pond Rd across road fill</u>		
JOB NO. <u>10292-04</u>	TECHNICIAN <u>FF/MB/SB</u>	DATE <u>20 APR 71</u>
SEISMOGRAPH NO. <u>Open 8727001</u>		AMPLIFIER NO.
SPREAD LENGTH <u>1030'</u>		FILTERS LOW <u>AP</u> HIGH
RECORD NUMBER _____ TO _____		

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET; DRY, ETC.)

Tampite Fume Class 1
LEL readings @ 4+50 + 10+30
→ zero readings

TOTAL CAPS 7 INSTRUMENTATION LOCATED AT STATION ST00
TOTAL POWDER 18 9 lbs
INCLUDE RESHOTS



10 +30
STATION

N
W (E)
S

RECORDS CHECKED BY

RECORDS READ BY

N
W (E)
S

STATION
0 +00

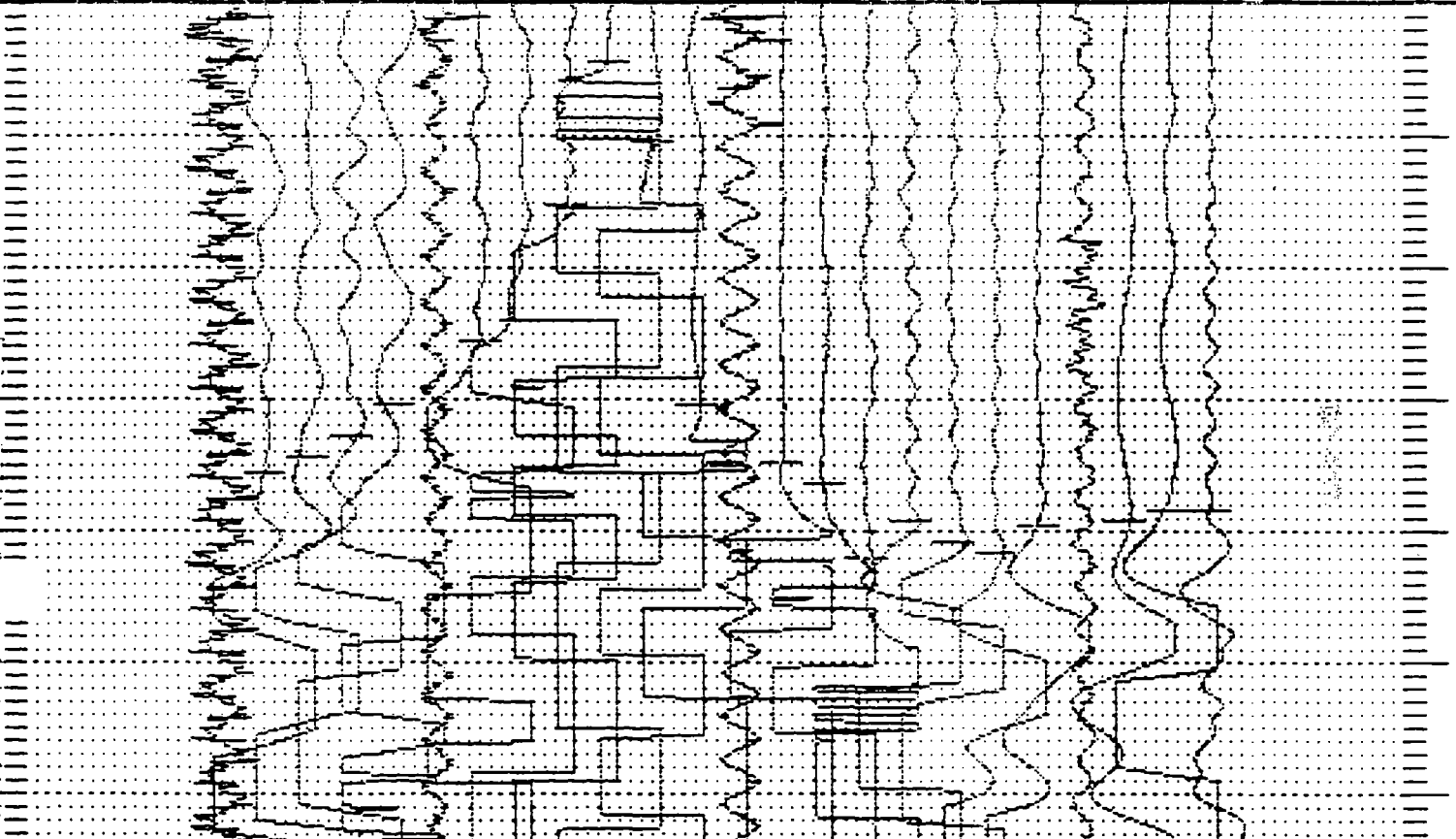
Shot pos.: 450 Logout start: 000 Logout end: 1000

Profile No.: 5 Note: 10092-04 Operator: 00001

Record time: 500 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ga	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15



Listing of markers: Record-000050 Date-910420 Time-16:23

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 500 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 450
04	0000	Logout start: 000
05	0000	Logout end: 1000
06	0000	Profile No.: 5
07	0000	Note: 10092-04
08	0000	Operator: 00001

Shot pos.: 1030

Layout start: 000

Layout end: 1030

Profile No.: 5

Note: 10292-04

Operator: 00001

Record time: 500 ms

Delay time: 0000 ms

Analog filter: Off

Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shot: 001

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15
15	15	15	15	15	15	15	15	15	15	15	15	15	15	15



Listing of markers: Record-000354 Date-910420 Time-16:58

Trace No	Marker time (ms)	Field notes
----------	------------------	-------------

01	0000	Record time: 500 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1030
04	0000	Layout start: 000
05	0000	Layout end: 1030
06	0000	Profile No.: 5
07	0000	Note: 10292-04
08	0000	Operator: 00001

09	0000	Record time: 500 ms
10	0000	Delay time: 0000 ms
11	0000	Shot pos.: 1030
12	0000	Layout start: 000
13	0000	Layout end: 1030
14	0000	Profile No.: 5
15	0000	Note: 10292-04
16	0000	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
100	4 lbs	20'	8	411	Drill hole	17:00
210	2 lbs	4'		412	B-H 10' at -5	17:32
10	4 lbs	4'		413	S	18:25

LINE C-C' (profile 8)

LOCATION Lyndonville, VT
Access Landfill - Hamming Lake

JOB NO. 18292-04 TECHNICIAN SB/FF DATE 24 APR 91

SEISMOGRAPH NO. Atem 8-2-1001 AMPLIFIER NO. _____

SPREAD LENGTH 1110' FILTERS LOW AT HIGH

RECORD NUMBER _____ TO _____

11 + 10
STATION
N
W
S

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS 7 INSTRUMENTATION LOCATED AT STATION 3700

TOTAL POWDER 10 lbs

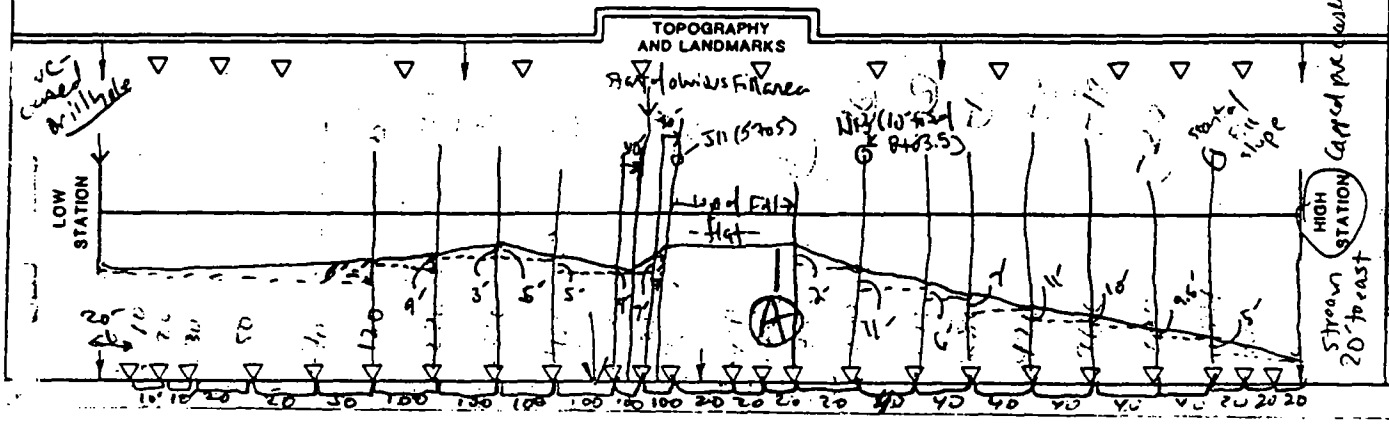
INCLUDE RESHOTS

Lev readings 0

C. DAT

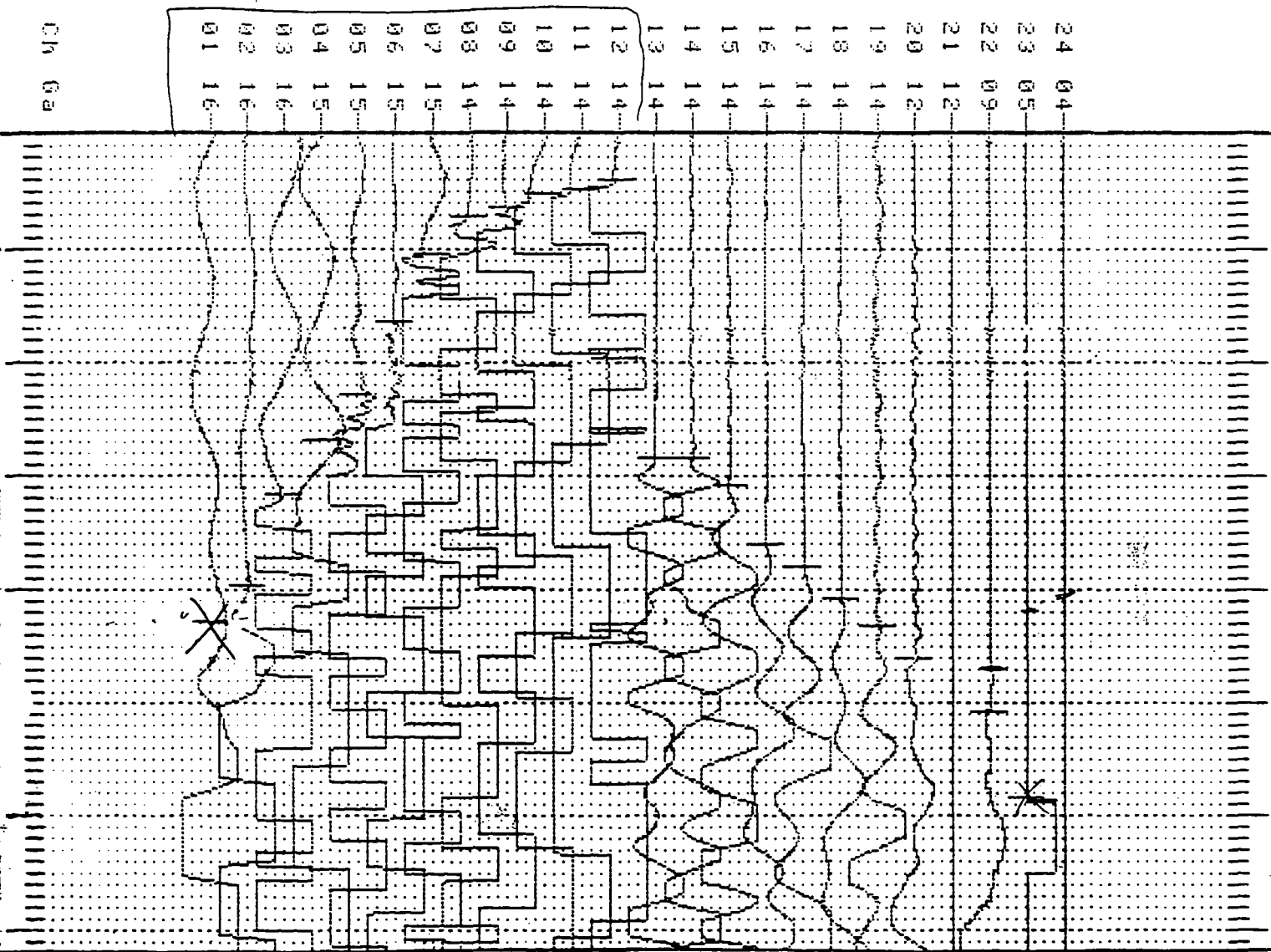
RECORDS CHECKED BY _____

RECORDS READ BY _____



N
E
S
STATION
0 + 00

Profile No.: 6 Shot pos.: 0+00 Layout start: 0+00 Layout end: 11+10
 Record time: 500 ms Note: 18292-04 Operator: 00001
 Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

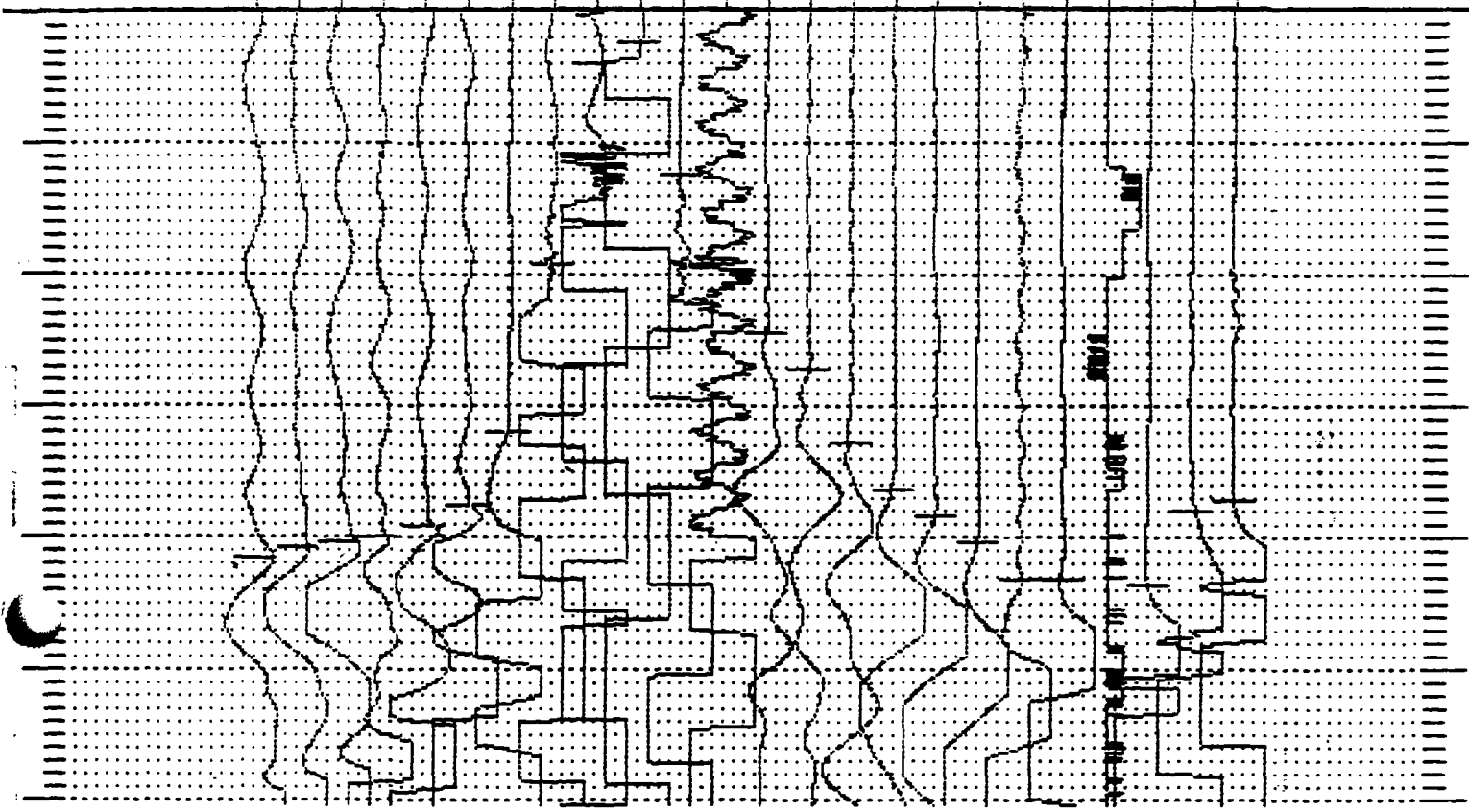


Listing of markers: Record-000411 Date-910424 Time-17:00

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 500 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 0+00
04	0000	Layout start: 0+00
05	0000	Layout end: 11+10
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

Shot pos.: 5+10 Layout start: 0+00 Layout end: 11+10
 Profile No.: 8 Note: 18292-04 Operator: 00001
 Record time: 500 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	12	11	10	09	08	07	06	05	04	03	02	01	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000412 Date-910424 Time-17:32

Trace No	Marker time (ms)	Field notes
12	0.0	Record time: 500 ms Delay time: 0000 ms Shot pos.: 5+10 Layout start: 0+00 Layout end: 11+10 Profile No.: 8 Note: 18292-04 Operator: 00001
11	0.1	
10	0.2	
09	0.3	
08	0.4	
07	0.5	
06	0.6	
05	0.7	
04	0.8	
03	0.9	
02	1.0	
01	1.1	
13	1.2	
14	1.3	
15	1.4	
16	1.5	
17	1.6	
18	1.7	
19	1.8	
20	1.9	
21	2.0	
22	2.1	
23	2.2	
24	2.3	

Terraloc Seismic System

Record-000413

Date-910424

Time-18:25

Shot pos.: 11+10

Layout start: 0+00

Layout end: 11+10

Profile No.: 6

Note: 18292-04

Operator: 00001

Record time: 500 ms

Delay time: 0000 ms

Analog filter: Off

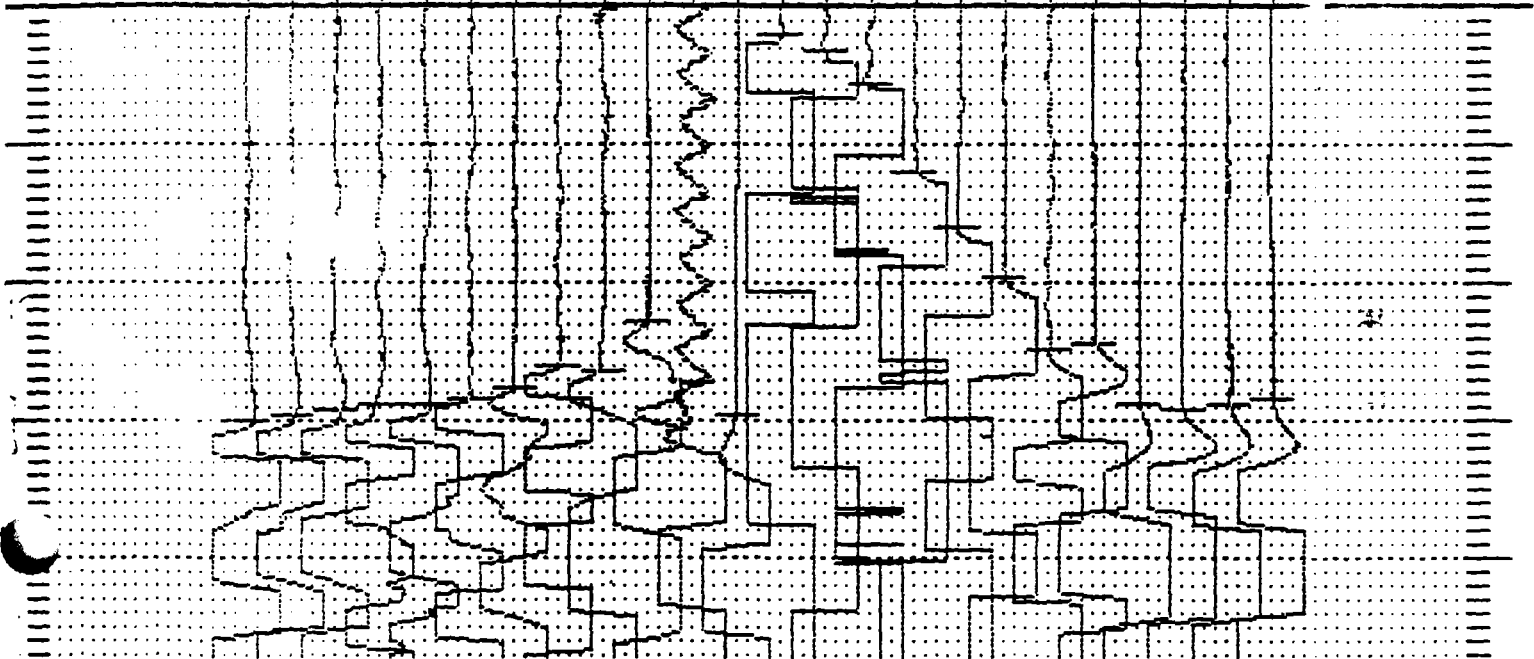
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12
Gain	15	15	15	15	15	15	15	15	15	15	15	15



Listing of markers:

Record-000413

Date-910424

Time-18:25

Trace No

Marker time (ms)

Field notes

Record time: 500 ms

Delay time: 0000 ms

Shot pos.: 11+10

Layout start: 0+00

Layout end: 11+10

Profile No.: 6

Note: 18292-04

Operator: 00001

Handwritten notes and markings on the left side of the marker listing, including a vertical list of numbers (1-12) and various symbols and lines.

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
0+00	1/3kl	3'	7	396	Swampy wet	9:25
1+00				397		9:38
2+00				398		9:48
3+00				399		
4+00	↓	↓	↓	400		

Along power line easement

LINE D-P (profile 7)		
LOCATION Londonville, VT		
<i>Working from Union Farm Rd towards Fill Area</i>		
JOB NO. 18292-04	TECHNICIAN FF/5B	DATE 24 APR 91
SEISMOGRAPH NO. Agem 8724001	AMPLIFIER NO.	
SPREAD LENGTH 400'	FILTERS LOW AP HIGH	
RECORD NUMBER _____ TO _____		

4 +00
STATION

(N)

W E

S

RECORDS CHECKED BY

RECORDS READ BY

N

W E

(S)

STATION
0 +00

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

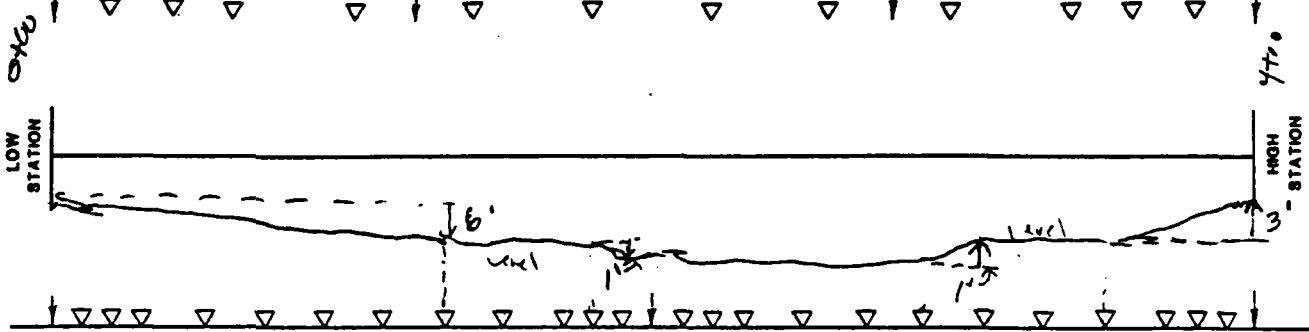
Boring B-124 15' E of 0+00
Shallow water table

TOTAL CAPS INSTRUMENTATION LOCATED AT STATION 2+70

TOTAL POWDER

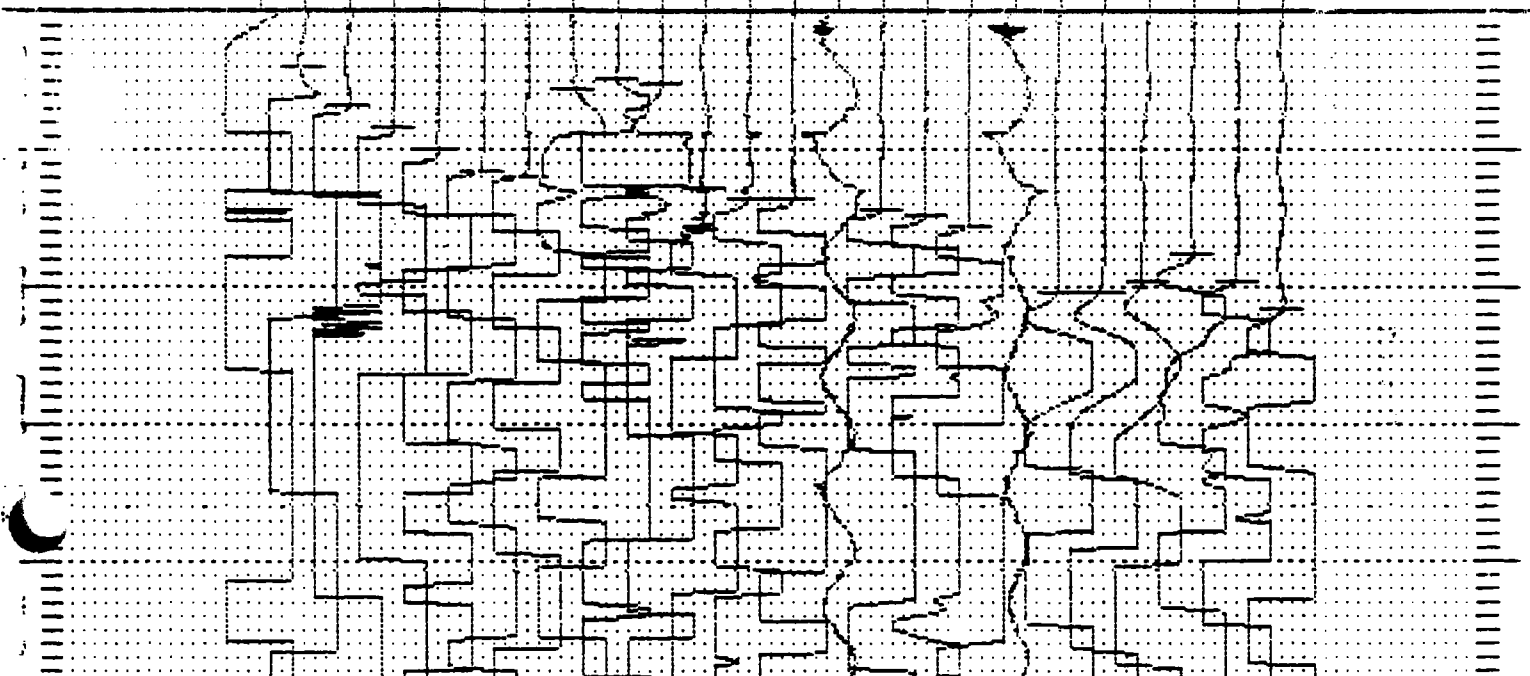
INCLUDE RESHOTS

TOPOGRAPHY AND LANDMARKS



Shot pos.: 0+00 Layout start: 0+00 Layout end: 4+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000396 Date-910424 Time-09:25

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 0+00
04	0000	Layout start: 0+00
05	0000	Layout end: 4+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Terraloc Seismic System

Record-000397

Date-910424

Time-09:38

Shot pos.: 1+00

Layout start: 0+00

Layout end: 4+00

Profile No.: 7

Note: 18292-04

Operator: 00001

Record time: 200 ms

Delay time: 0000 ms

Analog filter: Off

Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Ge	11	11	11	09	07	05	05	07	10	12	12	12	12	12	15	15	15	15	15	15	15	15	15	15	15



Listing of markers:

Record-000397

Date-910424

Time-09:38

Trace No	Marker time (ms)	Field notes
----------	------------------	-------------

01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1+00
04	0000	Layout start: 0+00
05	0000	Layout end: 4+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Record time: 200 ms
 Delay time: 0000 ms
 Shot pos.: 1+00
 Layout start: 0+00
 Layout end: 4+00
 Profile No.: 7
 Note: 18292-04
 Operator: 00001

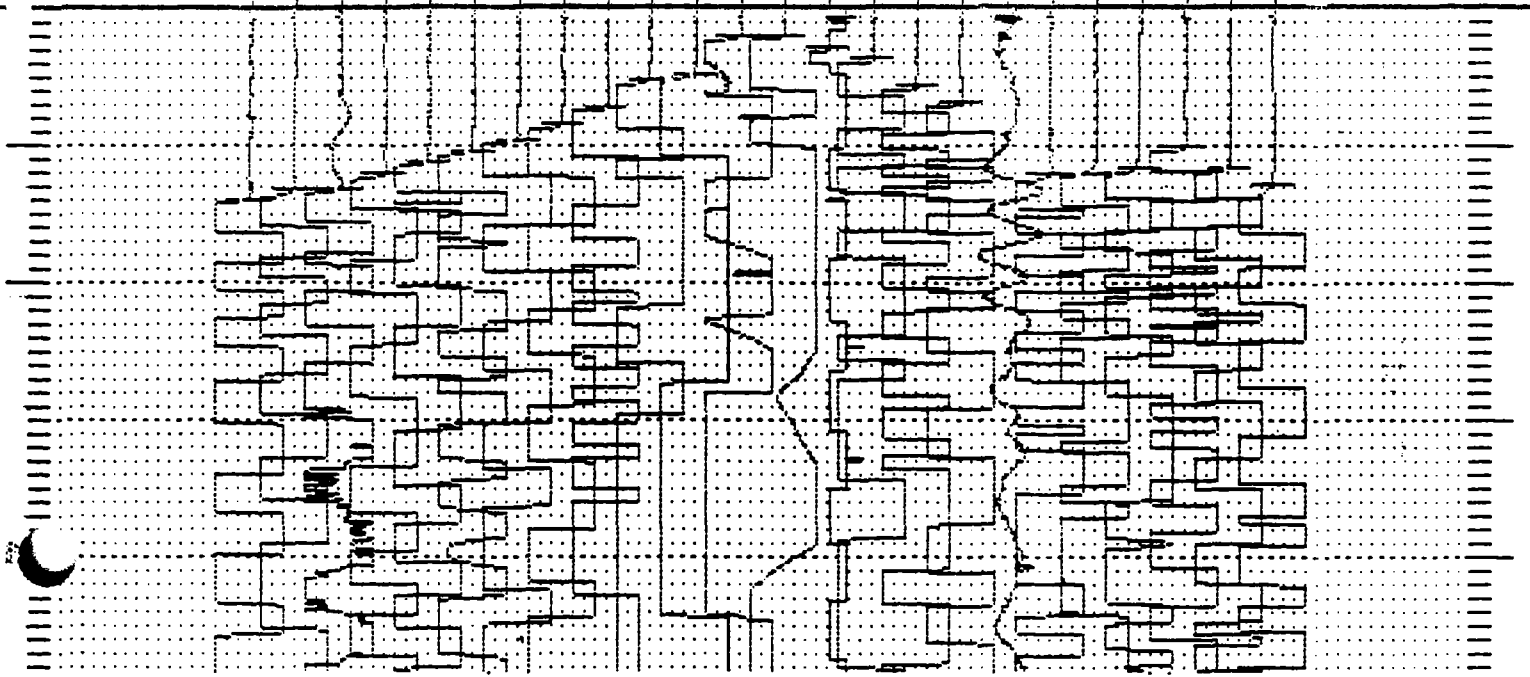
Pos.: 2+00 Layout start: 0+00 Layout end: 4+00

Profile No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0a	13	13	13	13	13	13	13	13	13	13	09	05	05	09	13	13	13	13	13	13	13	13	13	13



Listing of markers: Record-000398 Date-910424 Time-09:49

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 2+00
04	0000	Layout start: 0+00
05	0000	Layout end: 4+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Analog Seismic System Record-000400 Date-910424 Time-10:07

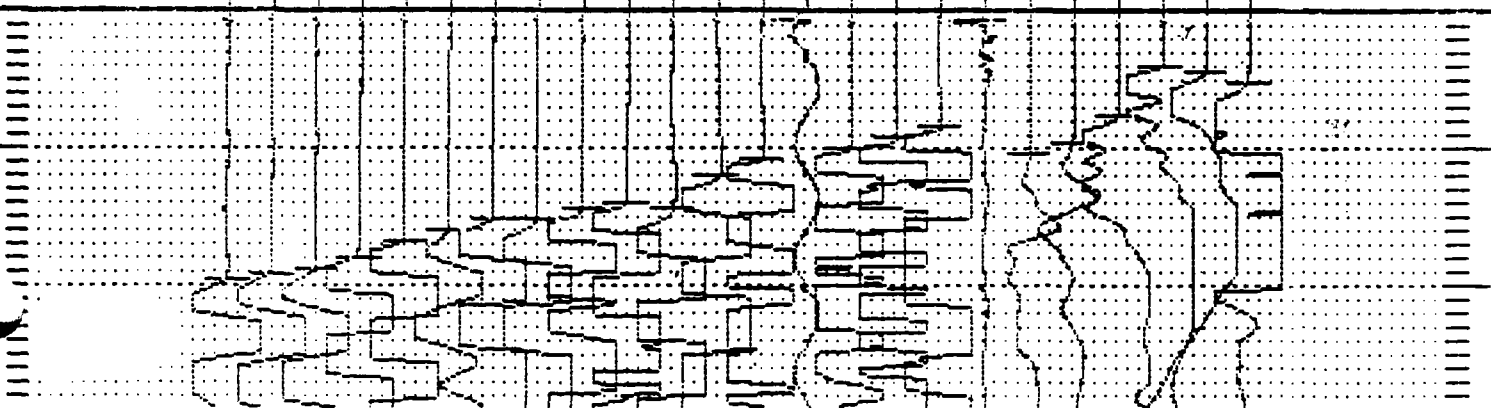
Pos.: 4+00 Layout start: 0+00 Layout end: 4+00

File No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



Listing of markers: Record-000400 Date-910424 Time-10:07

Trace No	Marker time (ms)	Field notes
+		Record time: 200 ms
5		Delay time: 0000 ms
5		Shot pos.: 4+00
5		Layout start: 0+00
5		Layout end: 4+00
5		Profile No.: 7
5		Note: 18292-04
5		Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
4700	1/3 KP	3'	7	401	see note	11:15
5400				402		11:24
400				403		11:32
7+00				404		11:41
8+00	↓	↓	↓	405	✓	11:48

Along line easement

LINE D-D' (profile 7)		
LOCATION North from Benningfield, Brandonville, VT		
JOB NO. 18292-04	TECHNICIAN FF/JS	DATE 24 Apr 91
SEISMOGRAPH NO. AZEM 8724001		AMPLIFIER NO.
SPREAD LENGTH 400		FILTERS LOW AP HIGH
RECORD NUMBER _____ TO _____		

8+00
STATION
N
W E
S

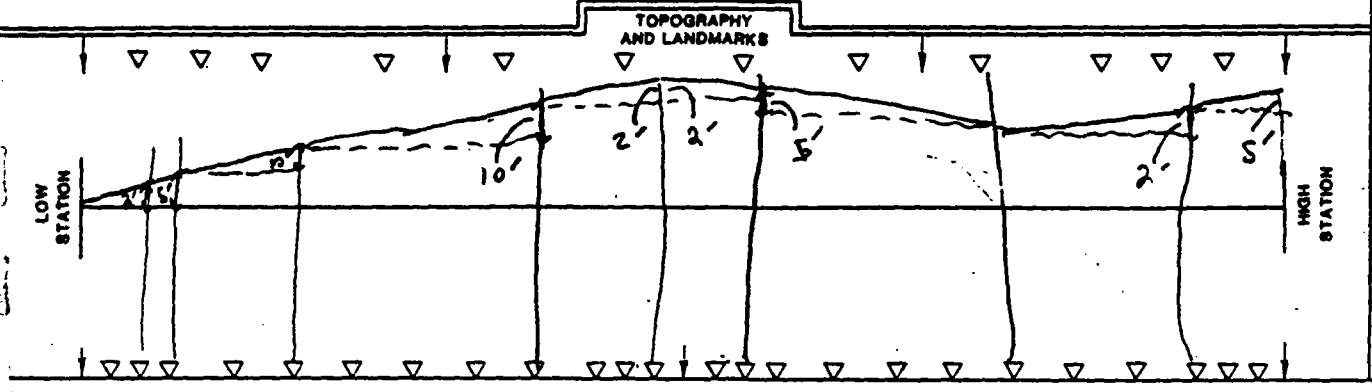
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS INSTRUMENTATION LOCATED AT STATION 6+70

TOTAL POWDER

INCLUDE RESHOTS

* 1st 1' soft
then 2-3' of hard material



RECORDS CHECKED BY

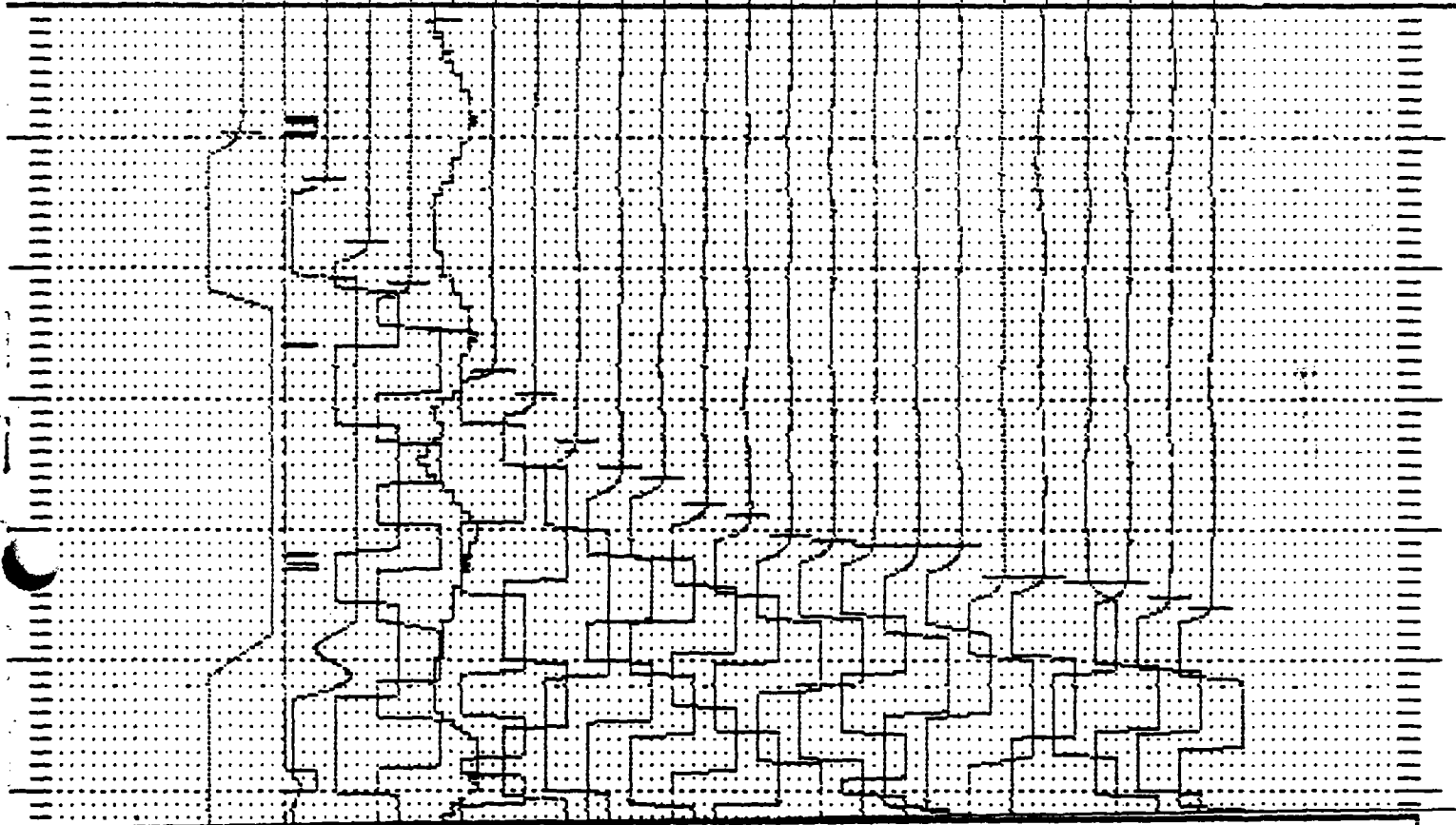
RECORDS READ BY

N
W E
3

STATION
4+00

Shot pos.: 4+00 Layout start: 4+00 Layout end: 8+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	04	06	08	10	10	12	12	12	12	12	13	13	13	13	13	13	13	13	13	14	14	14	14	14

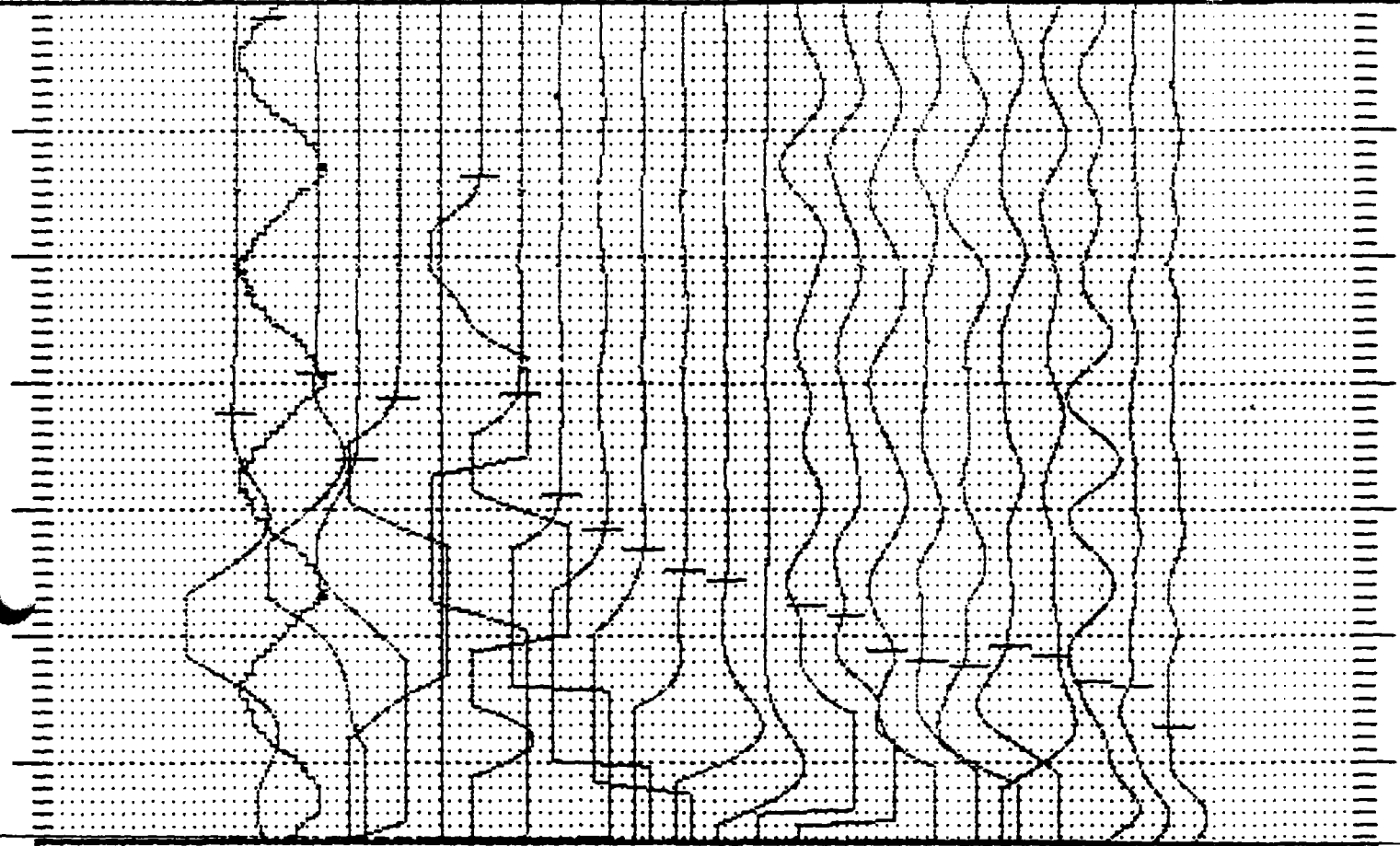


Listing of markers: Record-000401 Date-910424 Time-11:15

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 100 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 4+00
04	0000	Layout start: 4+00
05	0000	Layout end: 8+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Pos.: 5+00 Layout start: 4+00 Layout end: 8+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	10	10	10	08	06	04	04	06	09	11	11	11	11	11	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000402 Date-910424 Time-11:24

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 100 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 5+00
04	0000	Layout start: 4+00
05	0000	Layout end: 8+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: 6+00

Layout start: 4+00

Layout end: 8+00

Profile No.: 7

Note: 18292-04

Operator: 00001

Record time: 100 ms

Delay time: 0000 ms

Analog filter: Off

Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	13	13	13	13	13	13	13	13	13	09	05	05	09	13	13	13	13	13	13	13	13	13	13	13



Listing of markers:

Record-000403

Date-910424

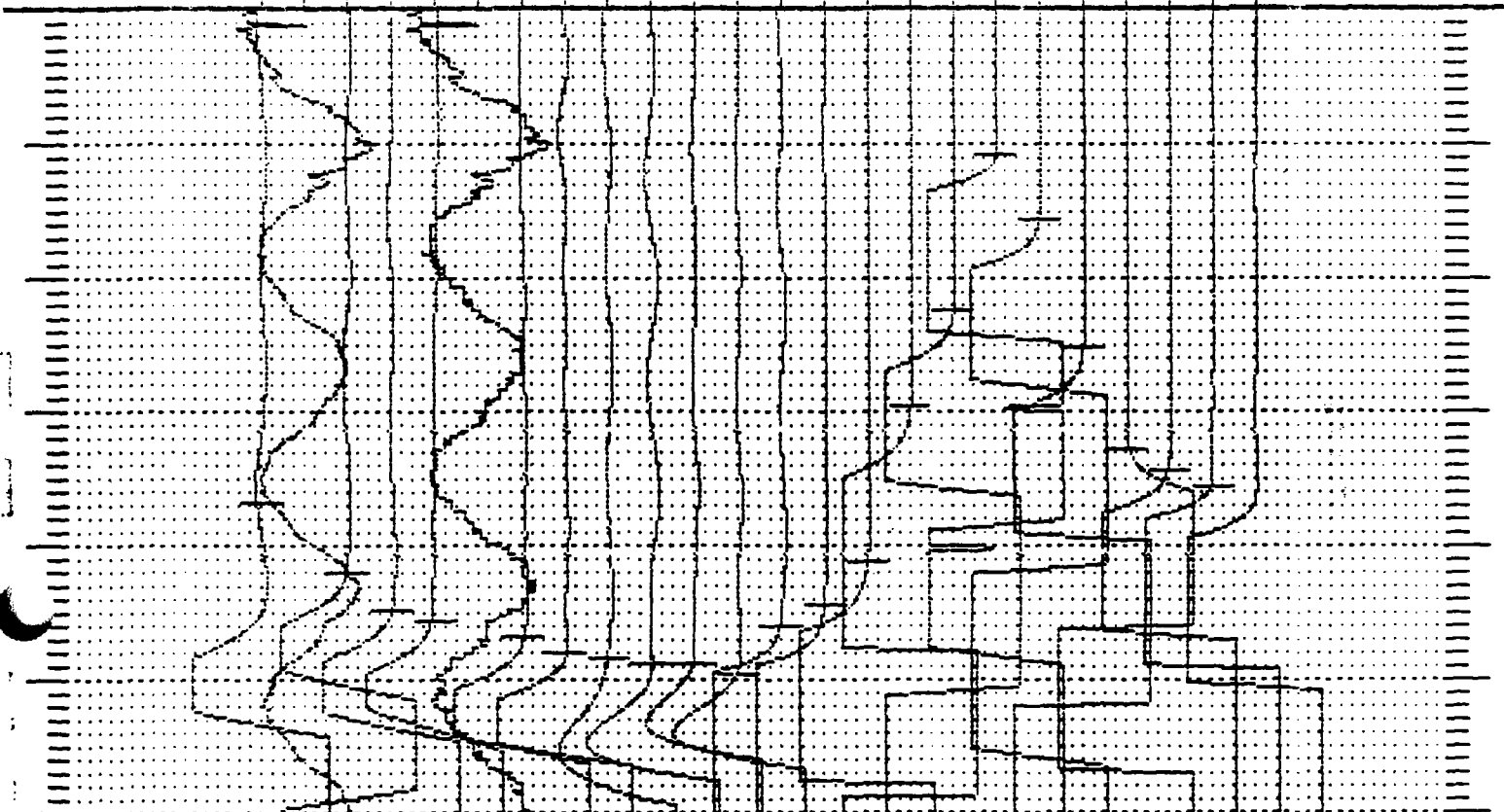
Time-11:32

Trace No	Marker time (ms)	Field notes
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01	4	Record time: 100 ms
02	4	Delay time: 0000 ms
03	4	Shot pos.: 6+00
04	4	Layout start: 4+00
05	4	Layout end: 8+00
06	4	Profile No.: 7
07	4	Note: 18292-04
08	4	Operator: 00001

Shot pos.: 7+00 Layout start: 4+00 Layout end: 8+00
 Profile No.: 7 Note: 10292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

04	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
08	14	14	14	14	14	14	14	14	13	13	13	13	13	12	10	10	07	04	04	07	09	10	12	12



Listing of markers: Record-000404 Date-910424 Time-11:41

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 100 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 7+00
04	0000	Layout start: 4+00
05	0000	Layout end: 8+00
06	0000	Profile No.: 7
07	0000	Note: 10292-04
08	0000	Operator: 00001

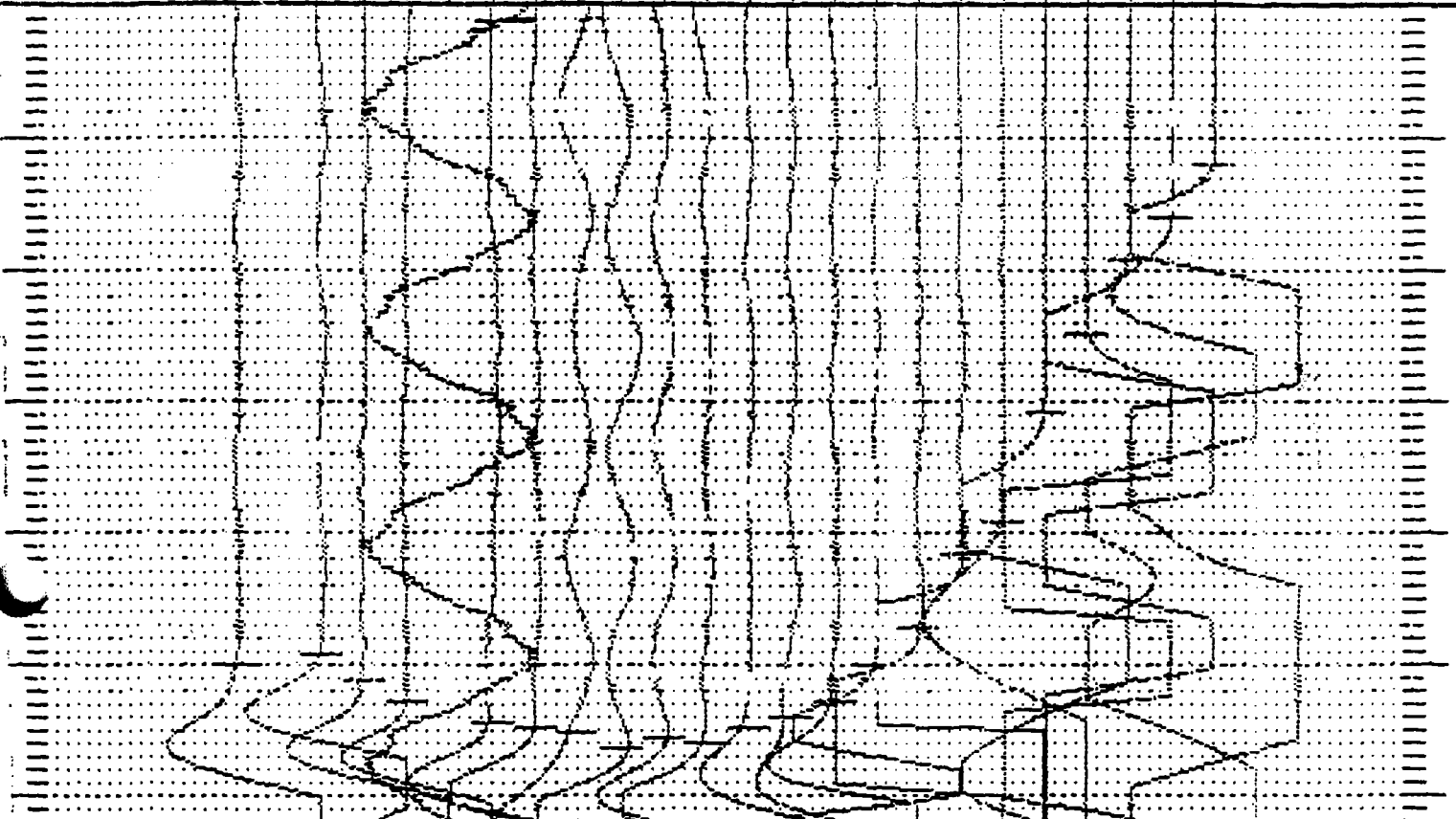
Shot 0+00 Layout start: 0+00 Layout end: 0+00

Profile No.: 7 Note: 10292-04 Operator: 00001

Record time: 100 ms Delay time: 0000 ms Analog filter: Off

Display mode Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



Listing of markers: Record-000405 Date-910424 Time-11:48

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 100 ms
03	0000	Delay time: 0000 ms
04	0000	Shot pos.: 0+00
05	0000	Layout start: 0+00
06	0000	Layout end: 0+00
07	0000	Profile No.: 7
08	0000	Note: 10292-04
09	0000	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
8700	1/3 kg	3'	8	406		13:29
8780				407		13:55
10700				408		14:01
11706				409		14:07
12700				410		

LINE <u>D-D'</u>		
LOCATION <u>18297 of Lyndonville, VT</u>		
JOB NO. <u>18297-04</u>	TECHNICIAN <u>FF/JS</u>	DATE <u>4/24/91</u>
SEISMOGRAPH NO. <u>ABEM</u>		AMPLIFIER NO.
SPREAD LENGTH <u>400</u>		FILTERS <u>LOW</u> HIGH
RECORD NUMBER _____ TO _____		

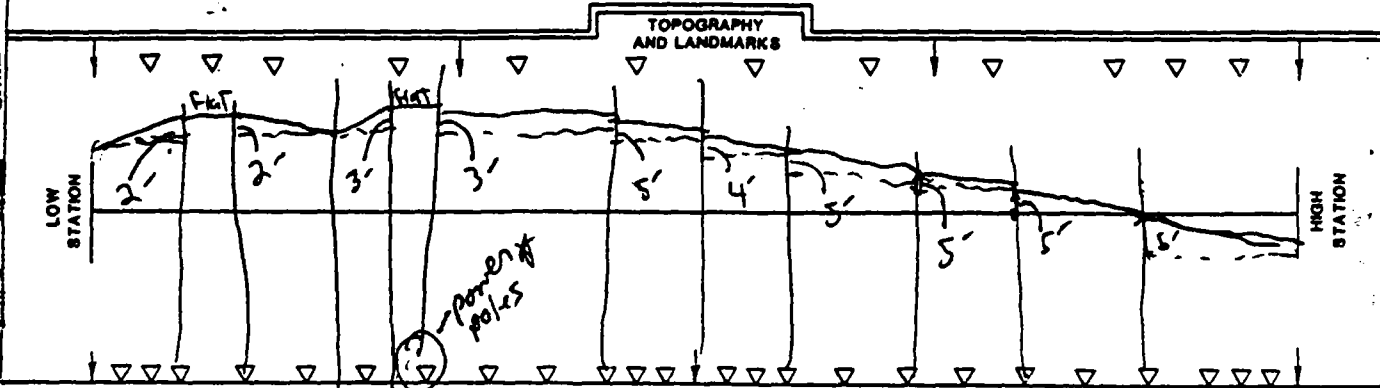
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS

TOTAL POWDER

INCLUDE REBHOTS

INSTRUMENTATION LOCATED AT STATION _____
 * power poles (2nd set in to north of brown farm rd)



12 + 00

STATION

N

W E

S

RECORDS CHECKED BY

RECORDS READ BY

N

W E

STATION

+00

Analogue Seismic System

Record-000406

Date-910424

Time-13:29

pos: 8+00

Layout start:

8+00

Layout end:

12+00

Profile No: 7

Note: 18292-04

Operator: 00001

Record time: 100 ms

Delay time: 0000 ms

Analog filter: Off

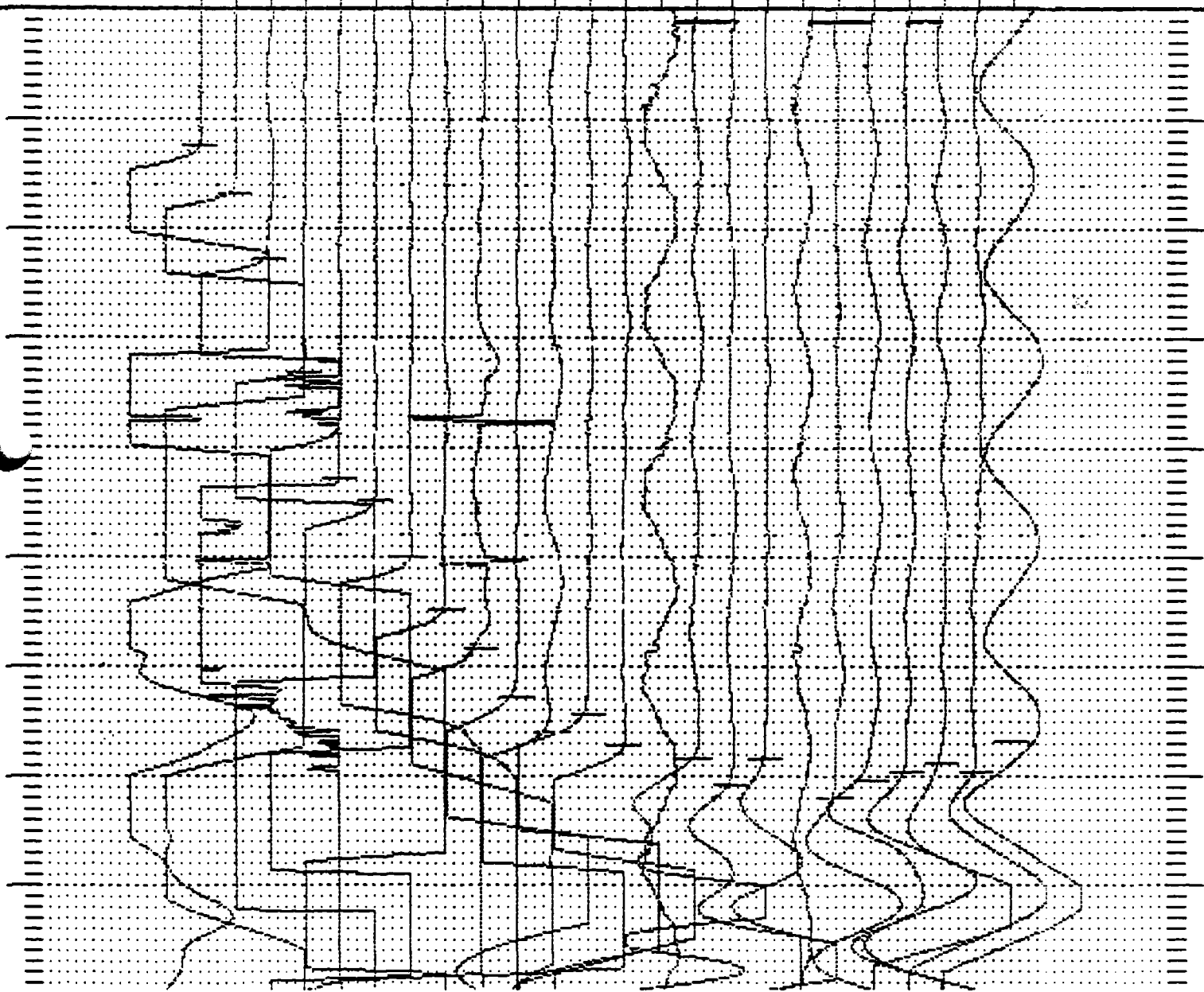
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	04	06	08	10	10	12	12	12	12	13	13	13	13	13	13	13	13	13	13	14	14	14	14	14



Listing of markers: Record-000406 Date-910424 Time-13:29

Trace No	Marker time (ms)	Field notes
00003	00000	Record time: 100 ms
00004	00000	Delay time: 0000 ms

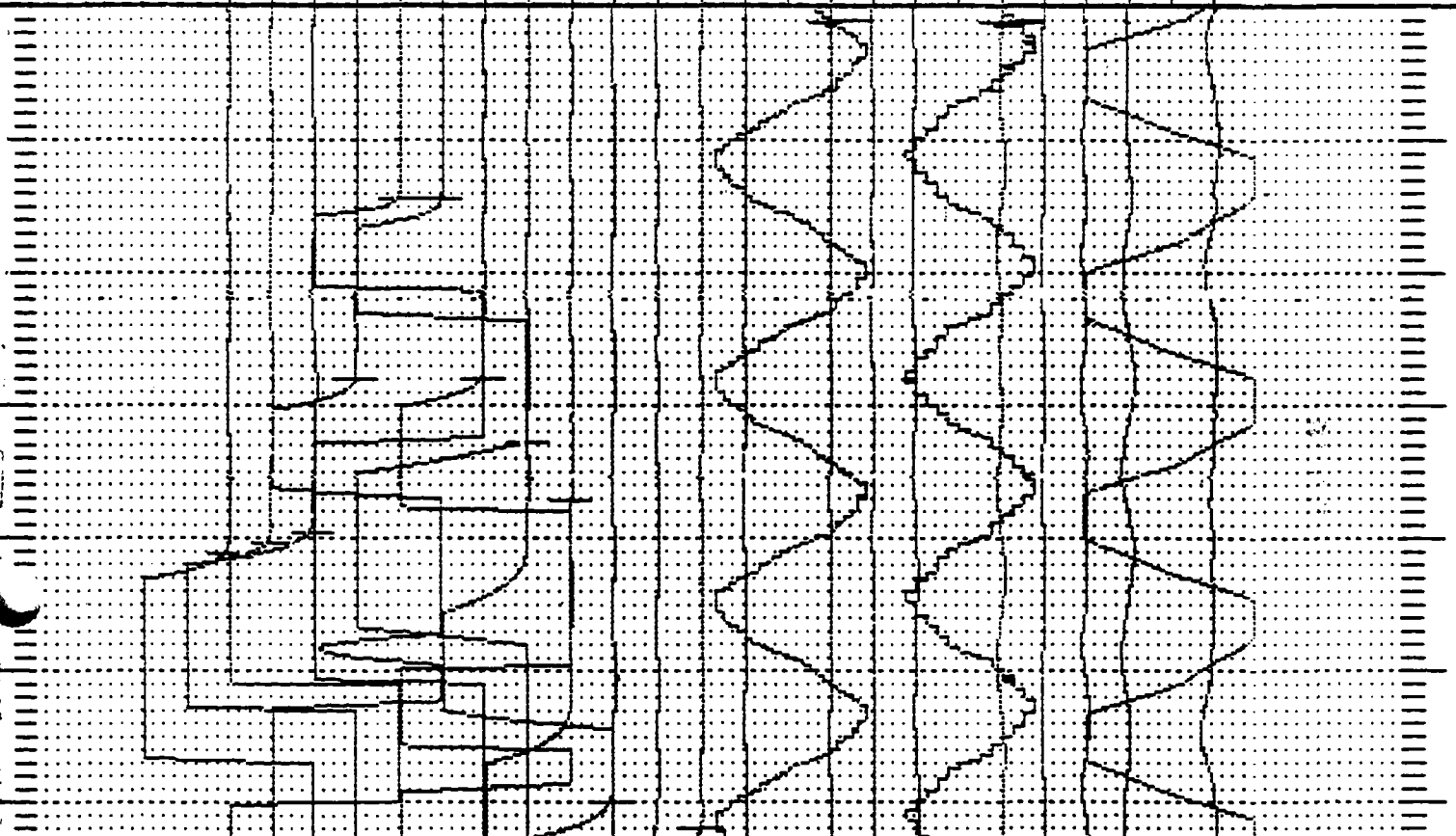
pos.: 0+00 Layout start: 0+00 Layout end: 12+00

Profile No.: 7 Note: 18292-04 Operator: 00001

Record time: 100 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
sa	11	11	11	09	07	07	09	09	10	11	11	11	11	11	11	12	12	12	12	12	12	13	13	14



Listing of markers: Record-000407 Date-910424 Time-13:55

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 100 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 0+00
04	0000	Layout start: 0+00
05	0000	Layout end: 12+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

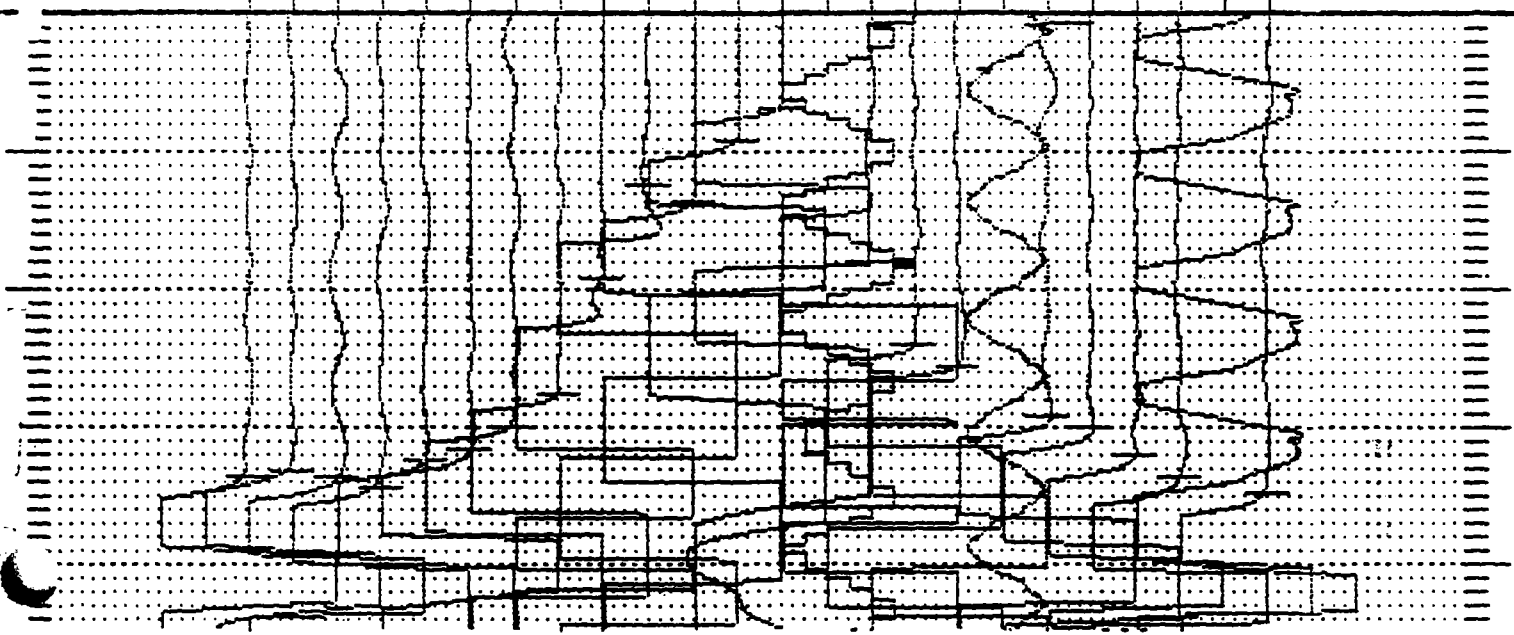
pos.: 10+00 Layout start: 8+00 Layout end: 12+00

file No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	13	13	13	13	13	13	13	13	13	13	09	05	05	09	13	13	13	13	13	13	13	13	13	13



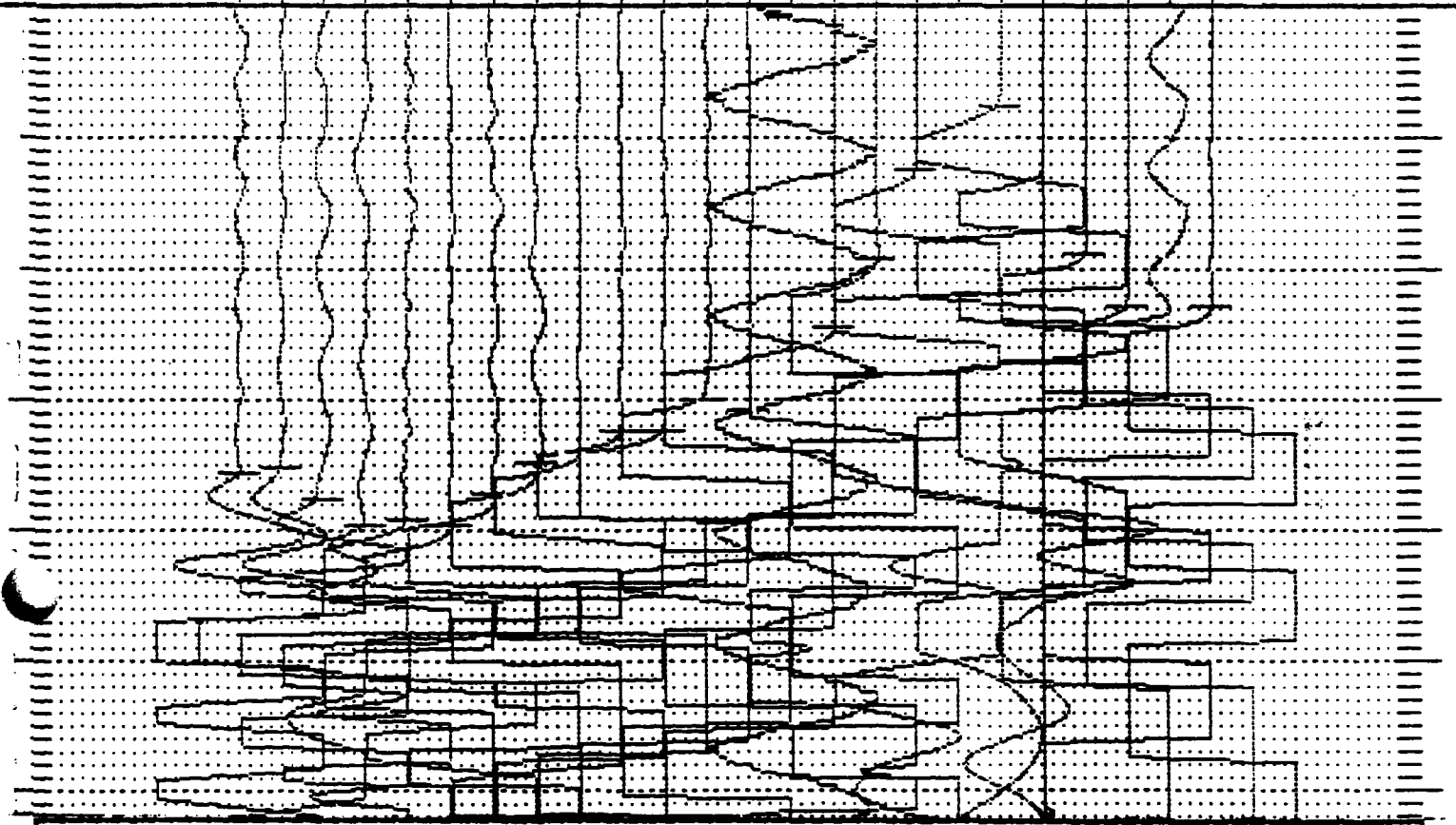
Listing of markers: Record-000408 Date-910424 Time-14:01

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 10+00
04	0000	Layout start: 8+00
05	0000	Layout end: 12+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

ABEM Terraloc Seismic System Record-000409 Date-910424 Time-14:07
 Shot pos.: 11+00 Layout start: 8+00 Layout end: 12+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch Ga

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
 13 13 13 13 13 13 13 13 12 12 12 12 11 09 09 06 03 03 06 08 09 11 11

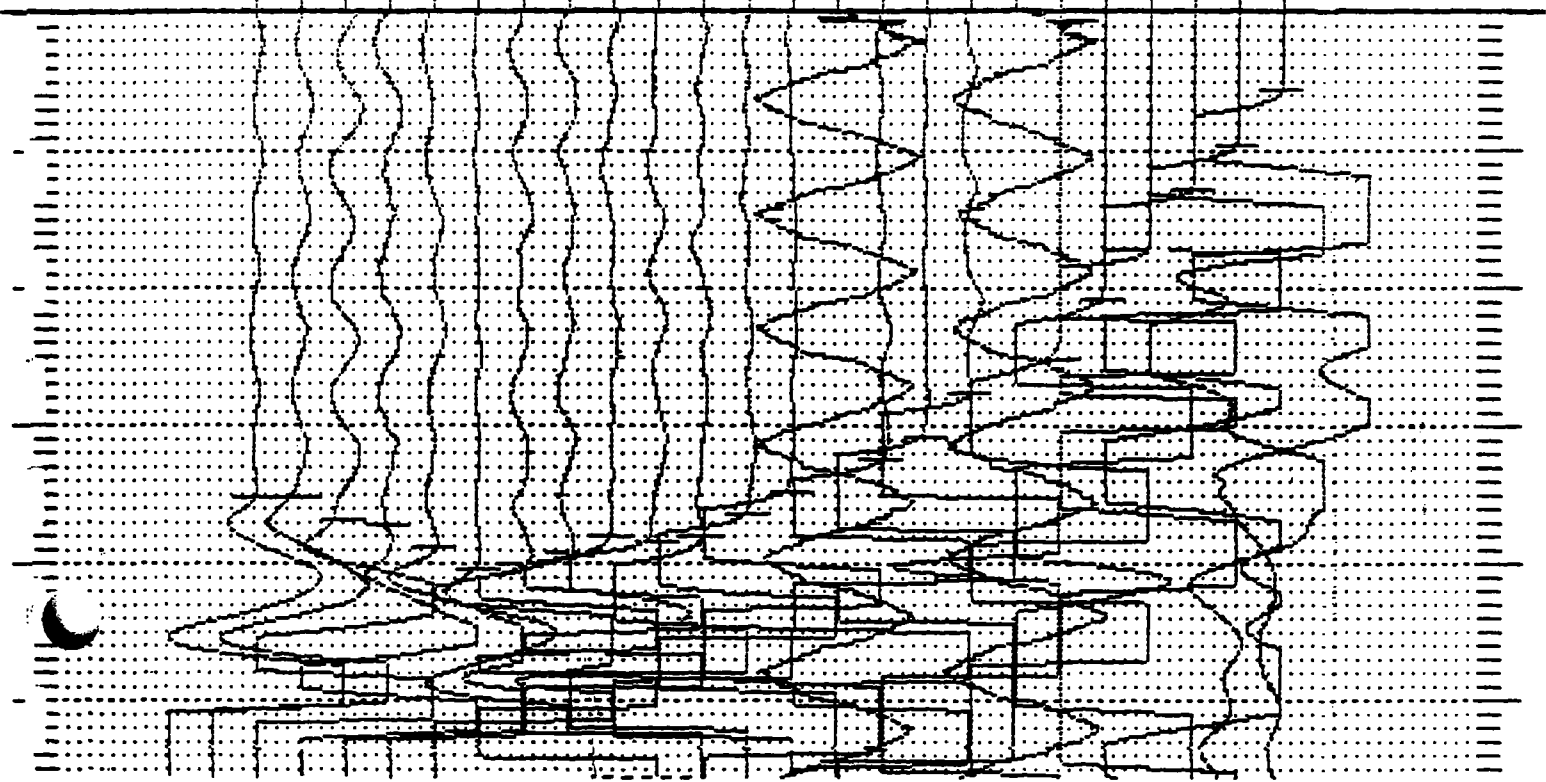


Listing of markers: Record-000409 Date-910424 Time-14:07

Trace No	Marker time (ms)	Field notes
1	0.000	Record time: 200 ms
2	0.000	Delay time: 0000 ms
3	0.000	Shot pos.: 11+00
4	0.000	Layout start: 8+00
5	0.000	Layout end: 12+00
6	0.000	Profile No.: 7
7	0.000	Note: 18292-04
8	0.000	Operator: 00001

Shot pos.: 12+00 Layout start: 8+00 Layout end: 12+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	06	04	03	03



Listing of markers: Record-000410 Date-910424 Time-14:14

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 12+00
04	0000	Layout start: 8+00
05	0000	Layout end: 12+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
12+00	1/3 KP	3'	8	414	M	
13+00				415		10:00
14+00				416		10:05
15+00				417		10:12
16+00	✓	✓	8	418	✓	10:20

Align power line easement

D-D'

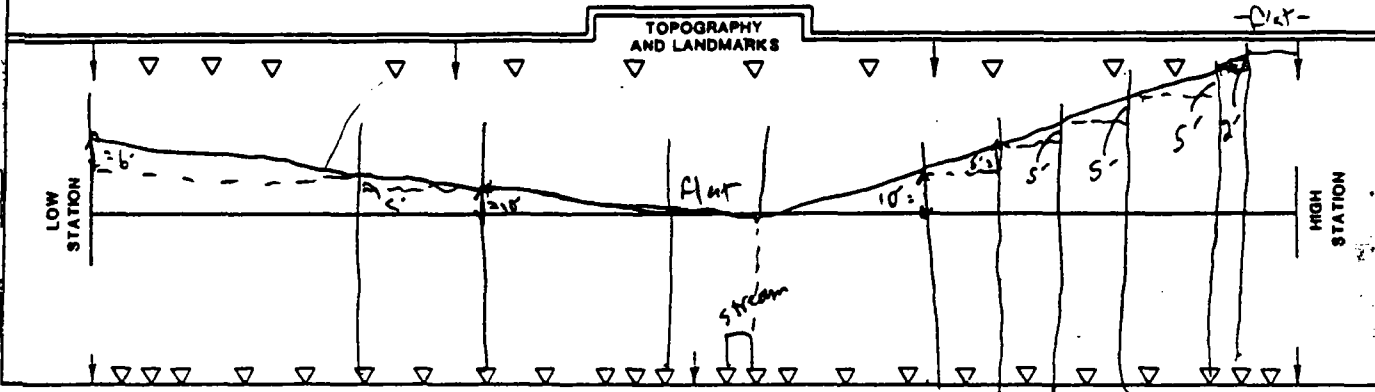
LINE		
LOCATION <i>Lyndonville, VT</i>		
JOB NO. <i>18292-04</i>	TECHNICIAN <i>FF/JB</i>	DATE <i>25 APR 91</i>
SEISMOGRAPH NO. <i>Ascom 8724001</i>		AMPLIFIER NO.
SPREAD LENGTH <i>400'</i>		FILTERS LOW <i>AP</i> HIGH
RECORD NUMBER _____ TO _____		

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS



16+00
STATION

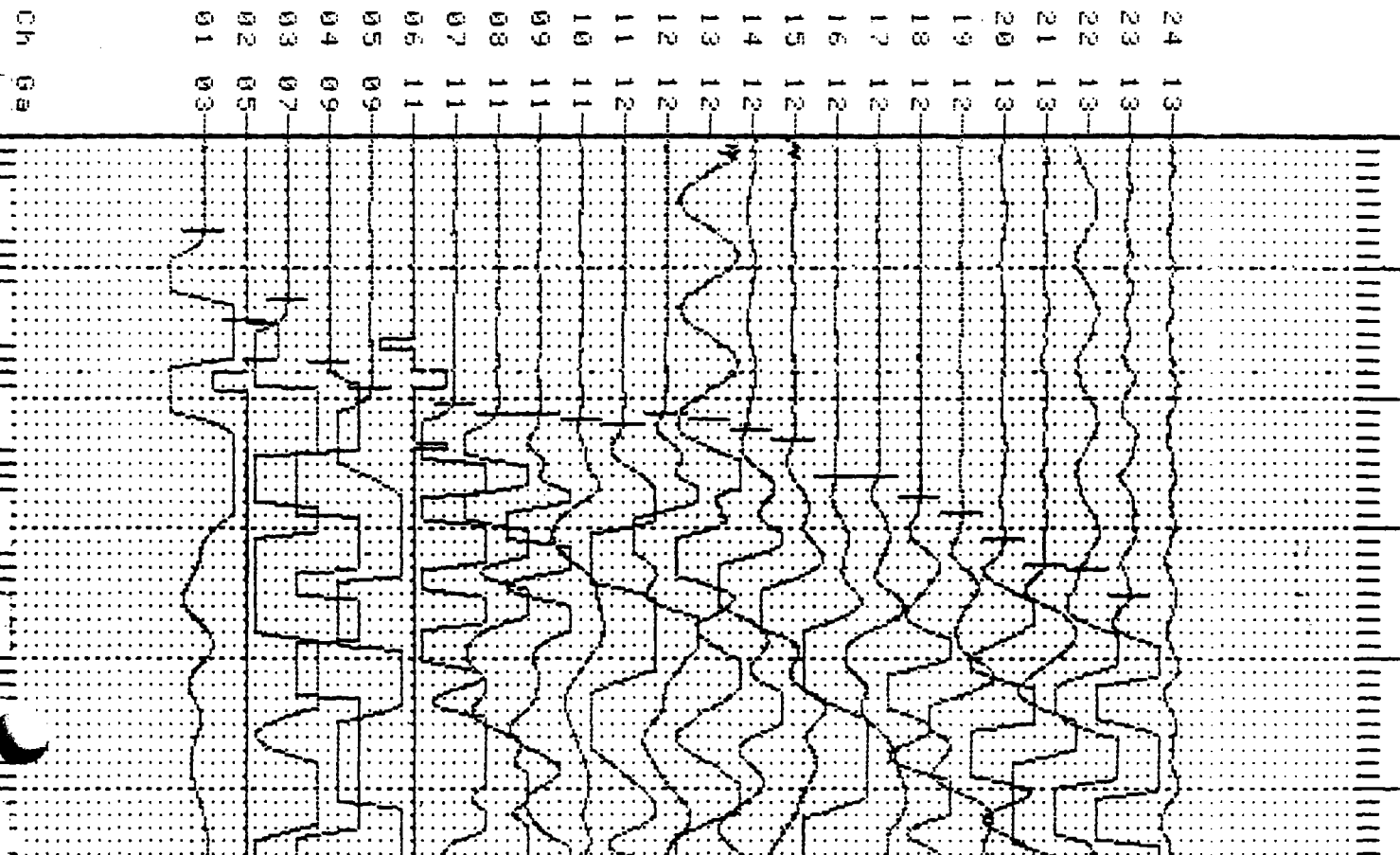
(N)
W E
S

RECORDS CHECKED BY

RECORDS READ BY

N
W E
(S)
STATION
12+00

Shot pos.: 12+00 Layout start: 12+00 Layout end: 16+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000414 Date-910425 Time-09:55

Trace No	Marker time (ms)	Field notes
01	03	Record time: 200 ms Delay time: 0000 ms Shot pos.: 12+00 Layout start: 12+00 Layout end: 16+00 Profile No.: 7 Note: 18292-04 Operator: 00001
02	05	
03	07	
04	09	
05	09	
06	11	
07	11	
08	11	
09	11	
10	11	
11	12	
12	12	
13	12	
14	12	
15	12	
16	12	
17	12	
18	12	
19	12	
20	13	
21	13	
22	13	
23	13	
24	13	

ABEM Terraloc Seismic System Record-000415 Date-910425 Time-10:00

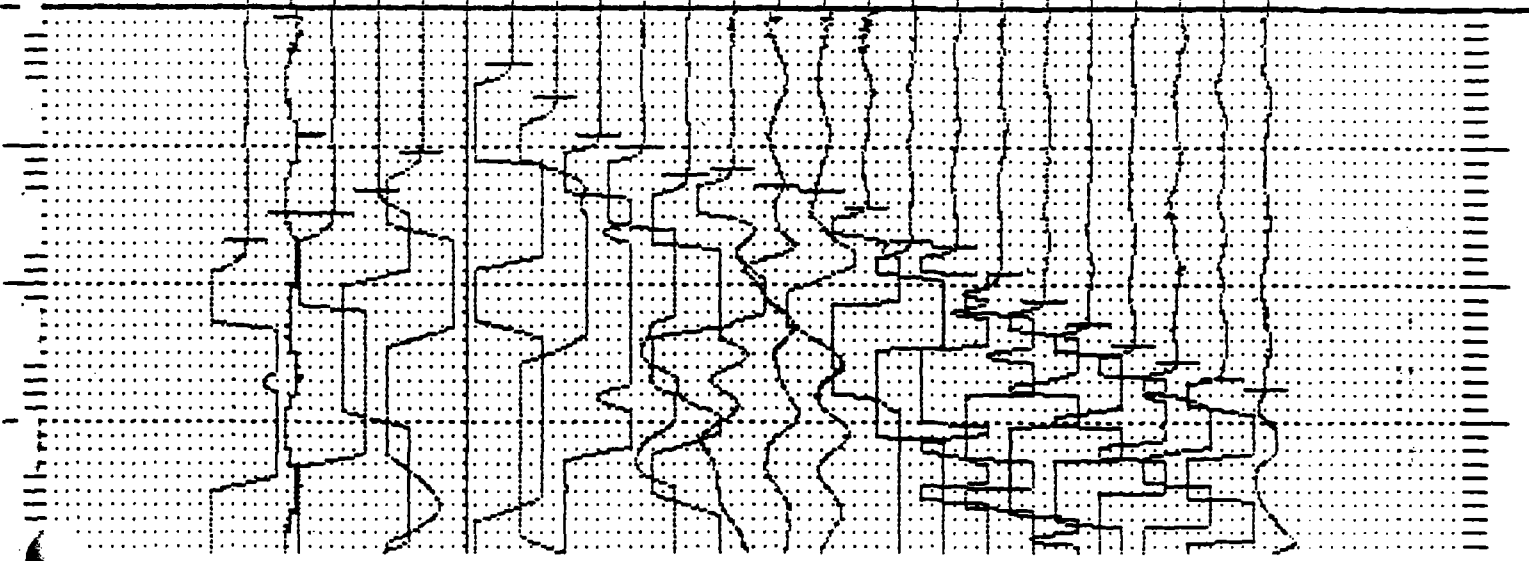
Shot pos.: 13+00 Layout start: 12+00 Layout end: 16+00

Profile No.: 7 Note: 10292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Gain	10	10	10	08	06	04	04	06	09	11	11	11	11	11	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000415 Date-910425 Time-10:00

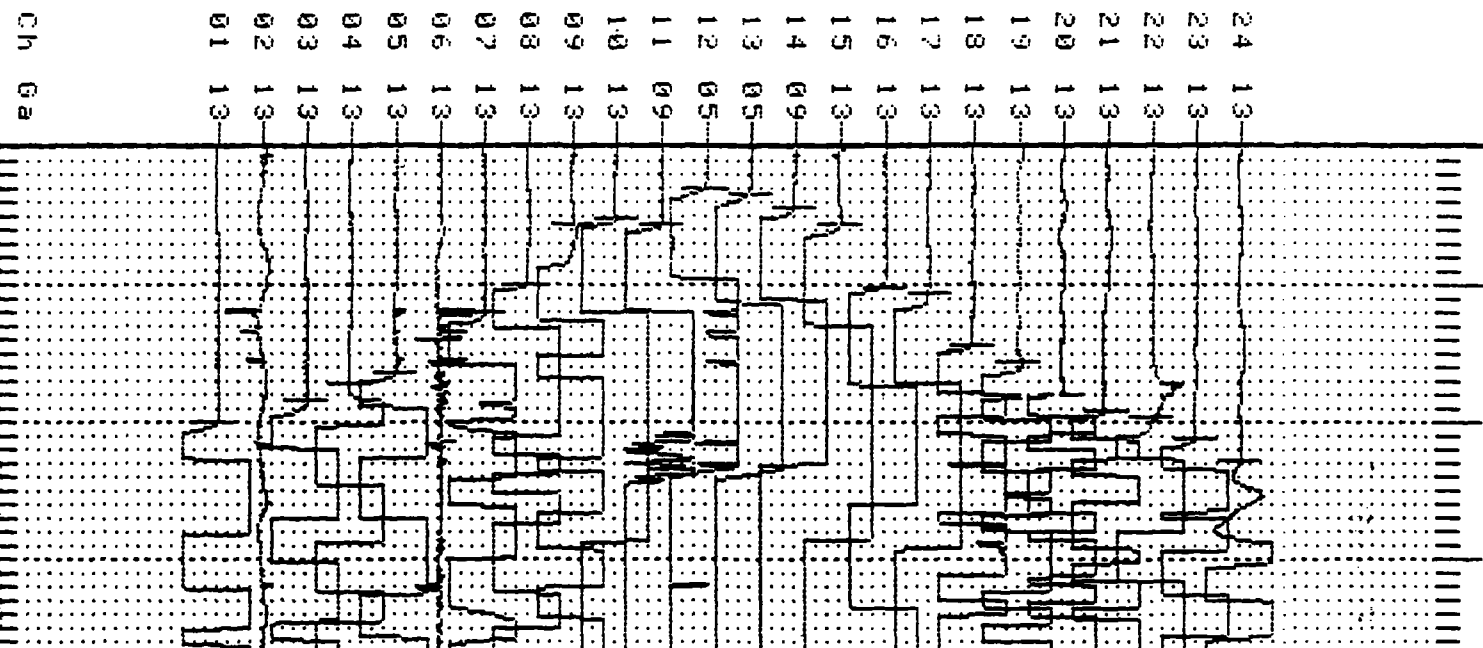
Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 13+00
04	0000	Layout start: 12+00
05	0000	Layout end: 16+00
06	0000	Profile No.: 7
07	0000	Note: 10292-04
08	0000	Operator: 00001

Shot pos.: 14+00 Layout start: 12+00 Layout end: 16+00

Profile No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

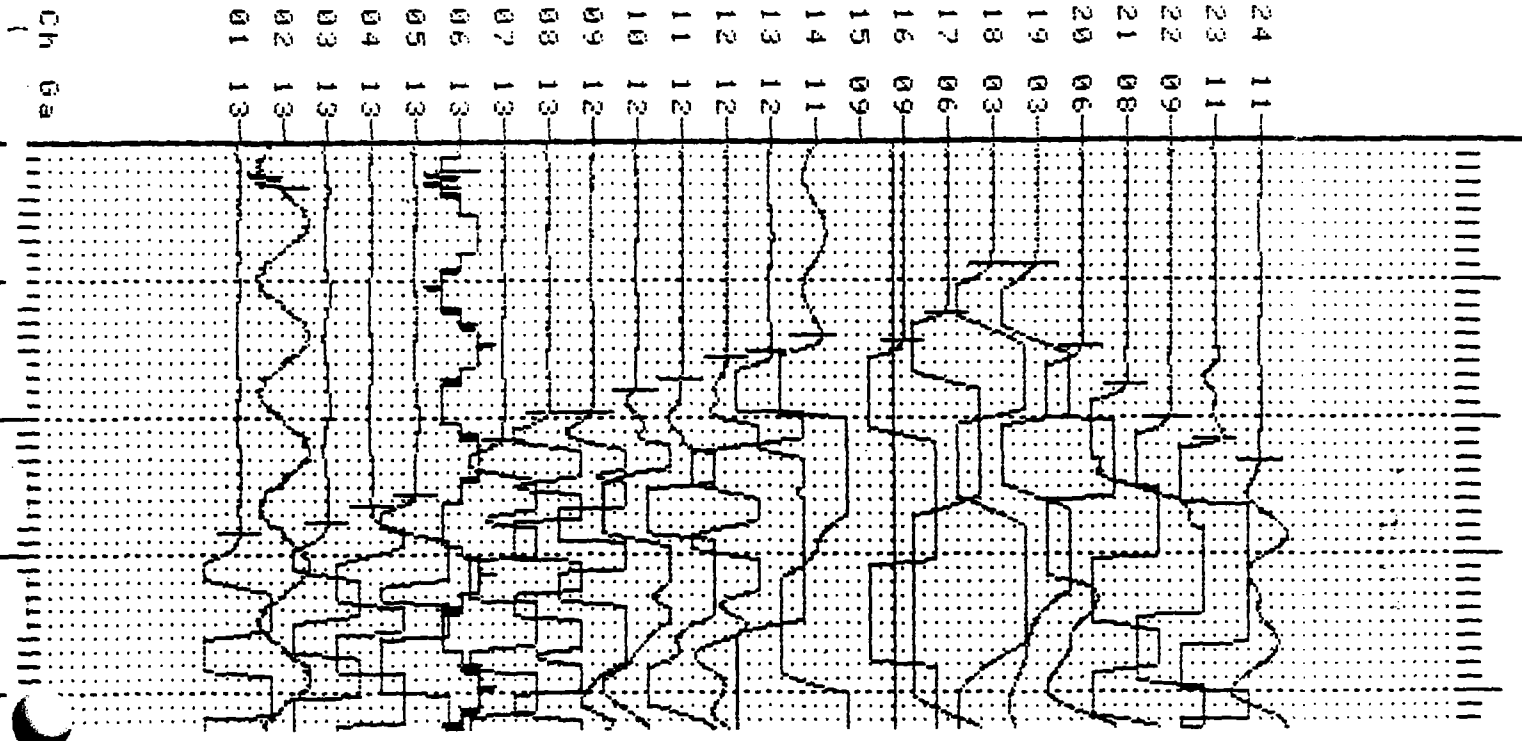
Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000416 Date-910425 Time-10:05

Trace No	Marker time (ms)	Field notes
01	4	Record time: 200 ms
02		Delay time: 0000 ms
03		Shot pos.: 14+00
04		Layout start: 12+00
05		Layout end: 16+00
06		Profile No.: 7
07		Note: 18292-04
08		Operator: 00001

Shot pos.: 15+00 Layout start: 12+00 Layout end: 16+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000417 Date-910425 Time-10:12

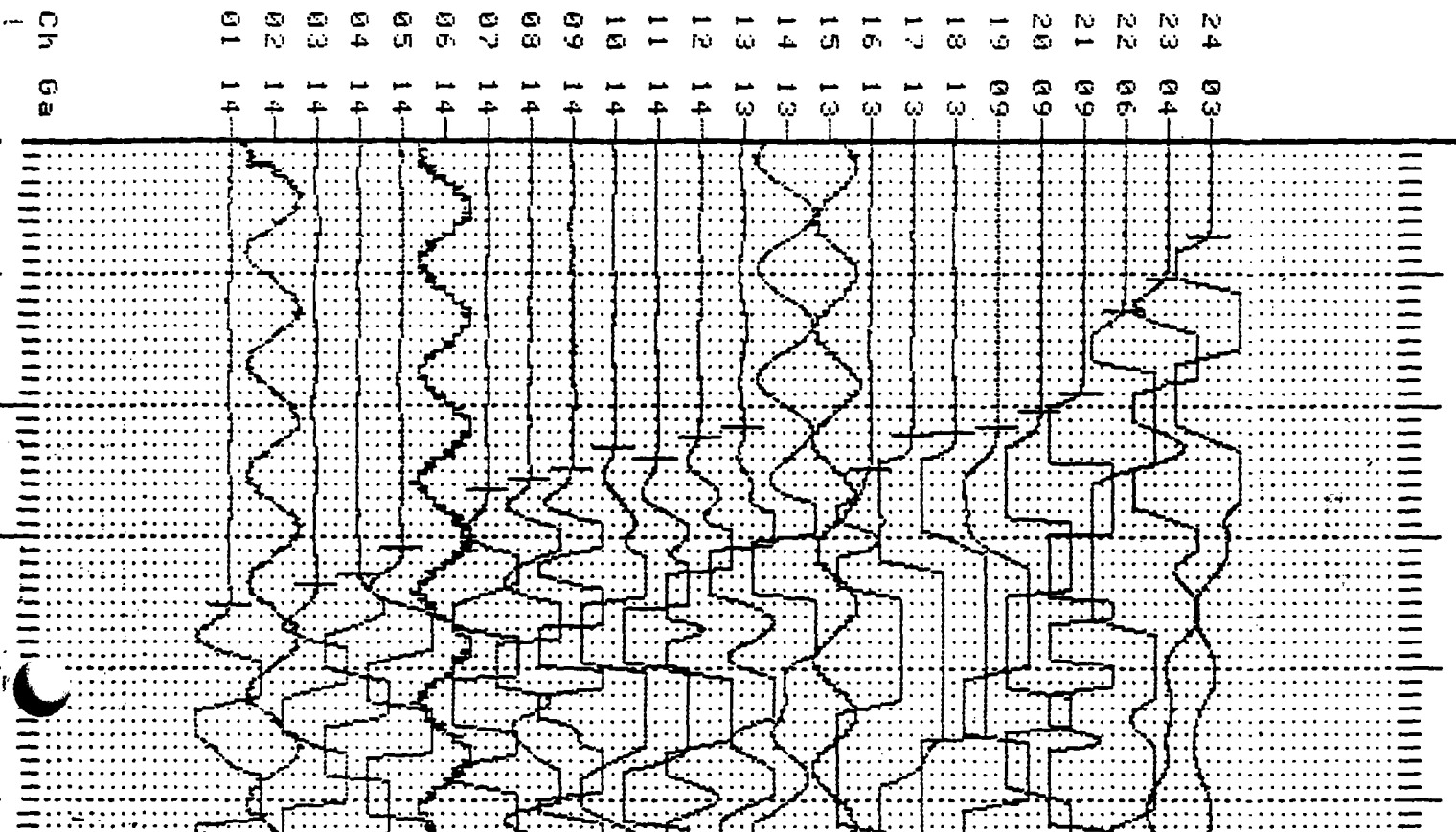
Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 15+00
04	0000	Layout start: 12+00
05	0000	Layout end: 16+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: 16+00 Layout start: 12+00 Layout end: 16+00

Profile No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000418 Date-910425 Time-10:20

Trace No	Marker time (ms)	Field notes
01	7	Record time: 200 ms
02	6	Delay time: 0000 ms
03	5	Shot pos.: 16+00
04	4	Layout start: 12+00
05	3	Layout end: 16+00
06	2	Profile No.: 7
07	1	Note: 18292-04
08	0	Operator: 00001
09		
10		
11		
12		
13		
14		
15		
16		
17		
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19		
20		
21		
22		
23		
24		

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
15+05	Y3 KP	3'	8	419/420	M	11:25
17+00			9	421		11:31
3+00				422		11:40
1+00				423		11:50
20+00	✓	✓	✓	424	✓	11:59

LINE D-D' Lyndon, VT

LOCATION Along - smaller ^{penetration} ~~passage~~ (row)

JOB NO. 8272-04 TECHNICIAN FF/JB DATE 25 Apr 91

SEISMOGRAPH NO. Proton 9724001 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS LOW AT HIGH

RECORD NUMBER _____ TO _____

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

SANDY SOIL

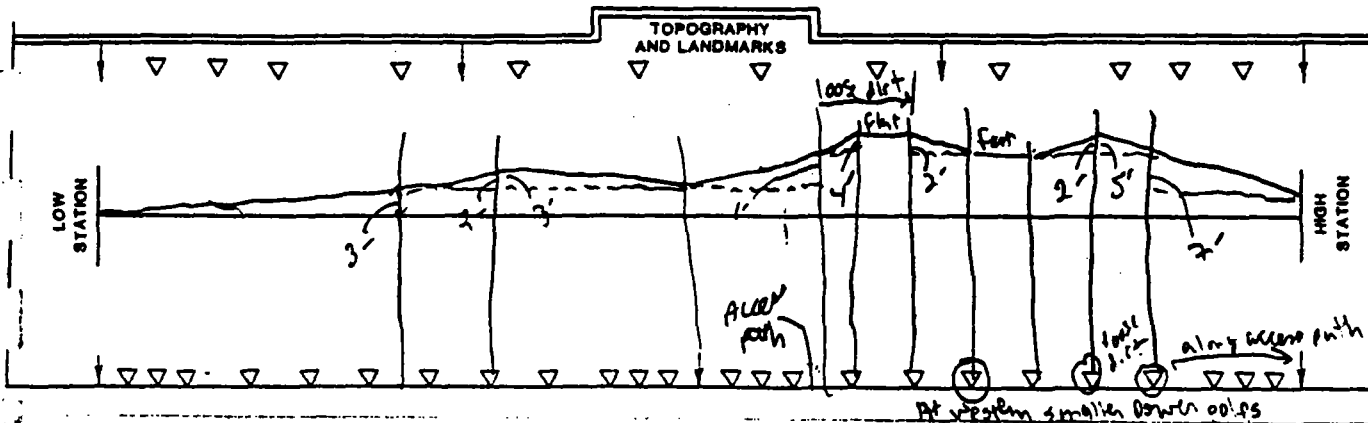
TOTAL CAPS

INSTRUMENTATION LOCATED AT STATION 16+00

TOTAL POWDER

1 reshot

INCLUDE RESHOTS



20+00

STATION

(N)

W E

S

RECORDS CHECKED BY

RECORDS READ BY

(S)

STATION 16+00

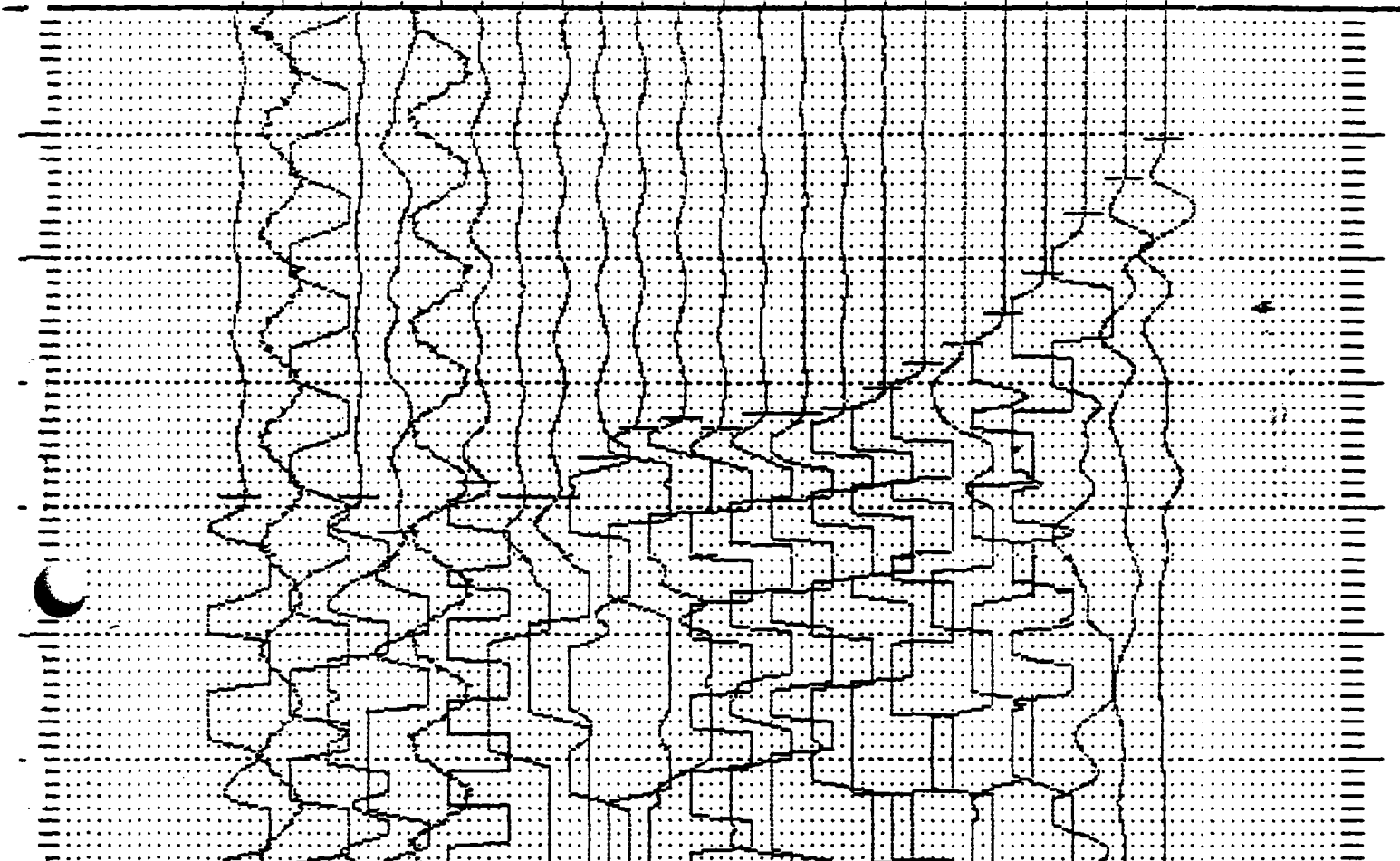
Shot pos.: 15+95 Layout start: 16+00 Layout end: 20+00

Profile No.: 7 Note: 10292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



Listing of markers: Record-000420 Date-910425 Time-11:25

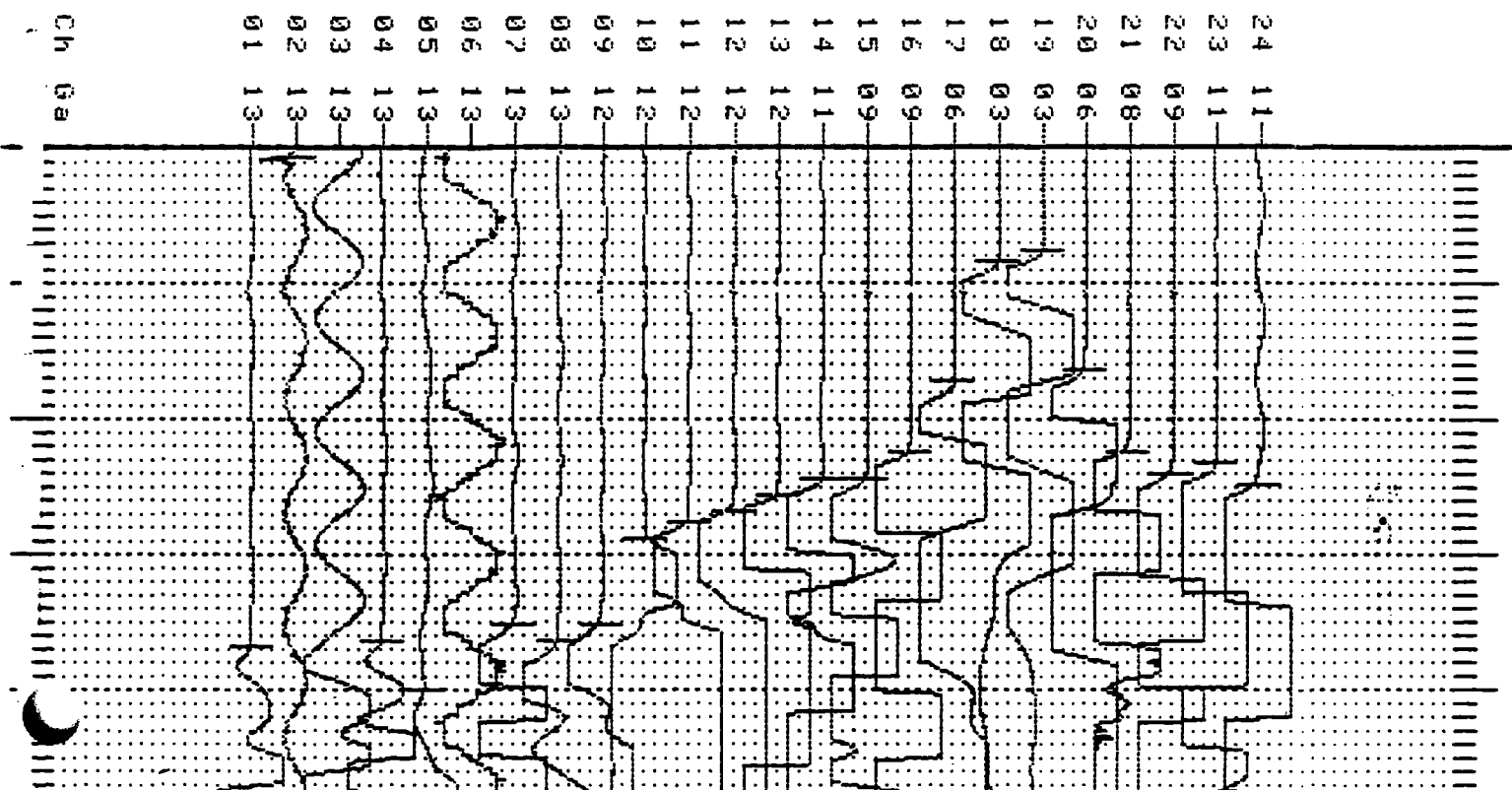
Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 15+95
04	0000	Layout start: 16+00
05	0000	Layout end: 20+00
06	0000	Profile No.: 7
07	0000	Note: 10292-04
08	0000	Operator: 00001

Shot pos.: 17+00 Layout start: 16+00 Layout end: 20+00

Profile No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000421 Date-910425 Time-11:31

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 17+00
04	0000	Layout start: 16+00
05	0000	Layout end: 20+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: 18+00

Layout start: 16+00

Layout end: 20+00

Profile No.: 7

Note: 18292-04

Operator: 00001

Record time: 200 ms

Delay time: 0000 ms

Analog filter: Off

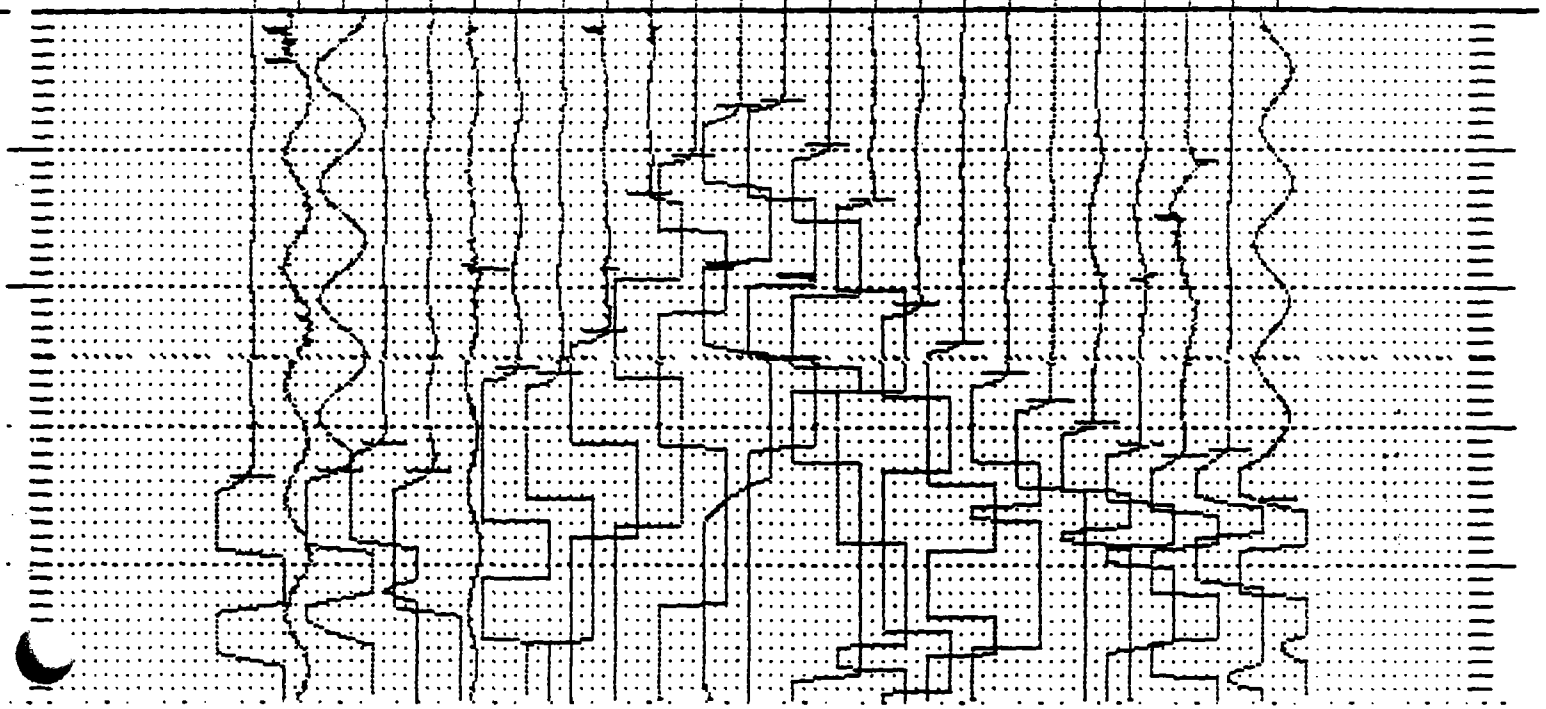
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	13	13	13	13	13	13	13	13	13	13	09	05	05	09	13	13	13	13	13	13	13	13	13	13



Listing of markers:

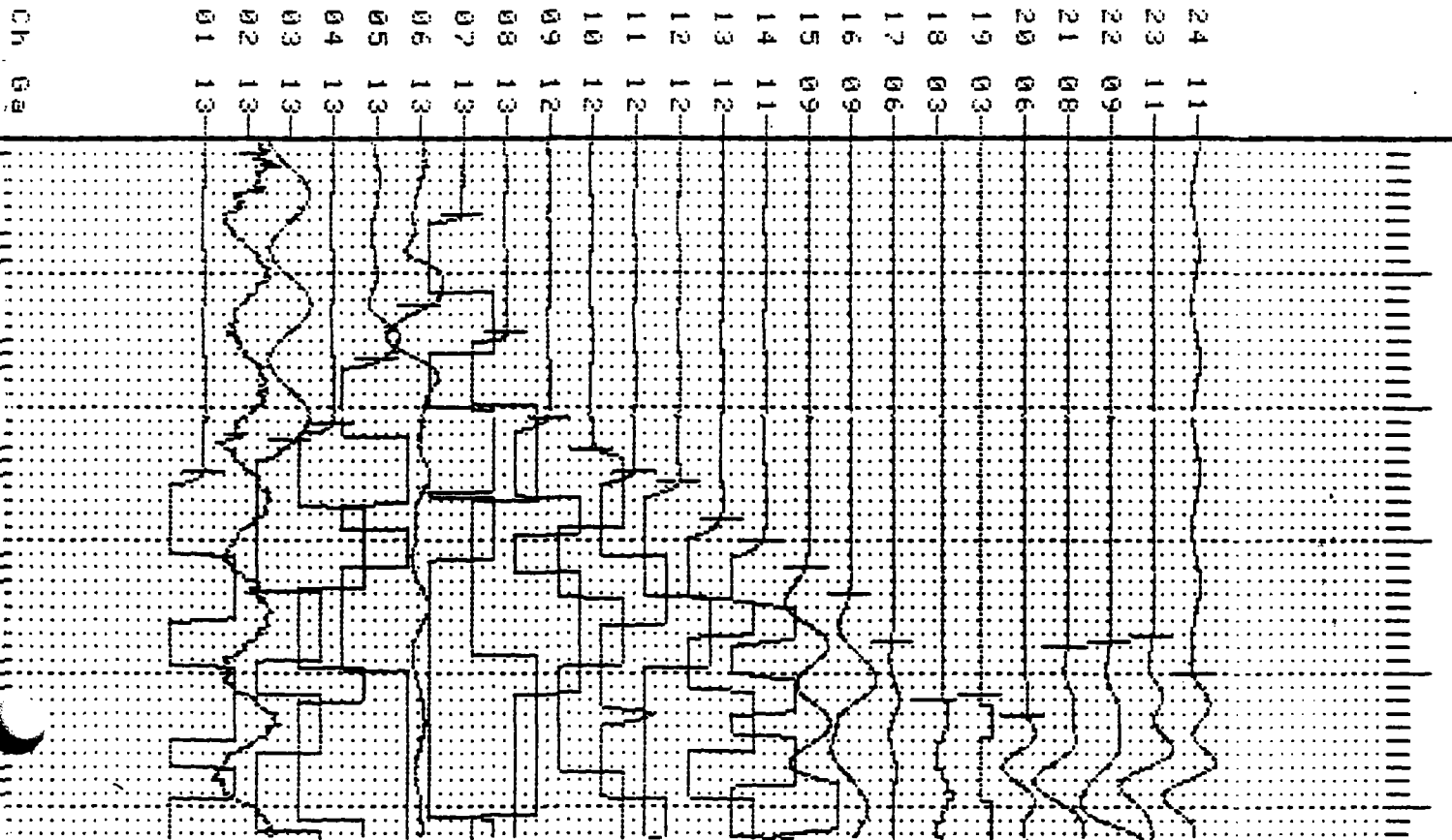
Record-000422

Date-910425

Time-11:40

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 18+00
04	0000	Layout start: 16+00
05	0000	Layout end: 20+00
06	0000	Profile No.: 7
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: 19+00 Layout start: 16+00 Layout end: 20+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000423 Date-910425 Time-11:50

Trace No	Marker time (ms)	Field notes
01	4	Record time: 200 ms
02	4	Delay time: 0000 ms
03	4	Shot pos.: 19+00
04	4	Layout start: 16+00
05	4	Layout end: 20+00
06	4	Profile No.: 7
07	4	Note: 18292-04
08	4	Operator: 00001

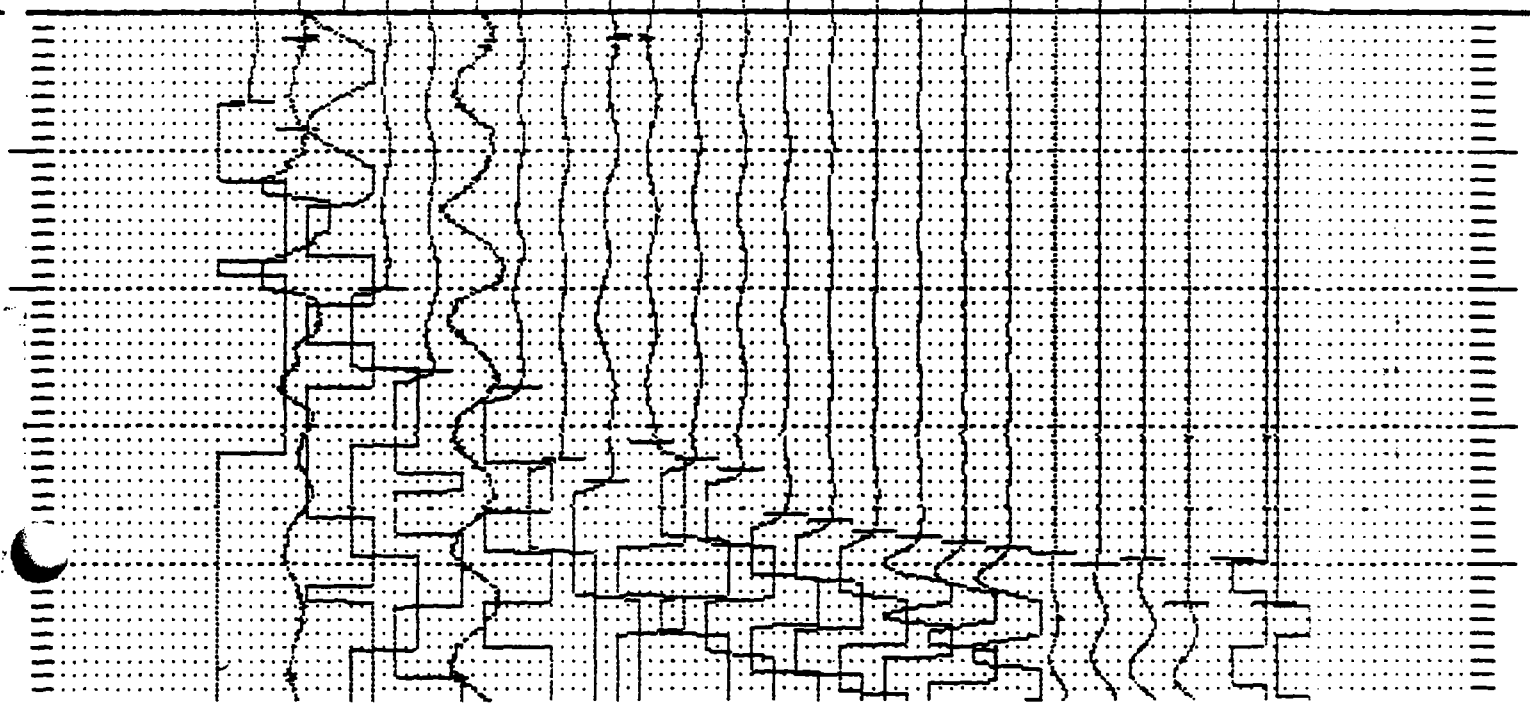
Shot pos.: 20+00 Layout start: 16+00 Layout end: 20+00

Profile No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



Listing of markers: Record-000424 Date-910425 Time-11:59

Trace No	Marker time (ms)	Field notes
01	14	Record time: 200 ms
02	14	Delay time: 0000 ms
03	14	Shot pos.: 20+00
04	14	Layout start: 16+00
05	14	Layout end: 20+00
06	14	Profile No.: 7
07	14	Note: 18292-04
08	14	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
20+00	1/2 kg	3'	9	425		13:23
21+40				426		13:31
22+00				427		13:40
23+00				428		13:51
24+00	↓	↓	↓	429		14:04

LINE <u>D-D' (profile 7)</u>		
LOCATION <u>Lyndonville, VT</u> <u>Along smaller powder road</u>		
JOB NO. <u>18292-04</u>	TECHNICIAN <u>FE/JS</u>	DATE <u>25 APR 91</u>
SEISMOGRAPH NO. <u>ARRM 0724001</u>	AMPLIFIER NO. _____	
SPREAD LENGTH <u>400</u>	FILTERS <u>AP</u> LOW HIGH	
RECORD NUMBER _____ TO _____		

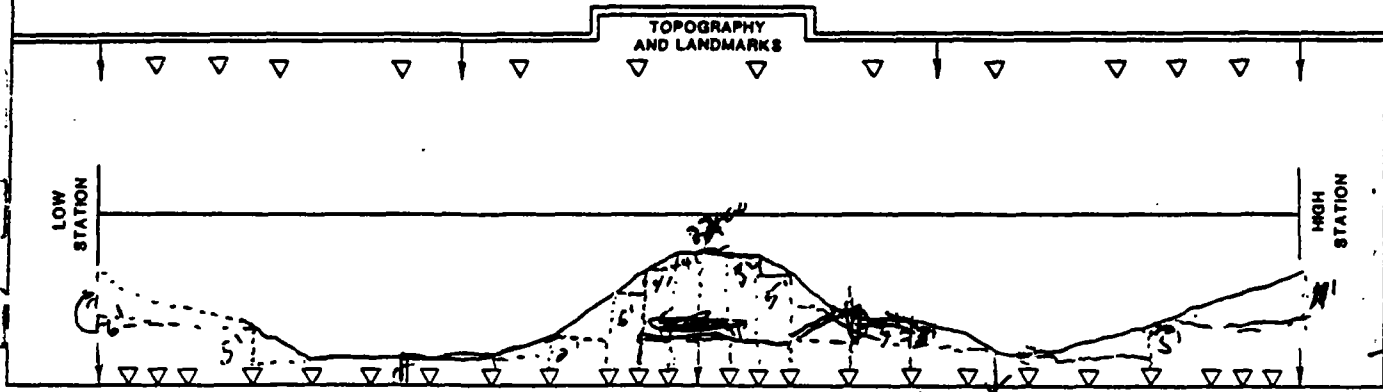
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS

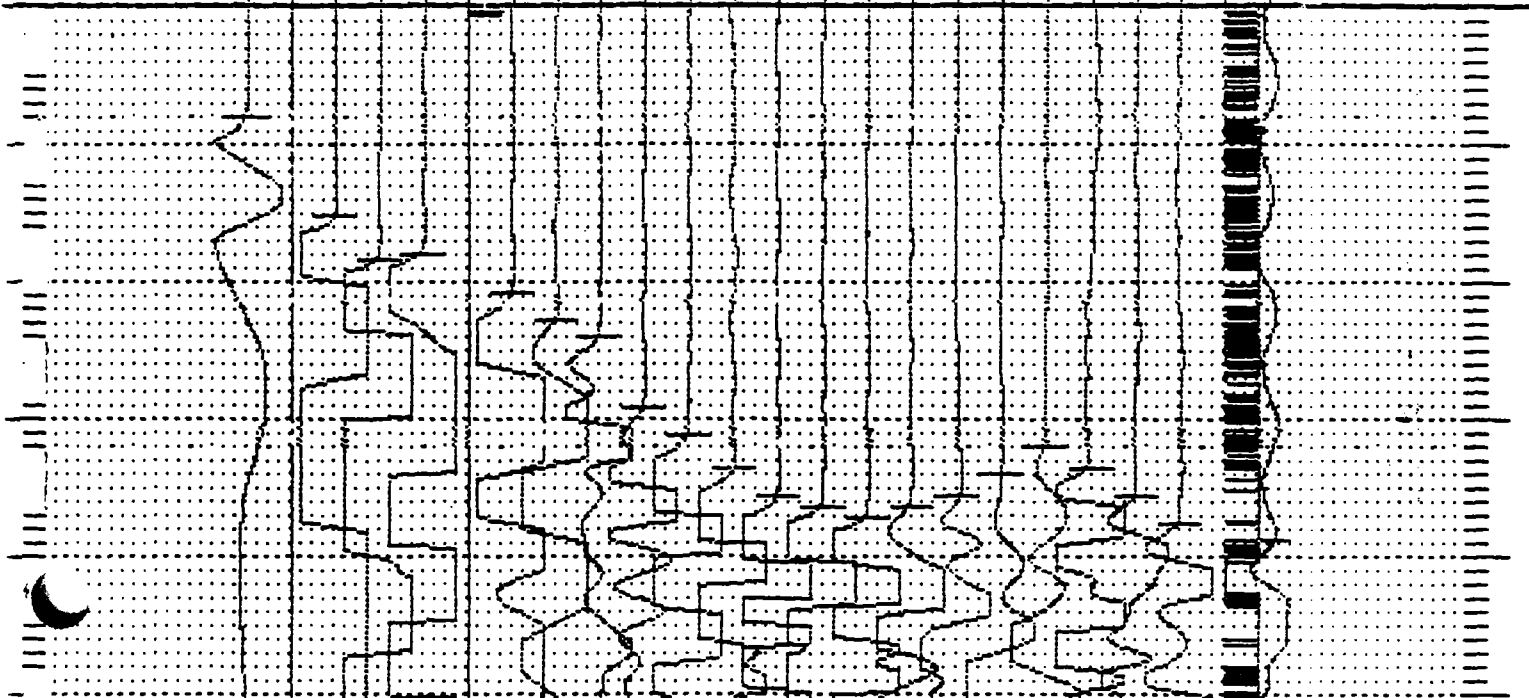
D: 21+40 = Appx 50' E of S: 11+10
 U: 24+00 = H 19



24+00
STATION
N
W E
S
RECORDS CHECKED BY
RECORDS READ BY
N
W E
STATION
20+00

Shot pos.: 20+00 Layout start: 20+00 Layout end: 24+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Core time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

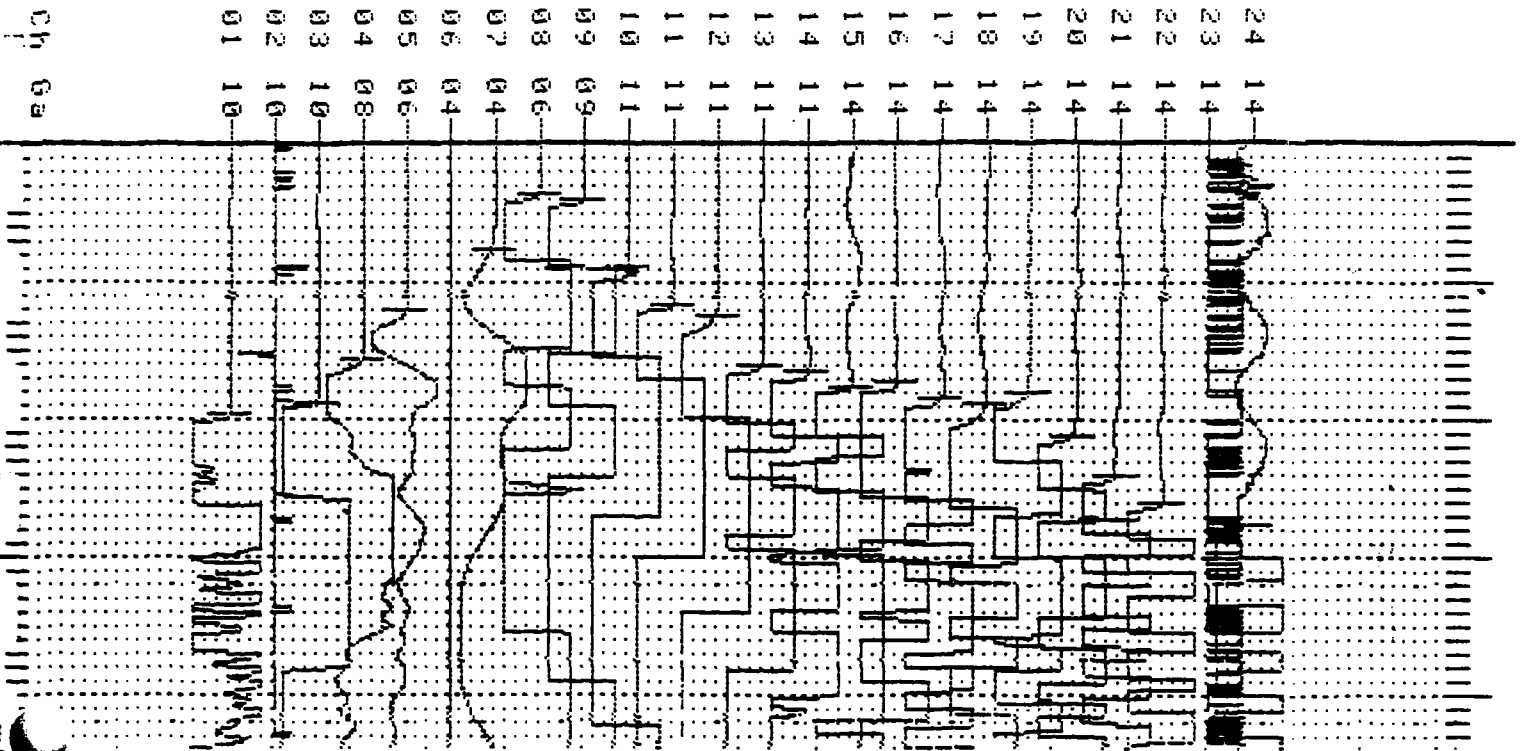
Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
ra	03	05	07	09	09	11	11	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13	13	13



Listing of markers: Record-000425 Date-910425 Time-13:23

Trace No	Marker time (ms)	Field notes
1	0000	Record time: 200 ms
		Delay time: 0000 ms
		Shot pos.: 20+00
		Layout start: 20+00
		Layout end: 24+00
		Profile No.: 7
		Note: 18292-04
		Operator: 00001

IBBN Terelec Seismic System Record-000426 Date-910425 Time-13:31
 Shot pos.: 21+40 Layout start: 20+00 Layout end: 24+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

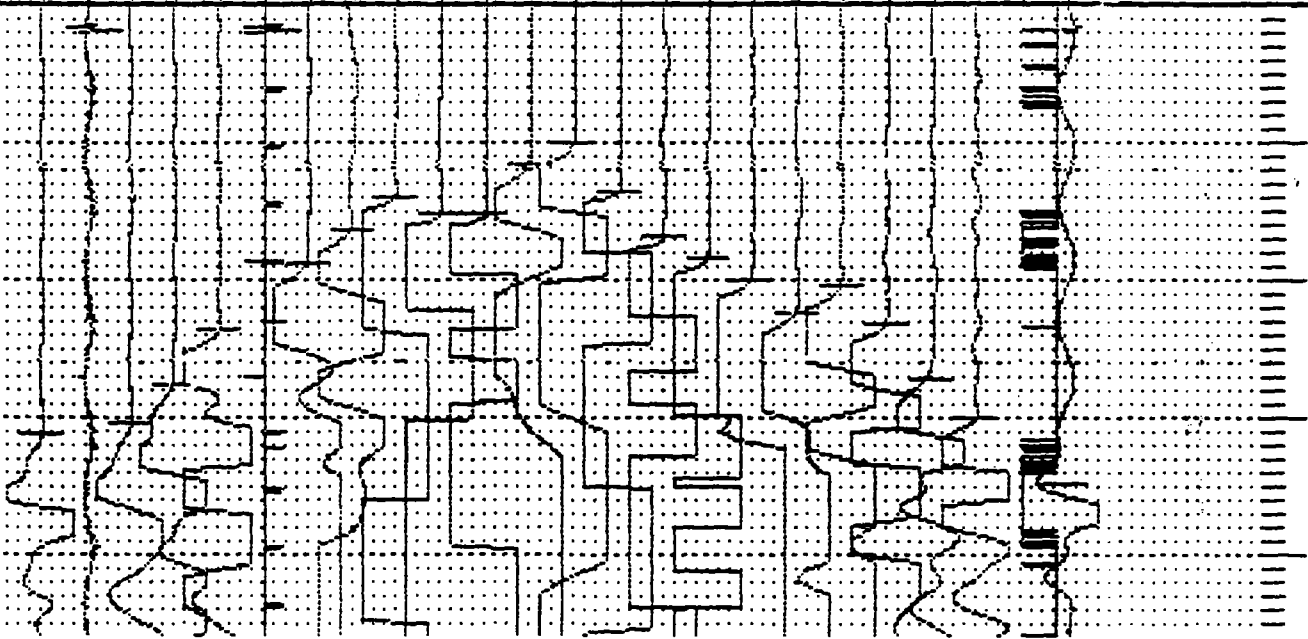


Listing of markers: Record-000426 Date-910425 Time-13:31

Trace No	Marker time (ms)	Field notes
1	0	Record time: 200 ms
2	0	Delay time: 0000 ms
3	0	Shot pos.: 21+40
4	0	Layout start: 20+00
5	0	Layout end: 24+00
6	0	Profile No.: 7
7	0	Note: 18292-04
8	0	Operator: 00001

Shot pos.: 22+00 Layout start: 20+00 Layout end: 24+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	13	13	13	13	13	13	13	13	13	13	09	05	05	09	13	13	13	13	13	13	13	13	13	13

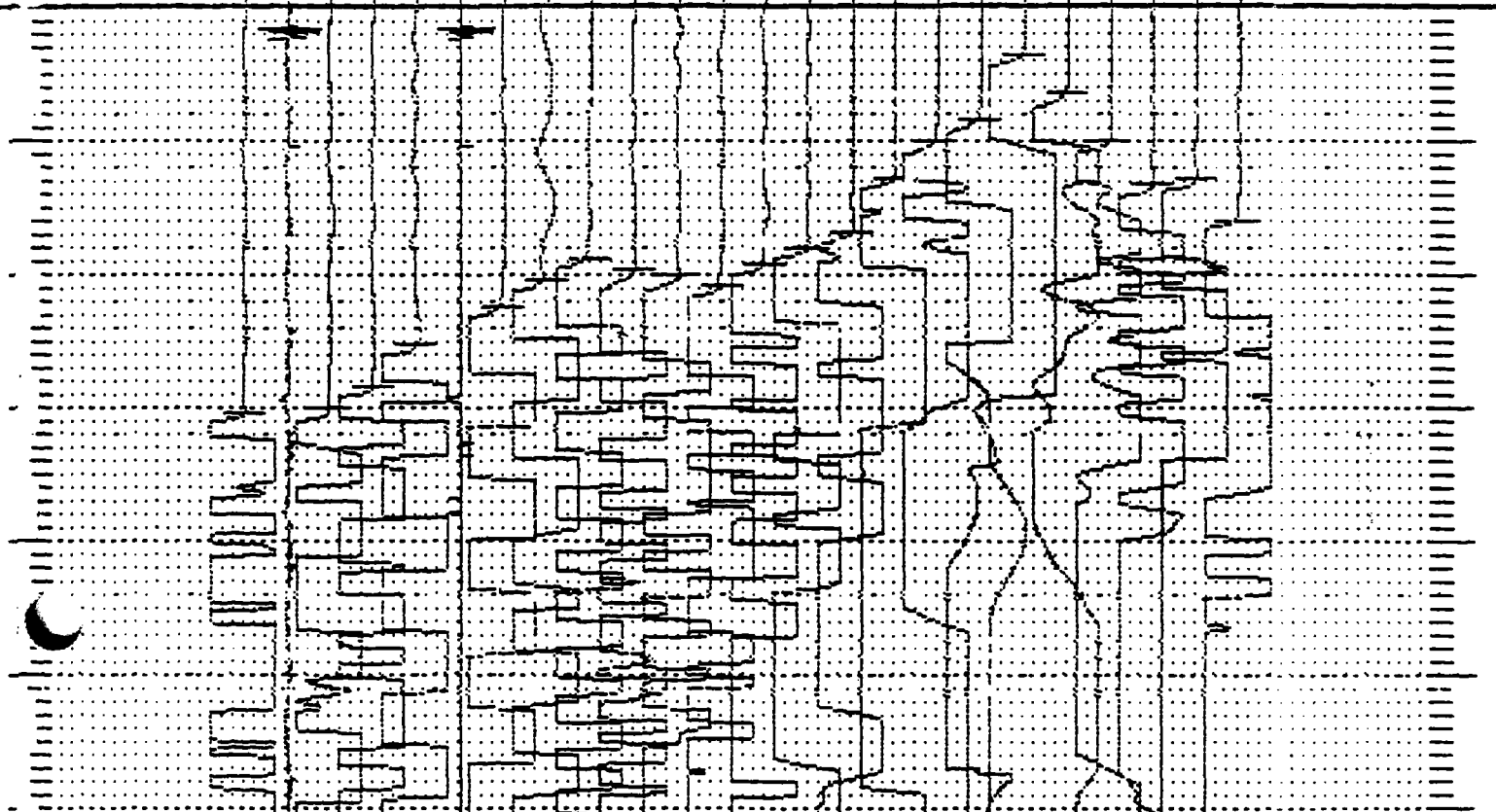


Listing of markers: Record-000427 Date-910425 Time-13:40

Trace No	Marker time (ms)	Field notes
01	0	Record time: 200 ms
02	0	Delay time: 0000 ms
03	0	Shot pos.: 22+00
04	0	Layout start: 20+00
05	0	Layout end: 24+00
06	0	Profile No.: 7
07	0	Note: 18292-04
08	0	Operator: 00001

ABEM Terraloc Seismic System Record-000428 Date-910425 Time-13:51
 Shot pos.: 20+00 Layout start: 20+00 Layout end: 24+00
 Profile No.: 7 Note: 10292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0a	13	13	13	13	13	13	13	13	12	12	12	12	12	11	09	09	06	03	03	06	08	09	11	11



Listing of markers: Record-000428 Date-910425 Time-13:51

Trace No	Marker	time (ms)	Field notes
01	S	0000	Record time: 200 ms
02	S	0000	Delay time: 0000 ms
03	S	0000	Shot pos.: 20+00
04	S	0000	Layout start: 20+00
05	S	0000	Layout end: 24+00
06	S	0000	Profile No.: 7
07	S	0000	Note: 10292-04
08	S	0000	Operator: 00001

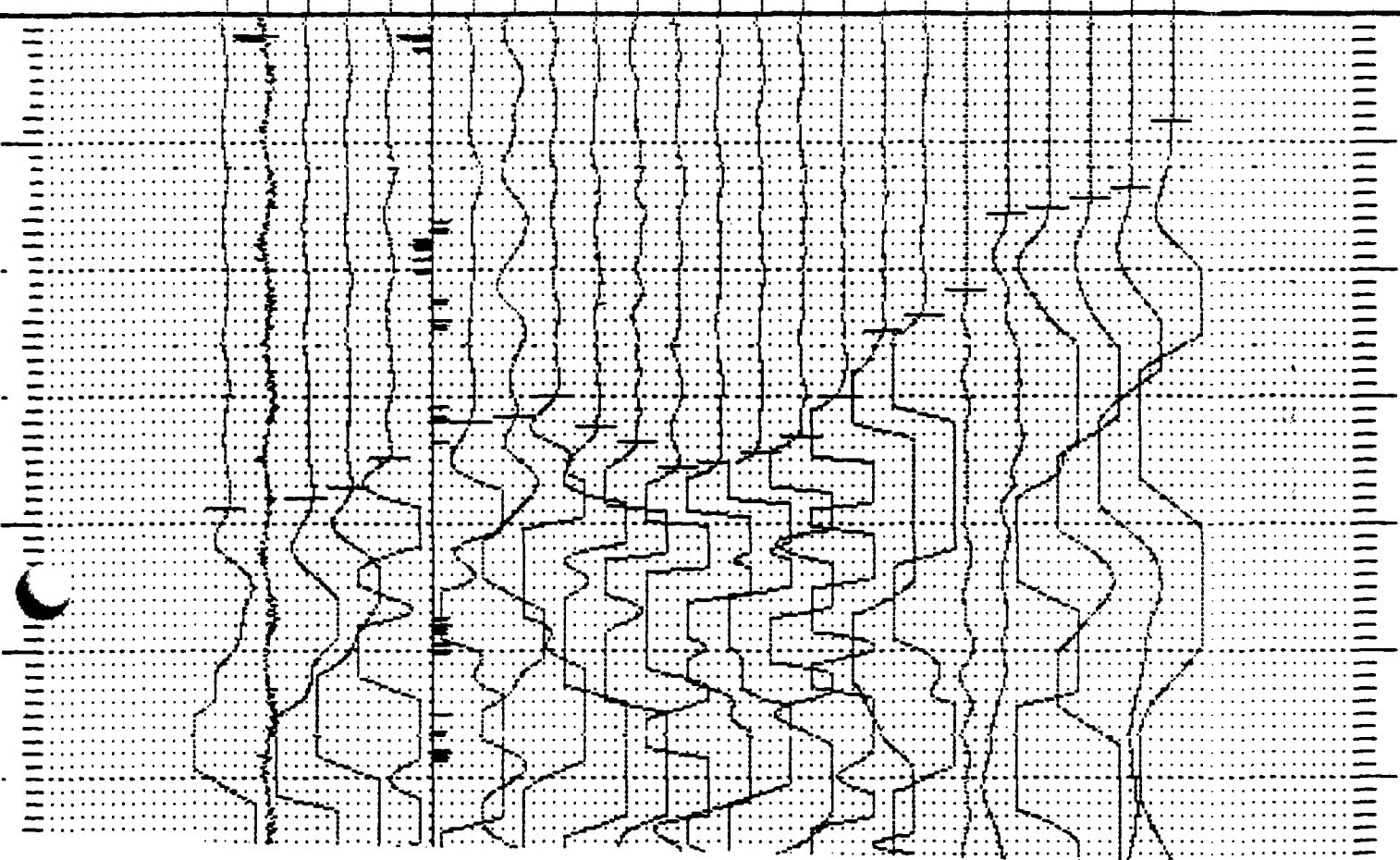
Shot pos.: 24+00 Layout start: 20+00 Layout end: 24+00

Profile No.: 7 Note: 10292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0a	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



Listing of markers: Record-000429 Date-910425 Time-14:04

Trace No	Marker time (ms)	Field notes
01	0	Record time: 200 ms
02	0	Delay time: 0000 ms
03	0	Shot pos.: 24+00
04	0	Layout start: 20+00
05	0	Layout end: 24+00
06	0	Profile No.: 7
07	0	Note: 10292-04
08	0	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
24+00	113 KP	3'	9	430	177	15:59
24+00				431	1	16:14
6+00				111 shot @ center LEL 12.04		
27+00				432		16:30
28+00				433		

LINE D-D' profile 7

LOCATION Along power line and foot of land fill

JOB NO. 18242-04	TECHNICIAN FF/JB	DATE 25 Apr 91
SEISMOGRAPH NO. ABEM		AMPLIFIER NO. —
SPREAD LENGTH 400		FILTERS LOW AF HIGH
RECORD NUMBER — TO —		

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS 6

TOTAL POWDER 10

INCLUDE RESHOTS

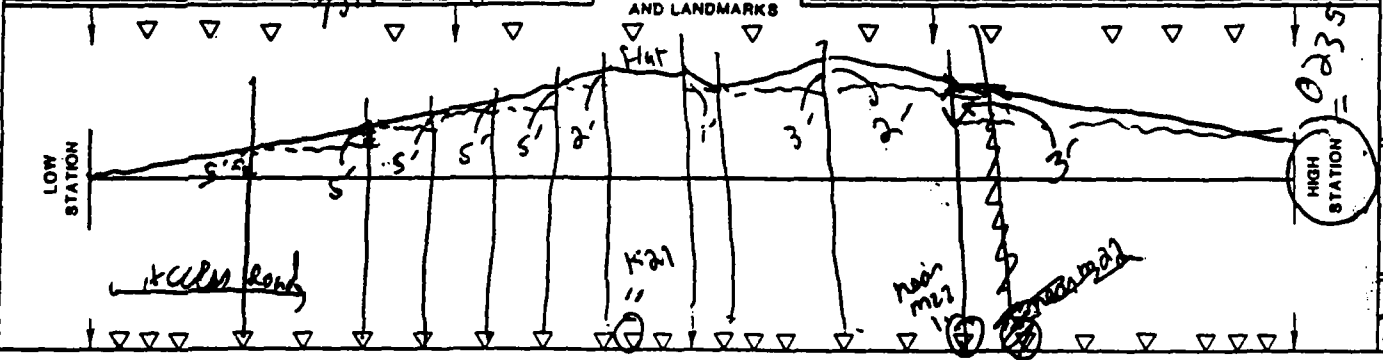
INSTRUMENTATION LOCATED AT STATION _____

Line is log logging from previous spread → spread in fill area

1 resh ot (2 caps / 3/10)
3/3/90 destroyed

Note: 25+00 methane exceeds LEL
26+00 " " "

TOPOGRAPHY AND LANDMARKS



28+00 STATION

(N)

W E

S

RECORDS CHECKED BY

RECORDS READ BY

W E

STATION 24+00

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
0+00	2/3 KP	3'	2	335 336	H	13:14
7+20	2/3 KP	3'	3	337		13:38
5+60				338		14:16
6+80	↓	↓	↓	339*	↓	

LINE E-E' (profile 2)

LOCATION High Ground off Lily Road Rd Lyndon VT

JOB NO. 18292-04 TECHNICIAN JB/EF DATE 19 APR 91

SEISMOGRAPH NO. ABEM 8724001 AMPLIFIER NO. _____

SPREAD LENGTH 200' FILTERS LOW AP HIGH _____

RECORD NUMBER _____ TO _____

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

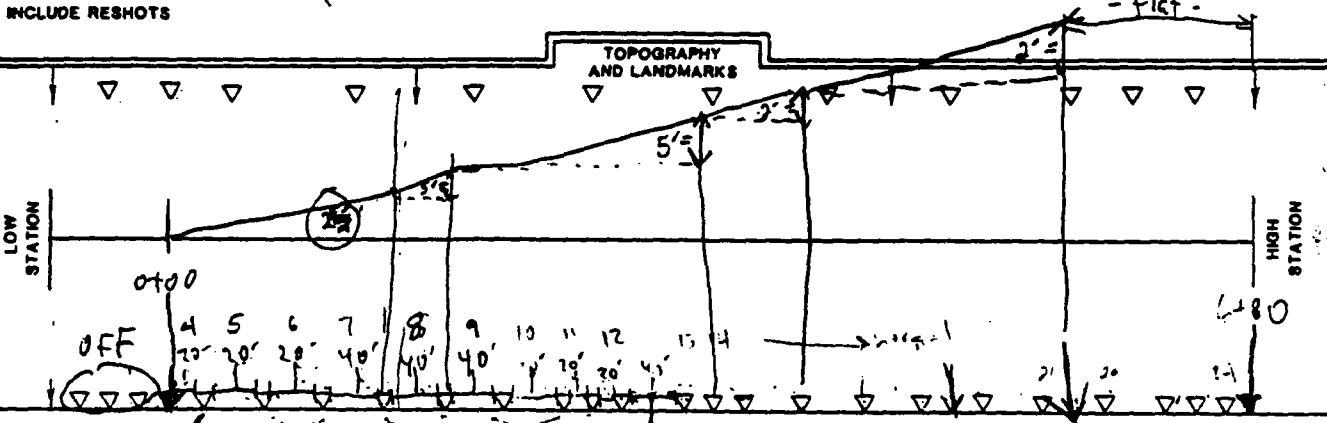
TOTAL CAPS 6

INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER 12

2 reshots (2 cap / 1/2 KP)

Thick layer of low velocity material
* = record # not assigned by ABEM!



STATION 6+80

W | N | E

S

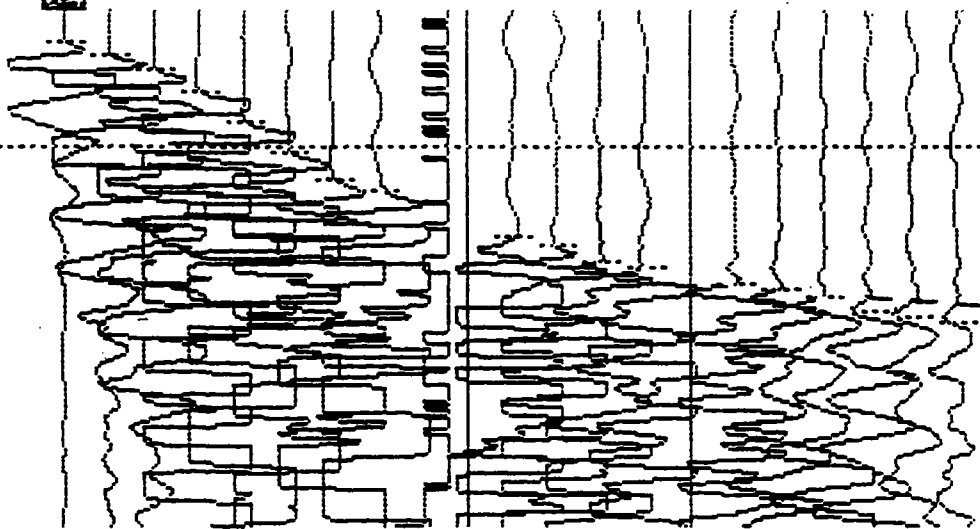
RECORDS CHECKED BY _____

RECORDS READ BY _____

W | N | E

STATION 0+00

Time line: 100.000 ms Record-000336 Date-910419 Time-13:14
 Modify: []



Listing of markers: Record-000336 Date-910419 Time-13:14

Trace No	Marker time (ms)	Field notes
000000		Record time: 500 ms
000001		Delay time: 0000 ms
000002		Shot pos.: 000000
000003		Layout start: 000000
000004		Layout end: 000500
000005		Profile No.: 000002
000006		Note: 18292-04
000007		Operator: 00001

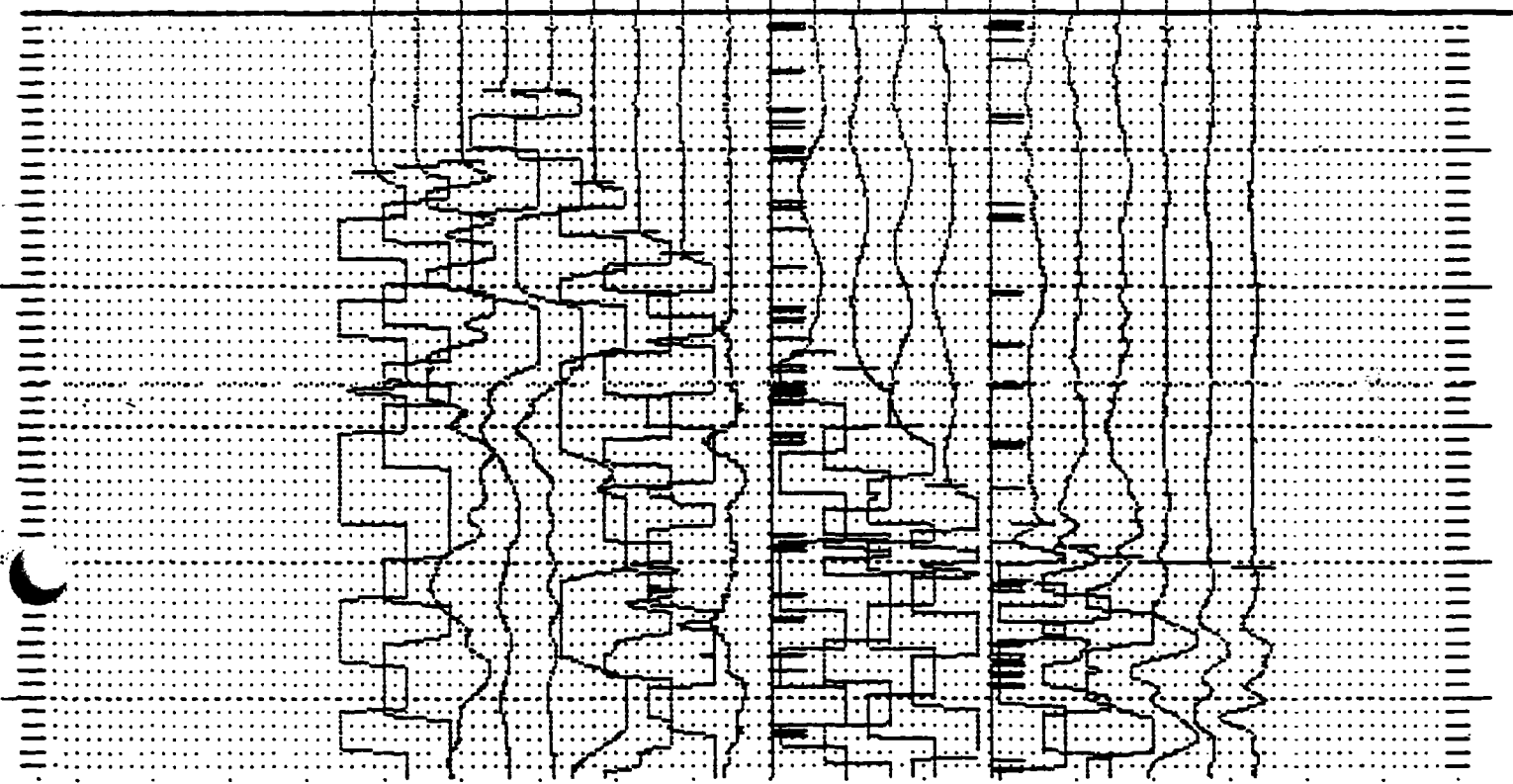
2/0
2/3
2/0

*rechecked
f.f.*

Shot pos.: 000100 20 Layout start: 000000 Layout end: 000600
 Profile No.: 000002 Note: 18292-04 Operator: 00001
 Record time: 500 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ge	11	09	07	05	05	07	09	10	11	13	13	13	13	13	13	13	13	13	11	11	11



Listing of markers: Record-000337 Date-910419 Time-13:38

Trace No	Marker time (ms)	Field notes
04	000000	Record time: 500 ms
05	000000	Delay time: 0000 ms
06	000000	Shot pos.: 000100 20
07	000000	Layout start: 000000
08	000000	Layout end: 000600
09	000000	Profile No.: 000002
10	000000	Note: 18292-04
11	000000	Operator: 00001

analog Seismic System

Record-

Date-

Time-

Pos.: 000680

Layout start: 000000

Layout end: 000680

Profile No.: 000002

Note: 18292-04

Operator: 00001

Record time: 500 ms

Delay time: 0000 ms

Analog filter: Off

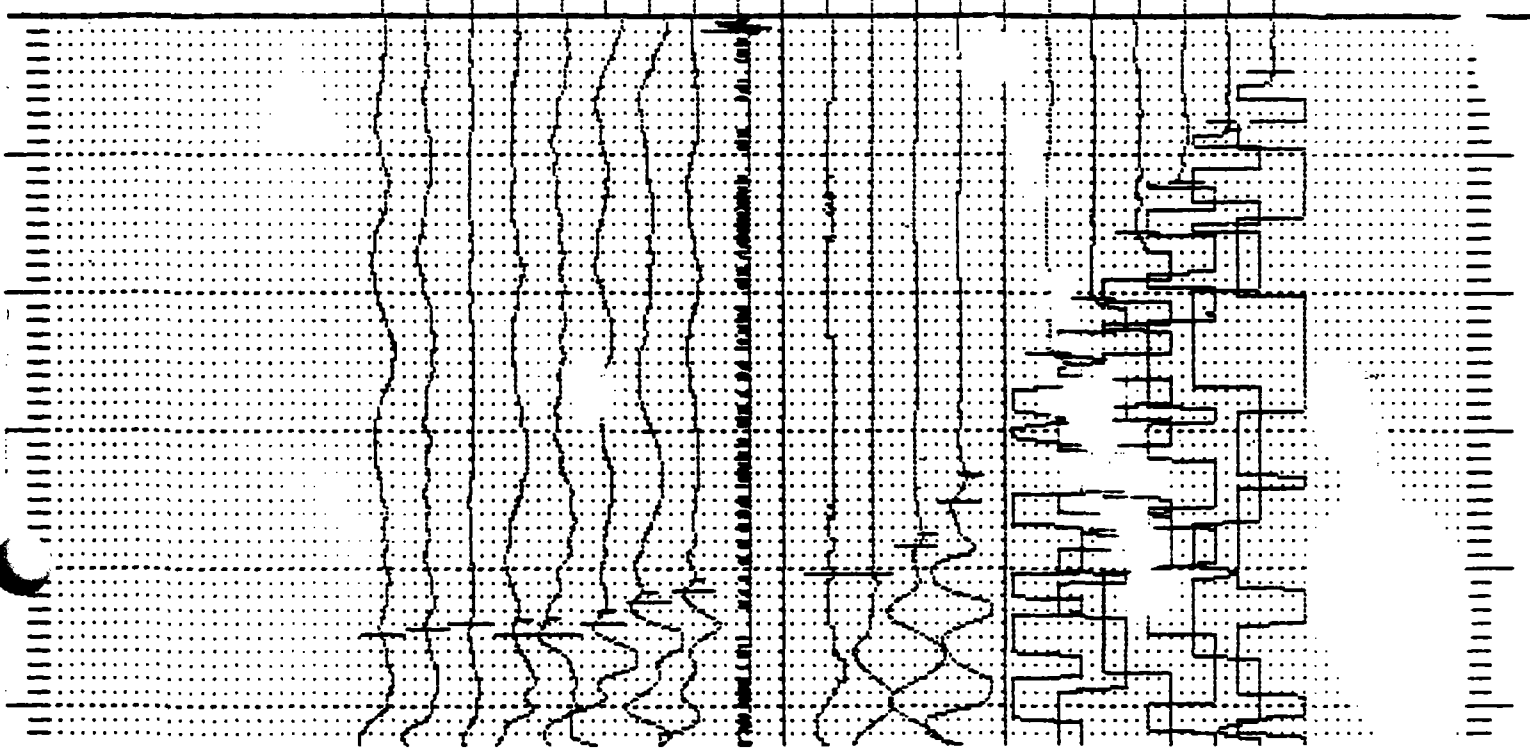
Display mode: Normal,

Low-cut: Off Hz

High-cut: Off Hz

Shots

Ch	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ge	12	12	12	12	12	12	12	12	12	03	04	06	09	09	09	10	10	11	11	11	11



Listing of markers:

Record-

Date-

Time-

Trace No

Marker time (ms)

Field notes

1
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 98
 99
 100

219
 210
 215
 208
 205
 187.5
 165
 120
 100
 42

Rapid FF
 5-23-91

Record time: 500 ms
 Delay time: 0000 ms
 Shot pos.: 000680
 Layout start: 000000
 Layout end: 000680
 Profile No.: 000002
 Note: 18292-04
 Operator: 00001

SHOT .HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
1-40	1/341	4'	6	389	S-m	11:56
0-40				390		12:06
0-15				391		12:13
-0-60			7	392		12:28
-1-60				393		12:40
-3+15				394		12:54
-4+15	↓	↓	↓	395	Sandy	

LINE off Brown Farm Rd F-F'

LOCATION Wadsworth VT

JOB NO. 18892-04 TECHNICIAN FF/JSB DATE 23 APR 91

SEISMOGRAPH NO. Alan 8724001 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS HP LOW HIGH

RECORD NUMBER _____ TO _____

STATION 0+15

W E

S

RECORDS CHECKED BY

RECORDS READ BY

STATION 4+15

TOTAL CAPS

INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

1 reshot (1 cap/1/3 cap)

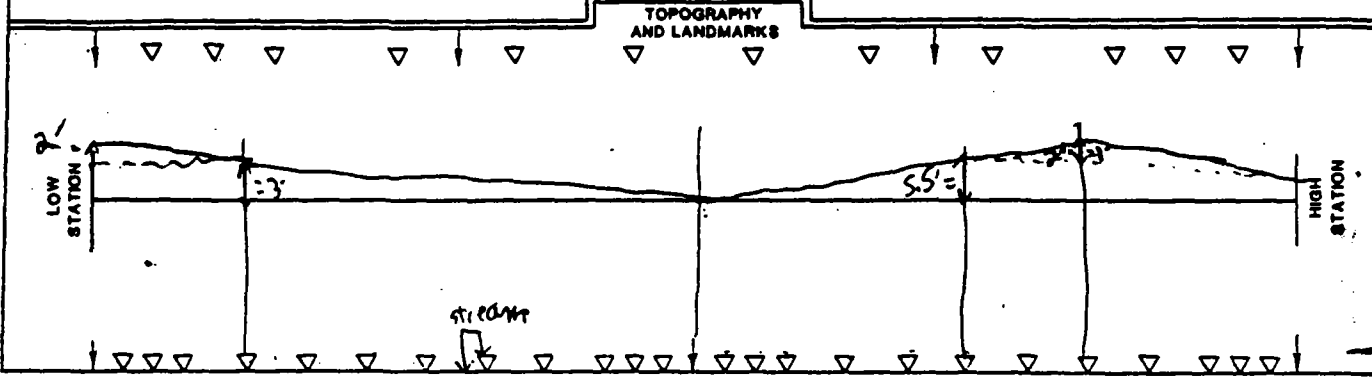
INCLUDE RESHOTS

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

-015 e northside of Brown Farm Rd.

-4+15 - ^{Wade} Sandy - material

extra 400 feet of coverage



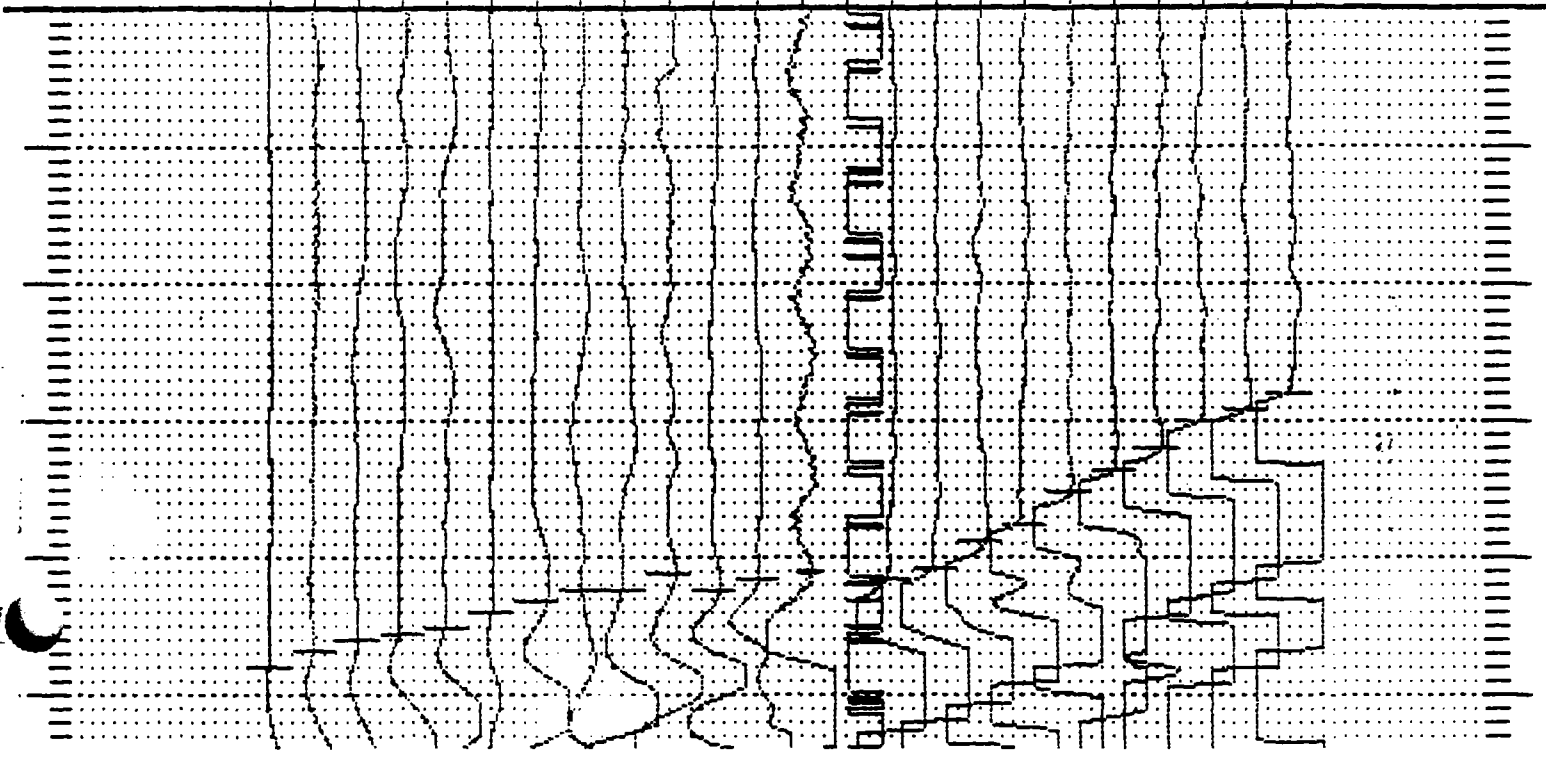
Shot pos.: 140 Layout start: -15 Layout end: -415

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ga	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers:

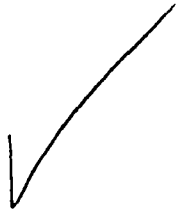
Record-000389

Date-910423

Time-11:56

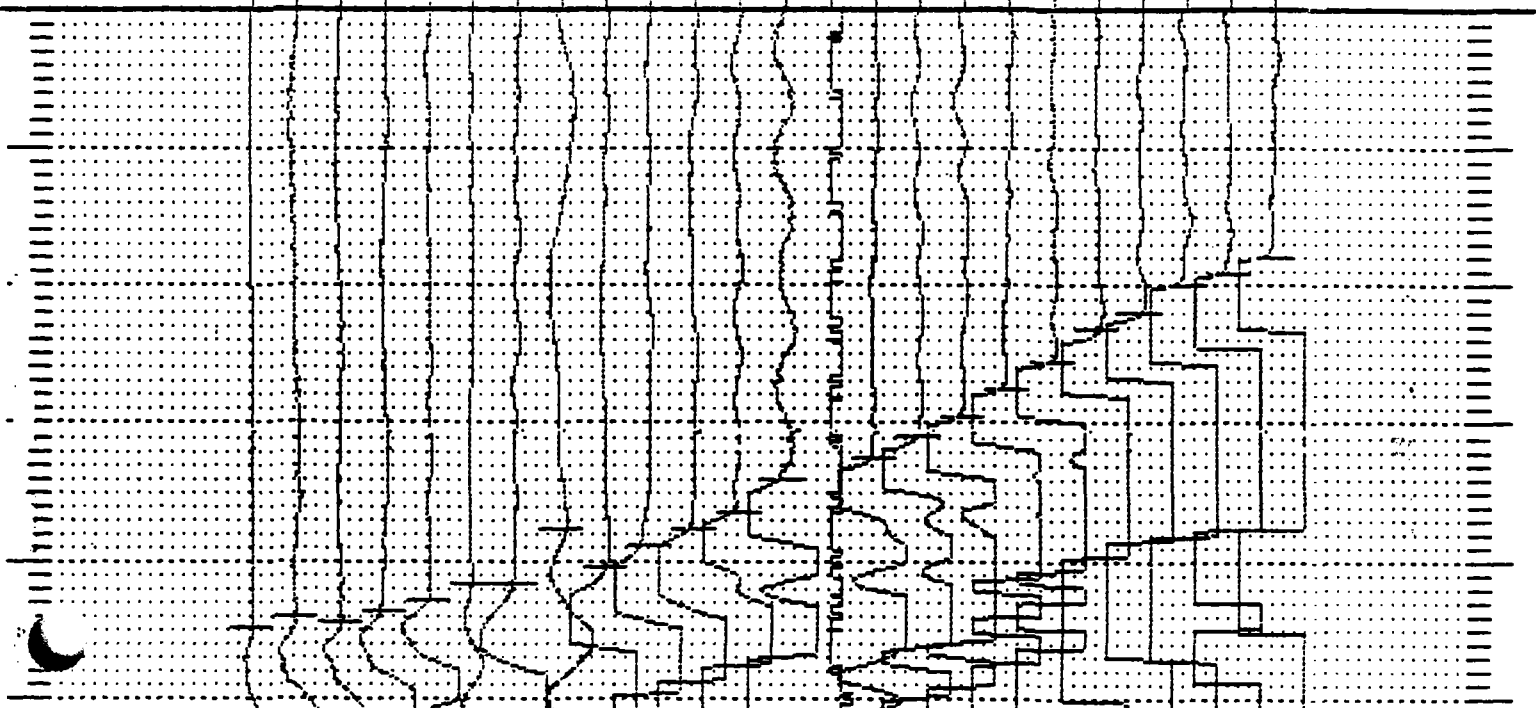
Trace No	Marker time (ms)	Field notes
01	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
02	0.000	
03	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
04	0.000	
05	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
06	0.000	
07	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
08	0.000	
09	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
10	0.000	
11	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
12	0.000	
13	0.000	Record time: 200 ms Delay time: 0000 ms Shot pos.: 140 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
14	0.000	

Record time: 200 ms
Delay time: 0000 ms
Shot pos.: 140
Layout start: -15
Layout end: -415
Profile No.: 6
Note: 18292-04
Operator: 00001



Shot pos.: 40 Layout start: -15 Layout end: -415
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000390 Date-910423 Time-12:06

Trace No	Marker time (ms)	Field notes
13	0000	Record time: 200 ms
14	0000	Delay time: 0000 ms
15	0000	Shot pos.: 40
16	0000	Layout start: -15
17	0000	Layout end: -415
18	0000	Profile No.: 6
19	0000	Note: 18292-04
20	0000	Operator: 00001

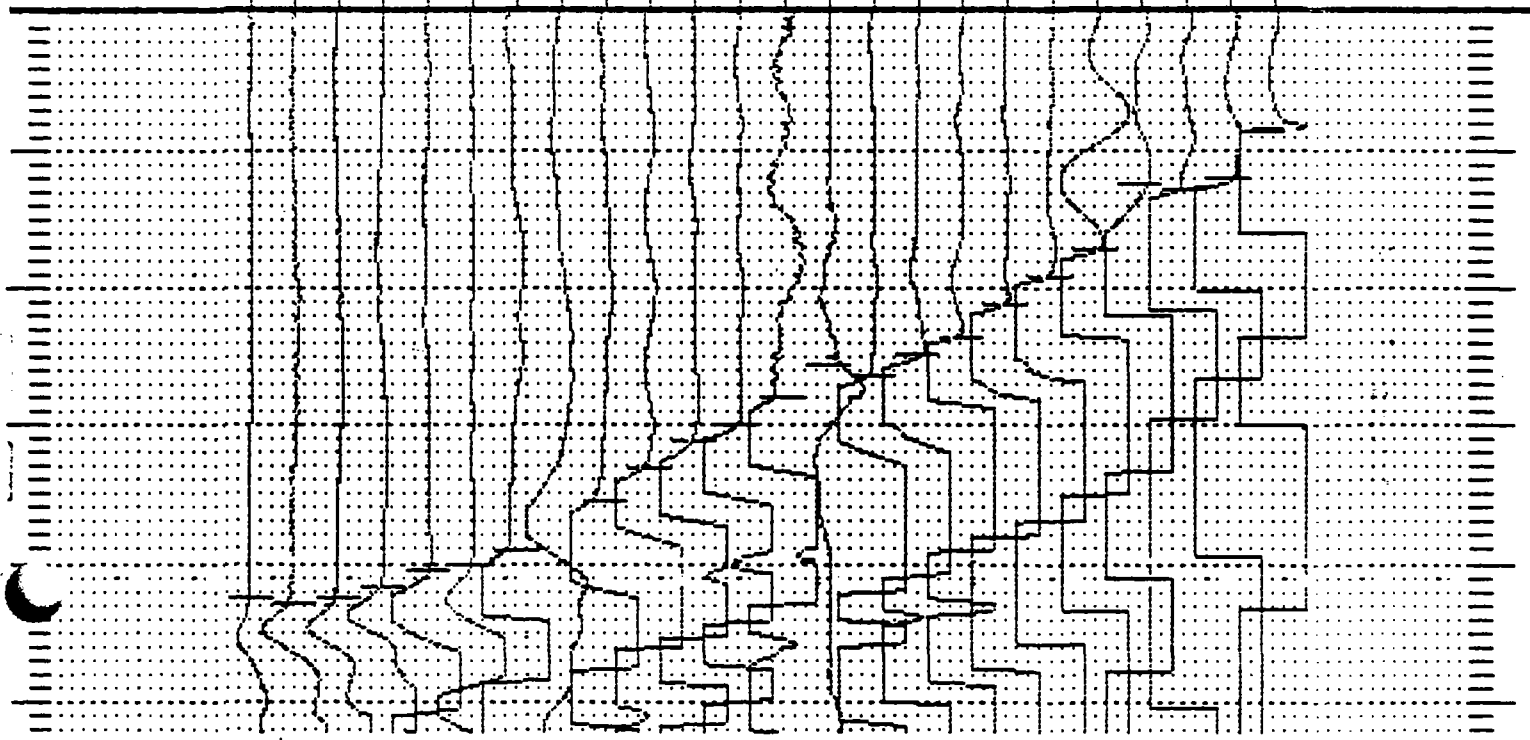
Shot pos.: -15 Layout start: -15 Layout end: -415

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	22	23	21	20	19	18	17	16	15	14	13
Ga	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

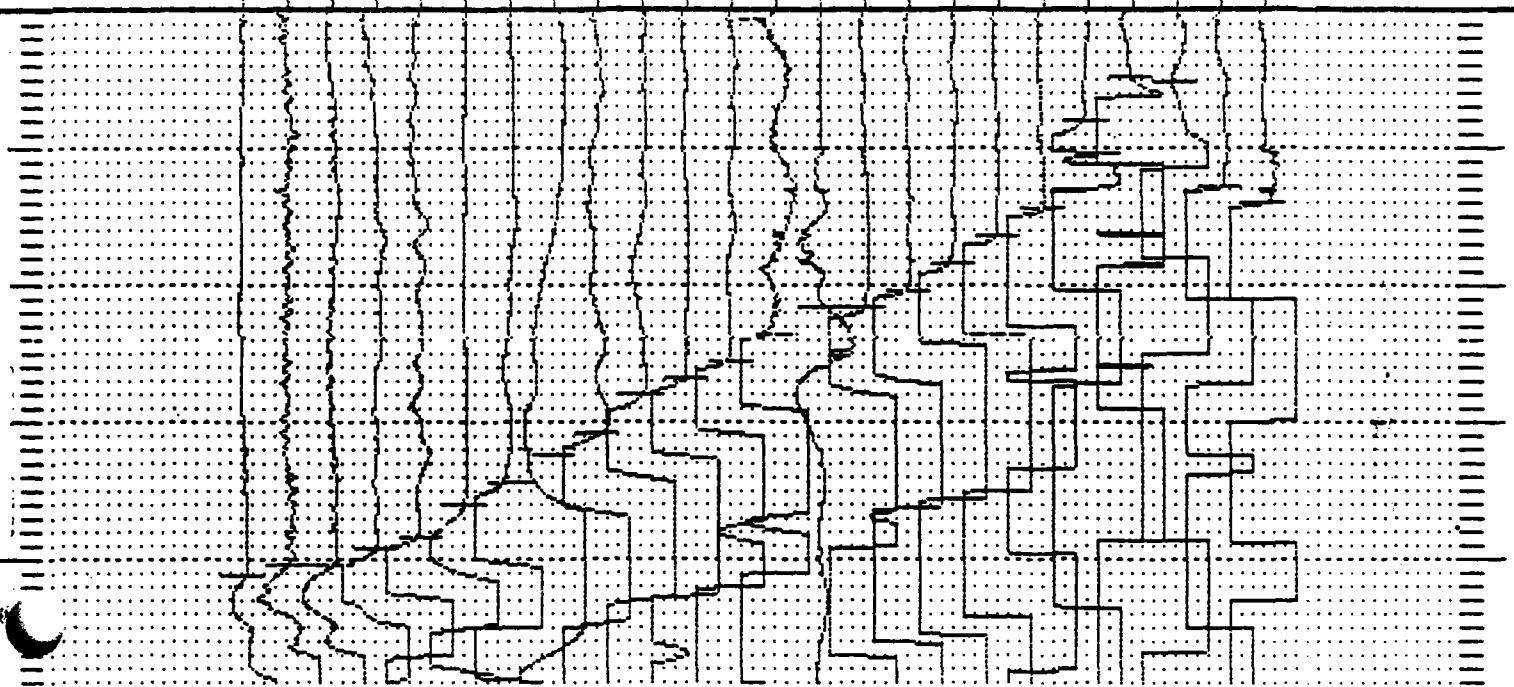


Listing of markers: Record-000391 Date-910423 Time-12:13

Trace No	Marker time (ms)	Field notes
01	100000000	Record time: 200 ms Delay time: 0000 ms Shot pos.: -15 Layout start: -15 Layout end: -415 Profile No.: 6 Note: 18292-04 Operator: 00001
02	100000000	
03	100000000	
04	100000000	
05	100000000	
06	100000000	
07	100000000	
08	100000000	
09	100000000	
10	100000000	
11	100000000	
12	100000000	
13	100000000	
14	100000000	
15	100000000	
16	100000000	
17	100000000	
18	100000000	
19	100000000	
20	100000000	
21	100000000	
22	100000000	
23	100000000	
24	100000000	

Shot pos.: -60 Layout start: -15 Layout end: -415
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch 01 02 03 04 05 06 07 08 09 10 11 12 24 23 22 21 20 19 18 17 16 15 14 13
 Ga 14



Listing of markers: Record-000392 Date-910423 Time-12:28

Trace No	Marker time (ms)	Field notes
01	0.000	Record time: 200 ms
02	0.000	Delay time: 0000 ms
03	0.000	Shot pos.: -60
04	0.000	Layout start: -15
05	0.000	Layout end: -415
06	0.000	Profile No.: 6
07	0.000	Note: 18292-04
08	0.000	Operator: 00001

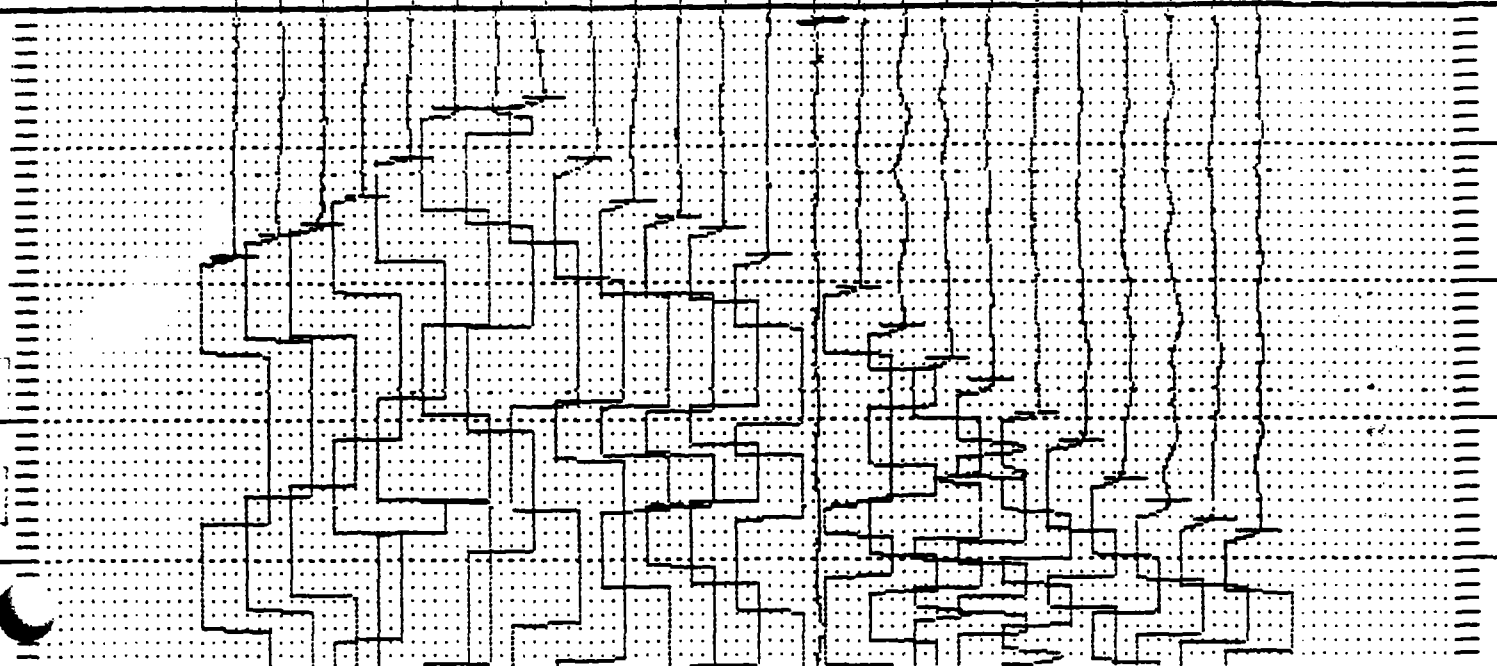
Shot pos.: -315 Layout start: -15 Layout end: -415

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Gs	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000394 Date-910423 Time-12:54

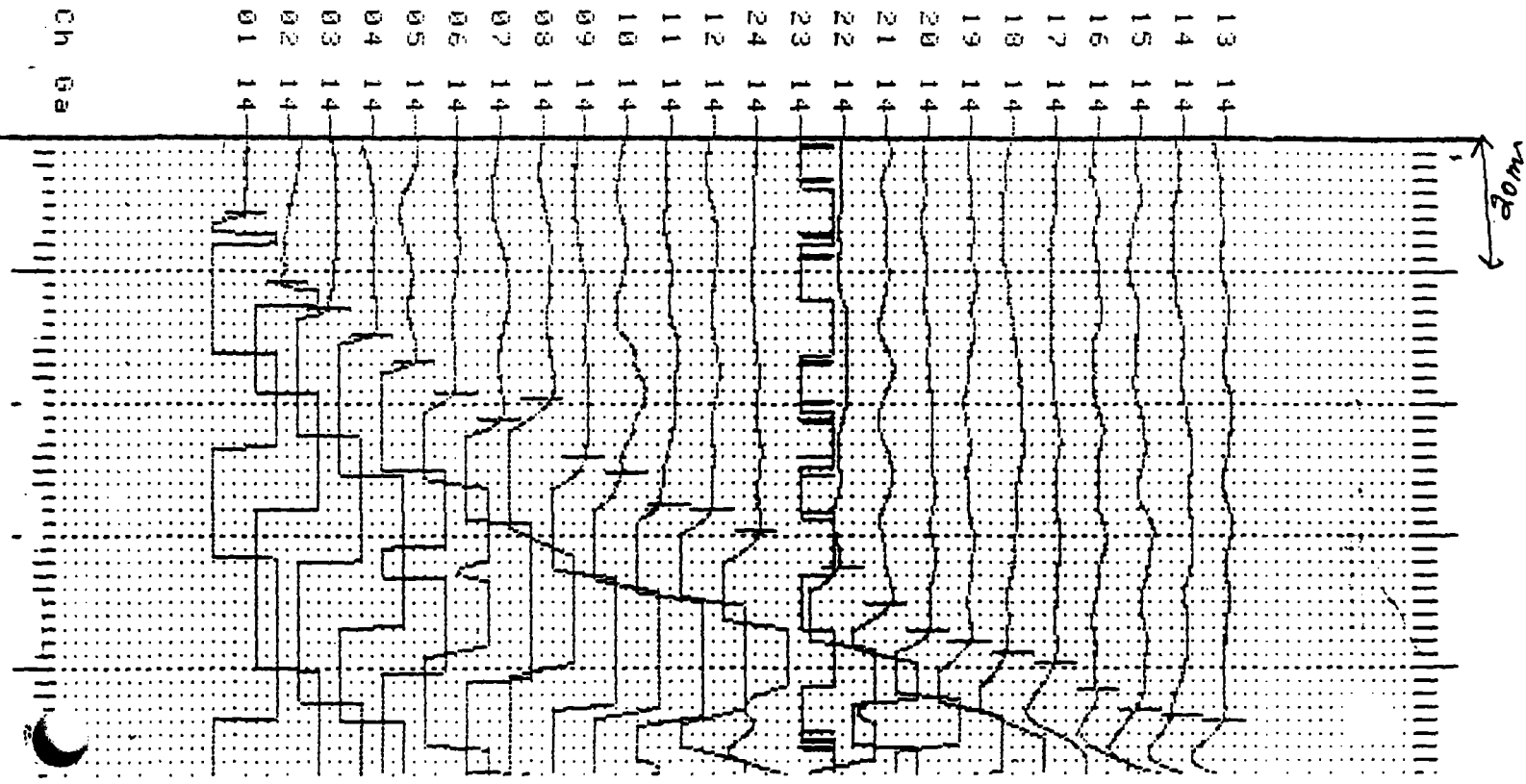
Trace No	Marker time (ms)	Field notes
----------	------------------	-------------

01	0000	
02	0000	
03	0000	
04	0000	
05	0000	
06	0000	
07	0000	
08	0000	
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

Record time:	200 ms
Delay time:	0000 ms
Shot pos.:	-315
Layout start:	-15
Layout end:	-415
Profile No.:	6
Note:	18292-04
Operator:	00001



ABEM Terraloc Seismic System • Record-000395 Date-910423 Time-13:04
 Shot pos.: -415 Layout start: -15 Layout end: -415
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000395 Date-910423 Time-13:04

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: -415
04	0000	Layout start: -15
05	0000	Layout end: -415
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	



SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
5700	1/2 KP	3'	6	382	S-M	9:24
4800				383		9:36 AM
3700				384		9:45
1740		1'		385		9:55
0740		4'		386		10:07
0-60				387		10:20

LINE E-F' (near Brown Farm Rd) (PROFILE)

LOCATION Lyndonville VT

JOB NO. 18297-04 TECHNICIAN FF/JS DATE 23 APR 91

SEISMOGRAPH NO. 8724001 AMPLIFIER NO. _____

SPREAD LENGTH 30' FILTERS LOW AP HIGH _____

RECORD NUMBER _____ TO _____

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

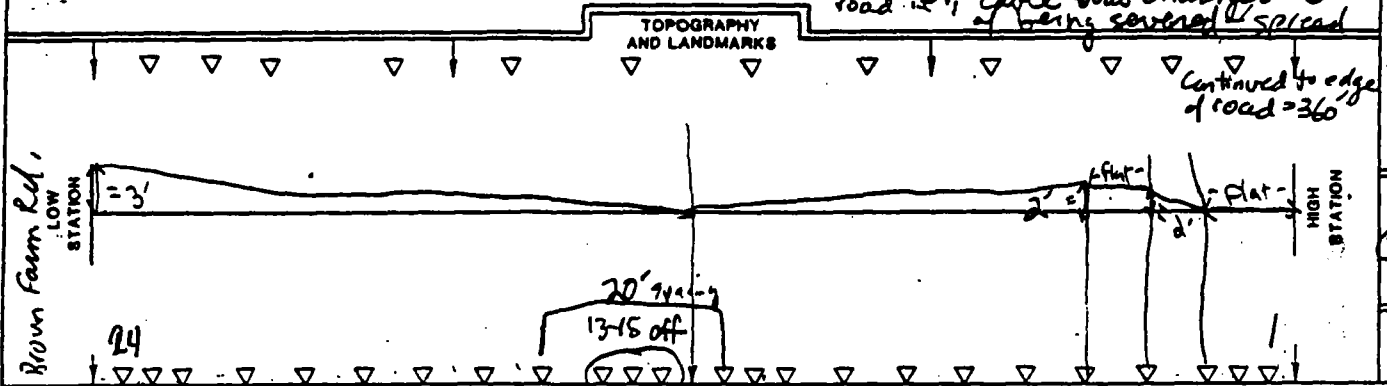
0740 at Brown Farm Rd
"Southside"

* Phono switched off due to busy road is; cable was endangered of being severed & spread

TOTAL CAPS 7 INSTRUMENTATION LOCATED AT _____

TOTAL POWDER 7 STATION _____

INCLUDE RESHOTS



4 + 00
STATION

N

W (E)

S

RECORDS CHECKED BY

RECORDS READ BY

N

W (E)

S

STATION
0 + 40

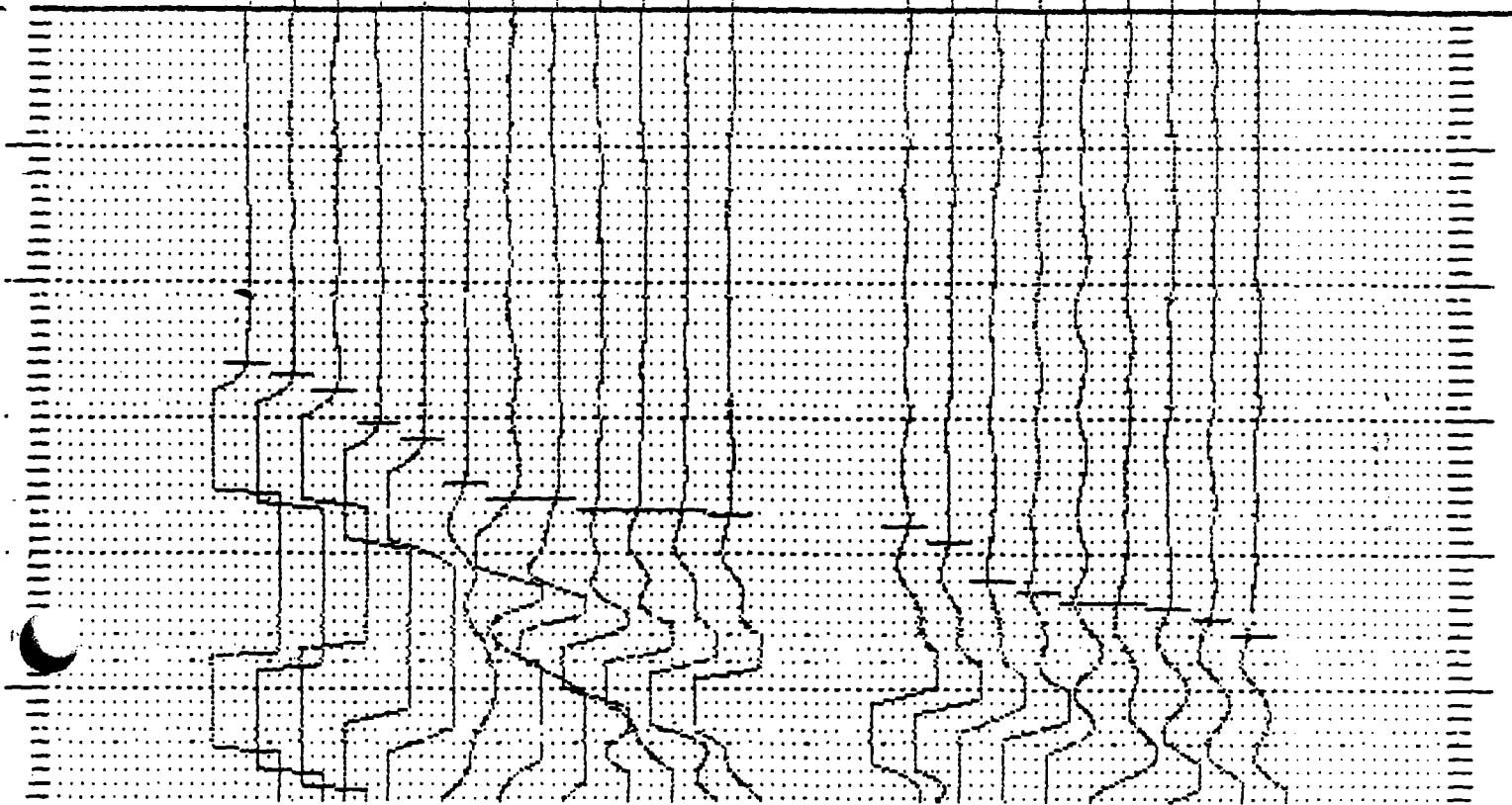
Shot pos.: 500 Layout start: 40 Layout end: 400

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000382 Date-910423 Time-09:24

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 500
04	0000	Layout start: 40
05	0000	Layout end: 400
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

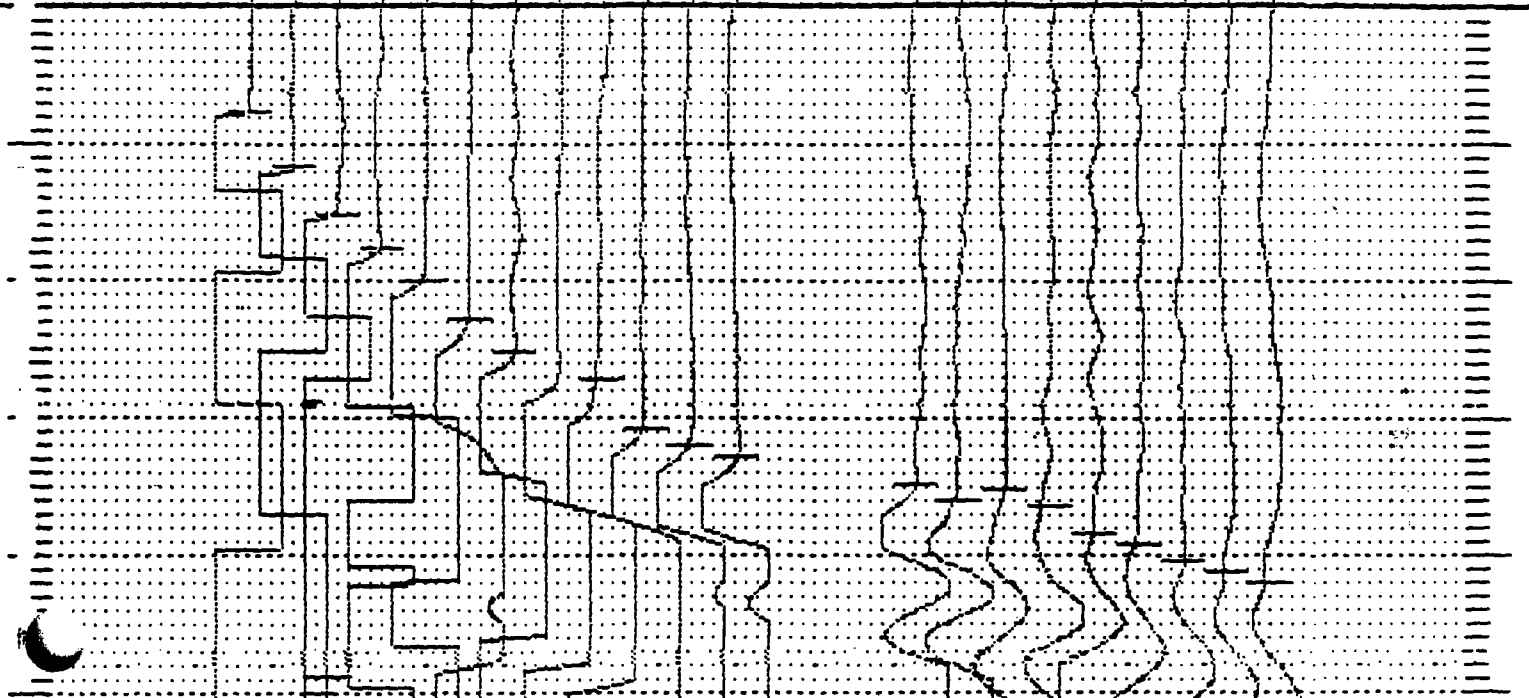
Shot pos.: 400 Layout start: 40 Layout end: 400

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



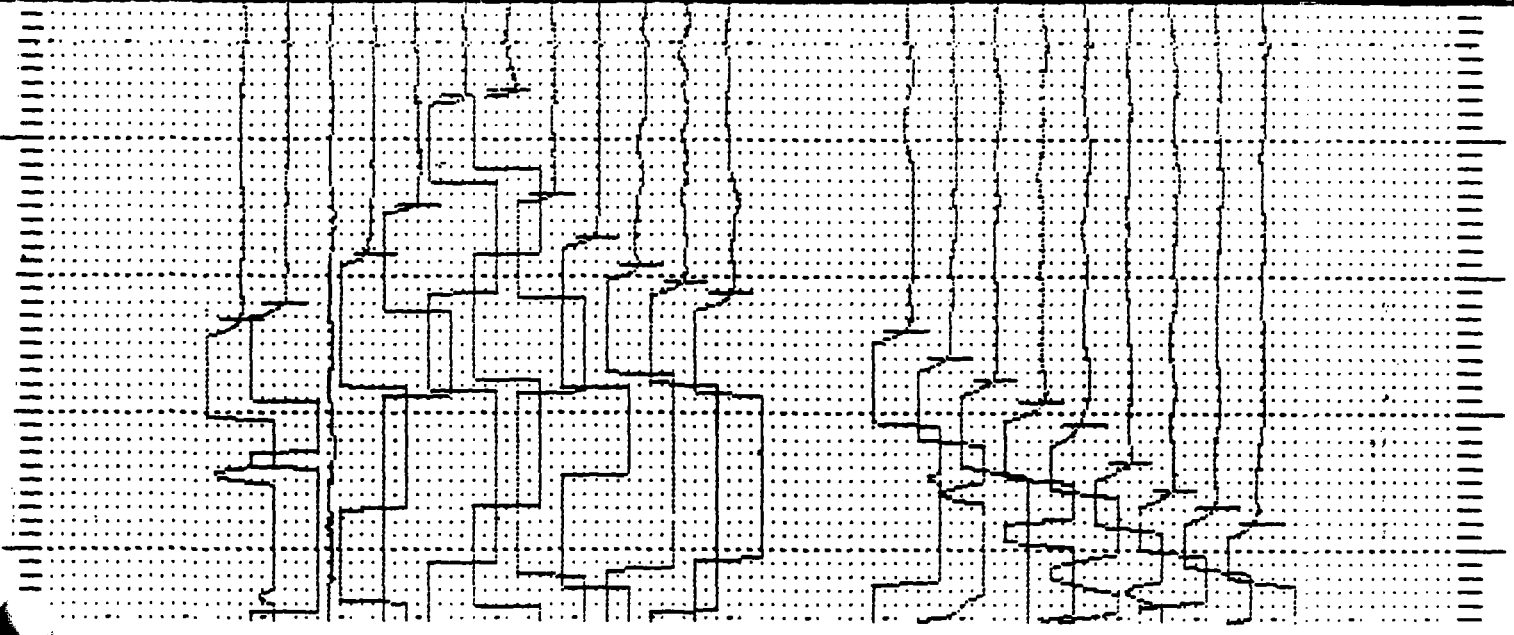
Listing of markers: Record-000383 Date-910423 Time-09:36

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 400
04	0000	Layout start: 40
05	0000	Layout end: 400
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: 300 Layout start: 40 Layout end: 400
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shutter: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	16	17	18	19	20	21	22	23	24
Da	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

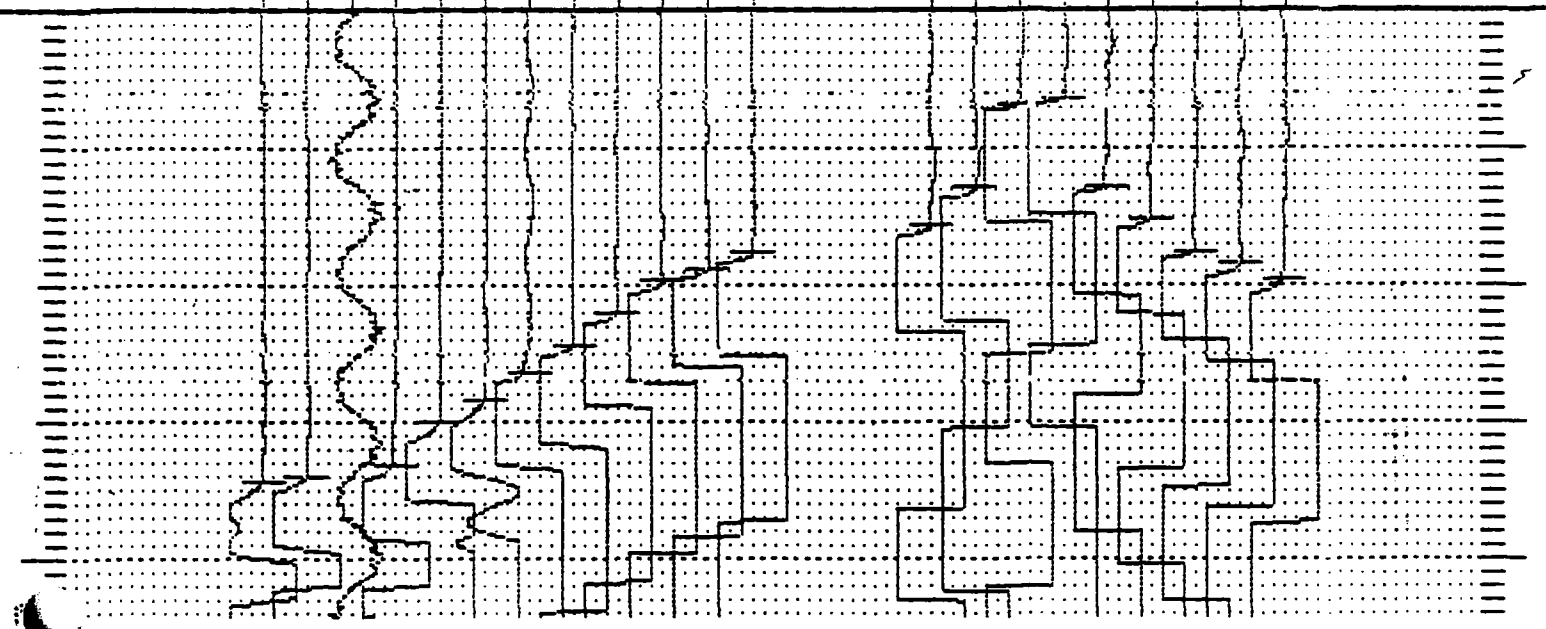


Listing of markers: Record-000364 Date-910423 Time-09:45

Trace No	Marker time (ms)	Field notes
01	24	Record time: 200 ms
02	26	Delay time: 0000 ms
03	28	Shot pos.: 300
04	30	Layout start: 40
05	32	Layout end: 400
06	34	Profile No.: 6
07	36	Note: 18292-04
08	38	Operator: 00001

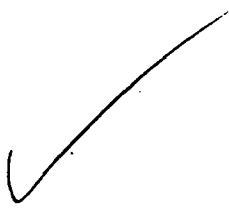
Shot pos.: 140 Layout start: 40 Layout end: 400
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	16	17	18	19	20	21	22	23	24
Gain	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000365 Date-910423 Time-09:55

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 140
04	0000	Layout start: 40
05	0000	Layout end: 400
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001



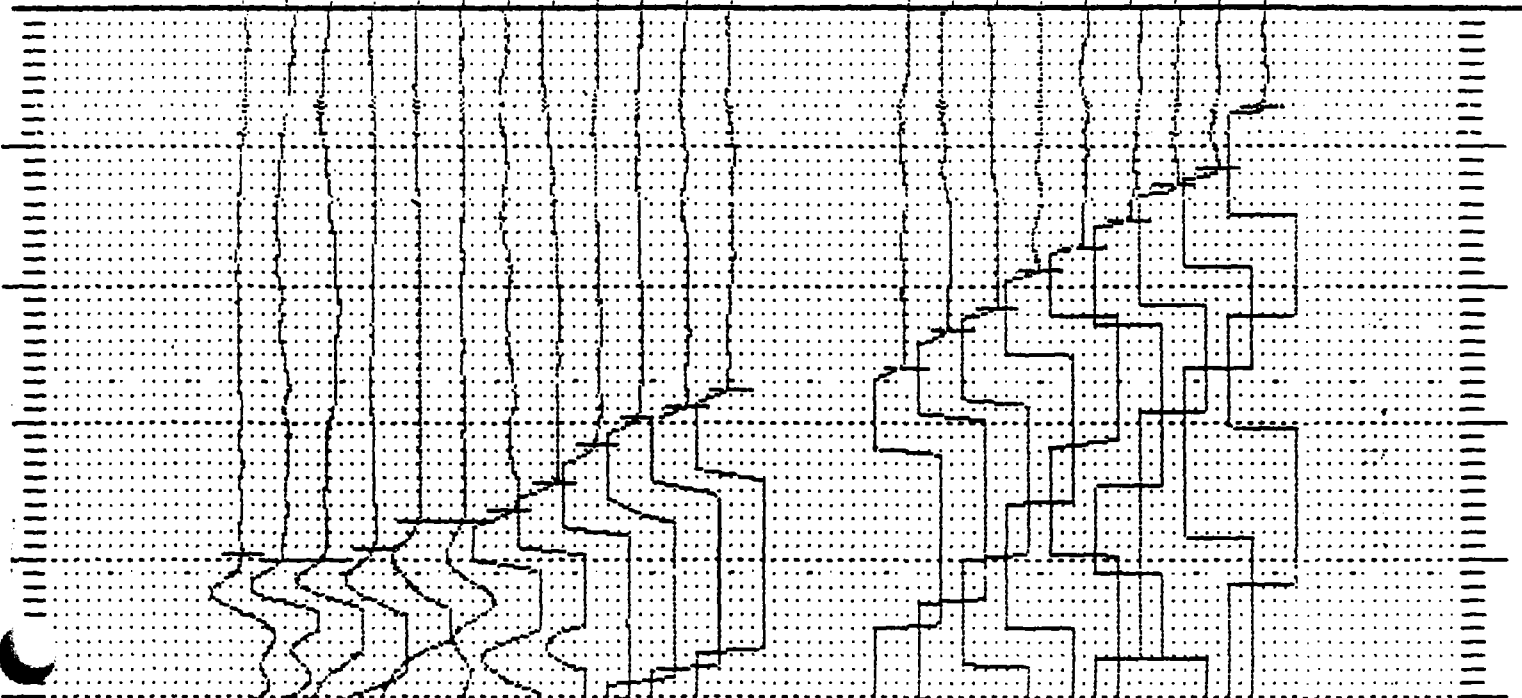
Shot pos: 40 Layout start: 40 Layout end: 400

Profile No: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	16	17	18	19	20	21	22	23	24
Gain	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

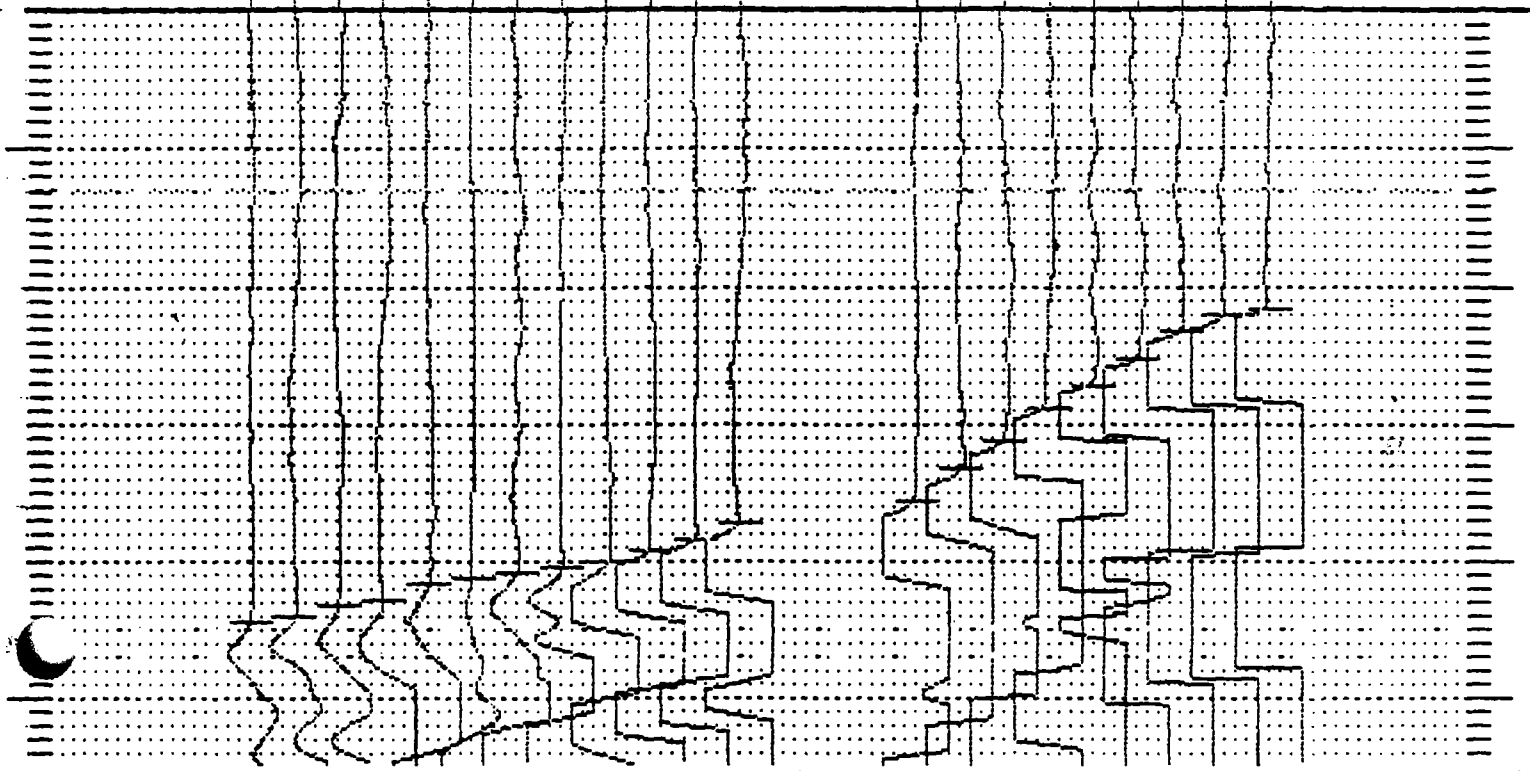


Listing of markers: Record-000366 Date-910423 Time-10:07

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 40
04	0000	Layout start: 40
05	0000	Layout end: 400
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: -60 Layout start: 40 Layout end: 400
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000387 Date-910423 Time-10:20

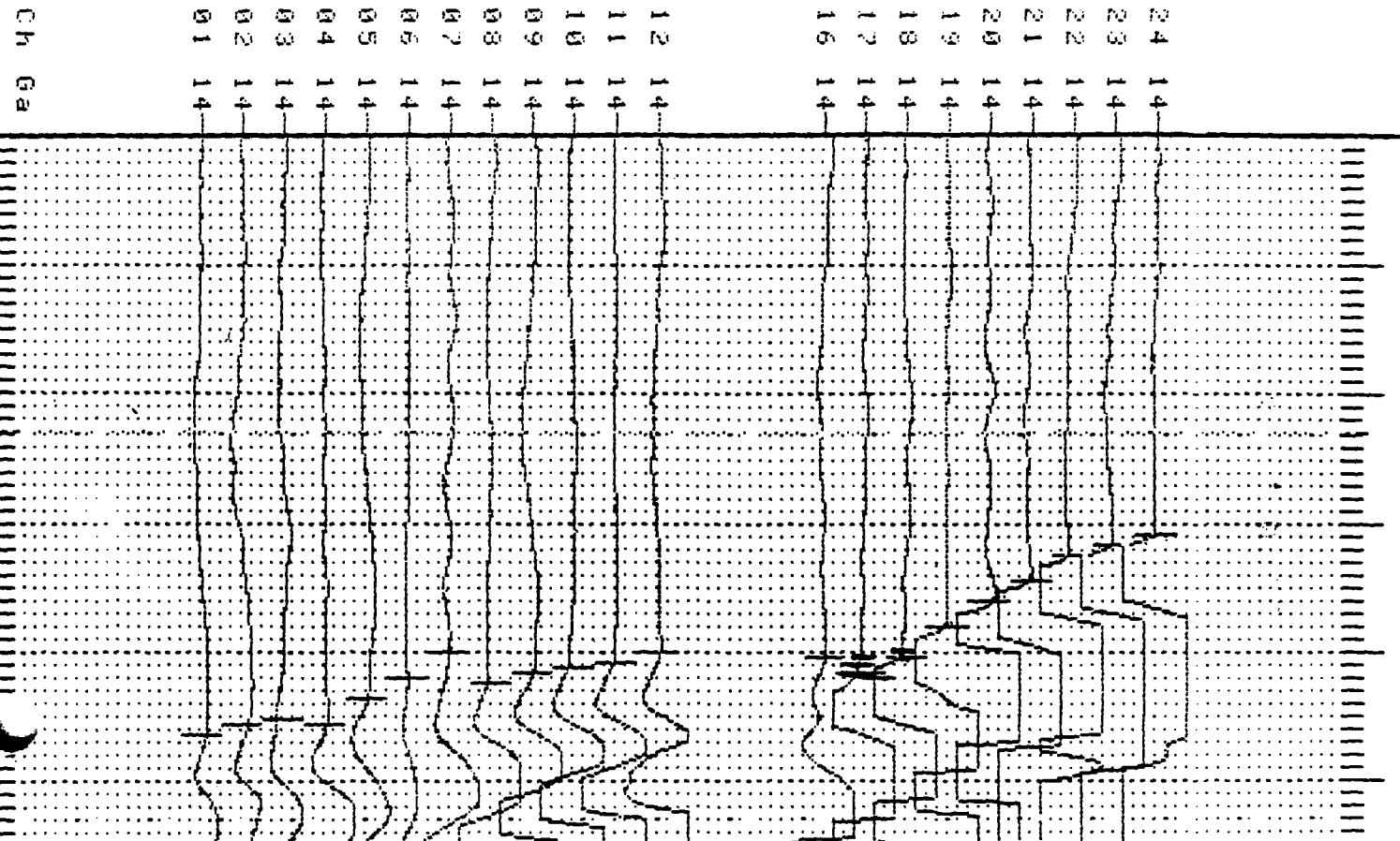
Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: -60
04	0000	Layout start: 40
05	0000	Layout end: 400
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: -160 Layout start: 40 Layout end: 400

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000388 Date-910423 Time-10:34

Trace No	Marker time (ms)	Field notes
1	0000	Record time: 200 ms
2	0000	Delay time: 0000 ms
3	0000	Shot pos.: -160
4	0000	Layout start: 40
5	0000	Layout end: 400
6	0000	Profile No.: 6
7	0000	Note: 18292-04
8	0000	Operator: 00001

80.6
80

OFF. ST

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - K	TIME
9+00	13KG	3'	5	375	S-m	16:06
8+00				376		16:16
7+00				377		16:29
6+00			6	378		16:35
5+00				379		16:50
4+00				380		16:59
3+00	✓	✓	✓	381	✓	17:07

LINE F-F' (profile 6)

LOCATION OFF Brown Farm Rd Lyndville

JOB NO. 18292-04 TECHNICIAN FF/TB DATE 22 Apr 91

SEISMOGRAPH NO. ABEM AMPLIFIER NO. —

SPREAD LENGTH 400' FILTERS LOW AP HIGH

RECORD NUMBER _____ TO _____

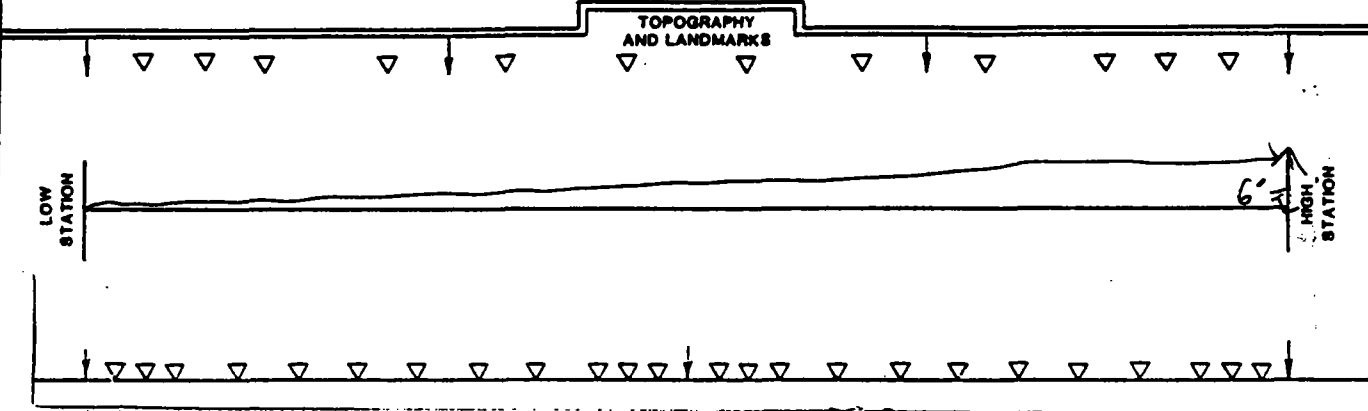
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS

INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS



8 + 04
STATION

N
W (E)
S

RECORDS CHECKED BY

RECORDS READ BY

N
W (E)
S

STATION
4 + 00

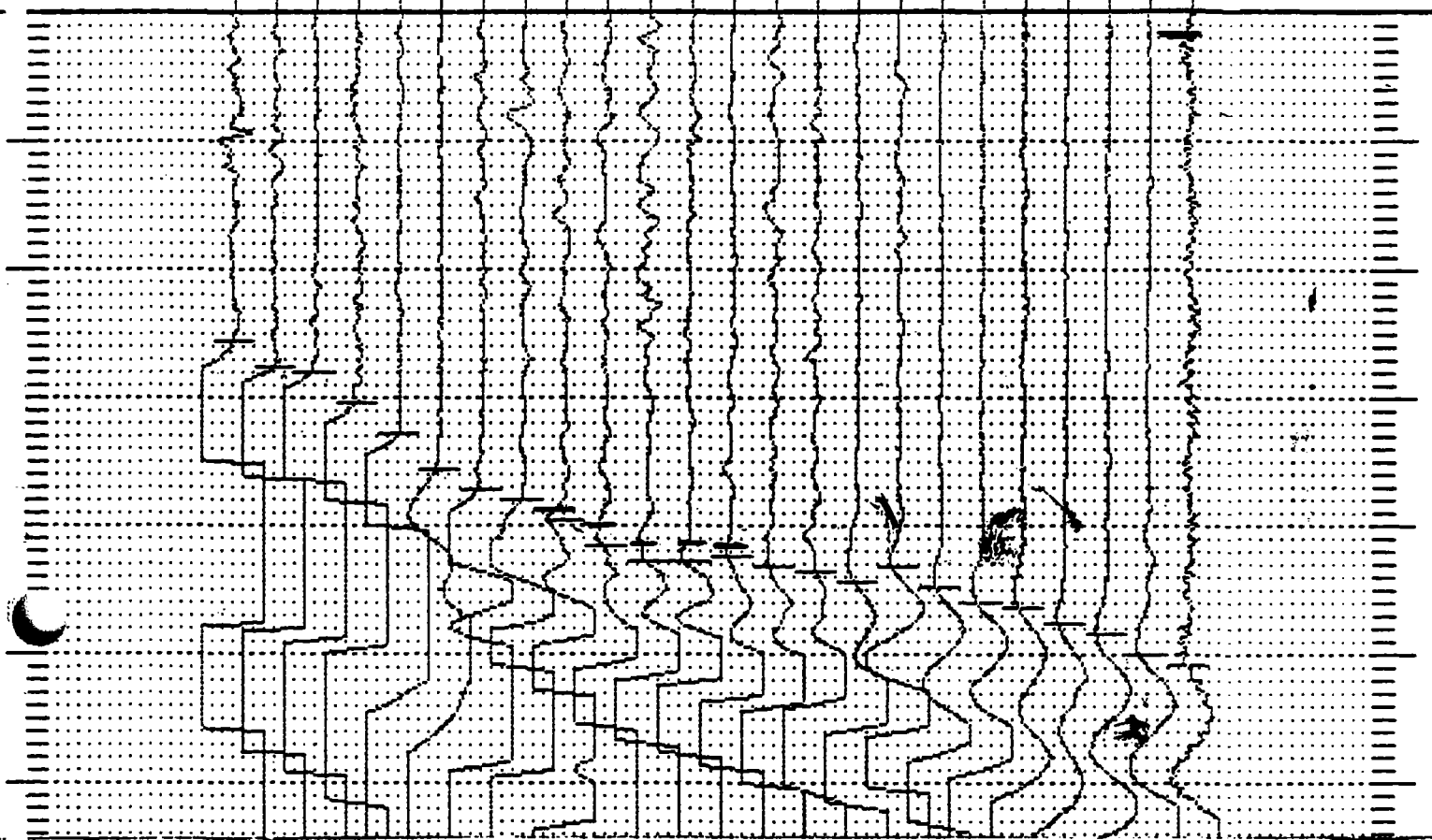
Shot pos.: 300 Layout start: 400 Layout end: 600

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

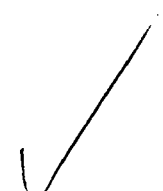
Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



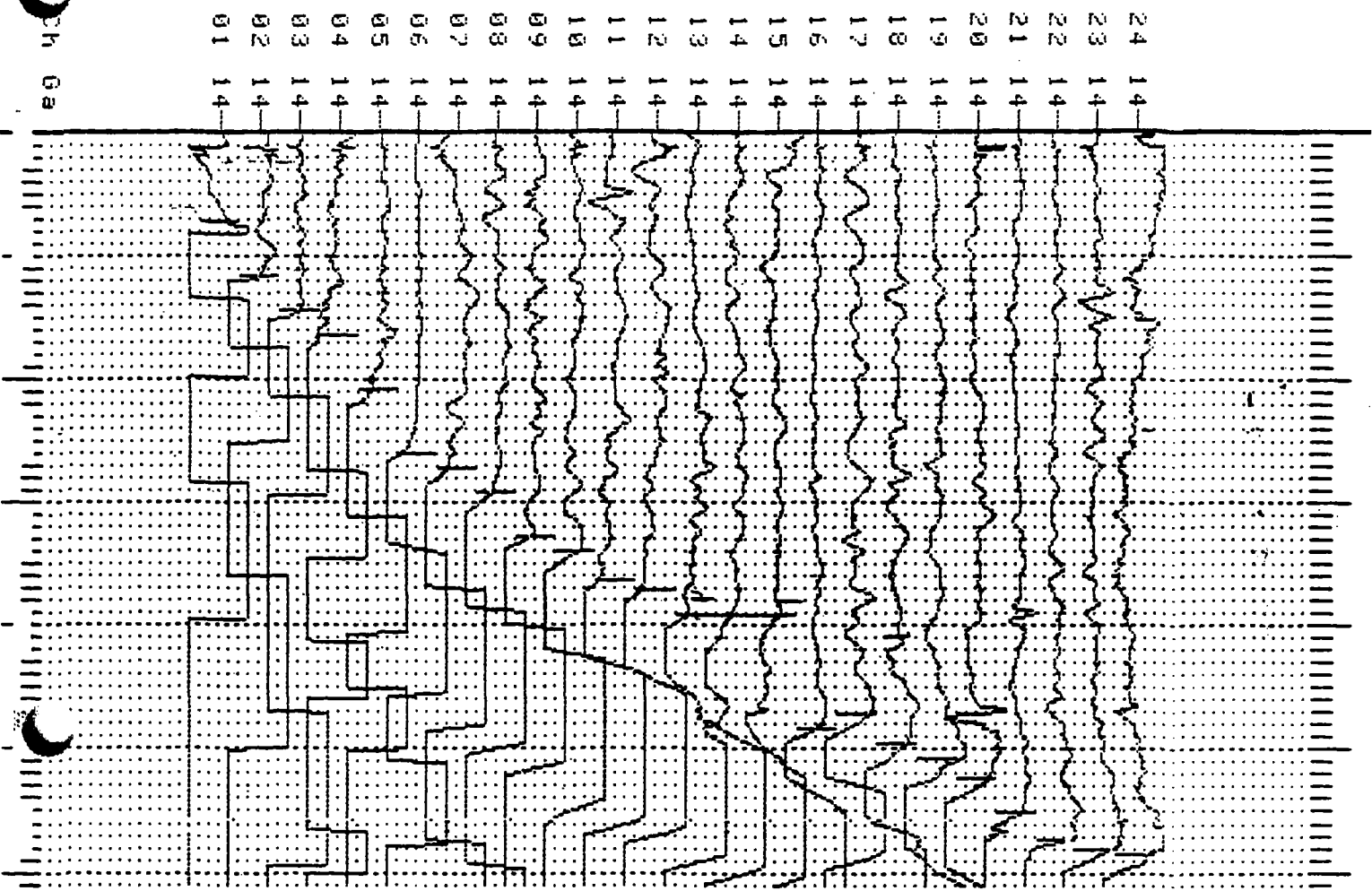
Listing of markers: Record-000381 Date-910422 Time-17:07

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 300
04	0000	Layout start: 400
05	0000	Layout end: 600
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

80.5
 70.5
 60.5



Shot pos.: 400 Layout start: 400 Layout end: 800
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000380 Date-910422 Time-16:59

Trace No.	Marker time (ms)	Field notes
01	76	Record time: 200 ms
02	76	Delay time: 0000 ms
03	82	Shot pos.: 400
04		Layout start: 400
05		Layout end: 800
06		Profile No.: 6
07		Note: 18292-04
08		Operator: 00001
09		
10		
11		
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✓
 repicked
 H.
 6/5/91

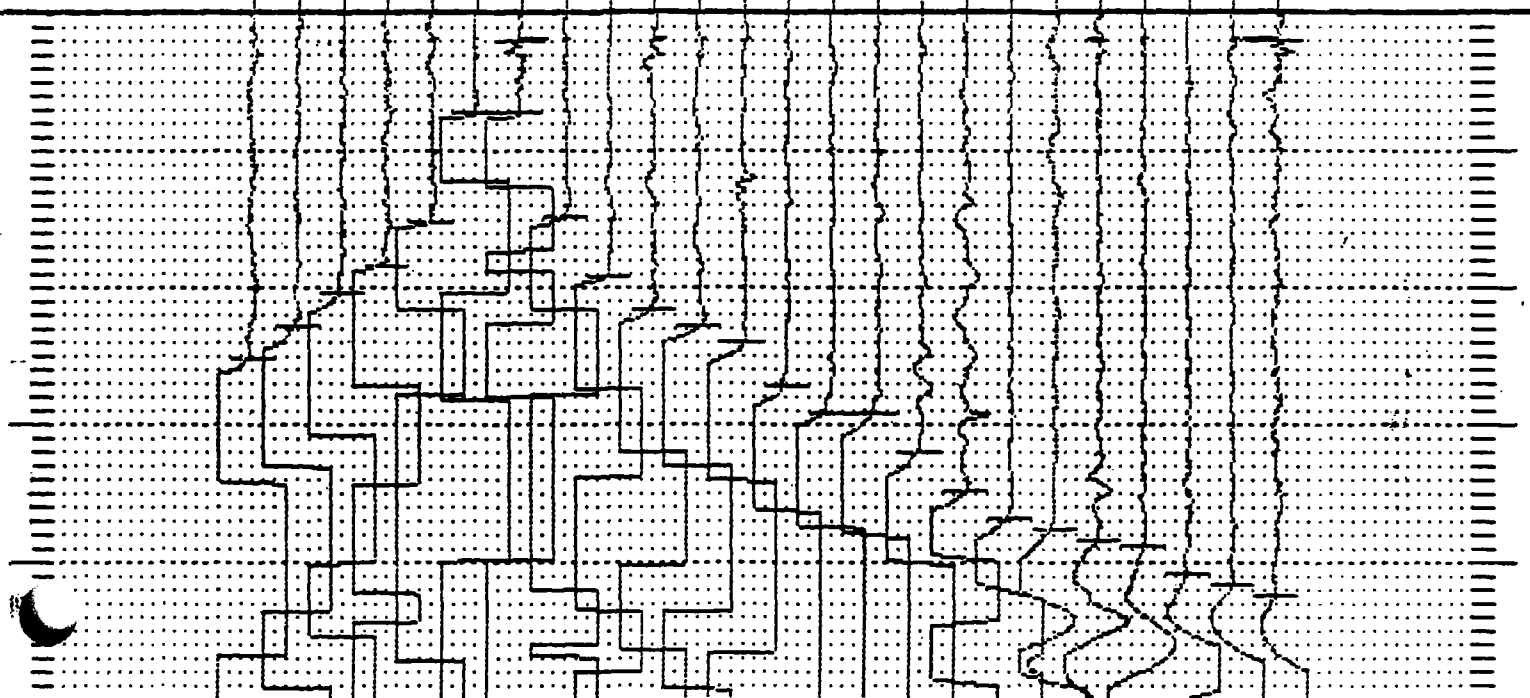
Shot pos.: 500 Layout start: 400 Layout end: 800

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000379 Date-910422 Time-16:50

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 500
04	0000	Layout start: 400
05	0000	Layout end: 800
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

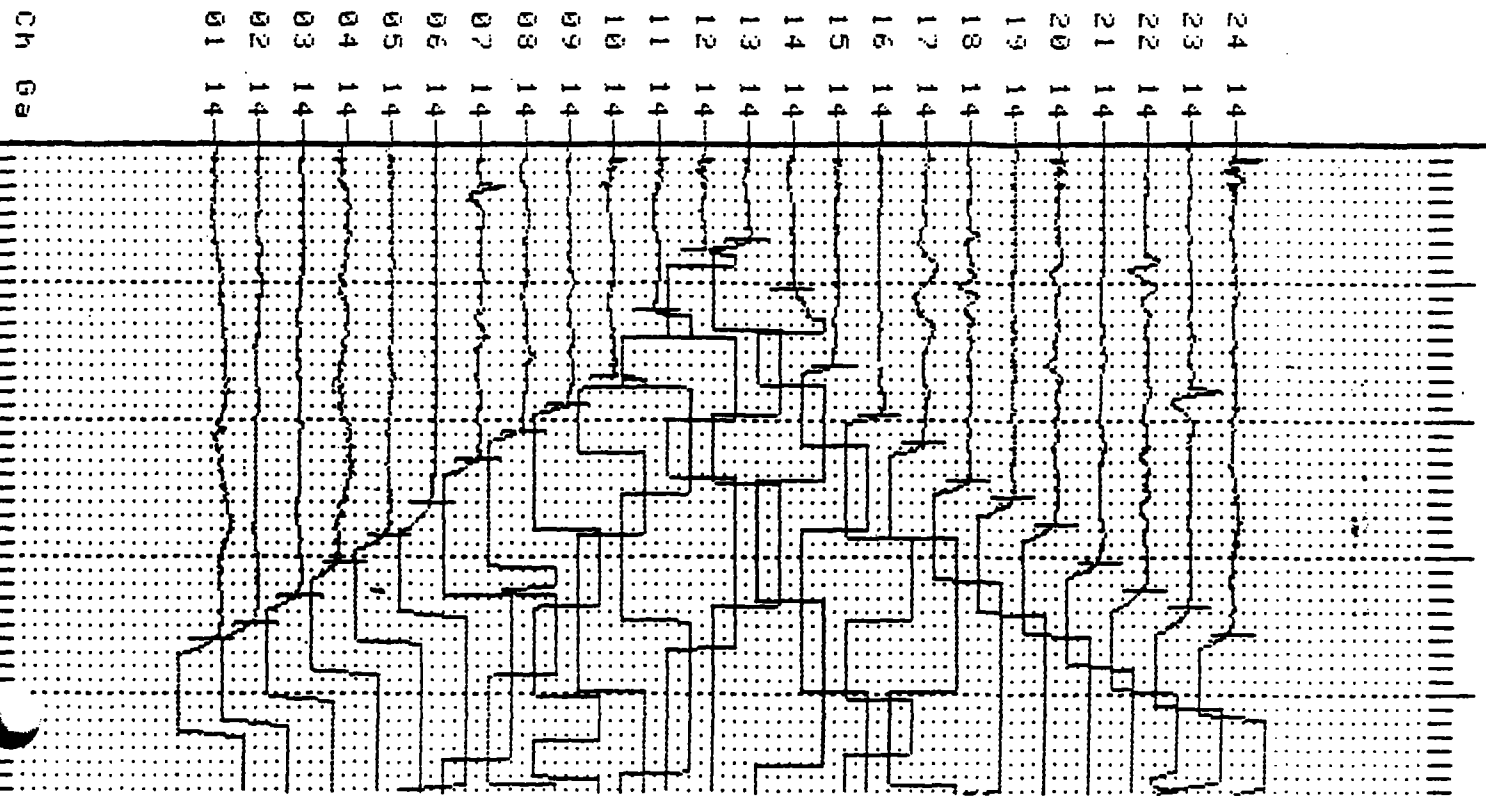


Shot pos.: 600 Layout start: 400 Layout end: 800

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



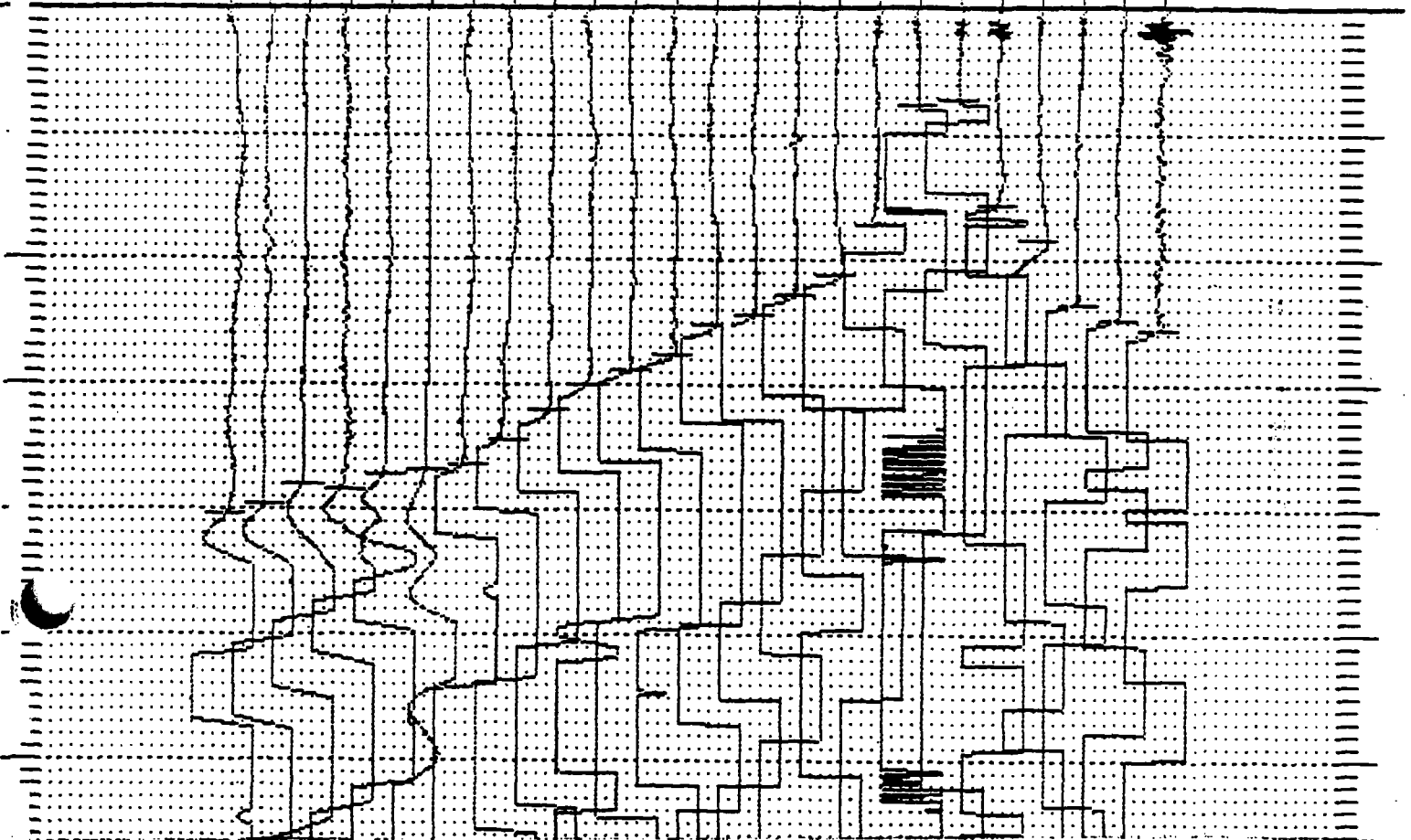
Listing of markers: Record-000378 Date-910422 Time-16:35

Trace No	Marker time (ms)	Field notes
01	14	Record time: 200 ms
02	14	Delay time: 0000 ms
03	14	Shot pos.: 600
04	14	Layout start: 400
05	14	Layout end: 800
06	14	Profile No.: 6
07	14	Note: 18292-04
08	14	Operator: 00001
09	14	
10	14	
11	14	
12	14	
13	14	
14	14	
15	14	
16	14	
17	14	
18	14	
19	14	
20	14	
21	14	
22	14	
23	14	
24	14	

ABEM Terraloc Seismic System

Shot pos.: 700 Layout start: 400 Layout end: 800
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch 01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
 Ga 14



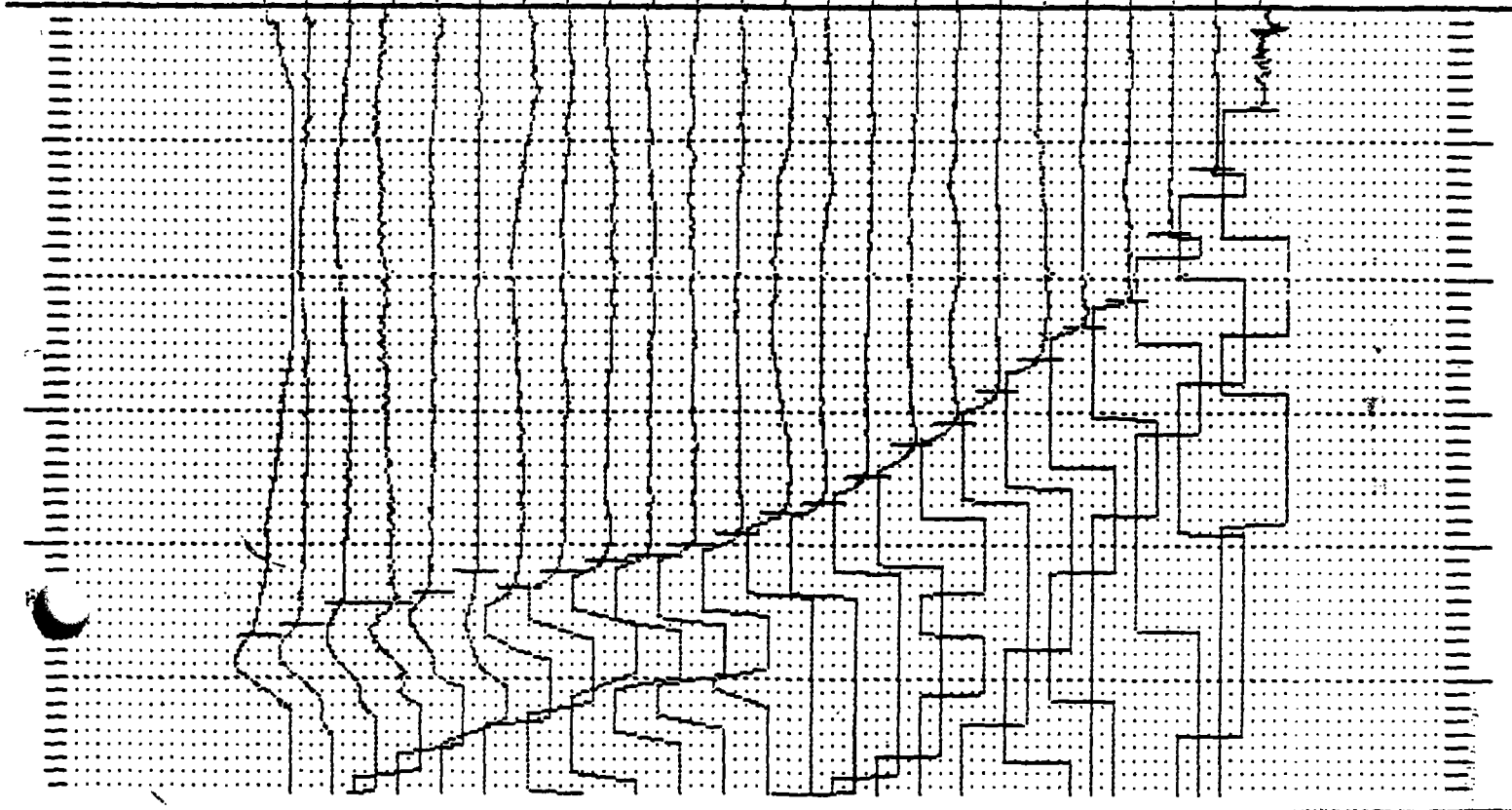
Listing of markers: Record-000377 Date-910422 Time-16:23

Trace No	Marker time (ms)	Field notes
01	00000	Record time: 200 ms
02	00000	Delay time: 0000 ms
03	00000	Shot pos.: 700
04	00000	Layout start: 400
05	00000	Layout end: 800
06	00000	Profile No.: 6
07	00000	Note: 18292-04
08	00000	Operator: 00001



Shot pos.: 000 Layout start: 400 Layout end: 000
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch Ga 01 14 02 14 03 14 04 14 05 14 06 14 07 14 08 14 09 14 10 14 11 14 12 14 13 14 14 14 15 14 16 14 17 14 18 14 19 14 20 14 21 14 22 14 23 14 24 14



Listing of markers: Record-000376 Date-910422 Time-16:16

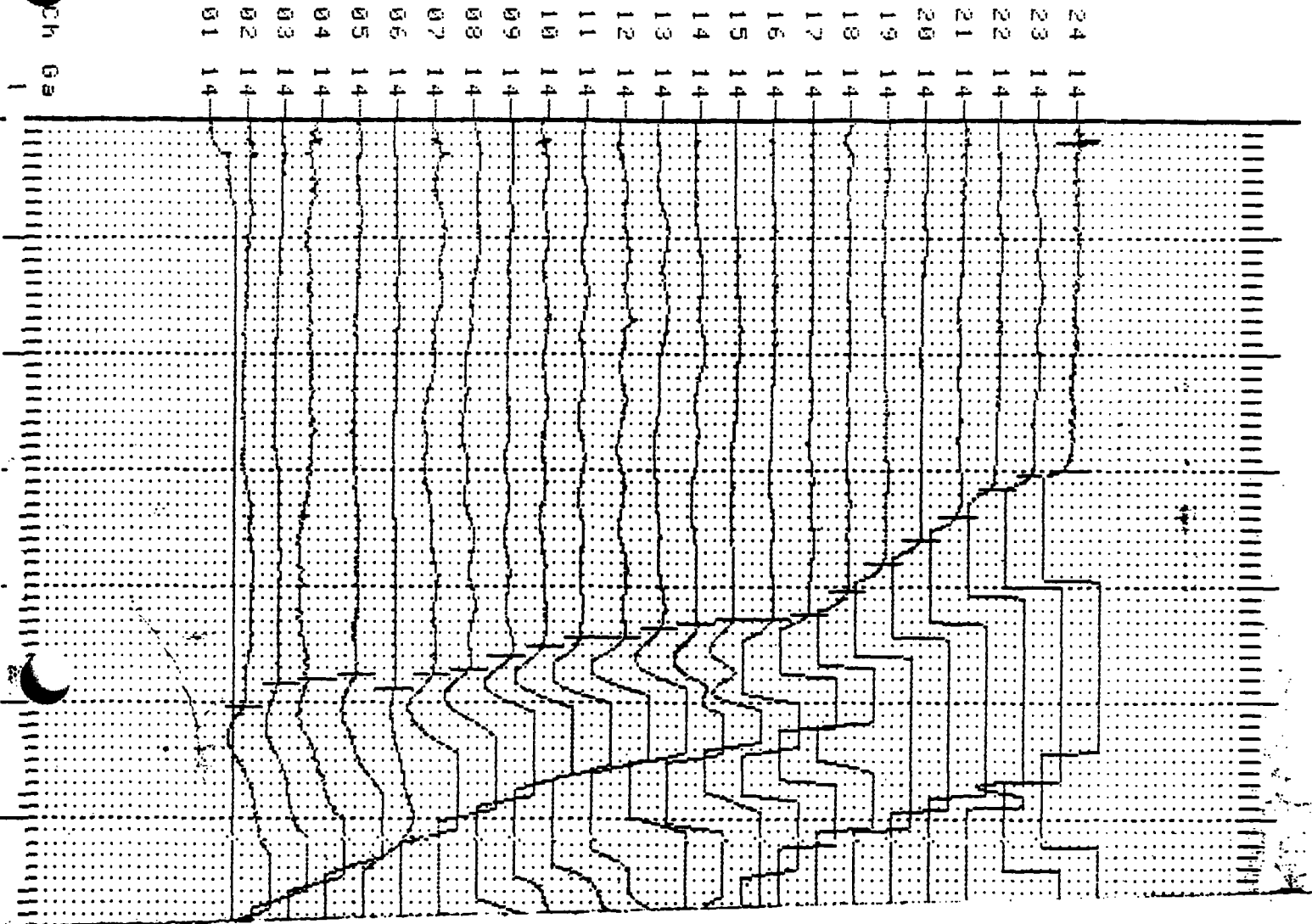
Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 000
04	0000	Layout start: 400
05	0000	Layout end: 000
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

Shot pos.: 900 Layout start: 400 Layout end: 2800

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000375 Date-910422 Time-16:06

Trace No	Marker time (ms)	Field notes
01	400	Record time: 200 ms
02	400	Delay time: 0000 ms
03	400	Shot pos.: 900
04	400	Layout start: 400
05	400	Layout end: 2800
06	400	Profile No.: 6
07	400	Note: 18292-04
08	400	Operator: 00001
09	400	
10	400	
11	400	
12	400	
13	400	
14	400	
15	400	
16	400	
17	400	
18	400	
19	400	
20	400	
21	400	
22	400	
23	400	
24	400	

Listing of markers: Record-000433 Date-910425 Time-17:08

Trace No	Marker time (ms)	Field notes
1	0.000	Record time: 200 ms
2	0.000	Delay time: 0000 ms
3	0.000	Shot pos.: 20+00
4	0.000	Layout start: 20+00
5	0.000	Layout end: 20+00
6	0.000	Profile No.: 7
7	0.000	Note: 10292-04
8	0.000	Operator: 00001

Trace No: 20+00

Layout start: 24+00

Layout end: 28+00

File No.: 7

Note: 18292-04

Operator: 00001

Record time: 200 ms

Delay time: 0000 ms

Analog filter: Off

Display mode Normal

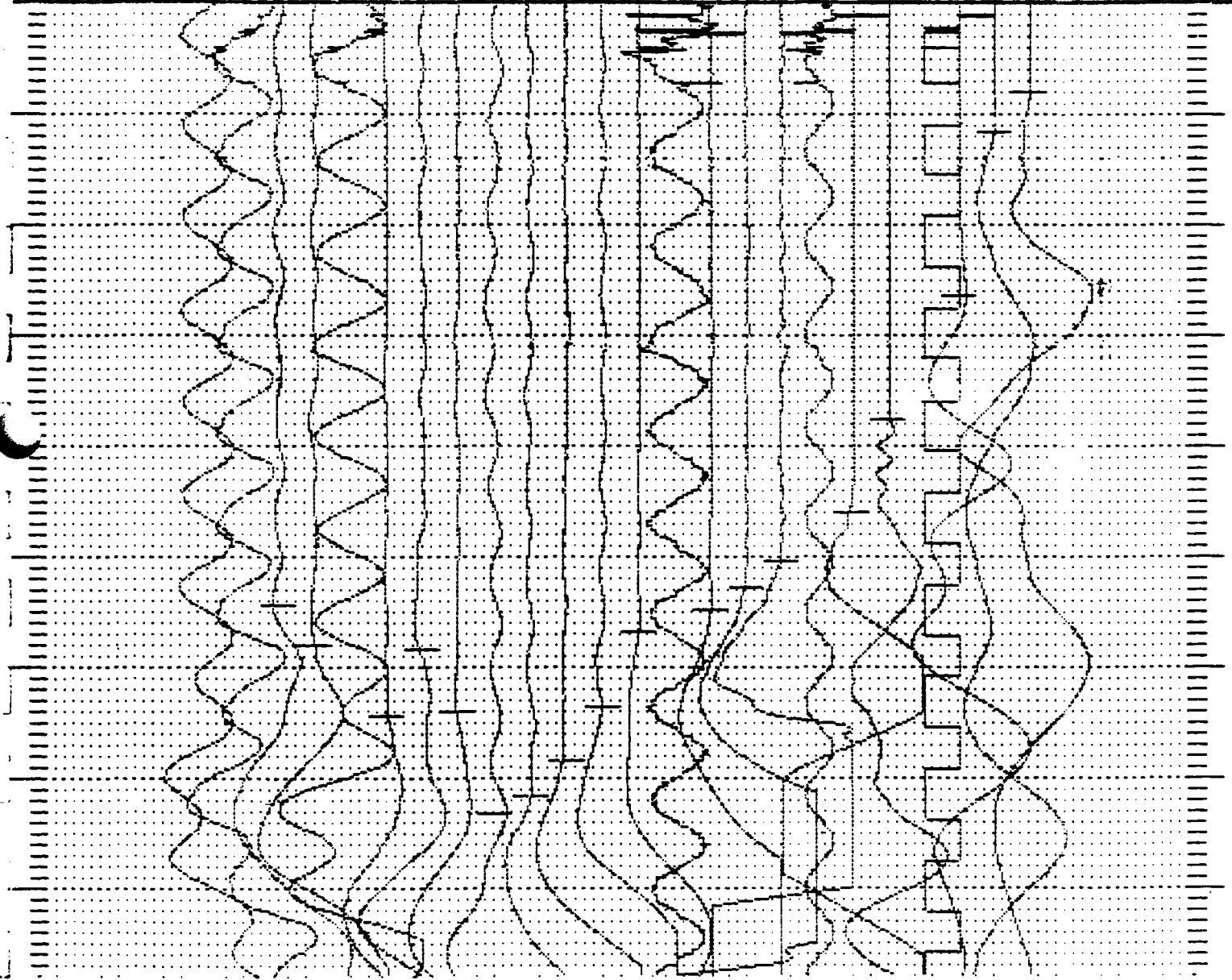
Low-cut: Off Hz

High-cut: Off Hz

Shot: 001

Ch 0a

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



Listing of markers:

Trace No	Marker time (ms)	Field notes
01	00000	Record time: 200 ms
02	00000	Delay time: 0000 ms
03	00000	
04	00000	
05	00000	
06	00000	
07	00000	
08	00000	
09	00000	
10	00000	
11	00000	
12	00000	
13	00000	
14	00000	
15	00000	
16	00000	
17	00000	
18	00000	
19	00000	
20	00000	
21	00000	
22	00000	
23	00000	
24	00000	

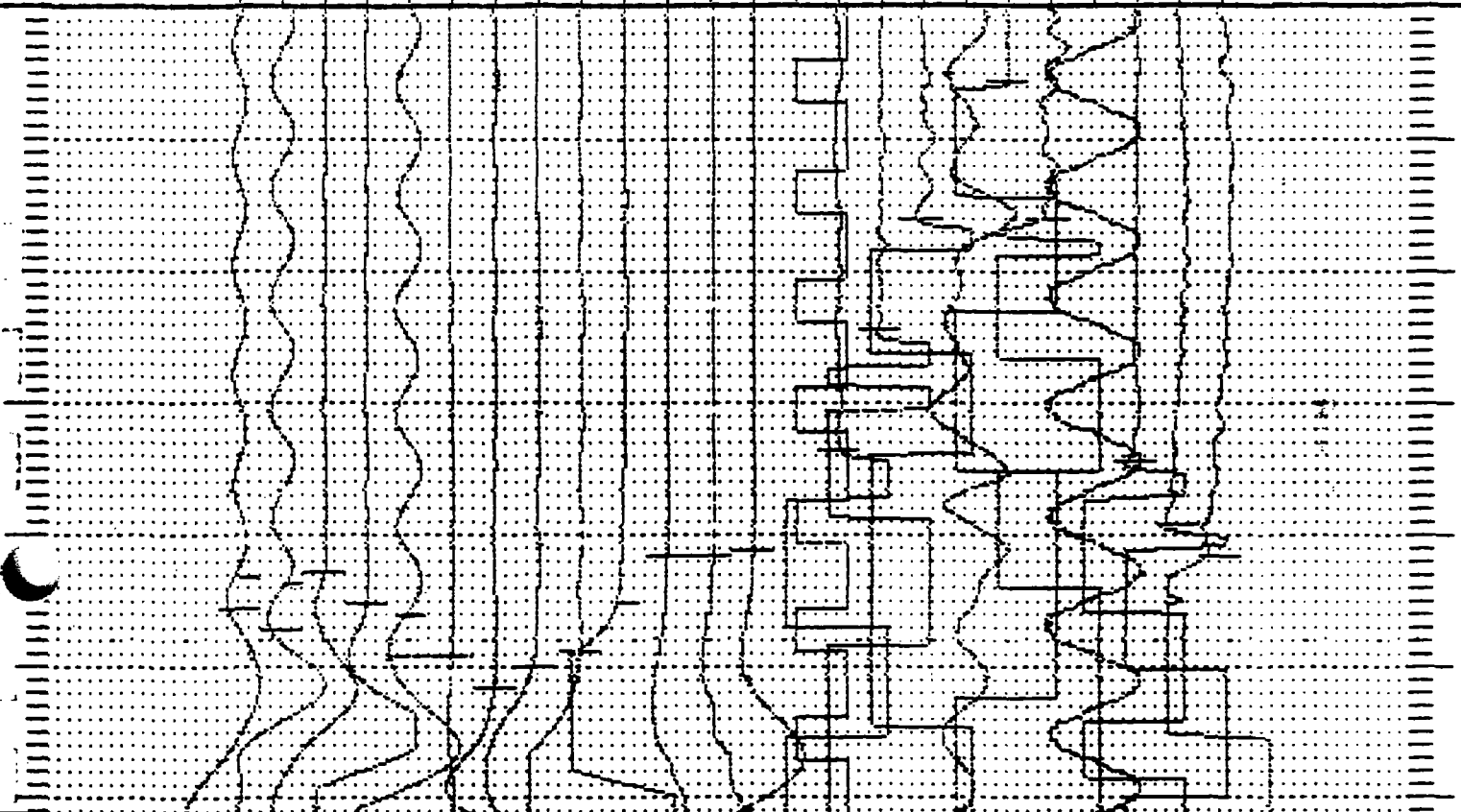
Pos.: 27+00 Layout start: 24+00 Layout end: 28+00

File No.: 7 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	13	13	13	13	13	13	13	13	13	09	05	05	05	09	13	13	13	13	13	13	13	13	13	13



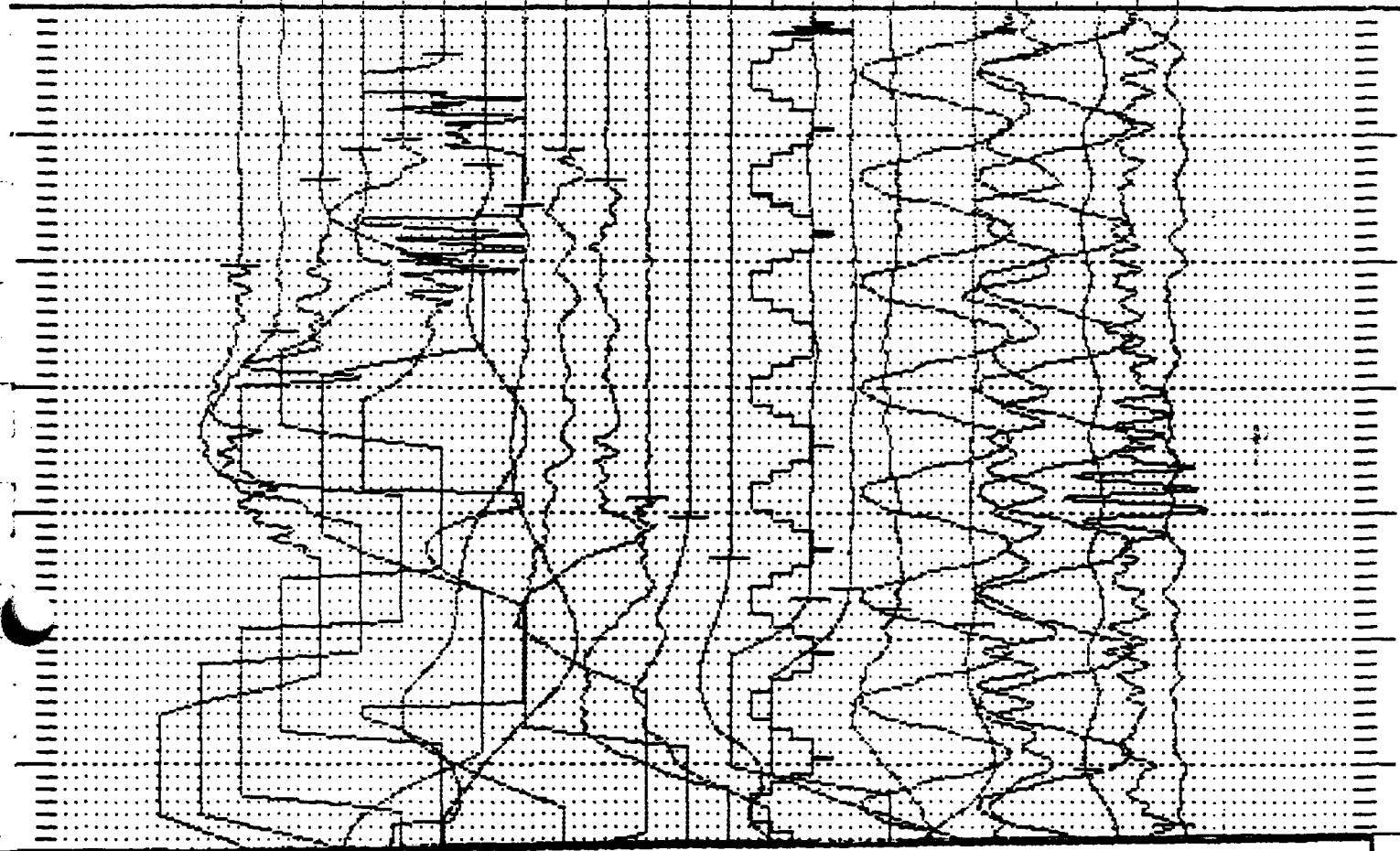
Listing of markers: Record-000432 Date-910425 Time-16:30

Trace No	Marker time (ms)	Field notes
01		Record time: 200 ms
02		Delay time: 0000 ms
03		Shot pos.: 27+00
04		Layout start: 24+00
05		Layout end: 28+00
06		Profile No.: 7
07		Note: 18292-04
08		Operator: 00001
09	92	
10	90	
11		
12		
13		
14		
15		
16		
17		
18		
19		
20		
21		
22		
23		
24		

Record-000431 Date-910425 Time-16:14
 Shot pos.: 24+00 Layout start: 24+00 Layout end: 28+00
 Profile No.: 7 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch 0a

01 10
 02 10
 03 10
 04 08
 05 06
 06 04
 07 04
 08 06
 09 09
 10 11
 11 11
 12 11
 13 11
 14 11
 15 14
 16 14
 17 14
 18 14
 19 14
 20 14
 21 14
 22 14
 23 14
 24 14



Listing of markers: Record-000431 Date-910425 Time-16:14

Trace No	Marker time (ms)	Field notes
1	0	Record time: 200 ms
1	0	Delay time: 0000 ms
1	0	Shot pos.: 24+00
1	0	Layout start: 24+00
1	0	Layout end: 28+00
1	0	Profile No.: 7
1	0	Note: 18292-04
1	0	Operator: 00001

Shot: 24+00

Layout start: 24+00

Layout end: 28+00

Profile No.: 7

Note: 18292-04

Operator: 00001

Record time: 200 ms

Delay time: 0000 ms

Analog filter: Off

Display mode: Normal

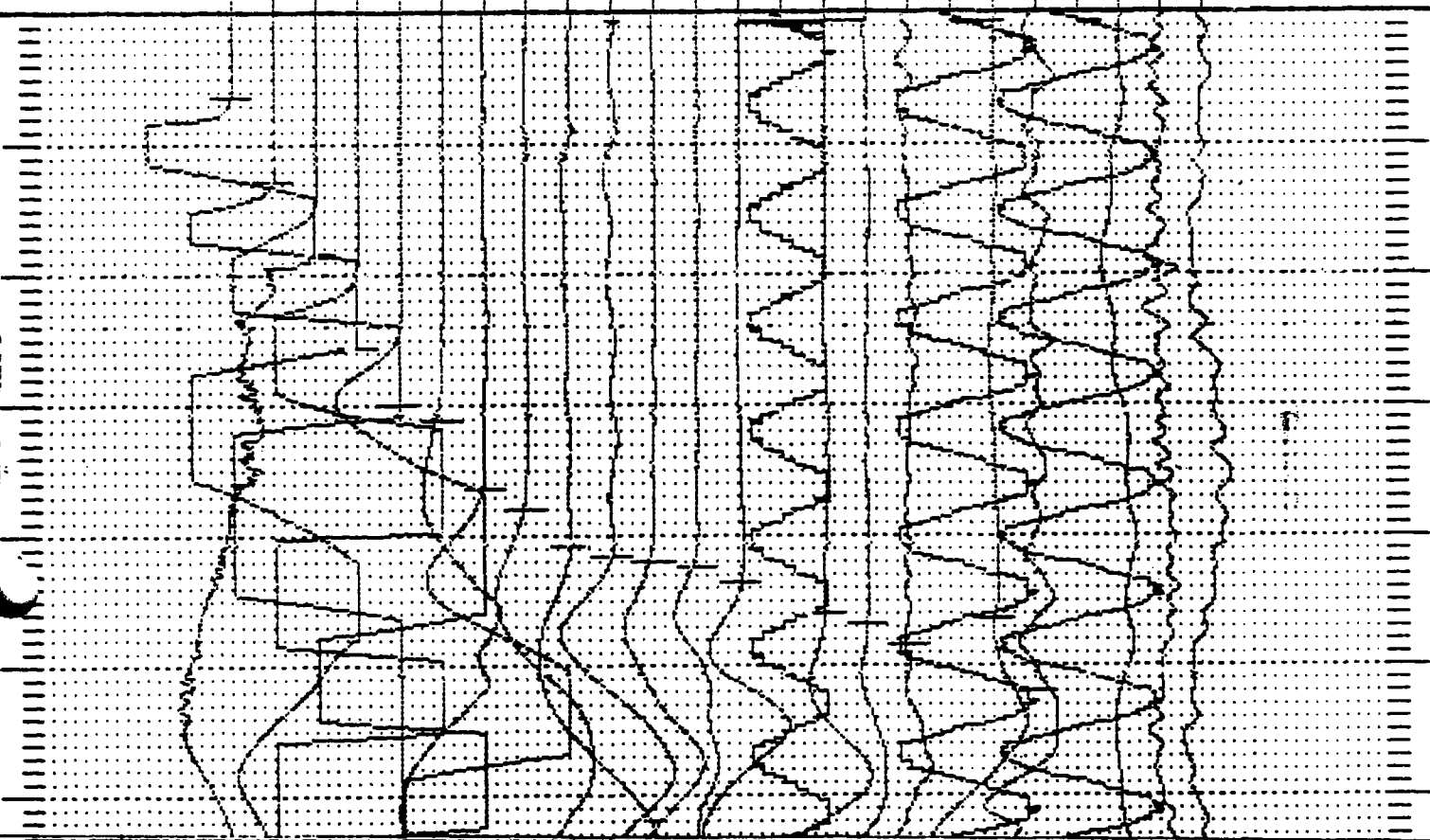
Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch
Ga

01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
03	05	07	09	09	11	11	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13	13	13



Listing of markers:

Record-000430

Date-910425

Time-15:59

Trace No

Marker time (ms)

Field notes

1
 2
 3
 4
 5
 6
 7
 8
 9
 10
 11
 12
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 14
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 20
 21
 22
 23
 24

1
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 6
 7
 8
 9
 10
 11
 12
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 14
 15
 16
 17
 18
 19
 20
 21
 22
 23
 24

Record time: 200 ms
 Delay time: 0000 ms
 Shot pos.: 24+00
 Layout start: 24+00
 Layout end: 28+00
 Profile No.: 7
 Note: 18292-04
 Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
6+00	13KP	3'	5	36-	S-M	
11+00				370		14:38
10+00				37		15:00
9+00				372		15:52
8+00	↓	↓	↓	373	↓	15:10
7+00	↓	↓	↓	374	↓	15:24

LINE F-F' (profile 6)

LOCATION 6 FF Brown Farm Rd

JOB NO. 18292-01 TECHNICIAN EF/JS DATE 22 Apr 91

SEISMOGRAPH NO. APEm 872401 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS LOW AP HIGH

RECORD NUMBER _____ TO _____

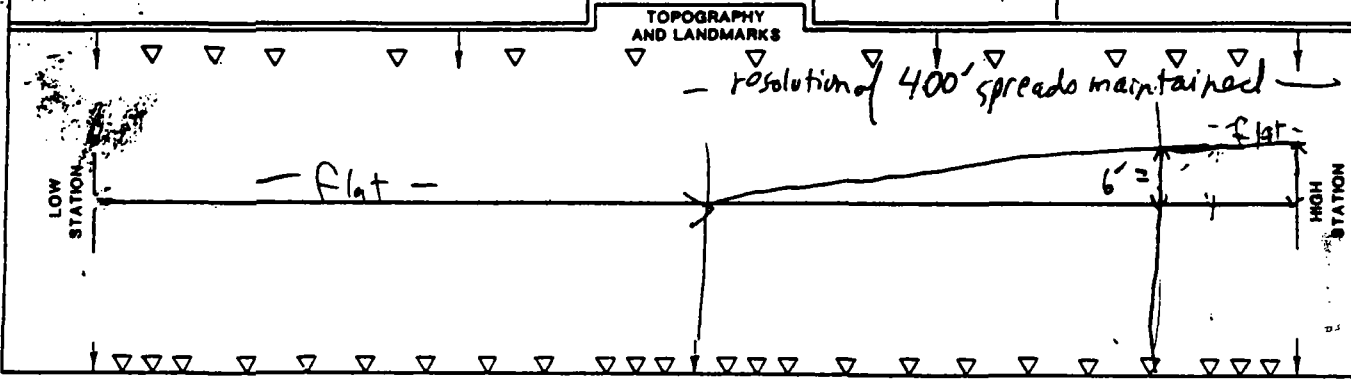
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, FLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS

deeper rock necessitates offset shots → to end of line F-P'



STATION 400

RECORDS CHECKED BY _____

RECORDS READ BY _____

STATION 400

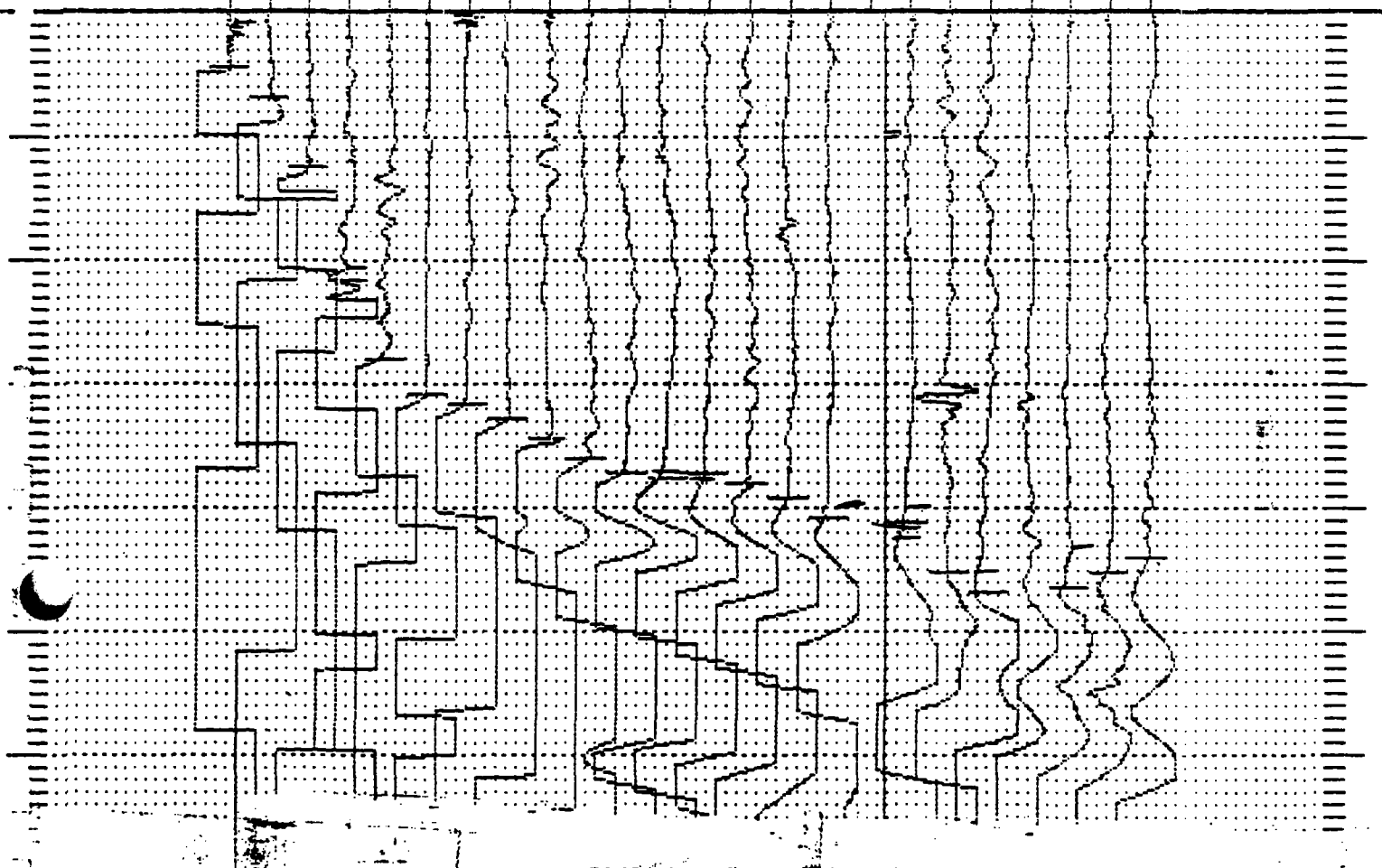
Shot pos.: 1200 Layout start: 000 Layout end: 1200

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000369 Date-910422 Time-14:31

Trace No	Marker time (ms)	Field notes
----------	------------------	-------------

Record time:	200 ms
Delay time:	0000 ms
Shot pos.:	1200
Layout start:	000
Layout end:	1200
Profile No.:	6
Note:	18292-04
Operator:	00001

~~01~~
~~02~~
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~~06~~
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~~11~~
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~~13~~
~~14~~
~~15~~
~~16~~
~~17~~
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~~21~~
~~22~~
~~23~~
~~24~~

rechecked FF 6/5/71

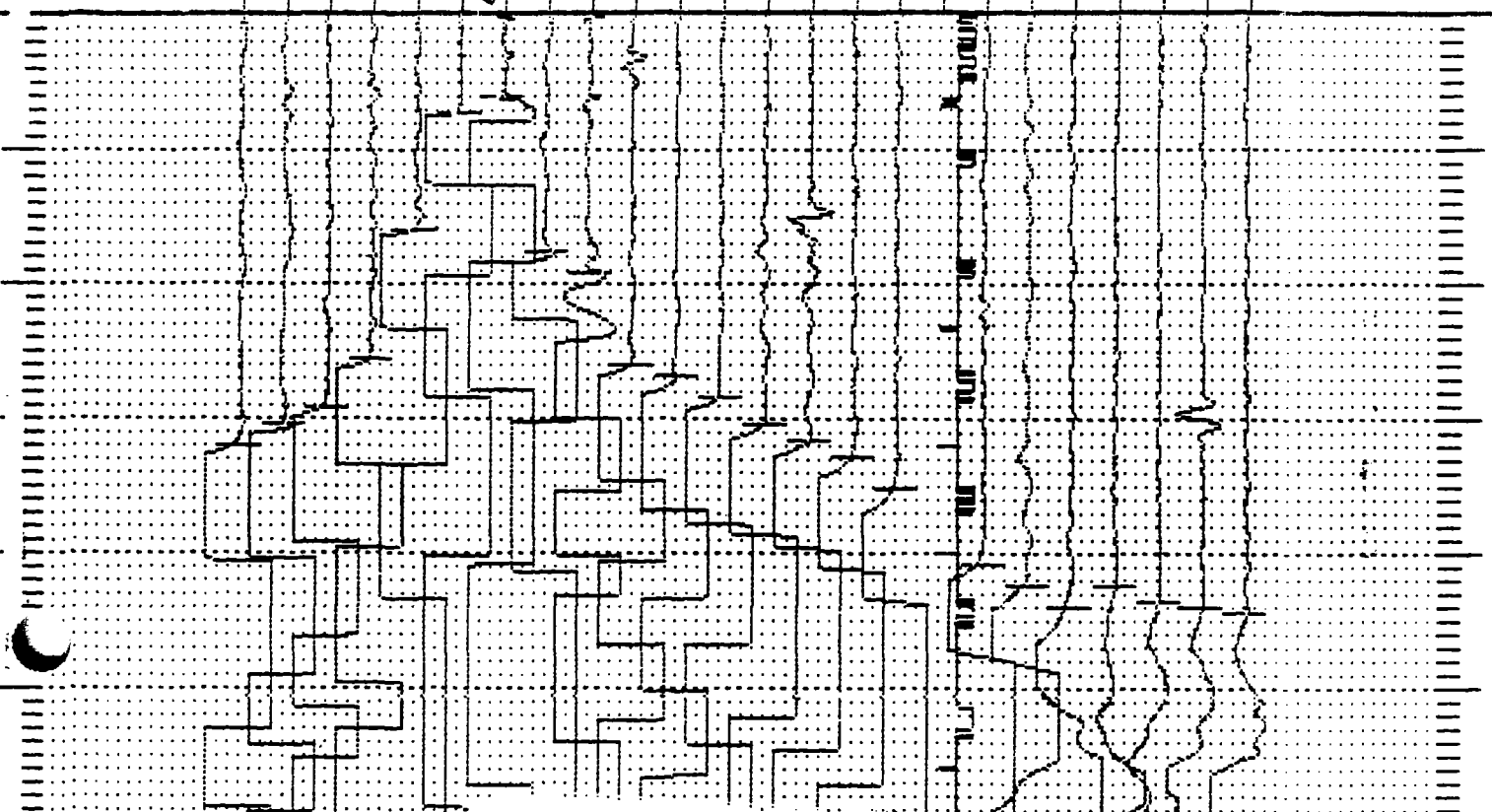
Shot pos.: 1100 Layout start: 000 Layout end: 1200

Profile No.: 6 Note: 10292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
Gain	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers. Record-000370 Date-9

Trace No	Marker time (ms)	Field notes
1	0.000	Record time: 200 ms
2	0.000	Delay time: 0000 ms
3	0.000	Shot pos.: 1100
4	0.000	Layout start: 000
5	0.000	Layout end: 1200
6	0.000	Profile No.: 6
7	0.000	Note: 10292-04
8	0.000	Operator: 00001



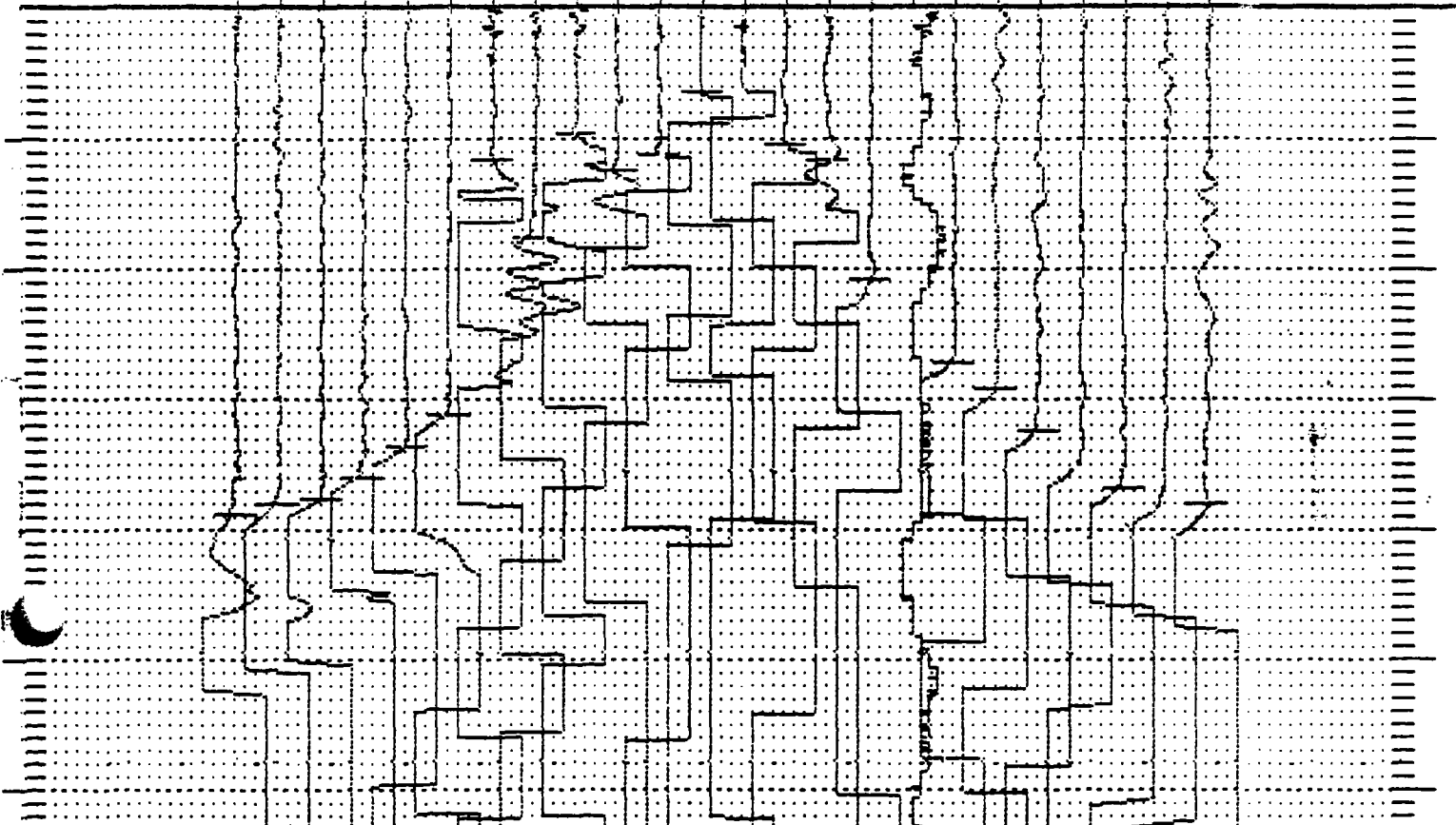
Shot pos.: 1100 Layout start: 500 Layout end: 1200

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shifts: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

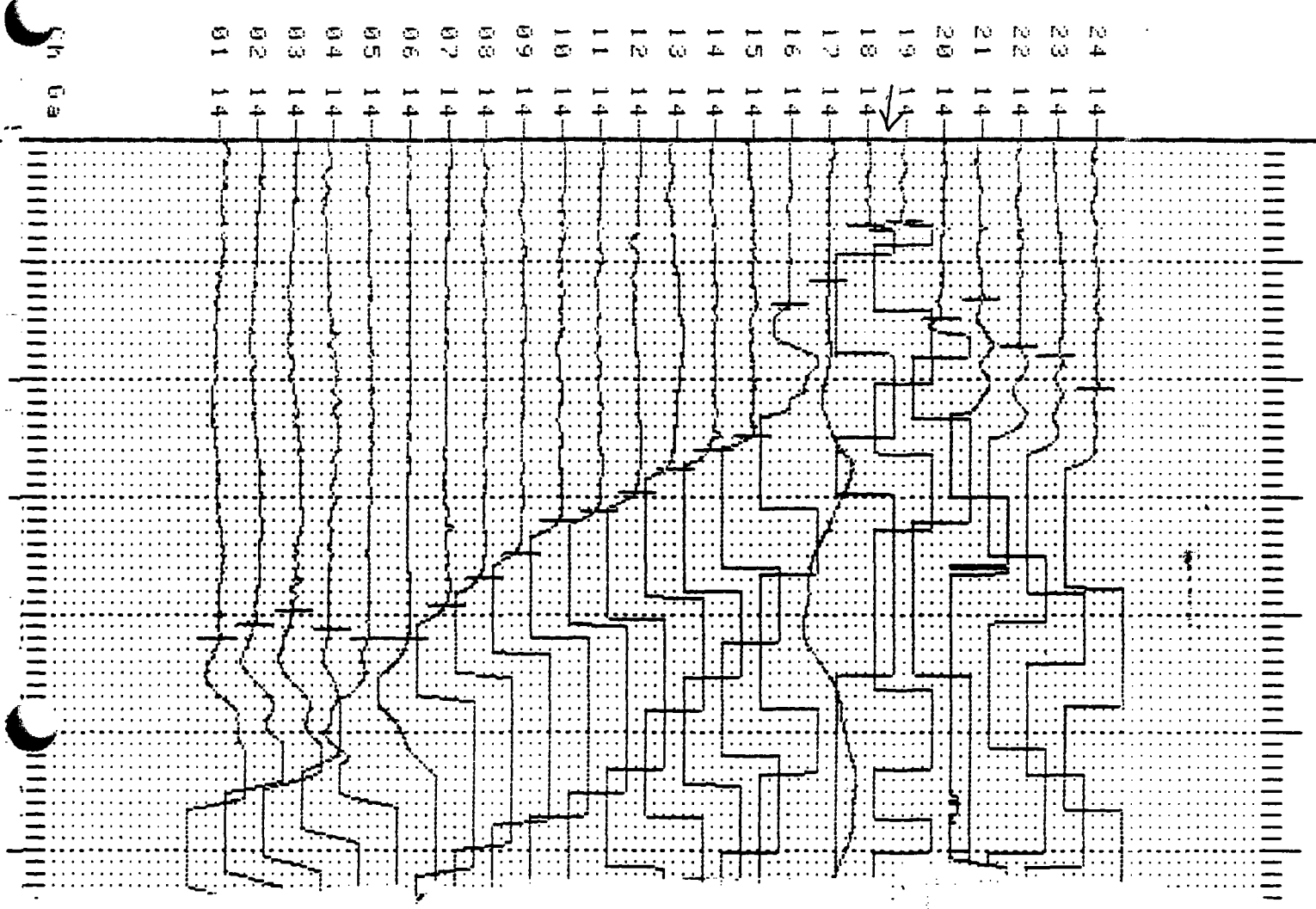


Listing of markers: Record-000371 Date-910422 Time-14:44

Trace No	Marker time (ms)	Field notes
01	500	Record time: 200 ms
02	500	Delay time: 0000 ms
03	500	Shot pos.: 1100
04	500	Layout start: 500
05	500	Layout end: 1200
06	500	Profile No.: 6
07	500	Note: 18292-04
08	500	Operator: 00001

Battery voltage too low

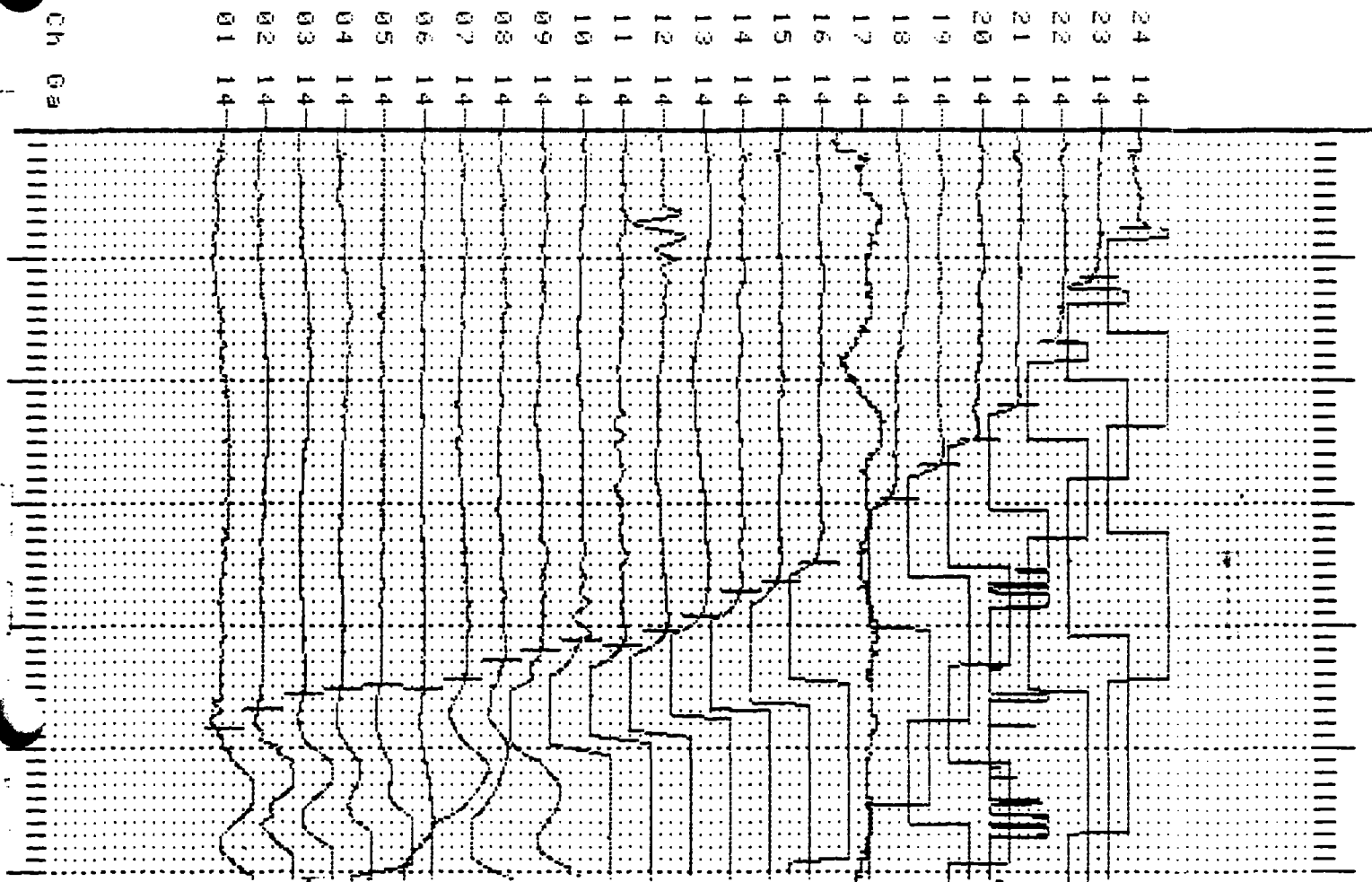
Shot pos.: 900 Layout start: 800 Layout end: 1200
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000372 Date-910422 Time-14:52

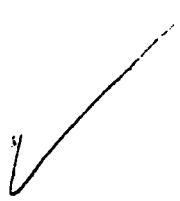
Trace No	Marker time (ms)	Field notes
01	14	Record time: 200 ms Delay time: 0000 ms Shot pos.: 900 Layout start: 800 Layout end: 1200 Profile No.: 6 Note: 18292-04 Operator: 00001
02	14	
03	14	
04	14	
05	14	
06	14	
07	14	
08	14	
09	14	
10	14	
11	14	
12	14	
13	14	
14	14	
15	14	
16	14	
17	14	
18	14	
19	14	
20	14	
21	14	
22	14	
23	14	
24	14	

Shot pos: 000 Layout start: 000 Layout end: 1200
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000373 Date-910422 Time-15:10

Trace No	Marker time (ms)	Field notes
01	000	Record time: 200 ms
02	000	Delay time: 0000 ms
03	000	Shot pos.: 000
04	000	Layout start: 000
05	000	Layout end: 1200
06	000	Profile No.: 6
07	000	Note: 18292-04
08	000	Operator: 00001



SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
16+00	1/3 KP	3'	5	364	S-M	13:20
15+00				365		13:27
14+00				366		13:35
13+00				367		13:45
12+00	✓	✓	✓	368	✓	13:53

LINE <u>F-F' (profile 6)</u>		
LOCATION <u>off Brown Farm Rd - London, VT</u>		
JOB NO. <u>1829204</u>	TECHNICIAN <u>FF/JSB</u>	DATE <u>22 Apr 91</u>
SEISMOGRAPH NO. <u>AAem 972V001</u>	AMPLIFIER NO. _____	
SPREAD LENGTH <u>400'</u>	FILTERS <u>LOW AP HIGH</u>	
RECORD NUMBER _____ TO _____		

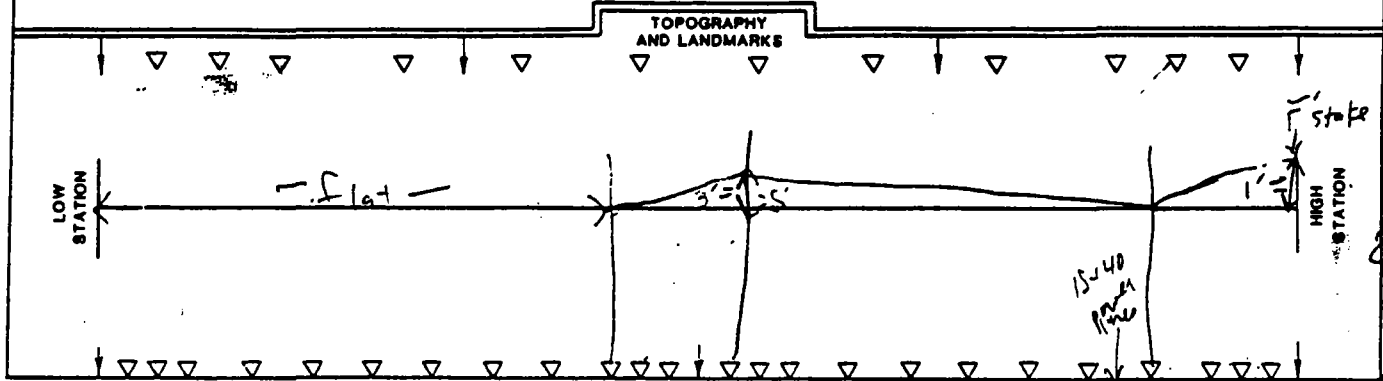
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS 5

TOTAL POWDER 5

INCLUDE RESHOTS

INSTRUMENTATION LOCATED AT STATION 14+00



16+00 STATION

N

W

S

RECORDS CHECKED BY

RECORDS READ BY

N

E

S

STATION

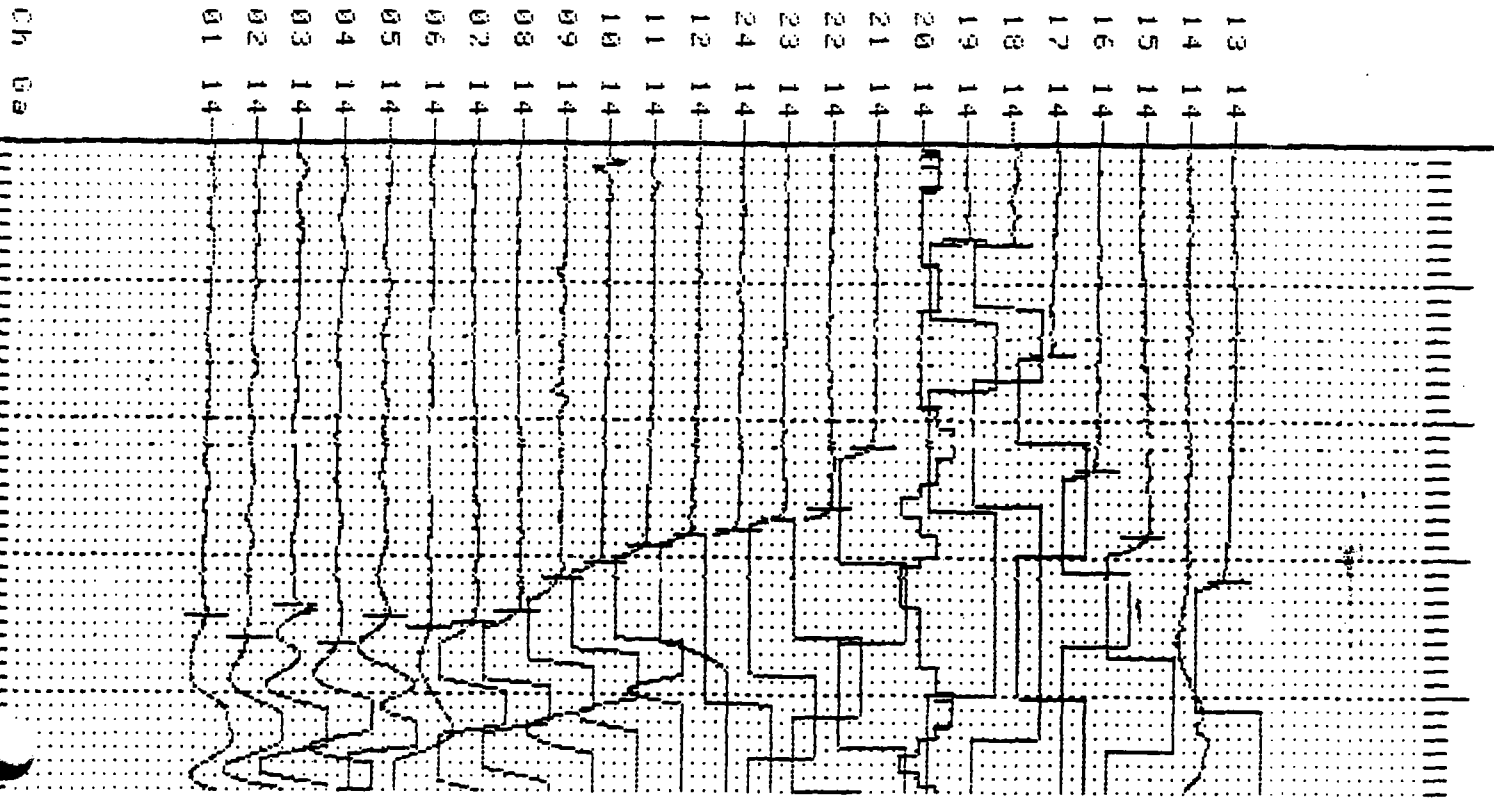
12+00

Shot pos.: 1300 Layout start: 1200 Layout end: 1600

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000367 Date-910422 Time-13:45

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1300
04	0000	Layout start: 1200
05	0000	Layout end: 1600
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

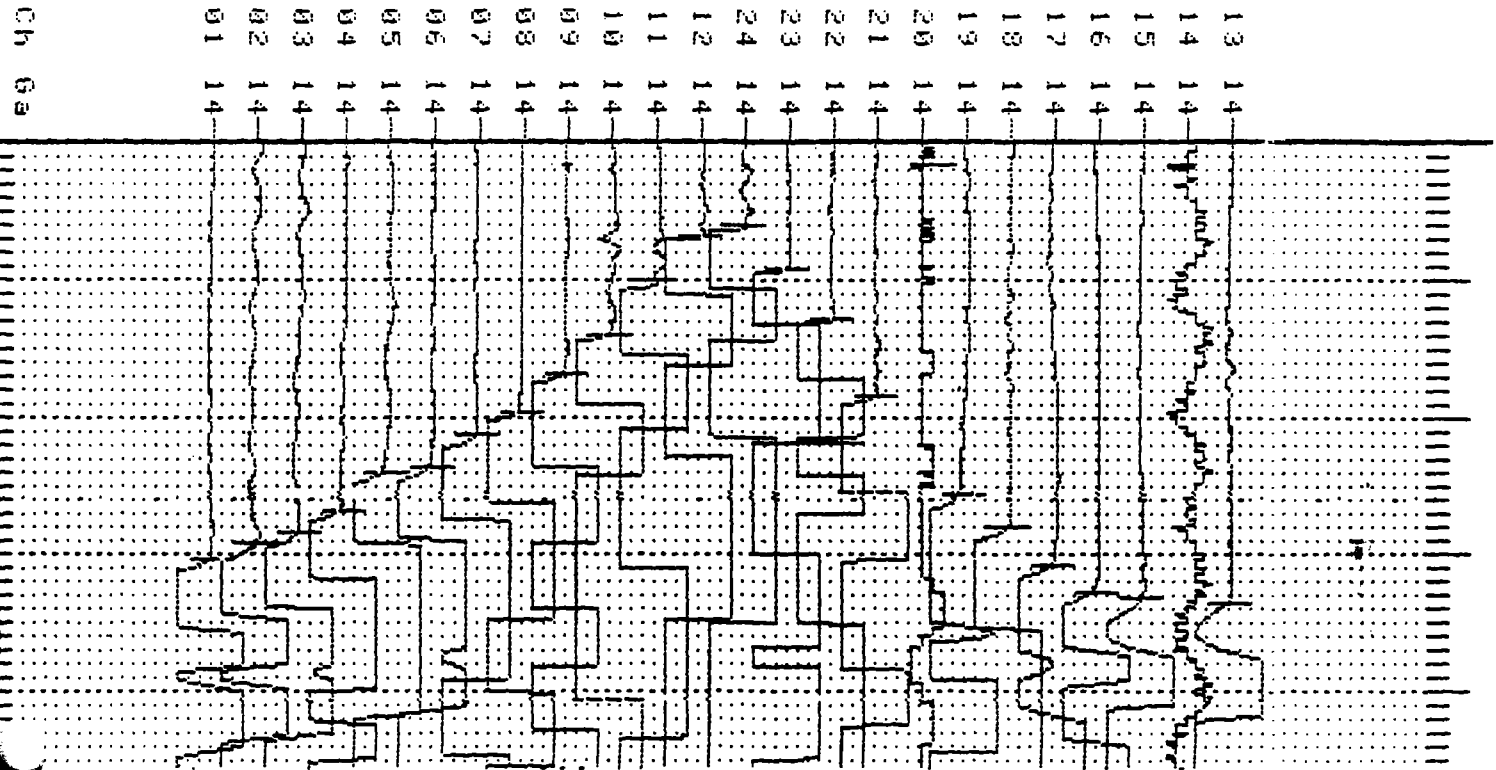
12x0

Shot pos.: 1400 Layout start: 1200 Layout end: 1600

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000366 Date-910422 Time-13:35

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1400
04	0000	Layout start: 1200
05	0000	Layout end: 1600
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

1210

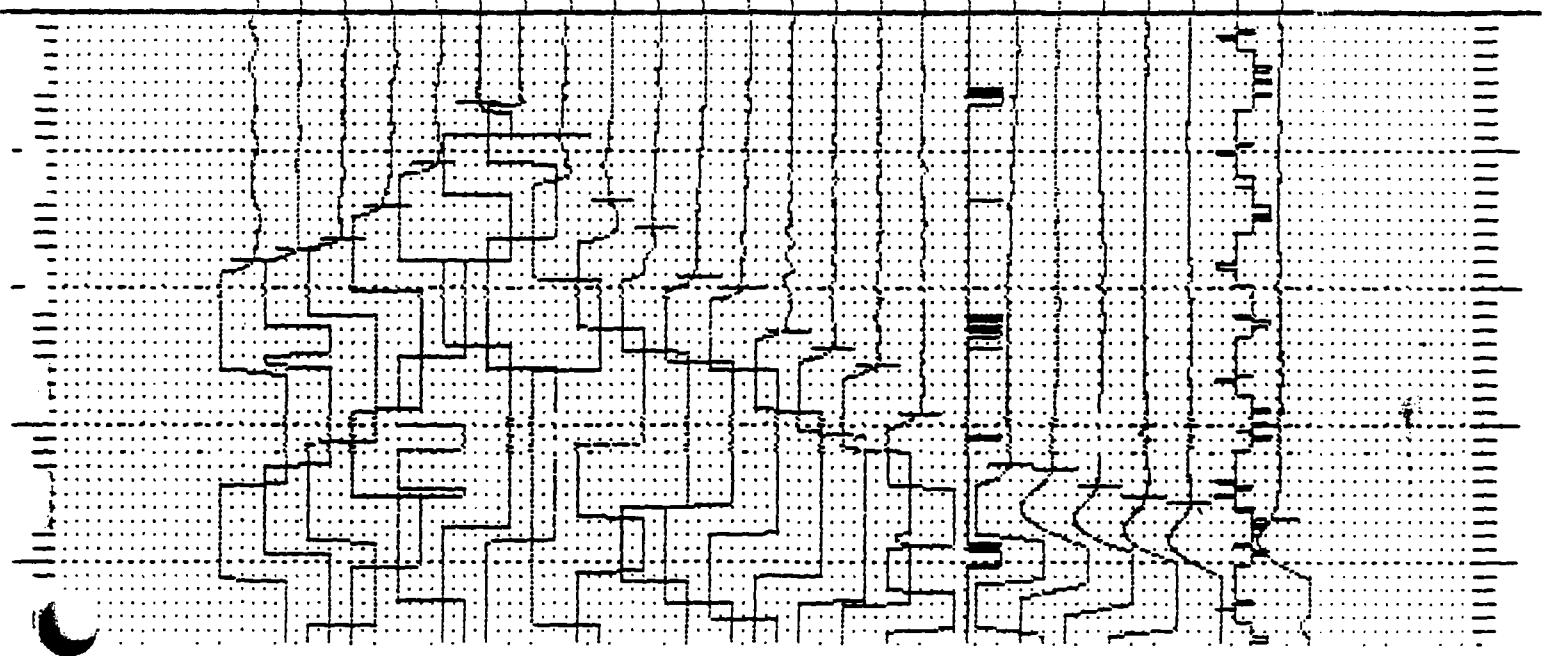
Shot pos.: 1500 Layout start: 1200 Layout end: 1600

Profile No.: 6 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

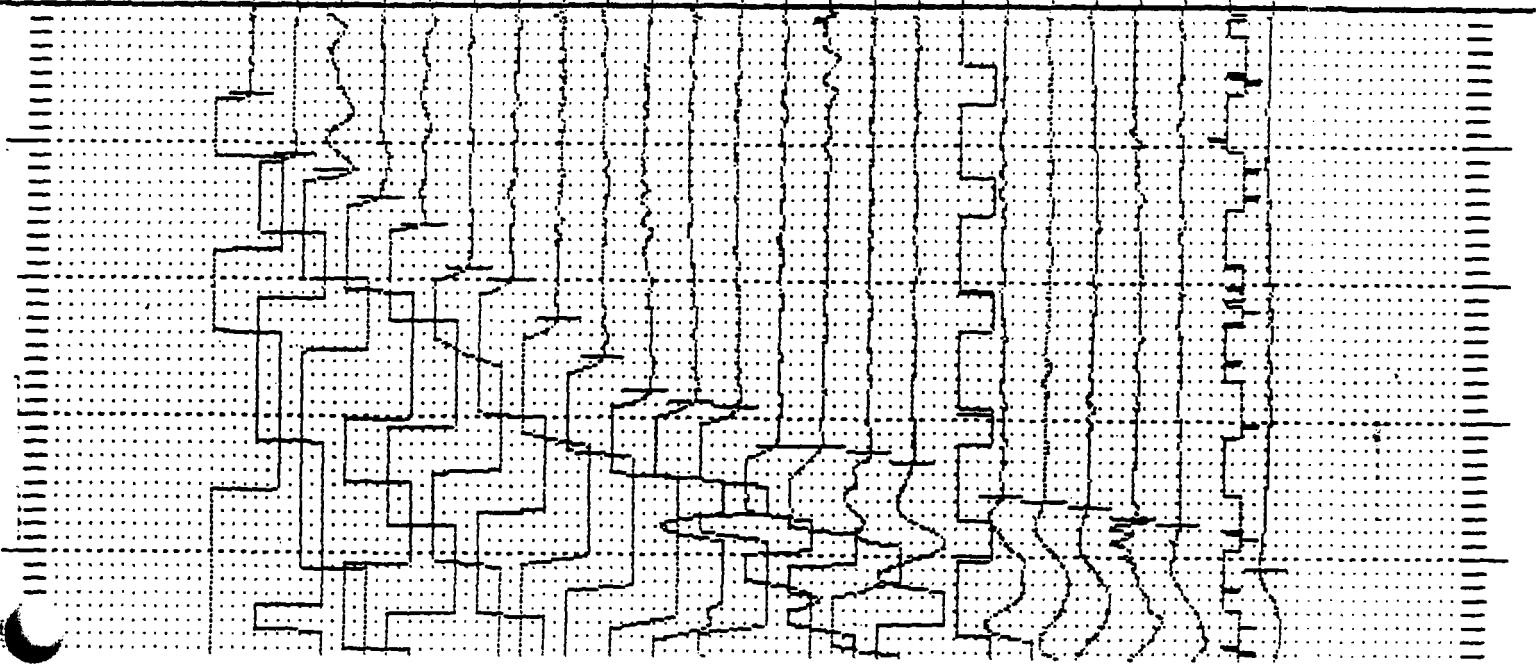


Listing of markers: Record-000365 Date-910422 Time-13:27

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1500
04	0000	Layout start: 1200
05	0000	Layout end: 1600
06	0000	Profile No.: 6
07	0000	Note: 18292-04
08	0000	Operator: 00001

ABEM Terraloc Seismic System Record-000364 Date-910422 Time-13:20
 Shot pos.: 1600 Layout start: 1200 Layout end: 1600
 Profile No.: 6 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	24	23	22	21	20	19	18	17	16	15	14	13
Ga	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000364 Date-910422 Time-13:20

Trace No	Marker time (ms)	Field notes
16+0		Record time: 200 ms Delay time: 0000 ms Shot pos.: 1600 Layout start: 1200 Layout end: 1600 Profile No.: 6 Note: 18292-04 Operator: 00001

1/2

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
-400	3/3 KP	3'	2	329	M	
-200	2/3 KP			330		
2100	2/3 KP			331		
2100	2/3 KP			332		
400	3/3 KP	↓	↓	333	↓	
5100	2/3 KP	↓	↓	334	↓	

LINE G (profile 1)

LOCATION Along Red village Rd Lyndon, VT

JOB NO. 18292-04 TECHNICIAN F.F./J.B. DATE 19 APR 91

SEISMOGRAPH NO. Alem 8724001 AMPLIFIER NO. ---

SPREAD LENGTH 800' FILTERS LOW AL HIGH

RECORD NUMBER --- TO ---

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

*Water table ~ 8-10' down (stream)
at 400 end*

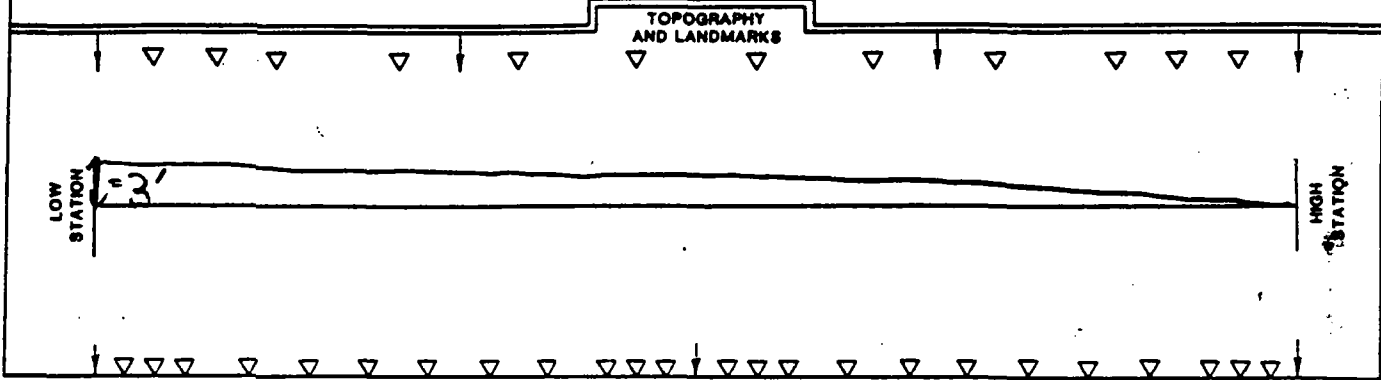
TOTAL CAPS

INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS

TOPOGRAPHY AND LANDMARKS



4+00
STATION

W N E
S

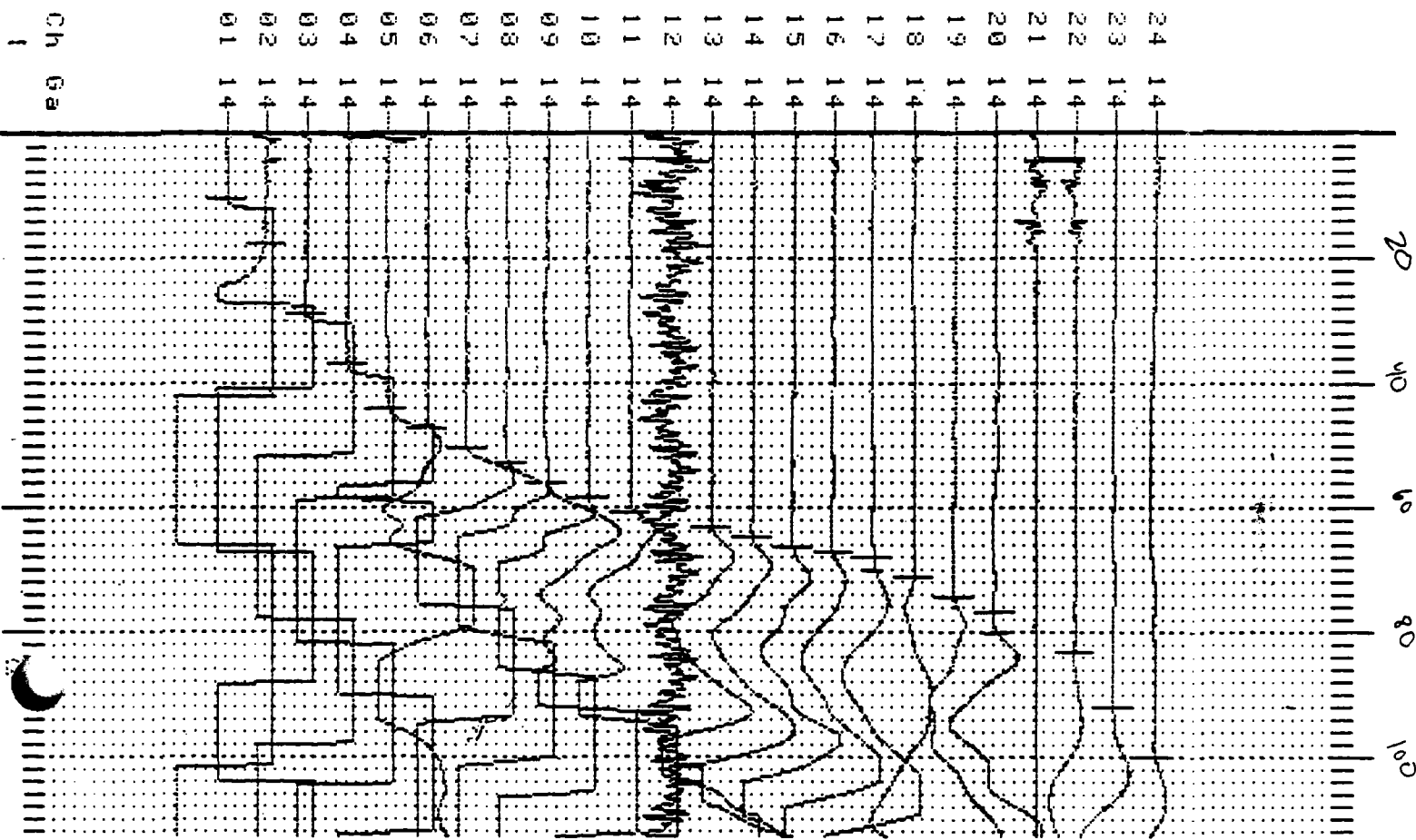
RECORDS CHECKED BY

RECORDS READ BY

W N E

STATION
-4+00

ABEN Terrain: Seismic System Record-0000329 Date-910419 Time-09:05
 Shot pos.: -00400 Layout start: -00400 Layout end: 000400
 Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: 000329 Date-910419 Time-09:05

Trace No	Marker time (ms)	Field notes
01	0.000	Record time: 200 ms
02	0.000	Delay time: 0000 ms
03	0.000	Shot pos.: -00400
04	0.000	Layout start: -00400
05	0.000	Layout end: 000400
06	0.000	Profile No.: 1
07	0.000	Note: 18292-04
08	0.000	Operator: 00001
09	0.000	
10	0.000	
11	0.000	
12	0.000	
13	0.000	
14	0.000	
15	0.000	
16	0.000	
17	0.000	
18	0.000	
19	0.000	
20	0.000	
21	0.000	
22	0.000	
23	0.000	
24	0.000	

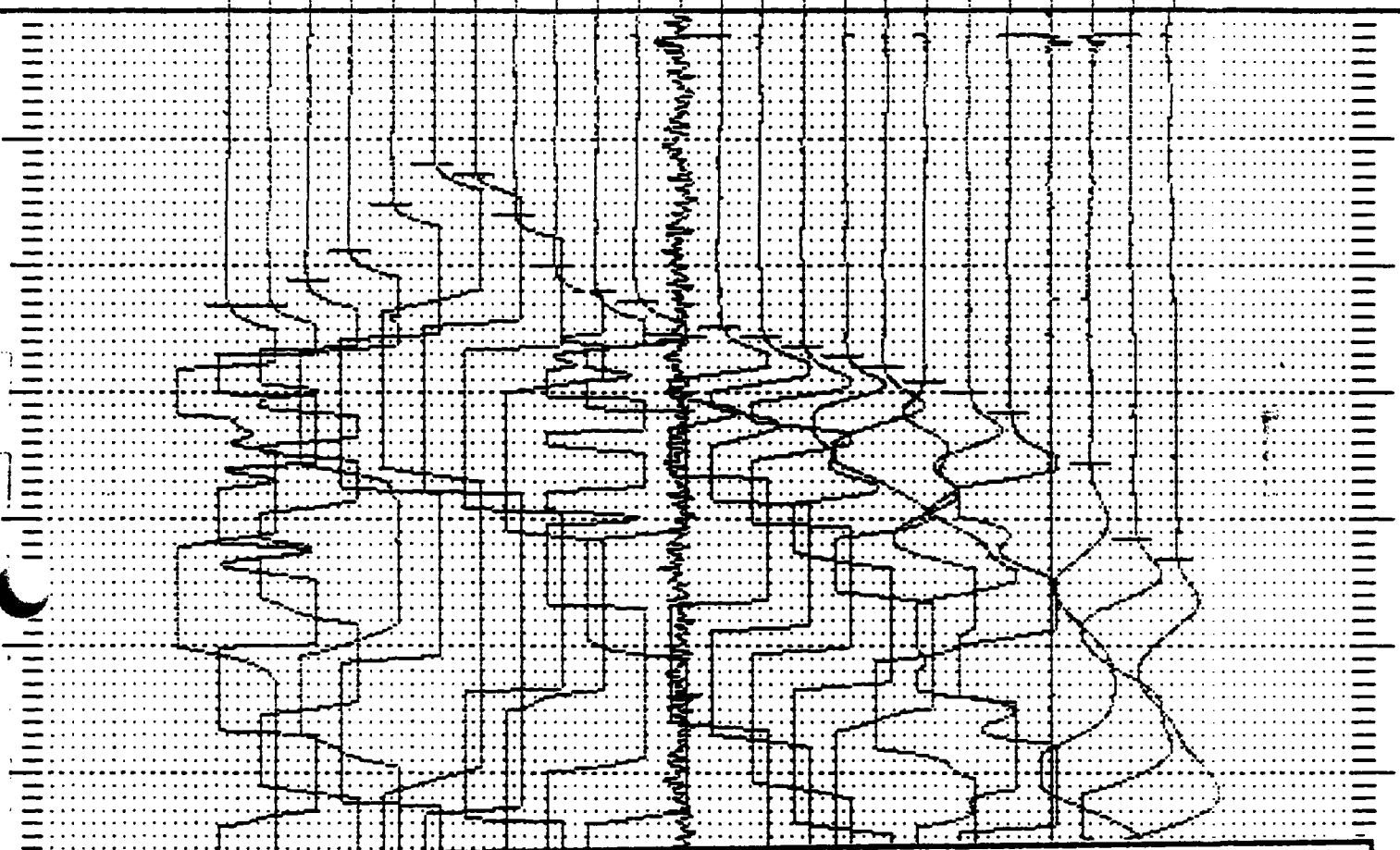
Shot pos.: -00200 Layout start: -00400 Layout end: 000400

Profile No.: 1 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	12	12	08	08	12	12	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



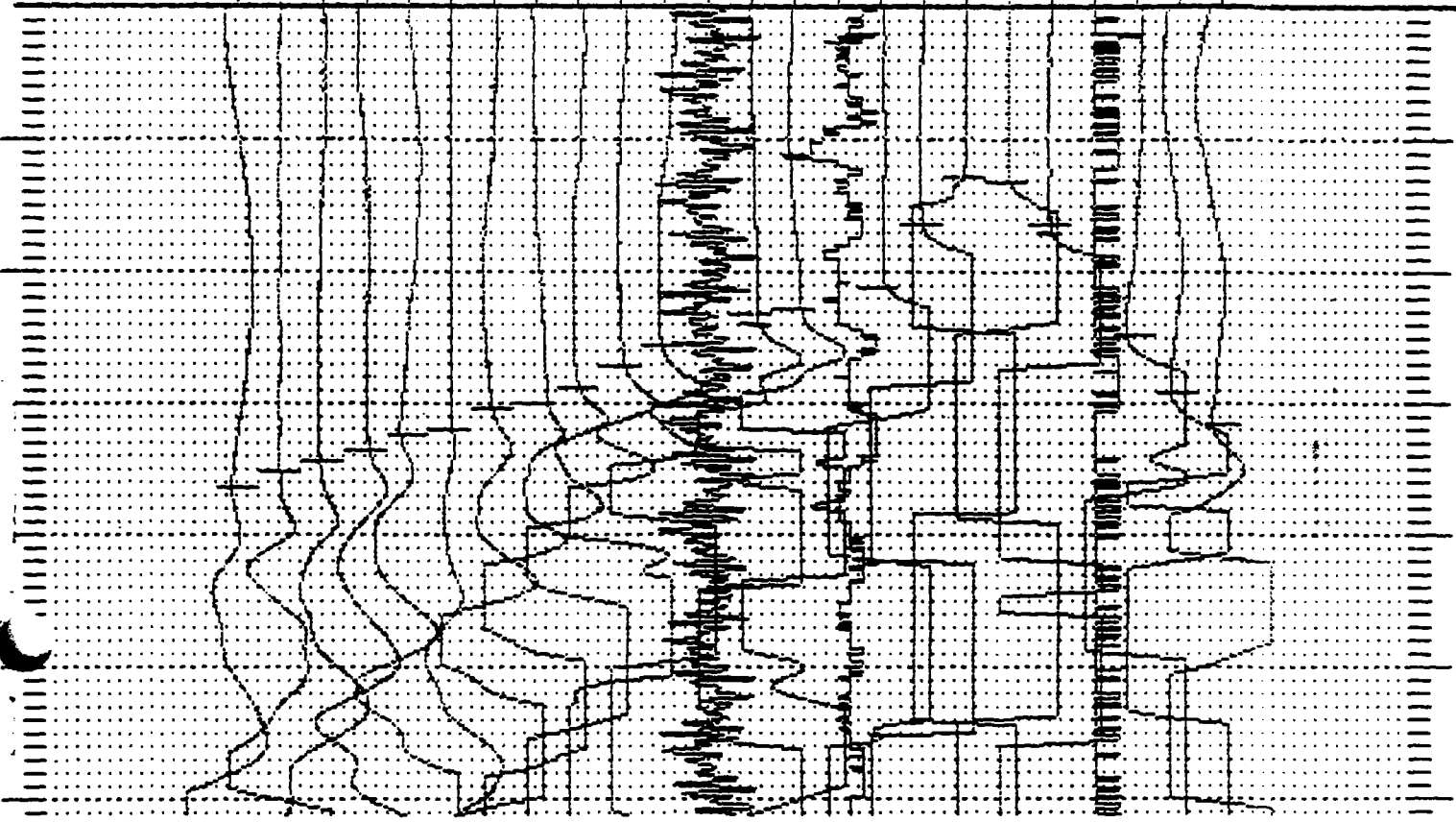
Listing of markers: Record-000330 Date-910419 Time-09:19

Trace No	Marker time (ms)	Field notes
1	0.000	Record time: 200 ms
1	0.000	Delay time: 0000 ms
1	0.000	Shot pos.: -00200
1	0.000	Layout start: -00400
1	0.000	Layout end: 000400
1	0.000	Profile No.: 1
1	0.000	Note: 18292-04
1	0.000	Operator: 00001

Shot pos.: 000200 Layout start: -00400 Layout end: 000400
 Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	13	12	08	08	12	13	14	14	14



Listing of markers: Record-000331 Date-910419 Time-09:45

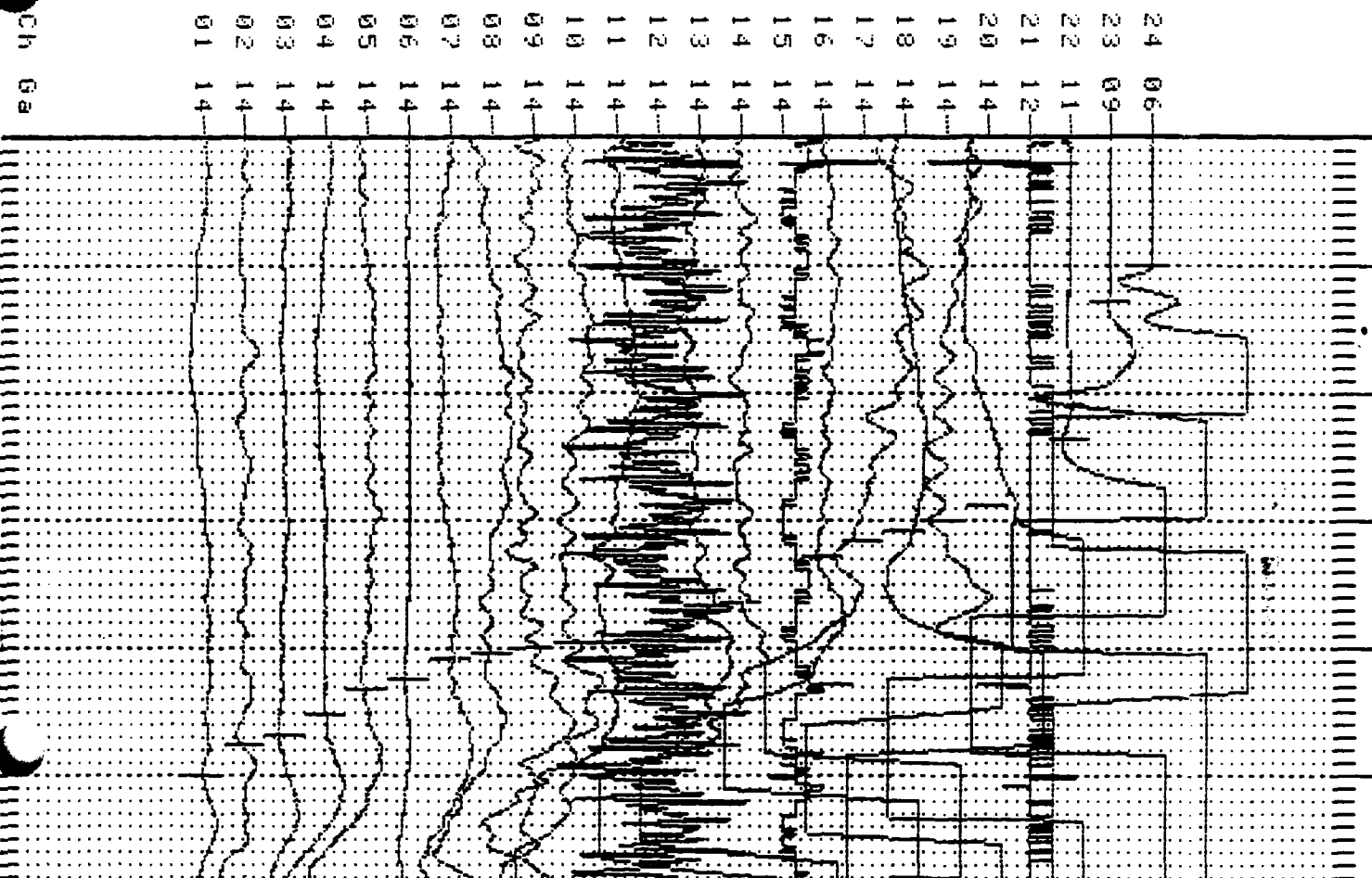
Trace No	Marker time (ms)	Field notes
		Record time: 200 ms
		Delay time: 0000 ms
		Shot pos.: 000200
		Layout start: -00400
		Layout end: 000400
		Profile No.: 1
		Note: 18292-04
		Operator: 00001

Shot pos.: 000400 Layout start: -00400 Layout end: 000400

Profile No.: 1 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



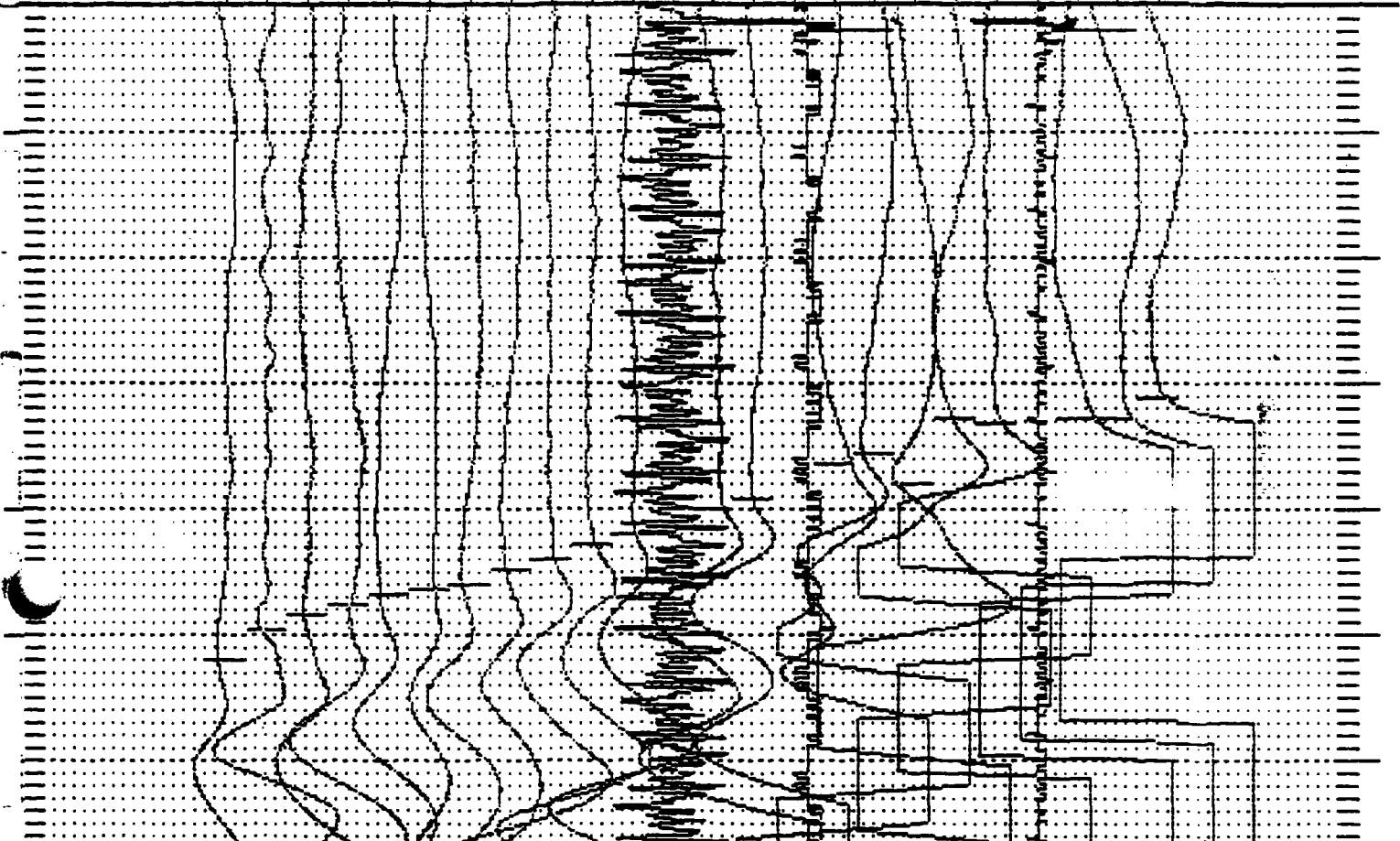
Listing of markers: Record-000333 Date-910419 Time-10:39

Trace No	Marker time (ms)	Field notes
01	000000	Record time: 200 ms
02	000000	Delay time: 0000 ms
03	000000	Shot pos.: 000400
04	000000	Layout start: -00400
05	000000	Layout end: 000400
06	000000	Profile No.: 1
07	000000	Note: 18292-04
08	000000	Operator: 00031

Shot pos.: 000500 Layout start: -00400 Layout end: 000400
 Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000334 Date-910419 Time-10:50

Trace No	Marker time (ms)	Field notes
1	000000	Record time: 200 ms
		Delay time: 0000 ms
		Shot pos.: 000500
		Layout start: -00400
		Layout end: 000400
		Profile No.: 1
		Note: 18292-04
		Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
8+00	1/3 KP	9'	1	321	S	
7+00		3'		322	M	
6+00			↓	323	H	
5+00			↓	323 ¹⁵⁰	H	
4+00	350			324	H	
10+00	350 KP	↓	↓	325	H	
9+00				326	H	
3+00				327	H	

LINE G-G (Profile 1)

LOCATION Along Red Village Rd Lyndon, VT

JOB NO. 18292-04 TECHNICIAN FF/JB DATE 1/24/91

SEISMOGRAPH NO. Atem 8724001 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS LOW AP HIGH

RECORD NUMBER _____ TO _____

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

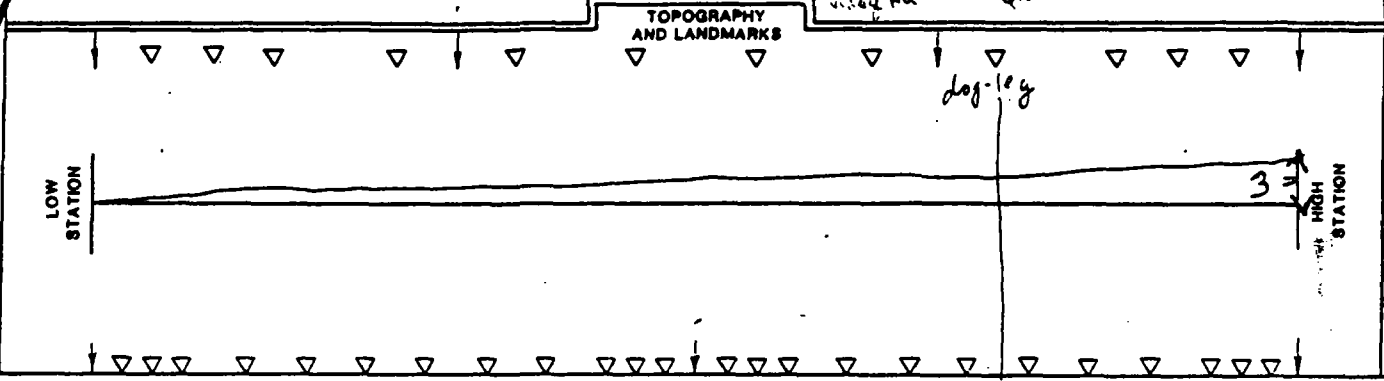
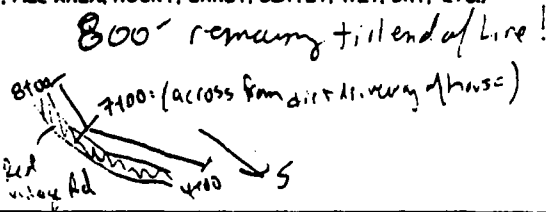
2+00 TOTAL CAPS 17 K.F.

3+00 TOTAL POWDER 16

INCLUDE RESHOTS

INSTRUMENTATION LOCATED AT STATION _____

1 cap lost (2 caps/2 strikes)
1 cap destroyed



STATION 3+00

W | N | E

S

RECORDS CHECKED BY _____

RECORDS READ BY _____

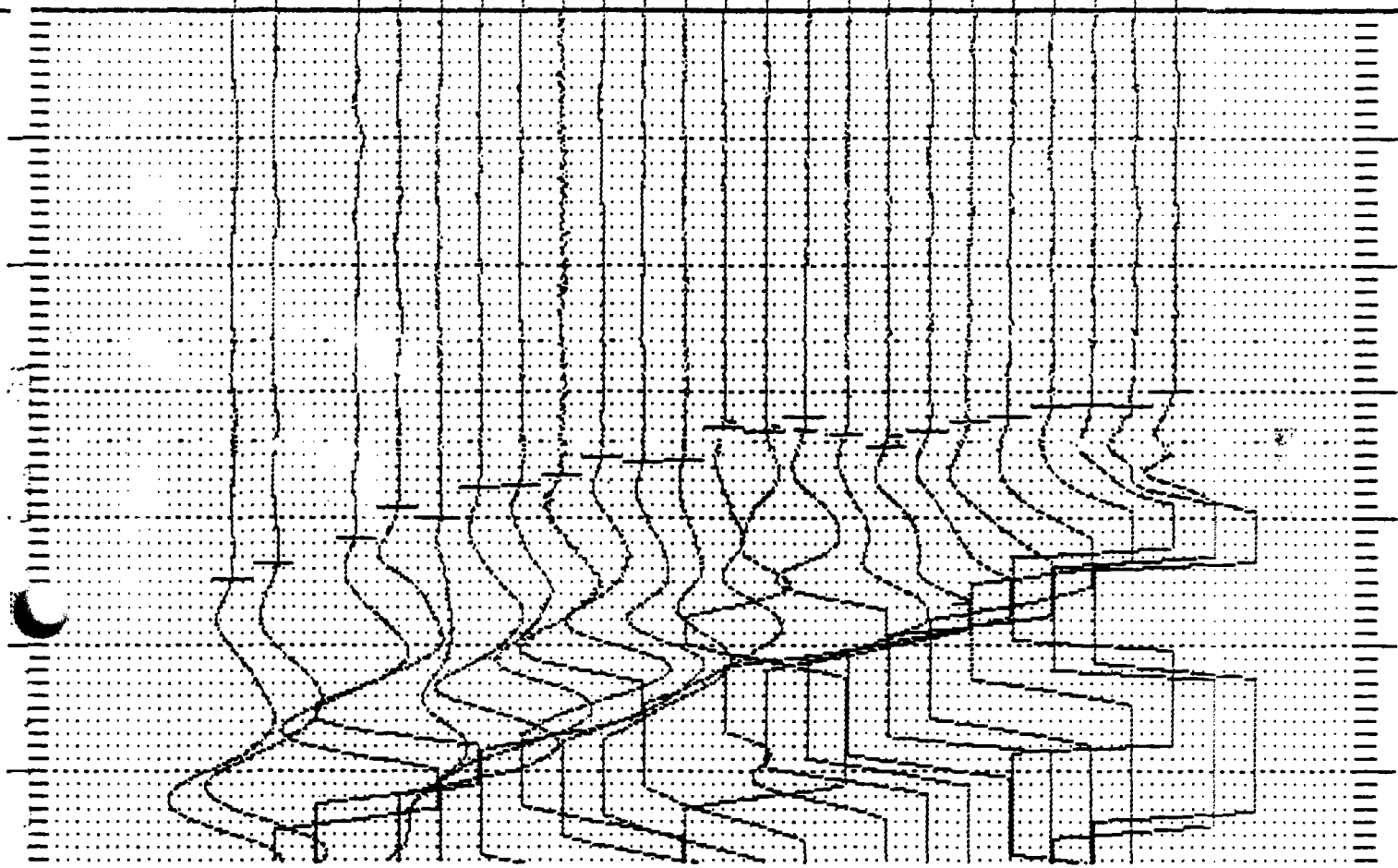
W | N | E

S

STATION 4+00

Shot pos.: 000200 Layout start: 000300 Layout end: 000400
 Profile No.: 1 Note: 10292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shift: 001

Ch	01	02	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

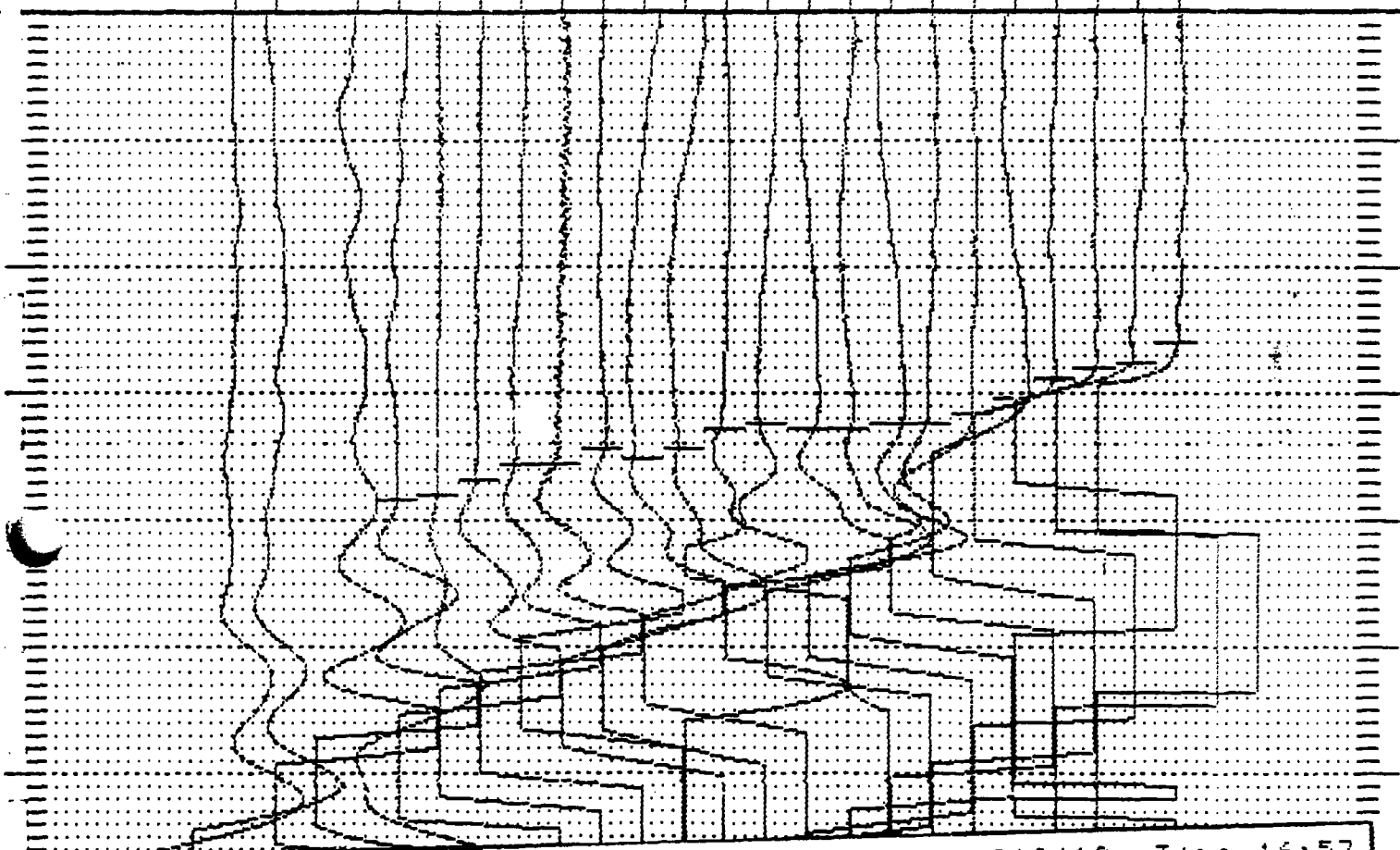


Listing of markers: Record-000328 Date-910418 Time-17:08

Trace No	Marker time (ms)	Field notes
01	000000	Record time: 200 ms
02	000000	Delay time: 0000 ms
04	000000	Shot pos.: 000200
05	000000	Layout start: 000300
06	000000	Layout end: 000400
07	000000	Profile No.: 1
08	000000	Note: 10292-04
09	000000	Operator: 00001

Shot pos.: 000300 Layout start: 000300 Layout end: 000400
 Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ga	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

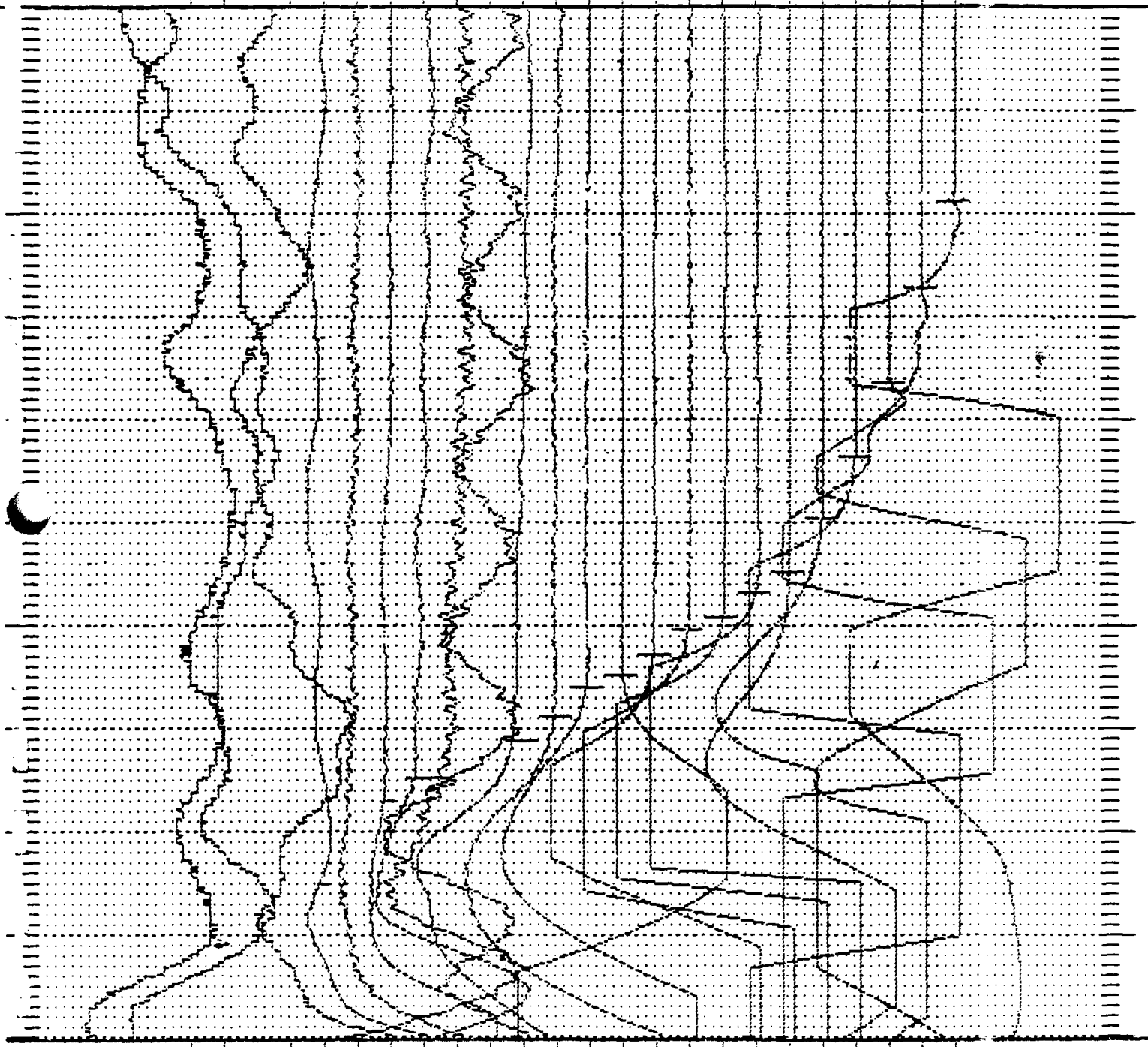


Listing of markers: Record-000327 Date-910418 Time-16:57

Trace No	Marker time (ms)	Field notes
01	000300	Record time: 200 ms
02	000300	Delay time: 0000 ms
04	000300	Shot pos.: 000300
05	000300	Layout start: 000300
06	000300	Layout end: 000400
07	000300	Profile No.: 1
08	000300	Note: 18292-04
09	000300	Operator: 00001

Shot pos.: 000400 Layout start: 000300 Layout end: 000400
 Profile No.: Note: 18292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-out: Off H High-out: Off H Sh:ts: 001

Ch	01	02	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ga	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



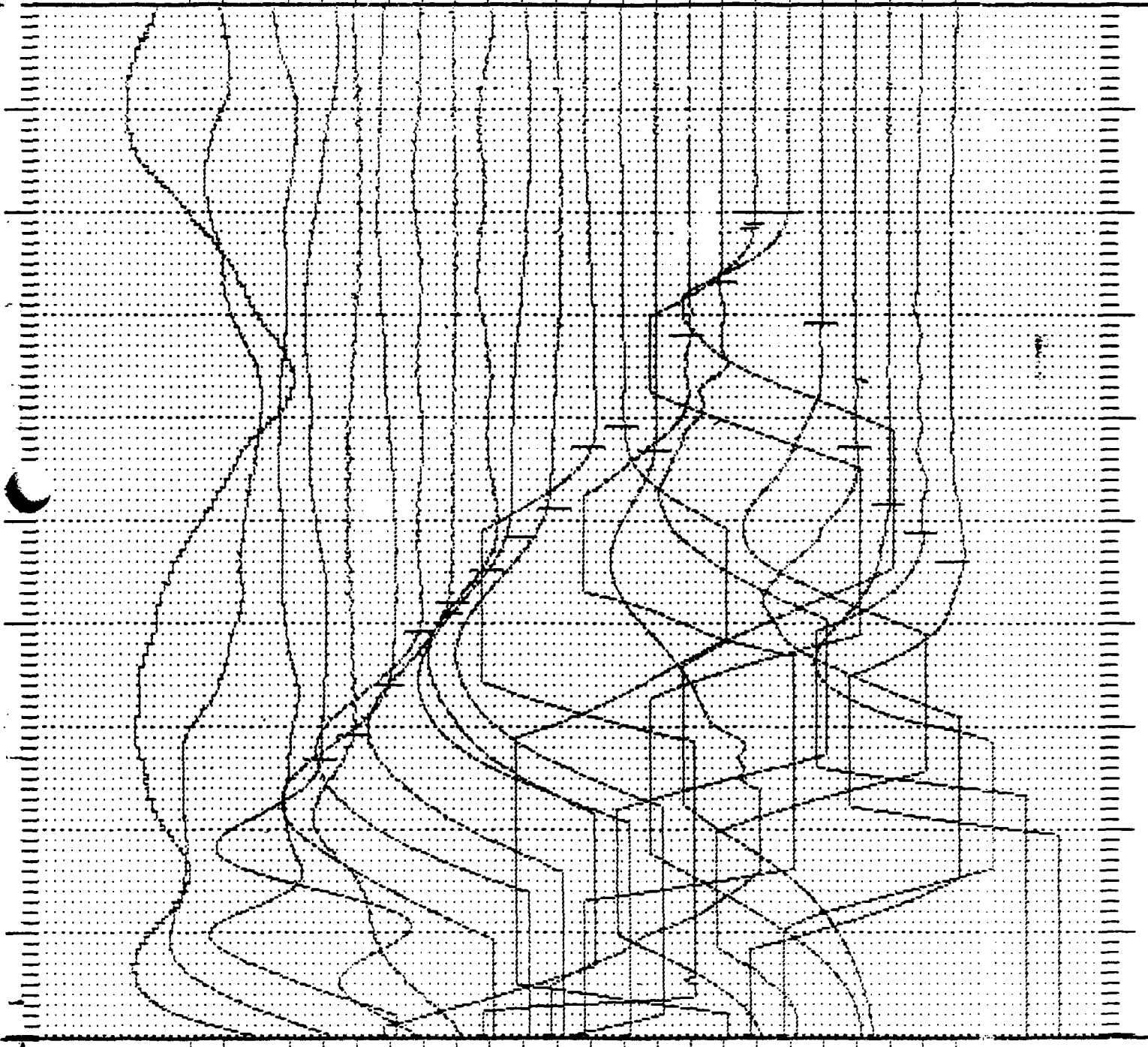
Shot pos.: 000500 Layout start: 000000 Layout end: 000400

Profile No.: 1 Note: 16292-04 Operator: 00001

Record time: 100 ms Delay time: 0000 ms Analog filter: Off

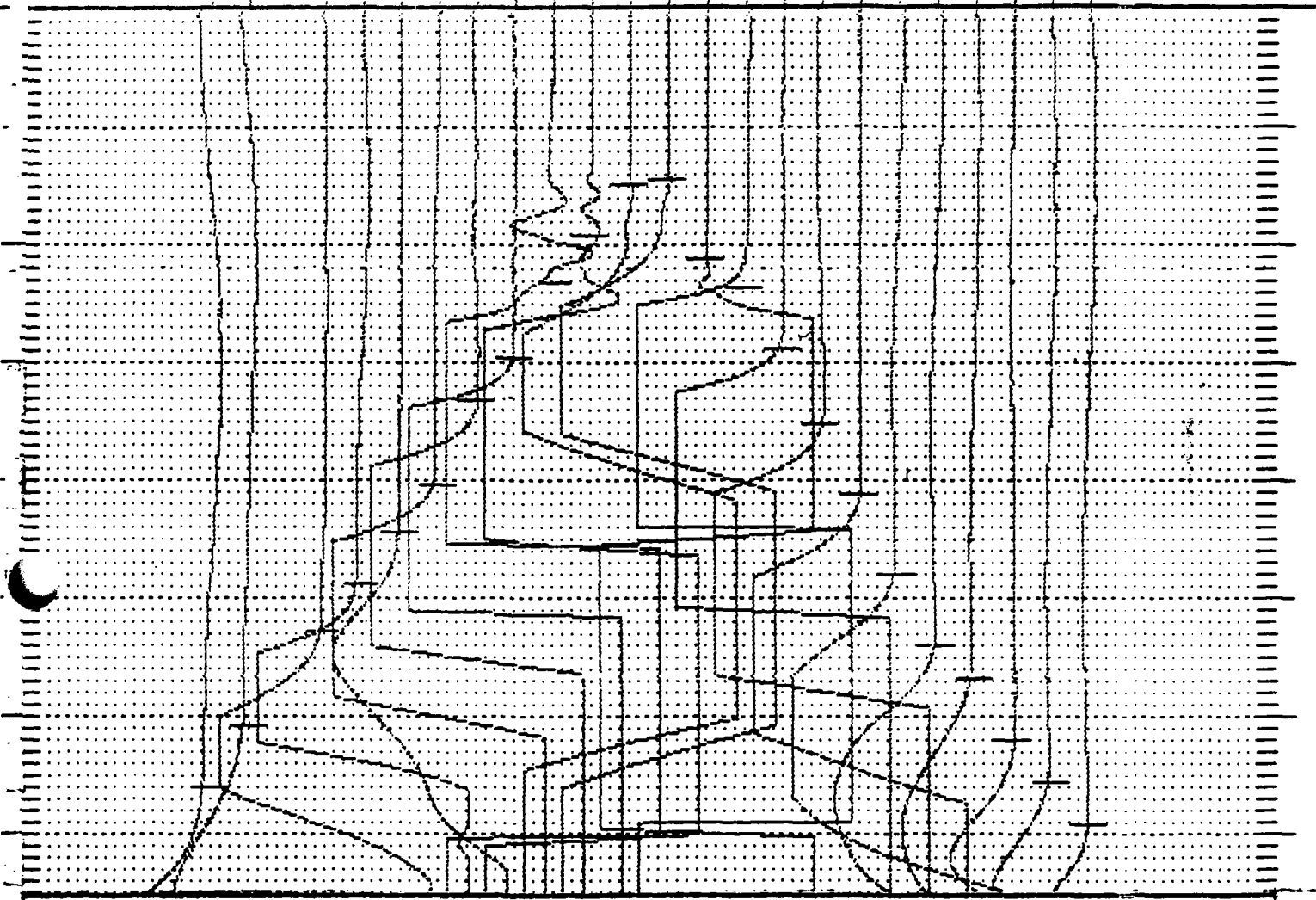
Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Sk: 1: 001

Ch	01	02	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	13	13	13	13	13	13	13	12	12	12	12	12	11	09	09	06	03	03	06	08	09	11	11



Shot pos.: 000500 Layout start: 000500 Layout end: 000400
 Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

01 02 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
 12 12 12 12 12 12 12 12 12 08 04 04 08 12 12 12 12 12 12 12 12 12 12



Listing of markers: Record-000323 Date-910418 Time-14:37

Trace No	Marker	time (ms)	Field notes
8+0			Record time: 100 ms
			Delay time: 0000 ms
			Shot pos.: 000500
			Layout start: 000500
			Layout end: 000400
			Profile No.: 1
			Note: 18292-04
			Operator: 00001

40

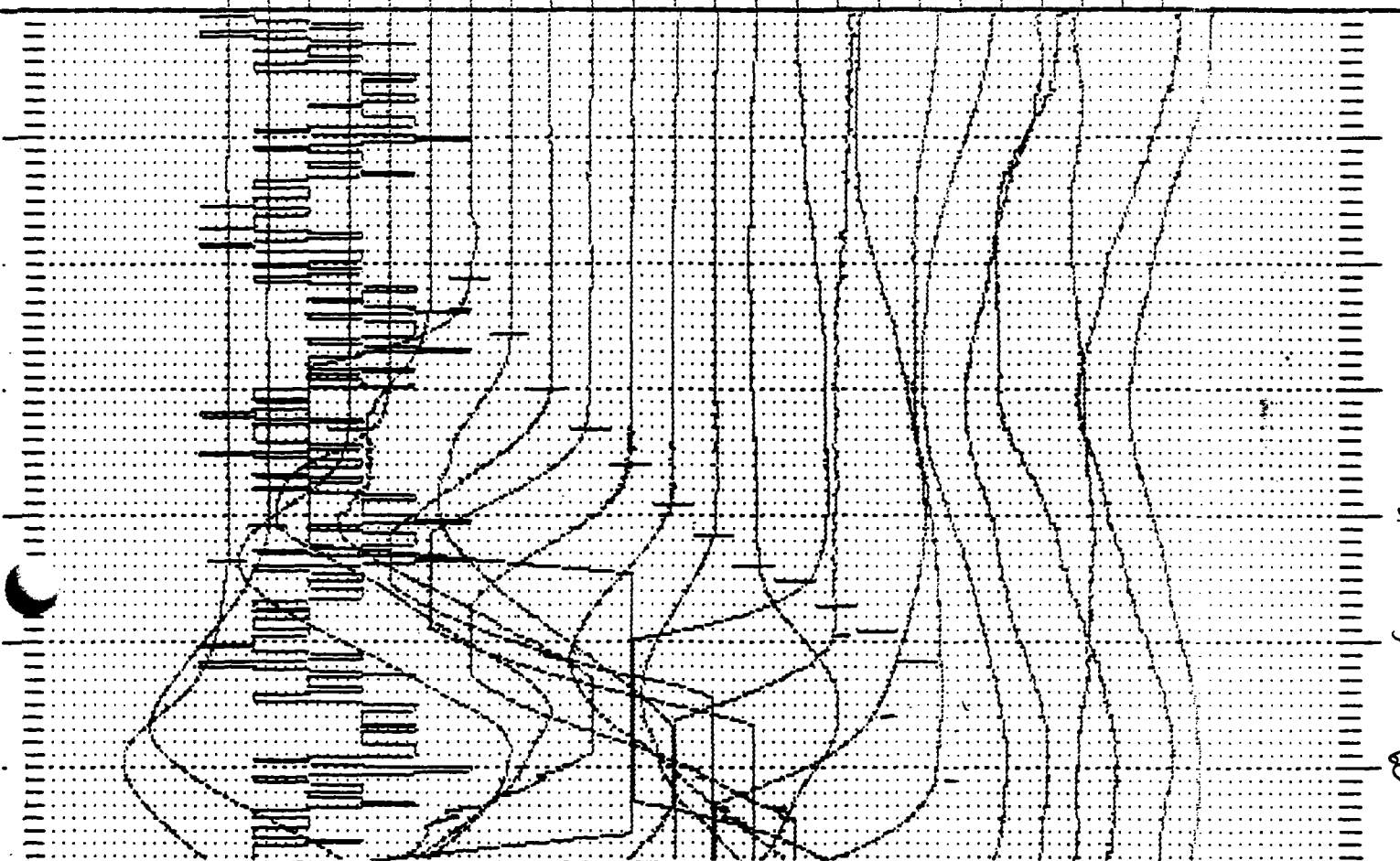
Shot pos.: 00700 Layout start: 000000 Layout end: 000400

Profile No.: 1 Note: 10292-04 Operator: 00001

Record time: 100 ms Delay time: 0000 ms Pulse filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
0s	10	10	10	08	06	04	04	06	09	11	11	11	11	11	14	14	14	14	14	14	14	14	14	14	14

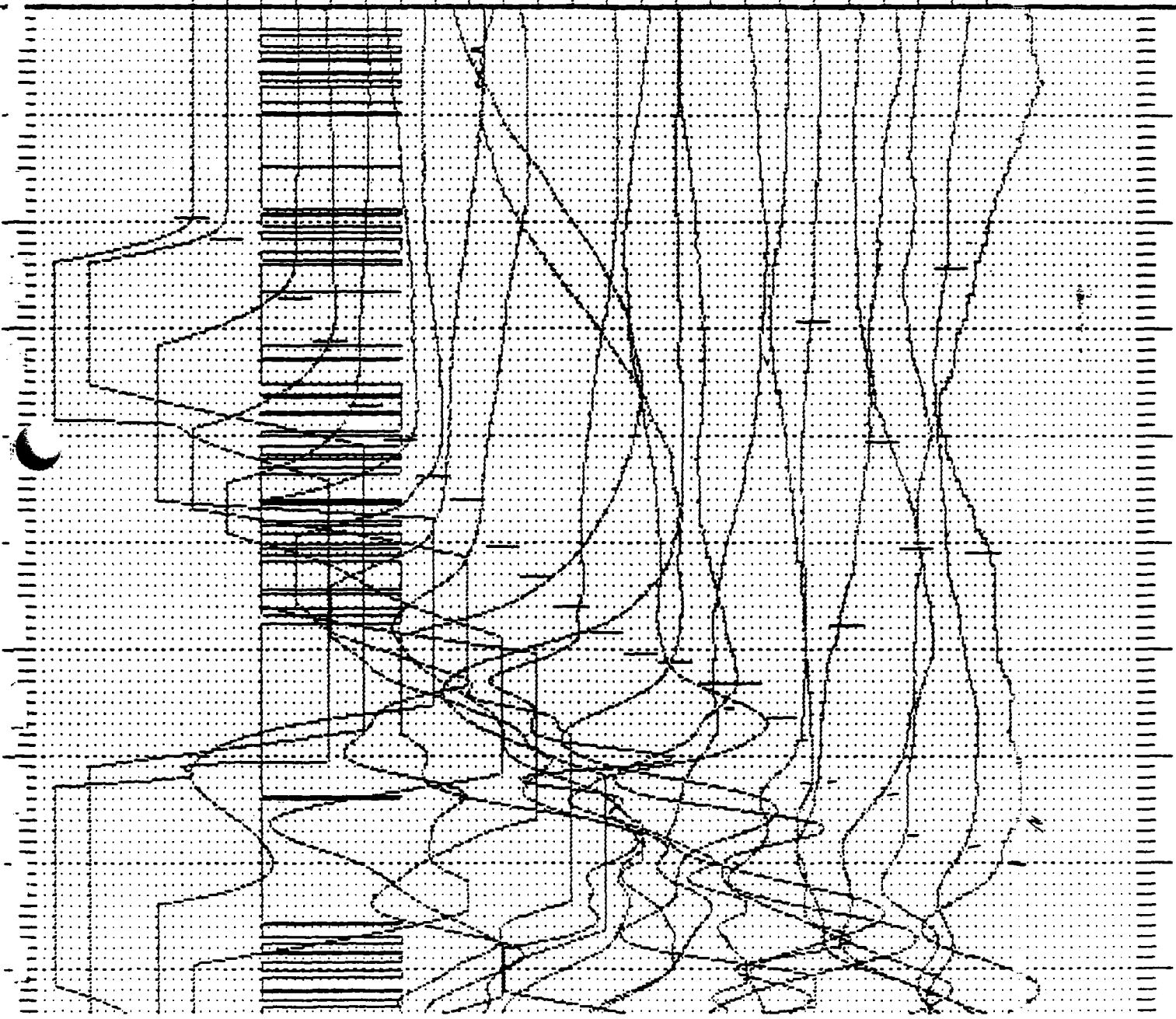


Listing of markers: Record-000322 Date-910410 Time-14:26

Trace No	Marker time (ms)	Field notes
01	4.4	Record time: 100 ms
02	4.4	Delay time: 0000 ms
03	4.4	Shot pos.: 00700
04	4.4	Layout start: 000000
05	4.4	Layout end: 000400
06	4.4	Profile No.: 1
07	4.4	Note: 10292-04
08	4.4	Operator: 00001

ABEN Terraloc Seismic System Record-000021 Date-910418 Time-14:19
 Shot pos.: 000000 Layout start: 000000 Layout end: 000400
 Profile No.: 1 Note: 16292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
03	03	05	09	09	11	11	11	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13	13	13



Listing of markers: Record-000021 Date-910418 Time-14:19

Trace No	Marker time (ms)	Field notes
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Listing of markers: Record-000321 Date-910418 Time-14:19

Trace No	Marker time (ms)	Field notes
8+0	Record time: 100 ms
	Delay time: 0000 ms
	Shot pos.: 000500
	Layout start: 000000
	Layout end: 000400
	Profile No.: 1
	Note: 18292-04
	Operator: 00001

4+0

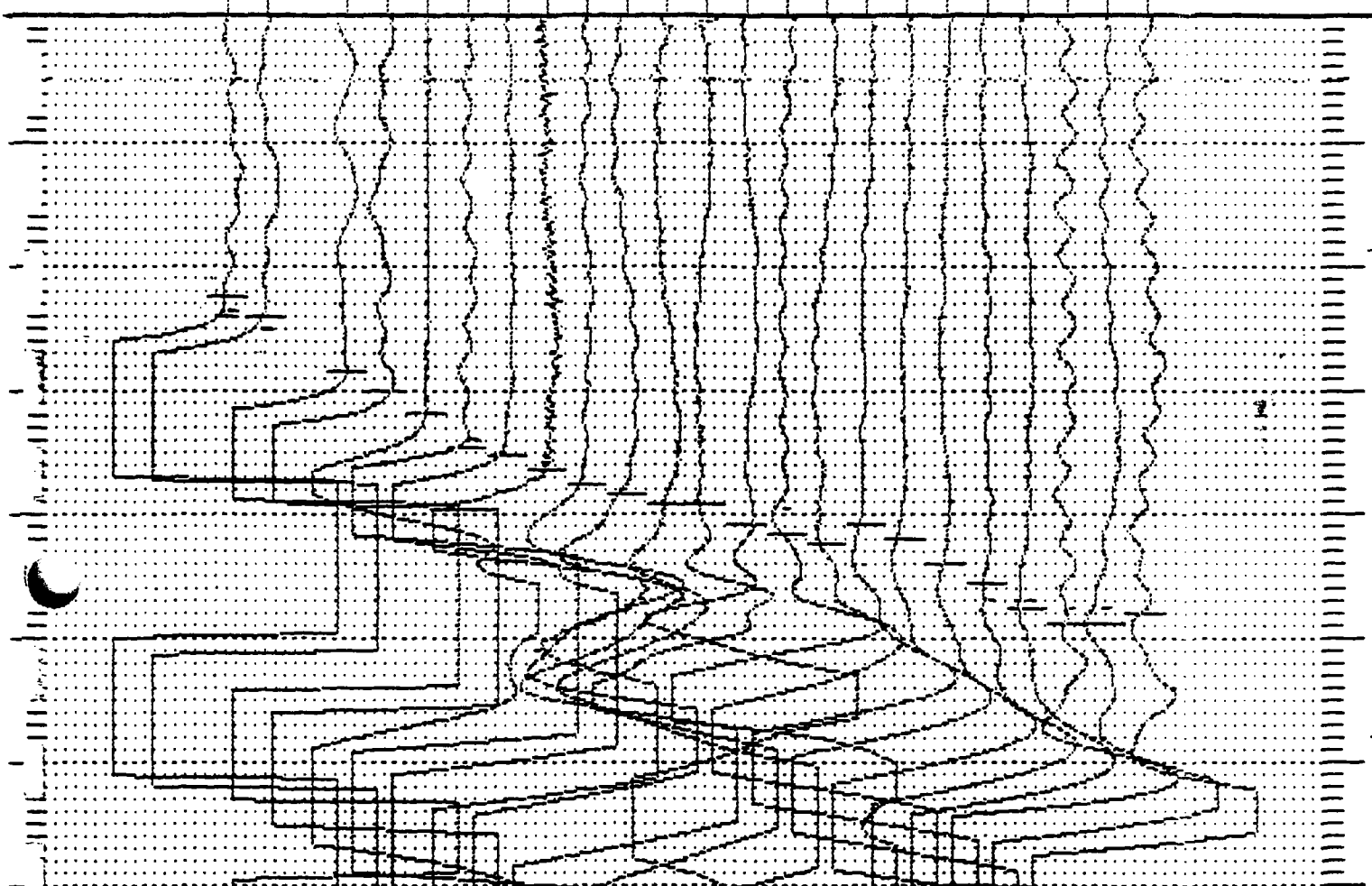
Shot pos.: 000300 Layout start: 000300 Layout end: 000400

Profile No.: 1 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Pa	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



07/08

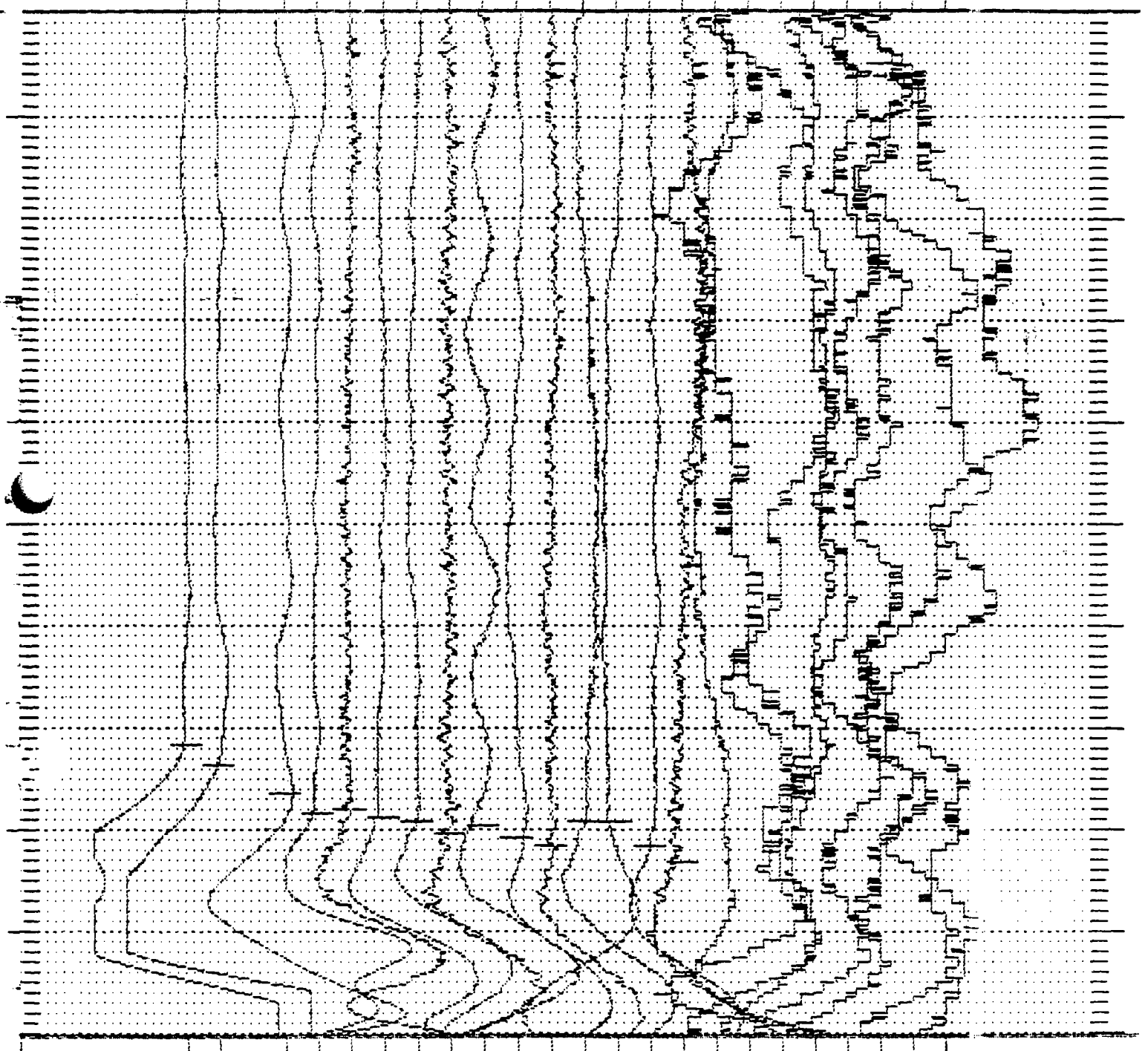
Listing of markers: Record-000326 Date-910418 Time-16:31

Trace No	Marker time (ms)	Field notes
01	000000	Record time: 200 ms
02	000000	Delay time: 0000 ms
04	000300	Shot pos.: 000300
05	000300	Layout start: 000300
06	000400	Layout end: 000400
07	000000	Profile No.: 1
08	000000	Note: 18292-04
09	000000	Operator: 00001

4500 Terraloc Data 1 Station Record-000225 Date-9:0416 Time-15:55
 Shot pos: 00100 Legout start: 000000 Legout end: 000400
 Profile No: 1 Note: 10202-04 Layer: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off H High-cut: Off H Shots: 001

Ch	01	02	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0a	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000325 Date-910418 Time-15:55

Trace No	Marker time (ms)	Field notes
1	000000	Record time: 200 ms
1	000000	Delay time: 0000 ms
1	000000	Shot pos.: 001000
1	000000	Layout start: 000000
1	000000	Layout end: 000400
1	000000	Profile No.: 1
1	000000	Note: 10292-04
1	000000	Operator: 00001

Divide times x 2

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
12+00	V3KP	3'	1	000314	S → M	
11+00				315		
10+00				316		
9+00				317		12:08
8+00	↓	↓	↓	318	↓	
8+00	↓	9'	↓	319	↓	
7+00	V3KP	3'	↓	320	↓	

LINE G-G' (profile 1)

LOCATION Along Red Village Rd Lyndon, VT

JOB NO. 18292-01 TECHNICIAN FE/JS DATE 18 APR 91

SEISMOGRAPH NO. ABEM 874001 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS LOW AP HIGH _____

RECORD NUMBER _____ TO _____

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

TOTAL CAPS

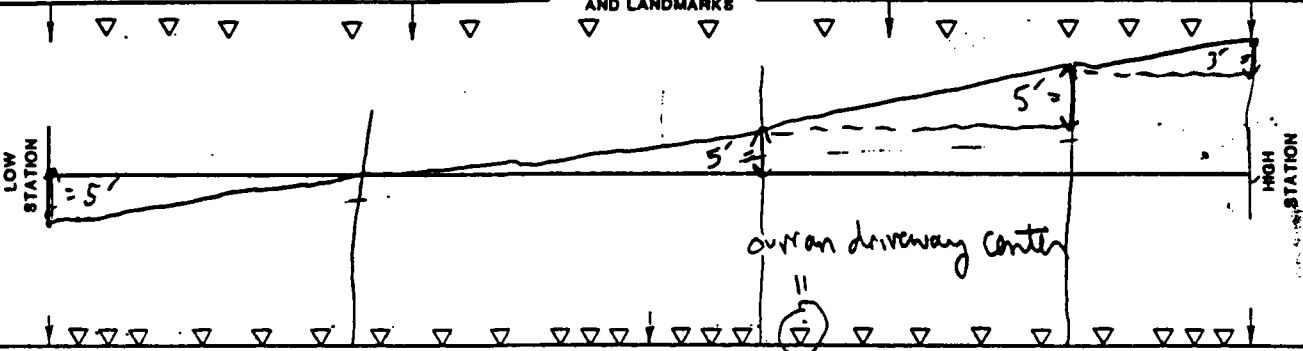
INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS

2 reshoots
+ 1 offset

TOPOGRAPHY AND LANDMARKS



12+00 STATION

W N E S

RECORDS CHECKED BY

RECORDS READ BY

W N E

STATION 8+00

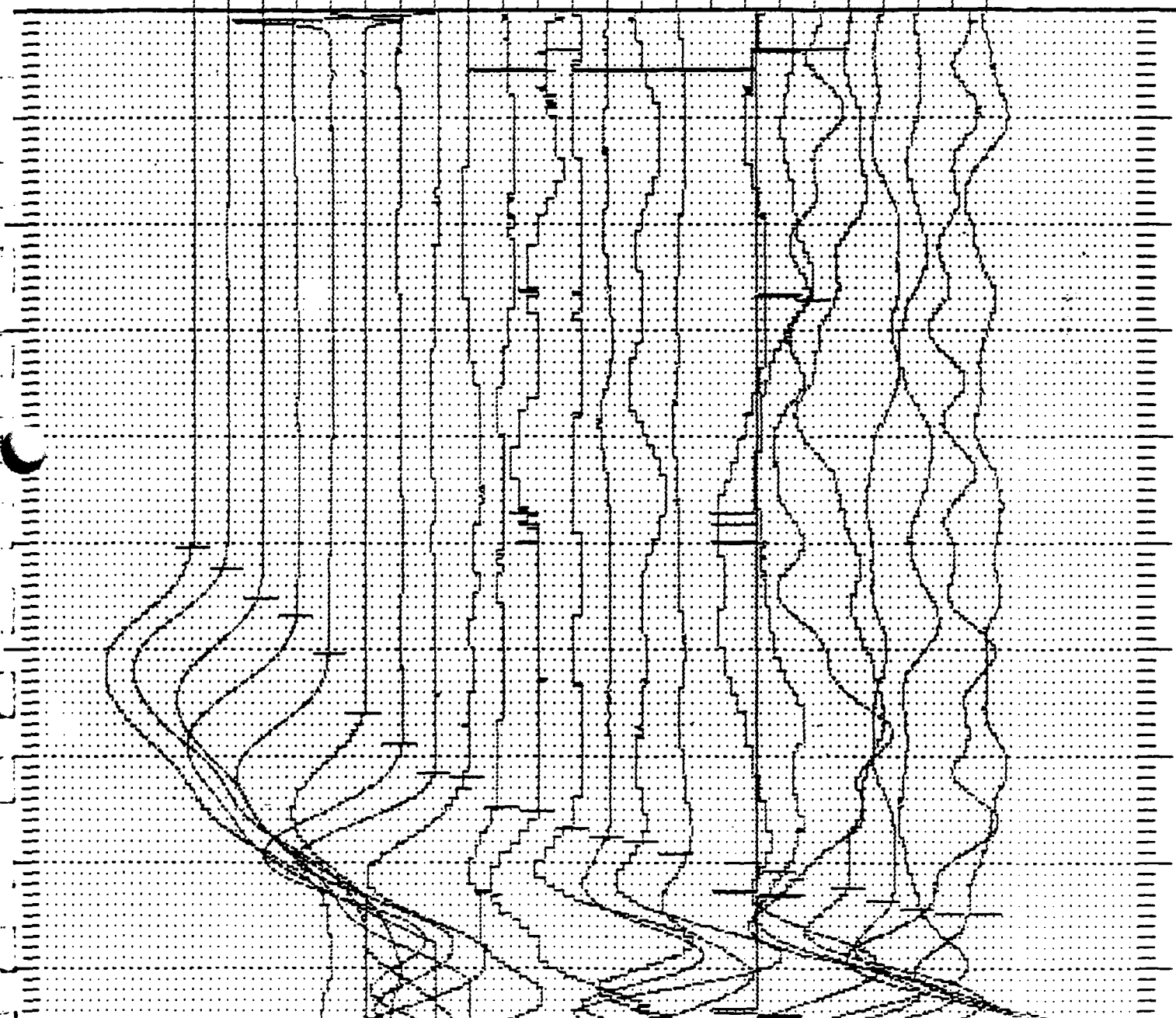
Shot pos.: 000700 Layout start: 001200 Layout end: 000800

Profile No.: 1 Note: 16292-04 Operator: 00001

Record time: 100 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

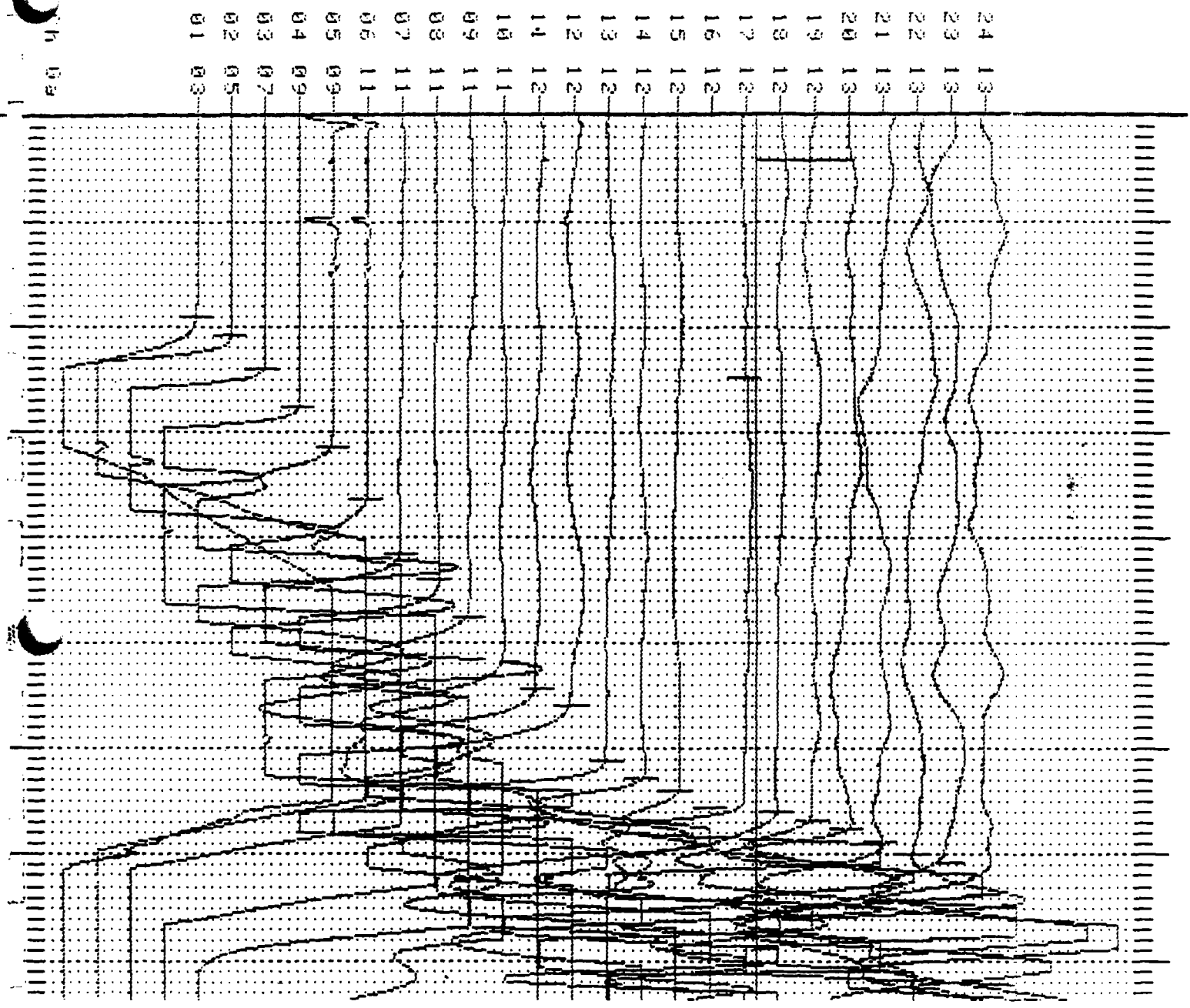
Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	08	10	10	11	11	11	11	11	11	11	11	11	12	12	12	12	12	13	13	13	13	13	13	13



Listing of markers: Record-000320 Date-910418 Time-13:05

Trace No	Marker time (ms)	Field notes
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Shot pos.: 000000 Layout start: 001200 Layout end: 000000
 Profile No.: 1 Note: 10292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000319 Date-910418 Time-13:00

Trace No	Marker time (ms)	Field notes
000000	000000	Record time: 100 ms
000000	000000	Delay time: 0000 ms
000000	000000	Shot pos.: 000000
000000	000000	Layout start: 001200
000000	000000	Layout end: 000000
000000	000000	Profile No.: 1

Listing of markers: Record-000319 Date-910418 Time-13:00

Trace No	Marker	time (ms)	Field notes
1	1	000000	Record time: 100 ms
1	2	000000	Delay time: 0000 ms
1	3	000000	Shot pos.: 000000
1	4	001200	Layout start: 001200
1	5	000800	Layout end: 000800
1	6	000000	Profile No.: 1
1	7	000000	Note: 10292-04
1	8	000000	Operator: 00001

-65.3

Shot pos.: 000000

Layout start: 001200

Layout end: 000800

Profile No.: 1

Note: 16292-04

Operator: 00001

Record time: 100 ms

Delay time: 0000 ms

Analog filter: Off

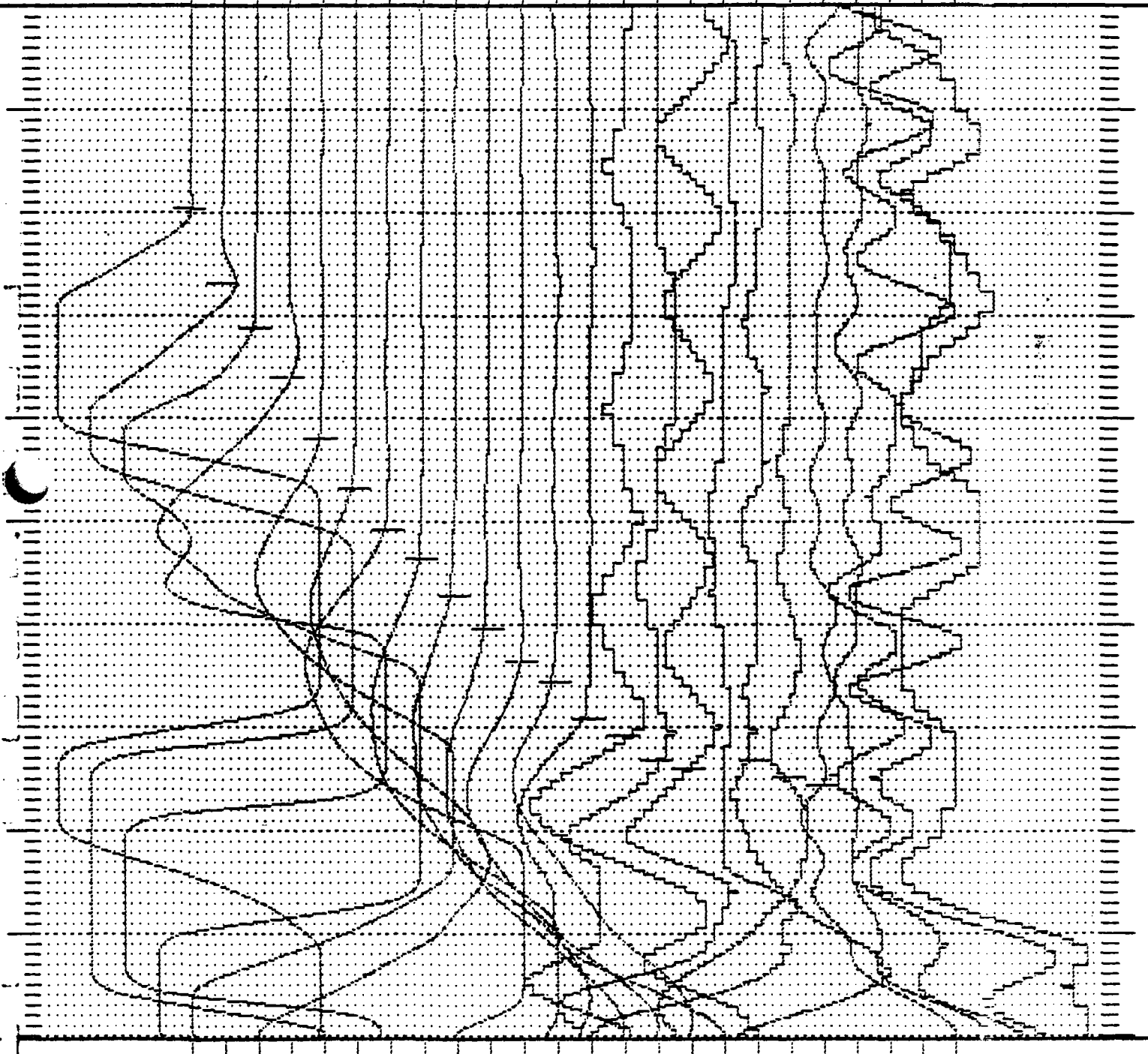
Display mode: Normal

Low-cut: Off Hz

High-cut: 150Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gain	03	05	07	09	09	11	11	11	11	11	12	12	12	12	12	12	12	12	12	13	13	13	13	13



Listing of markers: Record-000318 Date-910418 Time-12:13

Trace No	Marker	time (ms)	Field notes
8+0	Record time: 100 ms
	Delay time: 0000 ms
	Shot pos.: 000800
	Layout start: 001200
	Layout end: 000800
	Profile No.: 1
	Note: 18292-04
	Operator: 00001

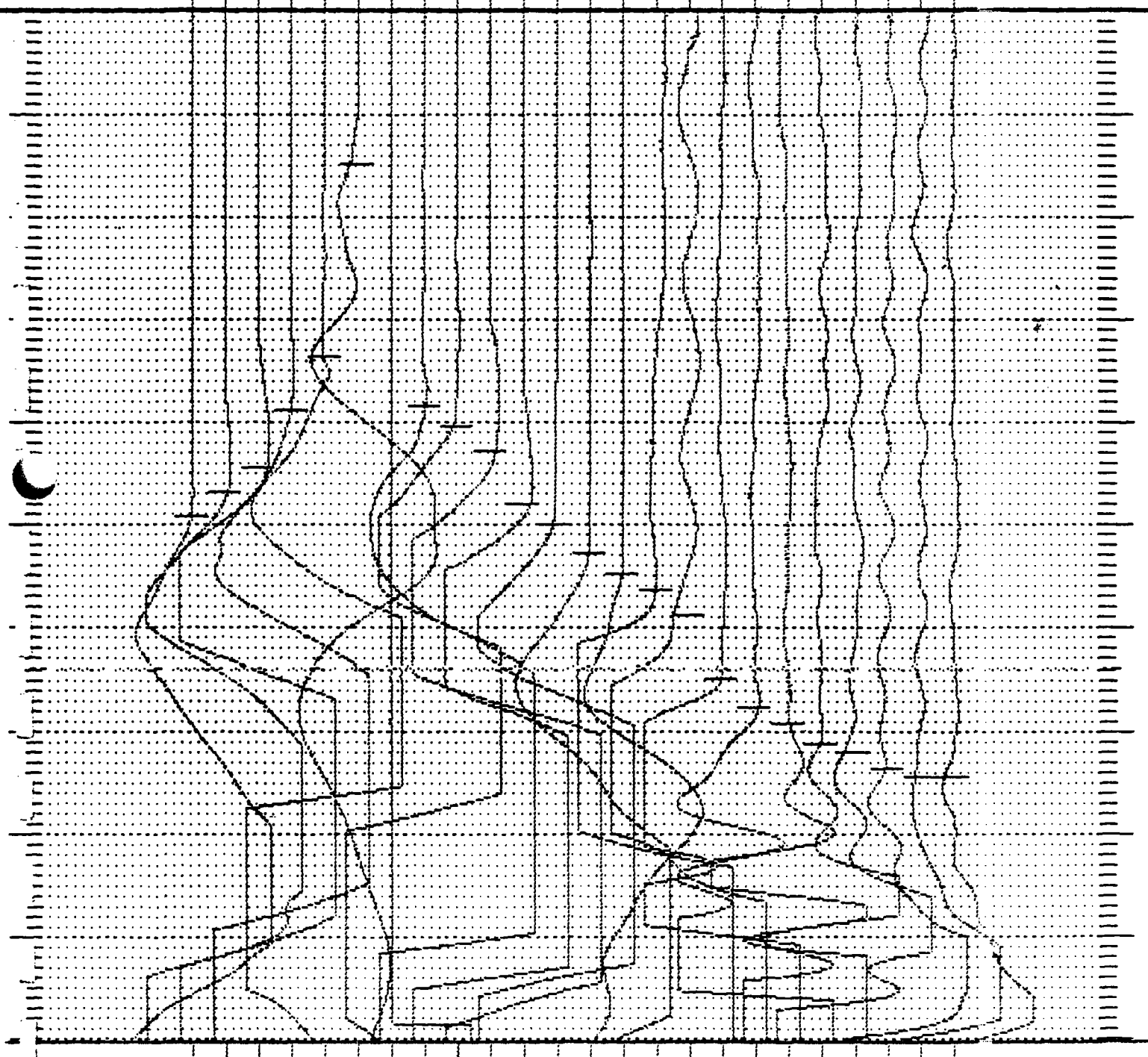
Shot pos.: 000000 Layout start: 001200 Layout end: 000000

Profile No.: 1 Note: 10292-04 Operator: 00001

Record time: 100 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

07	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
08	10	10	10	08	06	04	04	06	09	11	11	11	11	11	14	14	14	14	14	14	14	14	14	14



Listing of markers:

Record-000317

Date-910410

Time-12:06

Trace No

Marker time (ms)

Field notes

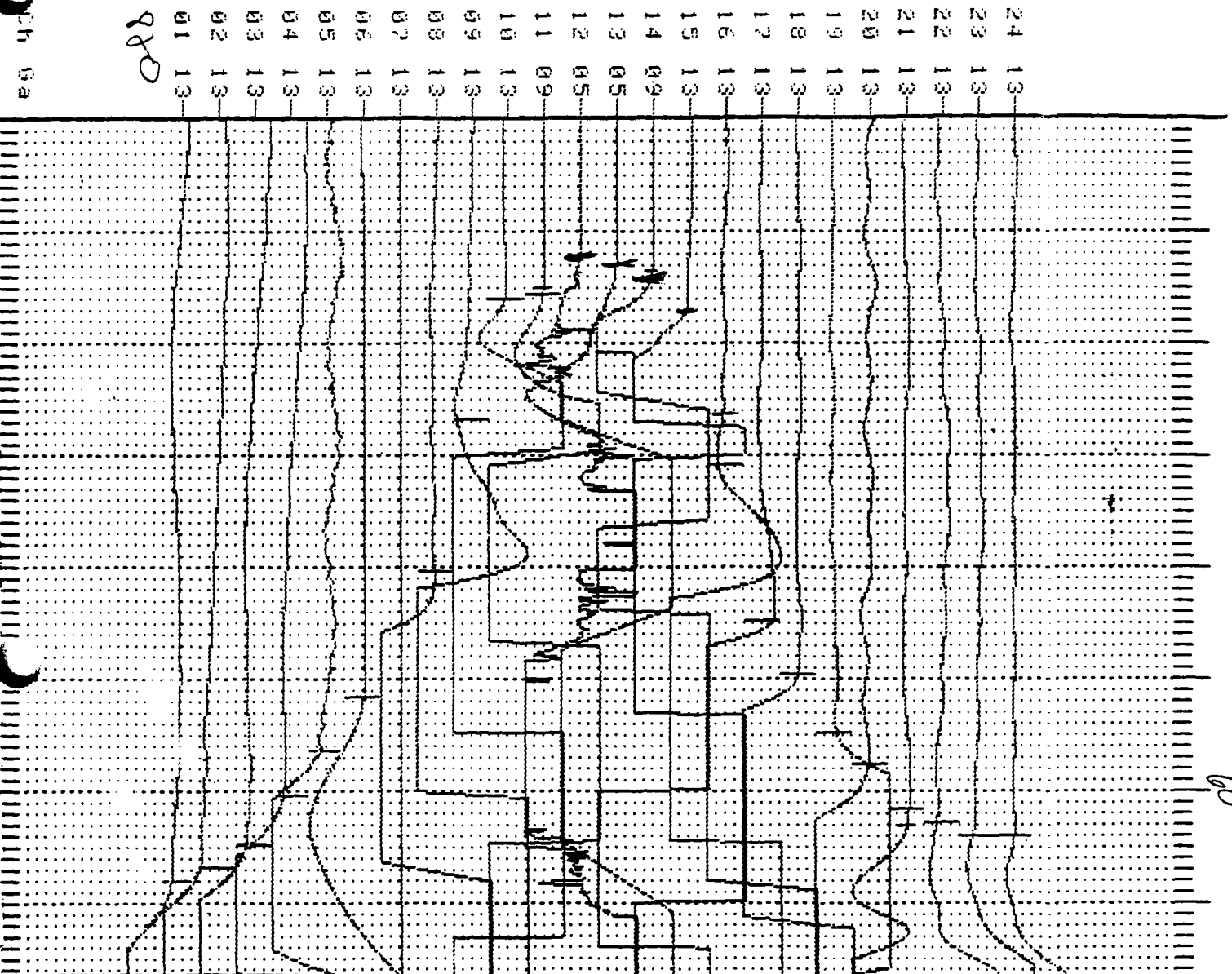
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Record time: 100 ms
Delay time: 0000 ms
Shot pos.: 000900
Layout start: 001200
Layout end: 000800
Profile No.: 1
Note: 10292-04
Operator: 00001

Shot pos.: 001000 Layout start: 001200 Layout end: 000800
 Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

810



Listing of markers: Record-000316 Date-11-11-52 Time-11:52

Trace No	Marker time (ms)	Field notes
810		Record time: 100 ms
		Delay time: 0000 ms
		Shot pos.: 001000
		Layout start: 001200
		Layout end: 000800
		Profile No.: 1
		Note: 18292-04
		Operator: 00001

1552

BBEN TerraLoc Seismic System

Record-000015

Date-910410

Time-11:43

Shot pos.: 001100

Layout start: 001200

Layout end: 000000

Profile No.: 1

Note: 18292-04

Operator: 00001

Record time: 100 ms

Delay time: 0000 ms

Analog filter: Off

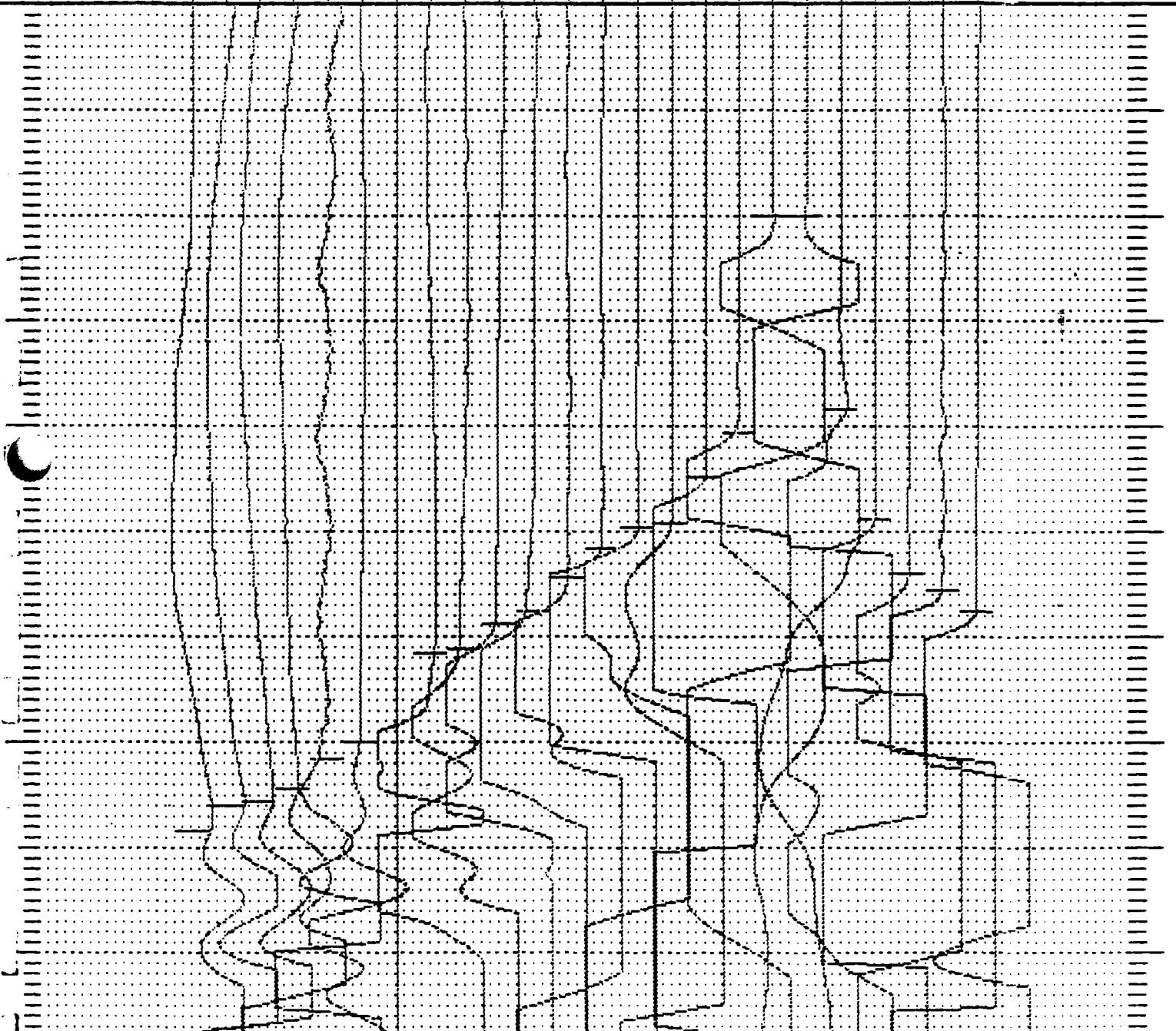
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	13	13	13	13	13	13	13	13	12	12	12	12	12	11	09	09	06	03	03	06	06	09	11	11



Listing of markers:

Record-000015

Date-910410

Time-11:43

Trace No

Marker time (ms)

Field notes

Shot pos.: 001200

Layout start: 001200

Layout end: 000000

Profile No.: 1

Note: 10292-04

Operator: 00001

Record time: 100 ms

Delay time: 0000 ms

Analog filter: Off

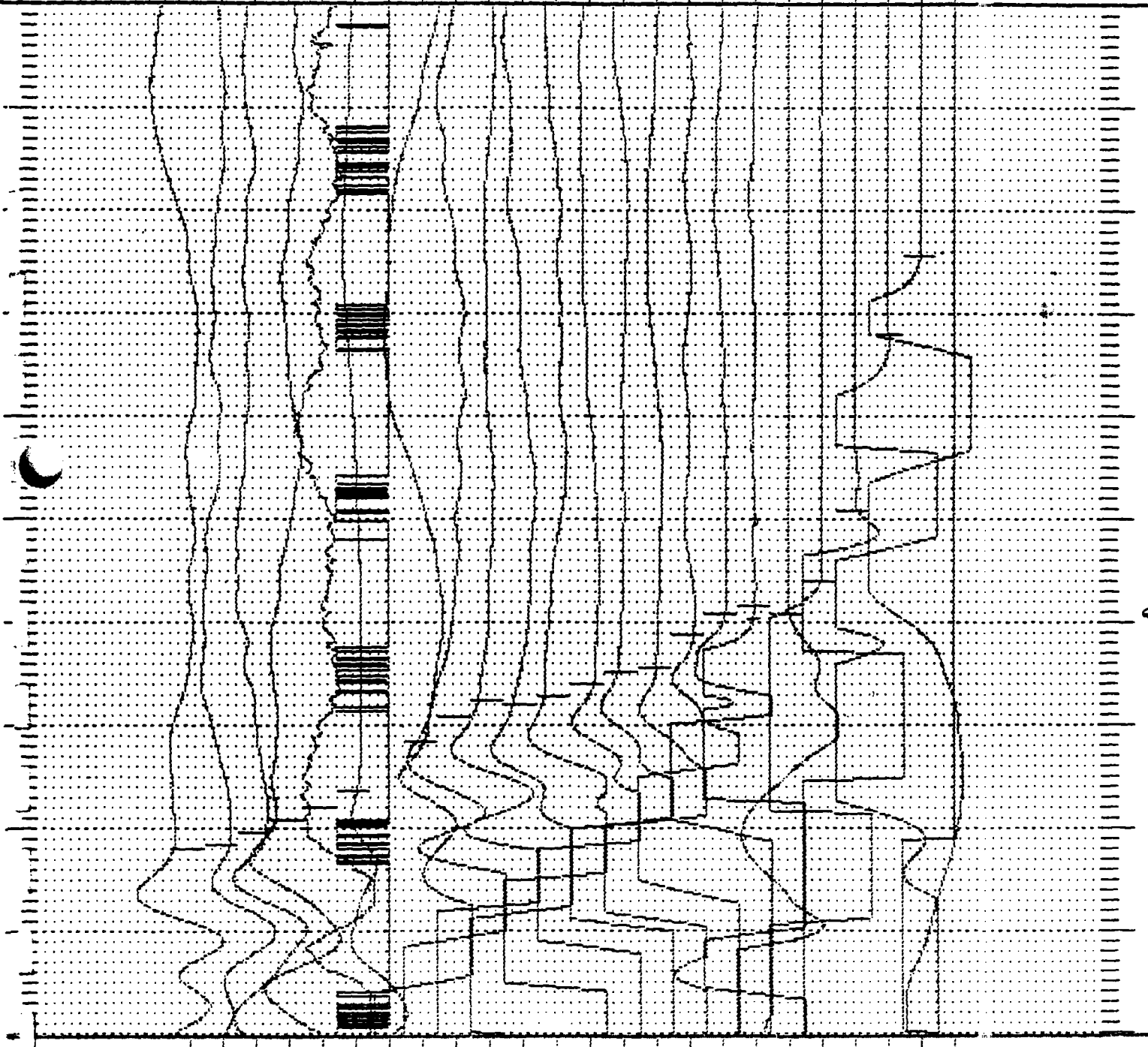
Display mode: Normal

Low-cut: Off Hz

High-cut: Off Hz

Skits: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
0a	14	14	14	14	14	14	14	14	14	14	14	14	13	13	13	13	13	13	09	09	09	06	04	03



10

Listing of markers: Record-000314 Date-910410 Time-11:35

Trace No	Marker	time (ms)	Field notes
----------	--------	-----------	-------------

			Record time: 100 ms
			Delay time: 0000 ms
			Shot pos.: 001200
			Layout start: 001200
			Layout end: 000000
			Profile No.: 1
			Note: 10292-04
			Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
16+00	1/3 KP	3'	1	000909	S+H	
15+00	.			000310		
14+00	.			311		
13+00	.			312		
12+00	✓	✓	✓	✓ 313	✓	

LINE <u>G-5 (profile 1)</u>		
LOCATION <u>Along Red Village Rd Lyndon, VT</u>		
JOB NO. <u>18292-04</u>	TECHNICIAN <u>FF/JP</u>	DATE <u>18 APR 91</u>
SEISMOGRAPH NO. <u>AR6M 8724001</u>		AMPLIFIER NO. _____
SPREAD LENGTH <u>40'</u>		FILTERS LOW <u>AP</u> HIGH _____
RECORD NUMBER _____ TO _____		

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

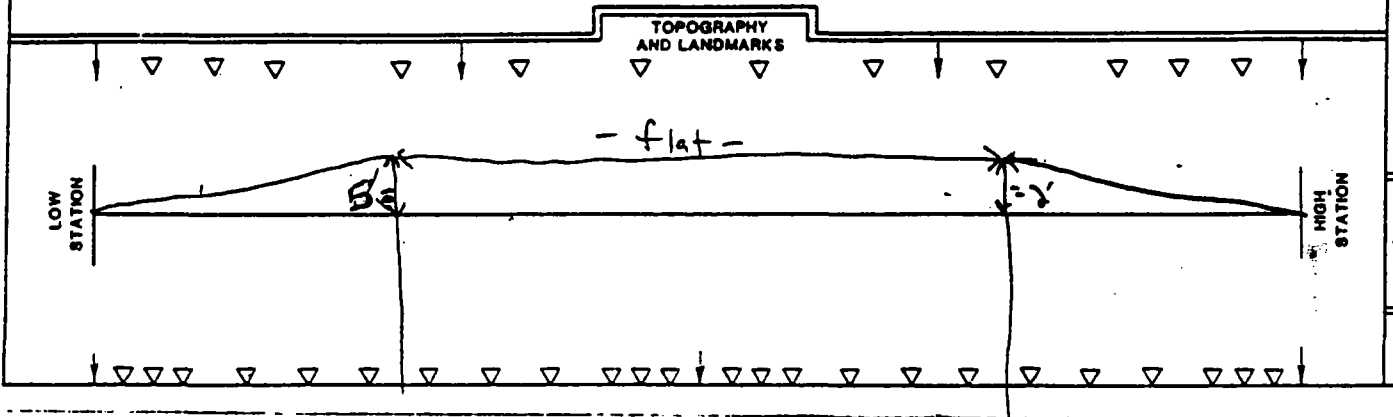
Hard soil ~ 1' down

TOTAL CAPS

INSTRUMENTATION LOCATED AT STATION 10+00

TOTAL POWDER ✓

INCLUDE RESHOTS



16 + 00
STATION
N
W
S
RECORDS CHECKED BY
RECORDS READ BY
N
W
E
STATION
12 + 00

Shot pos.: 001200 *1200* Layout start: 001500 Layout end: 001200
 Profile No.: 1 Note: 10292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms -Calog - Level: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Sh-res: 001

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
 13 13 13 13 13 13 13 13 13 13 09 05 05 09 13 13 13 13 13 13 13 13 13 13

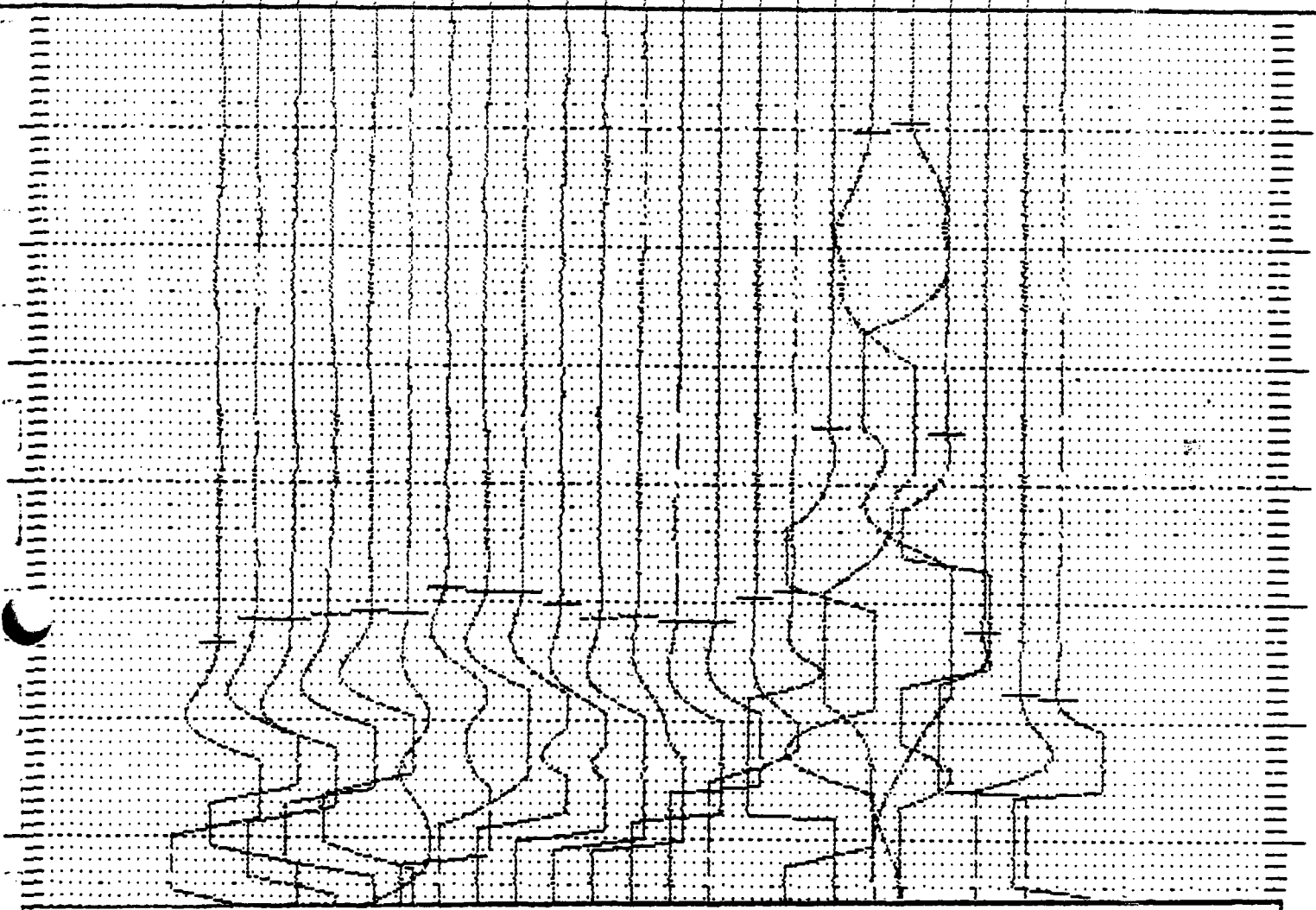


Listing of markers: Record-000313 Date-910410 Time-10:33

Trace No	Marker time (ms)	Field notes
16+0	00:00:00.000	Record time: 100 ms
	00:00:00.000	Delay time: 0000 ms
	00:00:00.000	Shot pos.: 001200
	00:00:00.000	Layout start: 001500
	00:00:00.000	Layout end: 001200
	00:00:00.000	Profile No.: 1
	00:00:00.000	Note: 10292-04
	00:00:00.000	Operator: 00001

Profile No.: 1 Note: 18292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: 0+ Hz Shots: 001

Ch 01 01 13
 Ga 02 13
 03 13
 04 13
 05 13
 06 13
 07 13
 08 13
 09 12
 10 12
 11 12
 12 12
 13 12
 14 11
 15 09
 16 09
 17 06
 18 03
 19 03
 20 06
 21 08
 22 09
 23 11



Listing of markers: Record-000312 Date-910410 Time-10:24

Trace No	Marker time (ms)	Field notes
01	13	Record time: 100 ms
02	13	Delay time: 0000 ms
03	13	Shot pos.: 001300
04	13	Layout start: 001600
05	13	Layout end: 001200
06	13	Profile No.: 1
07	13	Note: 18292-04
08	13	Operator: 00001
09	12	
10	12	
11	12	
12	12	
13	12	
14	11	
15	09	
16	09	
17	06	
18	03	
19	03	
20	06	
21	08	
22	09	
23	11	

Record-000311 Date-910418 Time-10:11
 Shot pos.: 001400 Layout start: 001500 Layout end: 001200
 Profile No.: 1 Note: 10292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch Ga
 01 13
 02 13
 03 13
 04 13
 05 13
 06 13
 07 13
 08 13
 09 13
 10 13
 11 09
 12 05
 13 05
 14 09
 15 13
 16 13
 17 13
 18 13
 19 13
 20 13
 21 13
 22 13
 23 13
 24 13

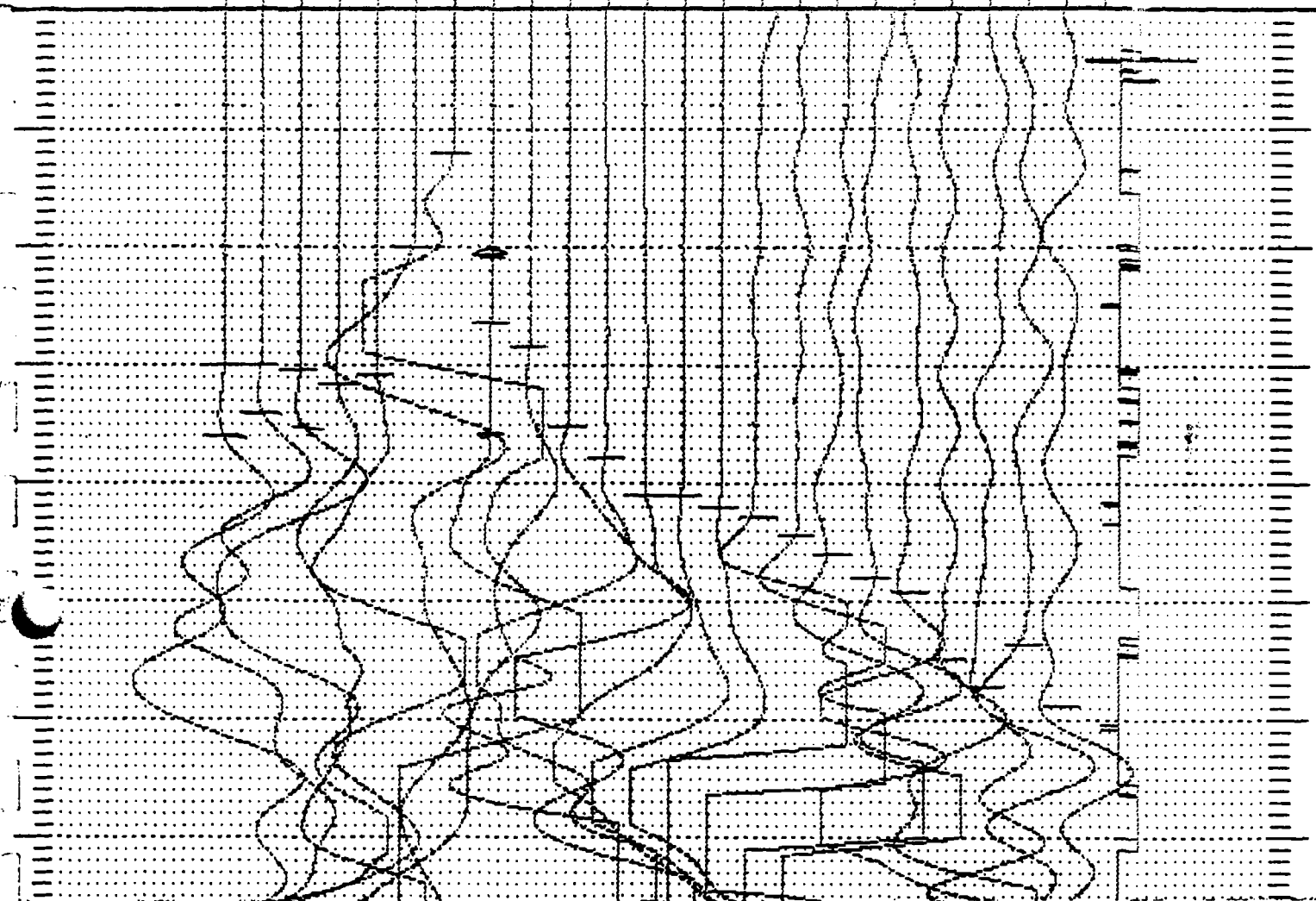


Listing of markers: Record-000311 Date-910418 Time-10:11

Trace No	Marker time (ms)	Field notes
16+0	31 27.5	Record time: 100 ms Delay time: 0000 ms Shot pos.: 001400 Layout start: 001500 Layout end: 001200 Profile No.: 1 Note: 10292-04 Operator: 00001

Shot pos.: 001500 Layout start: 001500 Layout end: 001500
 Profile No.: 1 Note: 10292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Da	10	10	10	08	06	04	04	06	09	11	11	11	11	11	14	14	14	14	14	14	14	14	14	14



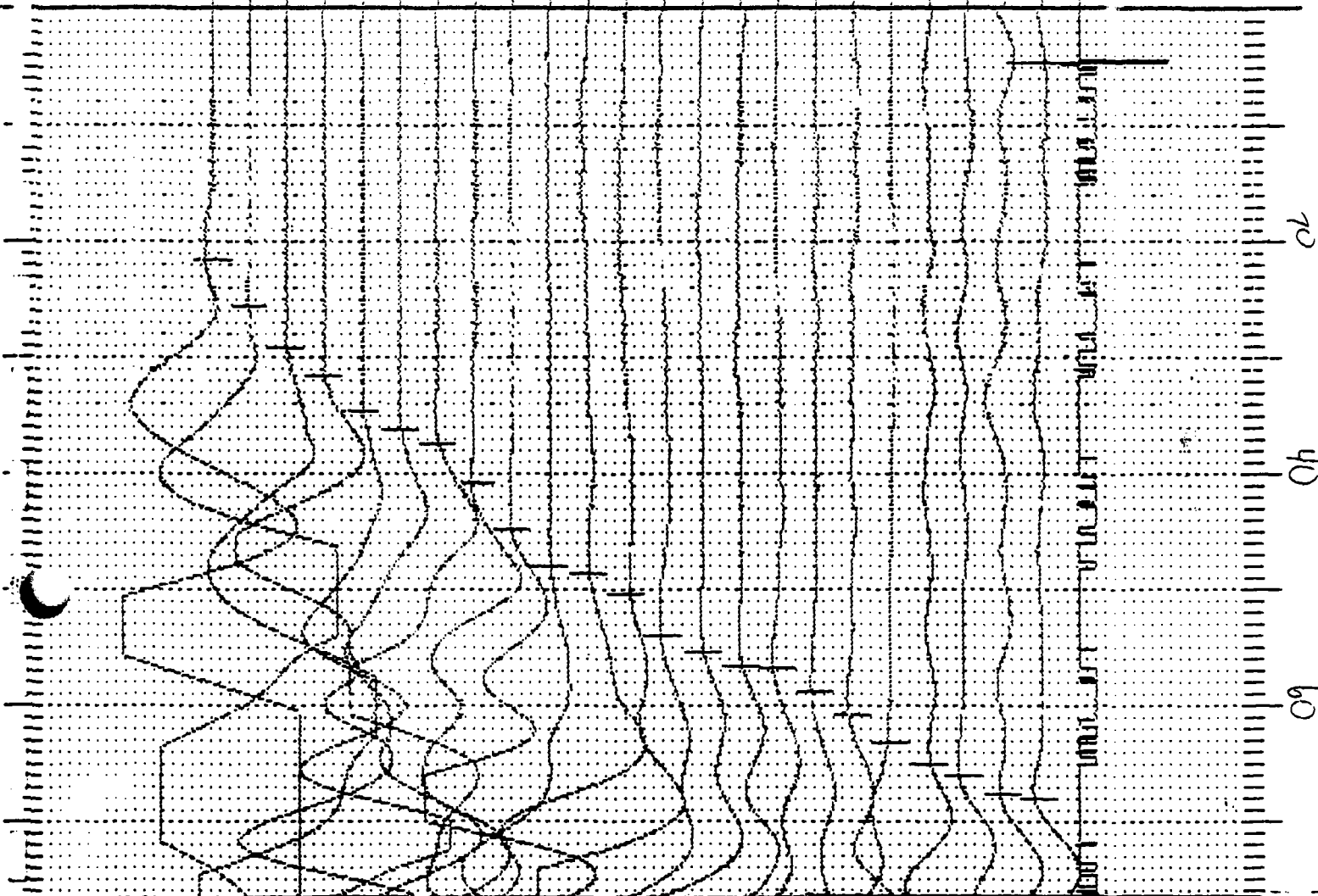
Listing of markers: Record-000310 Date-910418 Time-10:04

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 100 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 001500
04	0000	Layout start: 001500
05	0000	Layout end: 001500
06	0000	Profile No.: 1
07	0000	Note: 10292-04
08	0000	Operator: 00001

25

Shot pos.: 001500 Legout start: 001500 Legout end: 001200
 Profile No.: 1 Note: 10292-04 Operator: 00001
 Record time: 100 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

01 02 03 04 05 06 07 08 09 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24
 03 05 07 09 11 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12 12



Listing of markers: Record-000309 Date-910416 Time-09:53

Trace No	Marker	time (ms)	Field notes
16+0			Record time: 100 ms
			Delay time: 0000 ms
			Shot pos.: 001500
			Legout start: 001500
			Legout end: 001200
			Profile No.: 1
			Note: 10292-04
			Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
0+00	1/3 KP	3'	3	340	M	
1+00	↓	↓	↓	341	↓	
2+00	↓	↓	↓	342	↓	16:40
3+00	↓	↓	↓	343	↓	
4+00	↓	↓	↓	344	↓	

LINE H-H' (profile 3)

LOCATION Thompson - school area, Lyndonville

JOB NO. 18292-04 TECHNICIAN FF JB DATE 19 APR 91

SEISMOGRAPH NO. A9em 8724001 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS LOW AP HIGH _____

RECORD NUMBER _____ TO _____

4 + 00
STATION

N
W
S

RECORDS CHECKED BY

RECORDS READ BY

N
W
S

STATION
0 + 00

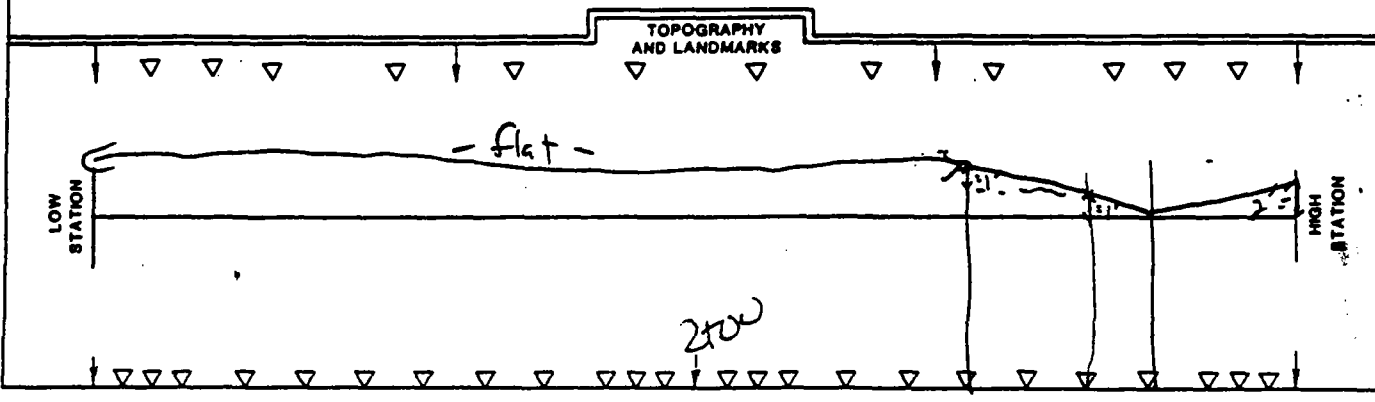
TOTAL CAPS 6

TOTAL POWDER 6

INCLUDE RESHOTS

INSTRUMENTATION LOCATED AT STATION _____

1 rshoot (1cp/1/3)



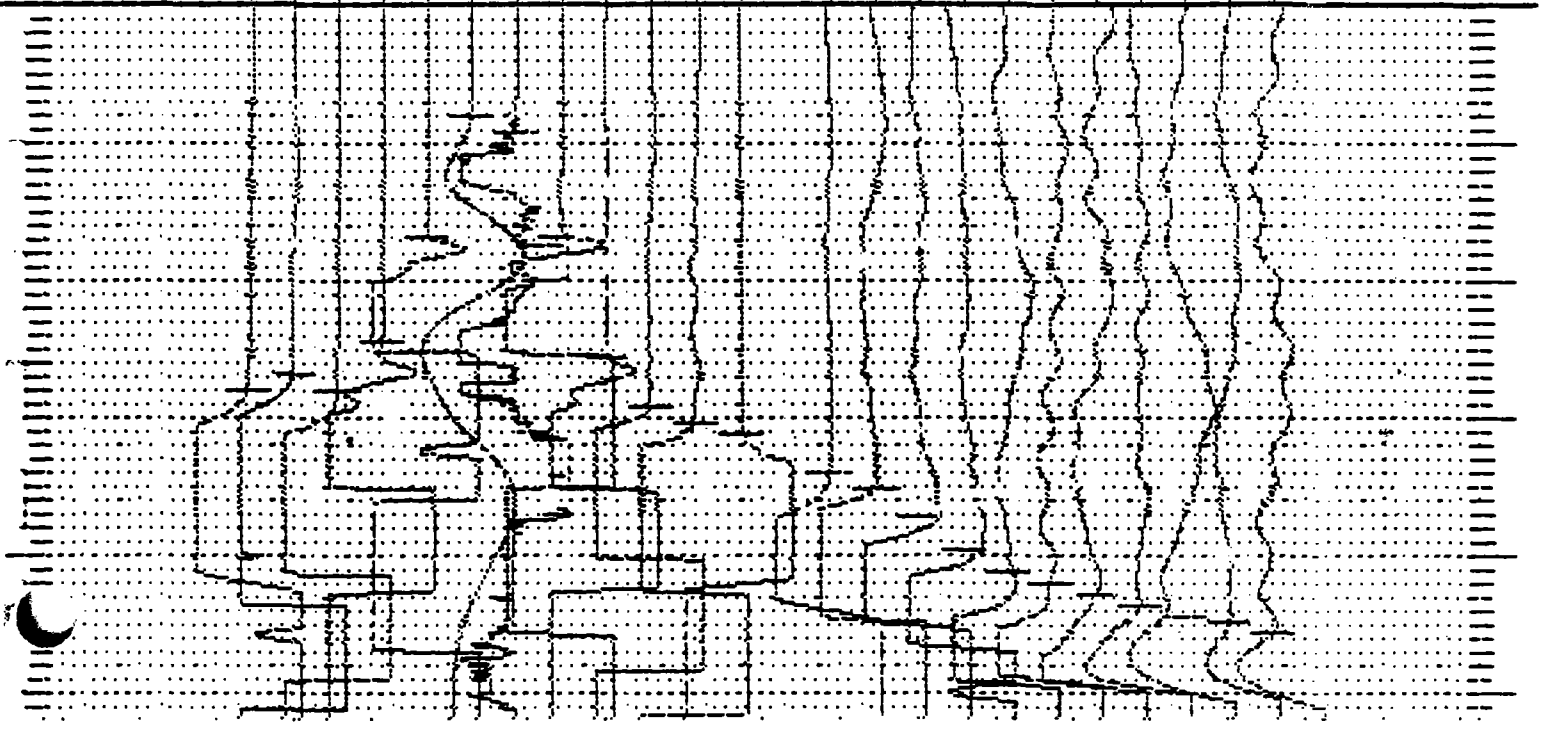
Shot pos.: 100 Layout start: 000 Layout end: 400

Profile No.: 3 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	14	15	16	17	18	19	20	21	22	23	24
ge	12	12	11	09	09	04	04	09	09	12	12	12	12	14	14	14	14	14	14	14	14	14	14



Listing of markers:

Record-000341

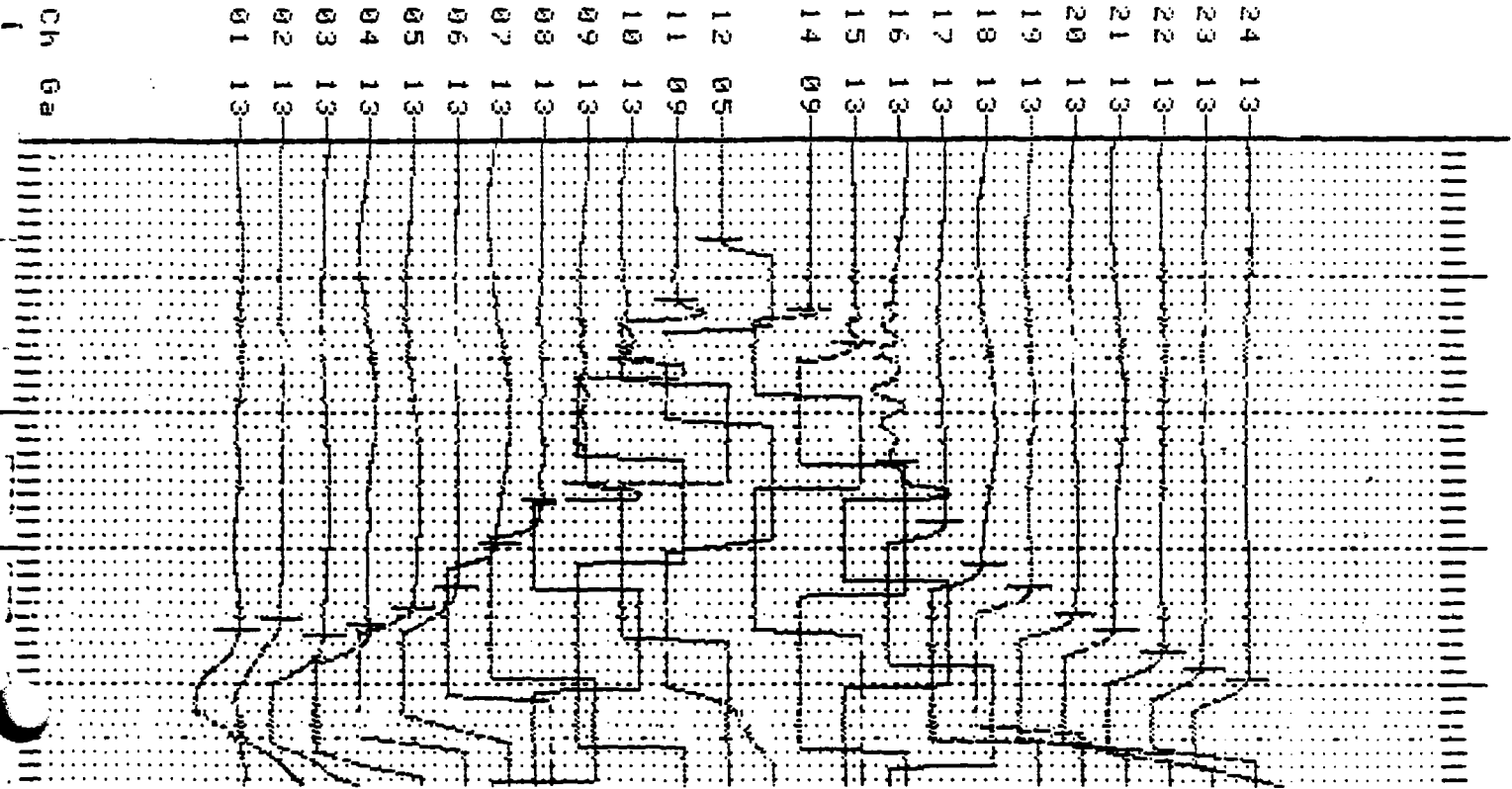
Date-910419

Time-16:36

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 100
04	0000	Layout start: 000
05	0000	Layout end: 400
06	0000	Profile No.: 3
07	0000	Note: 18292-04
08	0000	Operator: 00001

Record time: 200 ms
 Delay time: 0000 ms
 Shot pos.: 100
 Layout start: 000
 Layout end: 400
 Profile No.: 3
 Note: 18292-04
 Operator: 00001

ABEM Terraloc Seismic System Record-000342 Date-910419 Time-16:40
 Shot pos.: 200 Layout start: 000 Layout end: 400
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000342 Date-910419 Time-16:40

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 200
04	0000	Layout start: 000
05	0000	Layout end: 400
06	0000	Profile No.: 3
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

ABEM Terraloc Seismic System

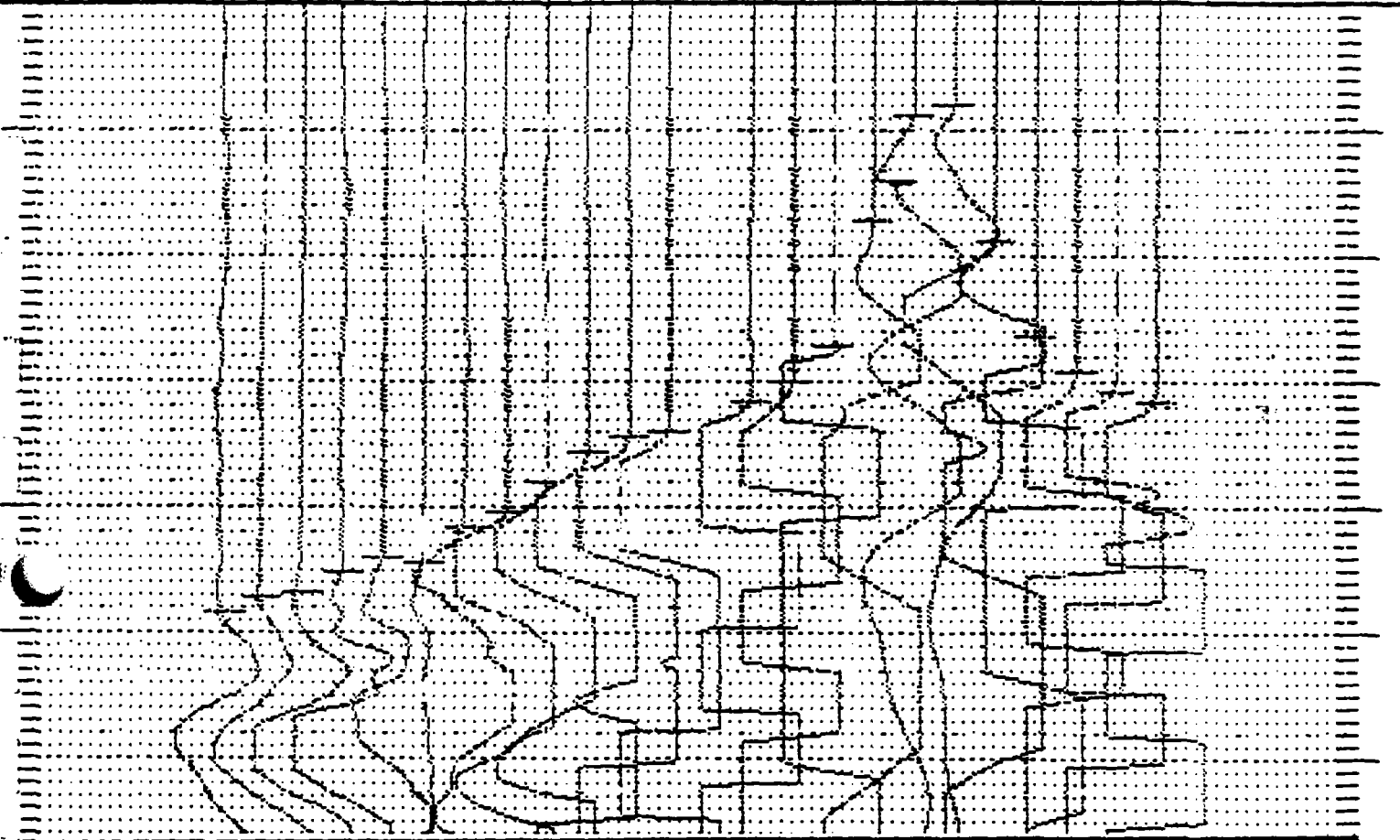
Shot pos.: 300 Layout start: 000 Layout end: 400

Profile No.: 3 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	14	15	16	17	18	19	20	21	22	23	24
Gs	13	13	13	13	13	13	13	13	12	12	12	12	11	09	09	06	03	03	06	08	09	11	11



Listing of markers: Record-000343 Date-910419 Time-16:46

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 300
04	0000	Layout start: 000
05	0000	Layout end: 400
06	0000	Profile No.: 3
07	0000	Note: 18292-04
08	0000	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S-M-H	TIME
4+00	1/2 KP	3'	2	345	M-H	
5+00				346		17:29
6+00				347		
7+00				348		
8+00	↓	↓		349	↓	

LINE H-H' (profile 3)

LOCATION Open field past Thompsons Lyndon, VT

JOB NO. 18292-04 TECHNICIAN FF/JB DATE 19 APR 91

SEISMOGRAPH NO. Agam 8224001 AMPLIFIER NO. _____

SPREAD LENGTH 400' FILTERS LOW AP HIGH

RECORD NUMBER _____ TO _____

STATION 8+00

N

W (E)

S

RECORDS CHECKED BY _____

RECORDS READ BY FF

N

W (E)

S

STATION 4+00

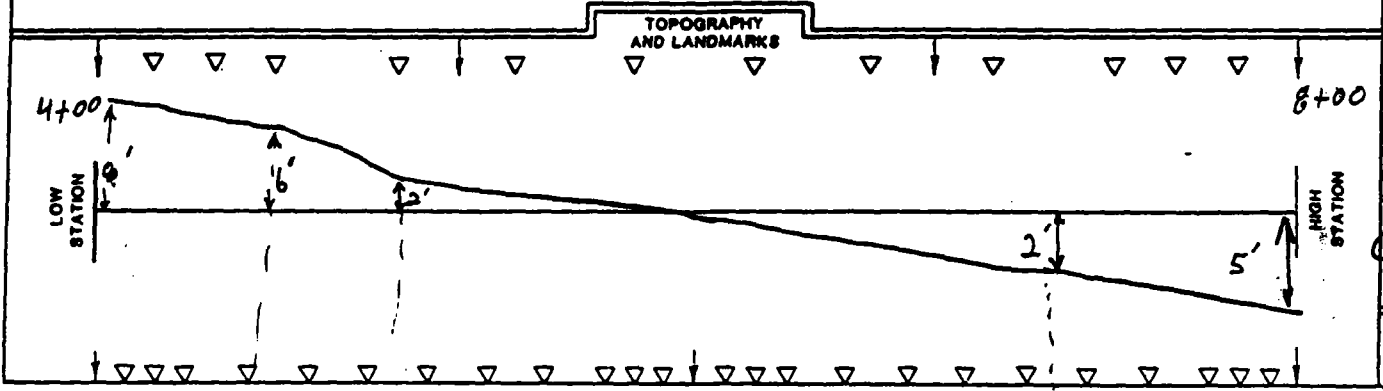
TOTAL CAPS INSTRUMENTATION LOCATED AT STATION _____

TOTAL POWDER

INCLUDE RESHOTS

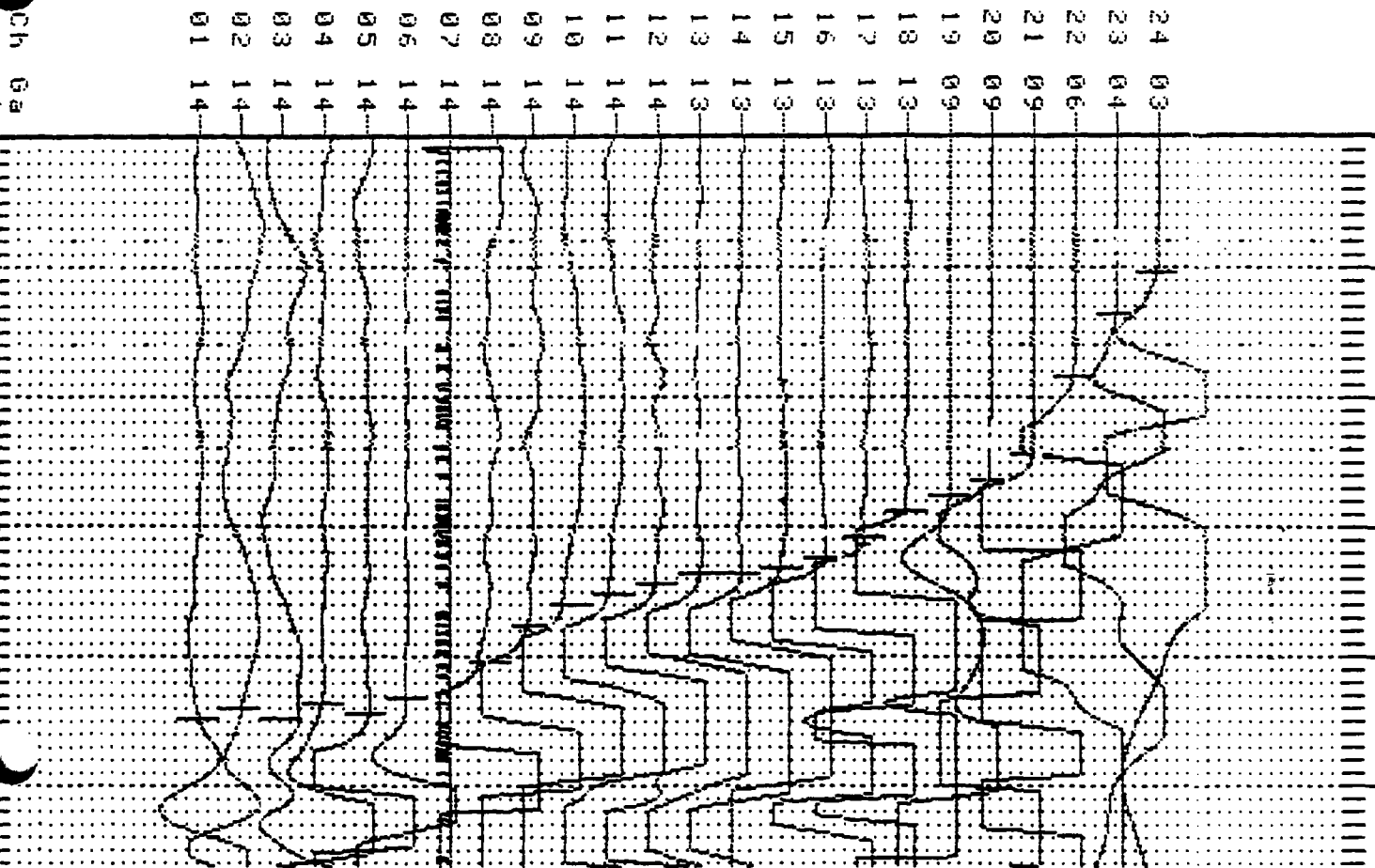
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

Dogleg towards B123



Shot pos.: 400 Layout start: 400 Layout end: 800
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000345 Date-910419 Time-17:25

Trace No	Marker time (ms)	Field notes
01	14	Record time: 200 ms
02	14	Delay time: 0000 ms
03	14	Shot pos.: 400
04	14	Layout start: 400
05	14	Layout end: 800
06	14	Profile No.: 3
07	14	Note: 18292-04
08	14	Operator: 00001
09	14	
10	14	
11	14	
12	14	
13	13	
14	13	
15	13	
16	13	
17	13	
18	13	
19	09	
20	09	
21	09	
22	06	
23	04	
24	03	

Shot pos.: 600 Layout start: 400 Layout end: 800

Profile No.: 3 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

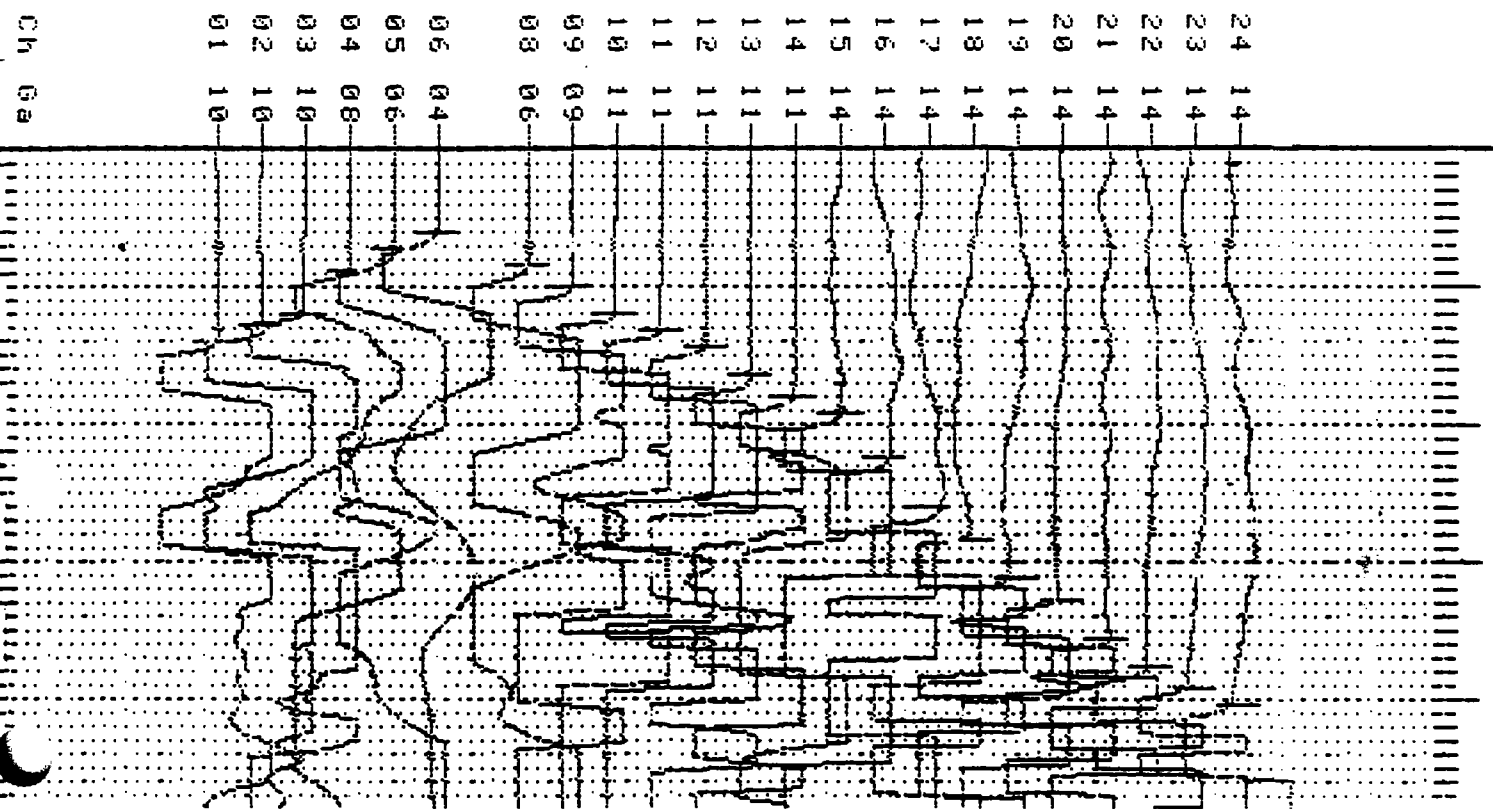
Ch	01	02	03	04	05	06	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
60	13	13	13	13	13	13	13	13	13	09	05	05	09	13	13	13	13	13	13	13	13	13	13



Listing of markers: Record-000347 Date-910419 Time-17:33

Trace No	Marker time (ms)	Field notes
01	444	Record time: 200 ms
02	444	Delay time: 0000 ms
03	444	Shot pos.: 600
04	444	Layout start: 400
05	444	Layout end: 800
06	444	Profile No.: 3
08	444	Note: 18292-04
09	444	Operator: 00001

Shot pos.: 700 Layout start: 400 Layout end: 800
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000348 Date-910419 Time-17:36

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 700
04	0000	Layout start: 400
05	0000	Layout end: 800
06	0000	Profile No.: 3
08	0000	Note: 18292-04
09	0000	Operator: 00001

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
8+00	1/3 KP	3'	4	355	S	9:14
9+00						
10+00				356		
11+00				357		9:45
12+00	✓	✓	✓	358	✓	10:01

LINE <u>H-H' (profile 3)</u>		
LOCATION <u>off Brown Farm Rd - Lyndon, VT</u>		
JOB NO. <u>18252-04</u>	TECHNICIAN <u>JB/FF</u>	DATE <u>27 APR 91</u>
SEISMOGRAPH NO. <u>ABRb 8724001</u>	AMPLIFIER NO. _____	
SPREAD LENGTH <u>400'</u>	FILTERS LOW <u>AP</u> HIGH _____	
RECORD NUMBER _____ TO _____		

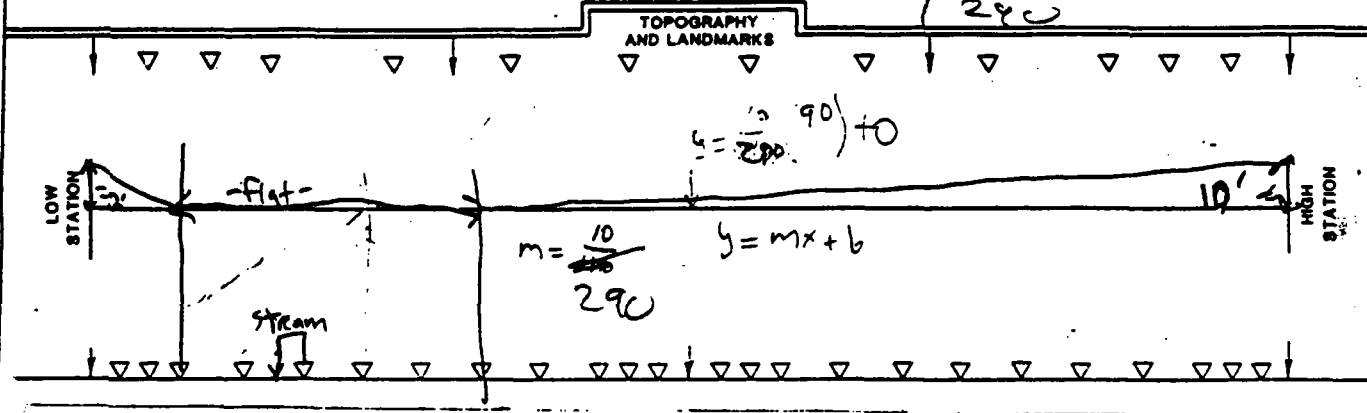
THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)
Clayey soil

TOTAL CAPS

TOTAL POWDER

INCLUDE RESHOTS

INSTRUMENTATION LOCATED AT STATION 10+00



12+00

STATION

N

W

S

RECORDS CHECKED BY

RECORDS READ BY

N

W

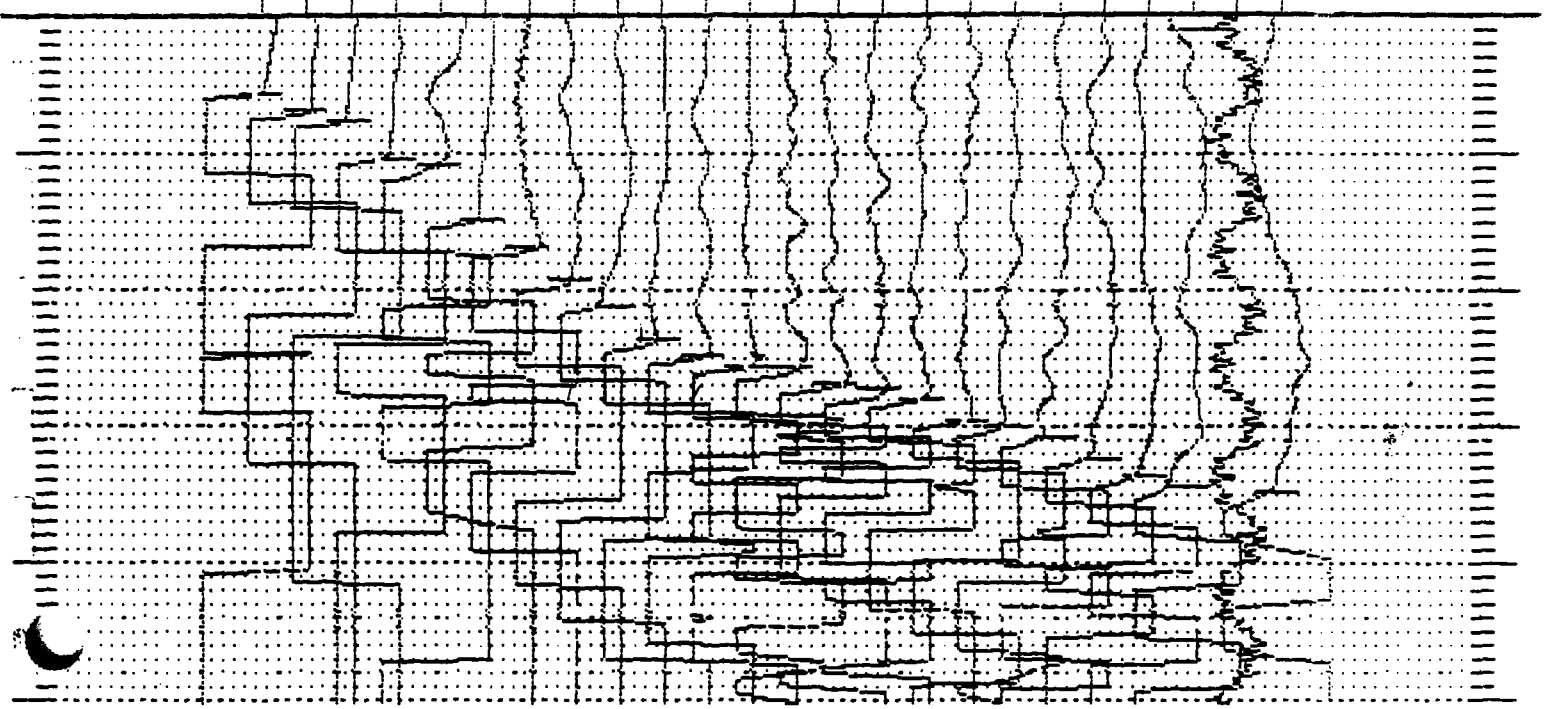
S

STATION

8+00

Shot pos.: 000 Layout start: 000 Layout end: 1200
 Profile No.: 3 Note: 10292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000355 Date-910422 Time-09:14

Trace No	Marker	time (ms)	Field notes
01	0	0	Record time: 200 ms
02	0	0	Delay time: 0000 ms
03	0	0	Shot pos.: 000
04	0	0	Layout start: 000
05	0	0	Layout end: 1200
06	0	0	Profile No.: 3
07	0	0	Note: 10292-04
08	0	0	Operator: 00001

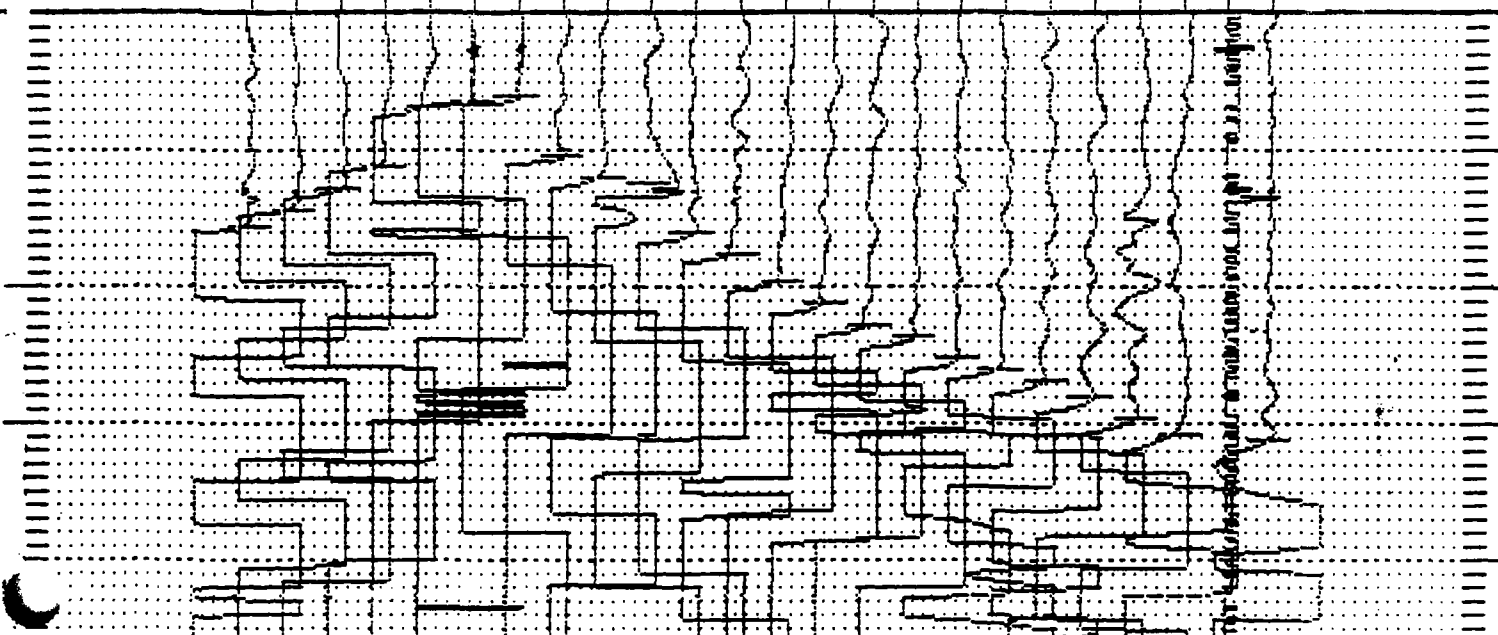
Shot pos.: 900 Layout start: 800 Layout end: 1200

Profile No.: 3 Note: 18292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

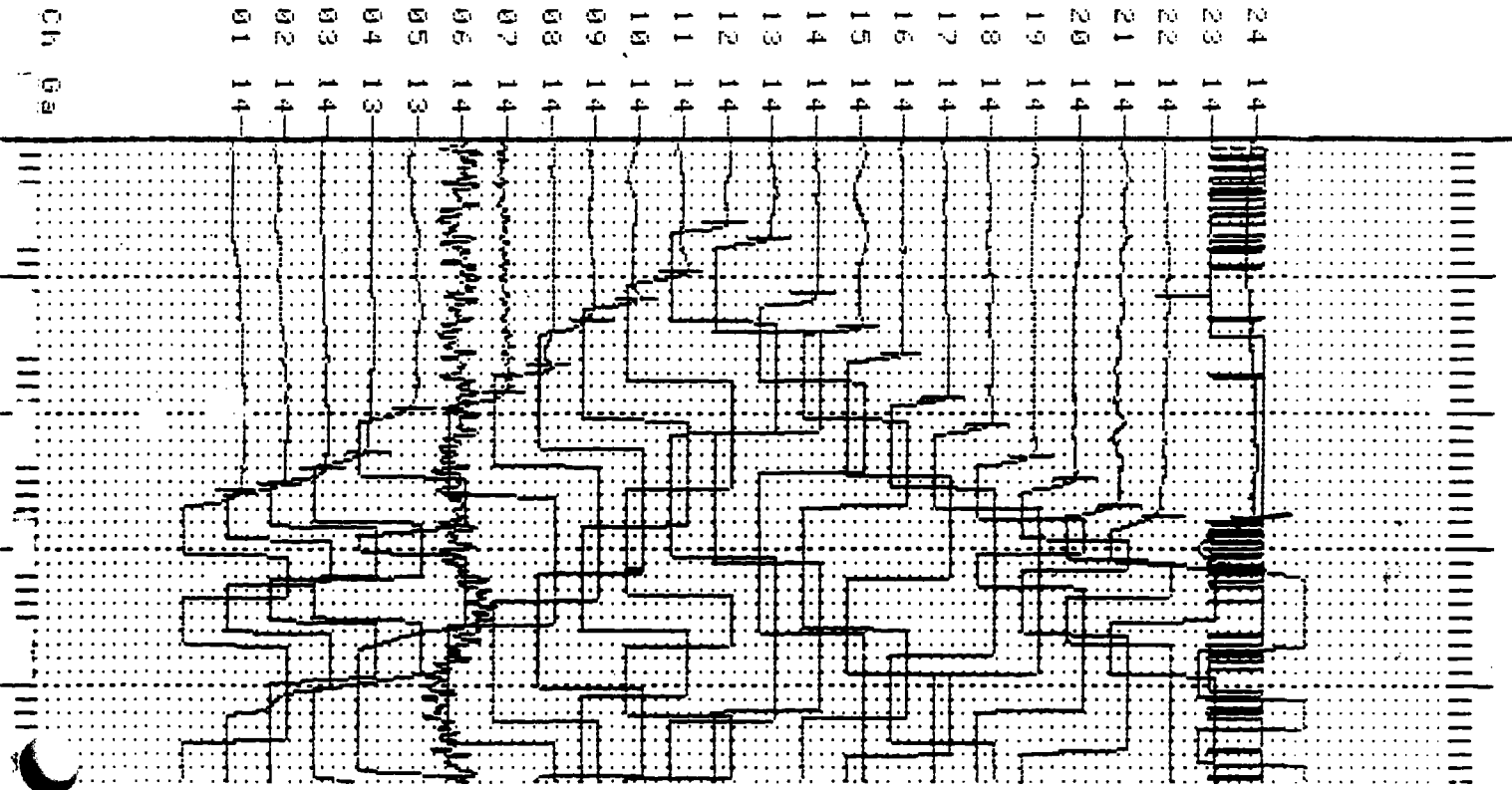
Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000356 Date-910422 Time-09:25

Trace No	Marker time (ms)	Field notes
01	0.000	Record time: 200 ms
02	0.000	Delay time: 0000 ms
03	0.000	Shot pos.: 900
04	0.000	Layout start: 800
05	0.000	Layout end: 1200
06	0.000	Profile No.: 3
07	0.000	Note: 18292-04
08	0.000	Operator: 00001
09	0.000	
10	0.000	
11	0.000	
12	0.000	
13	0.000	
14	0.000	
15	0.000	
16	0.000	
17	0.000	
18	0.000	
19	0.000	
20	0.000	
21	0.000	
22	0.000	
23	0.000	
24	0.000	

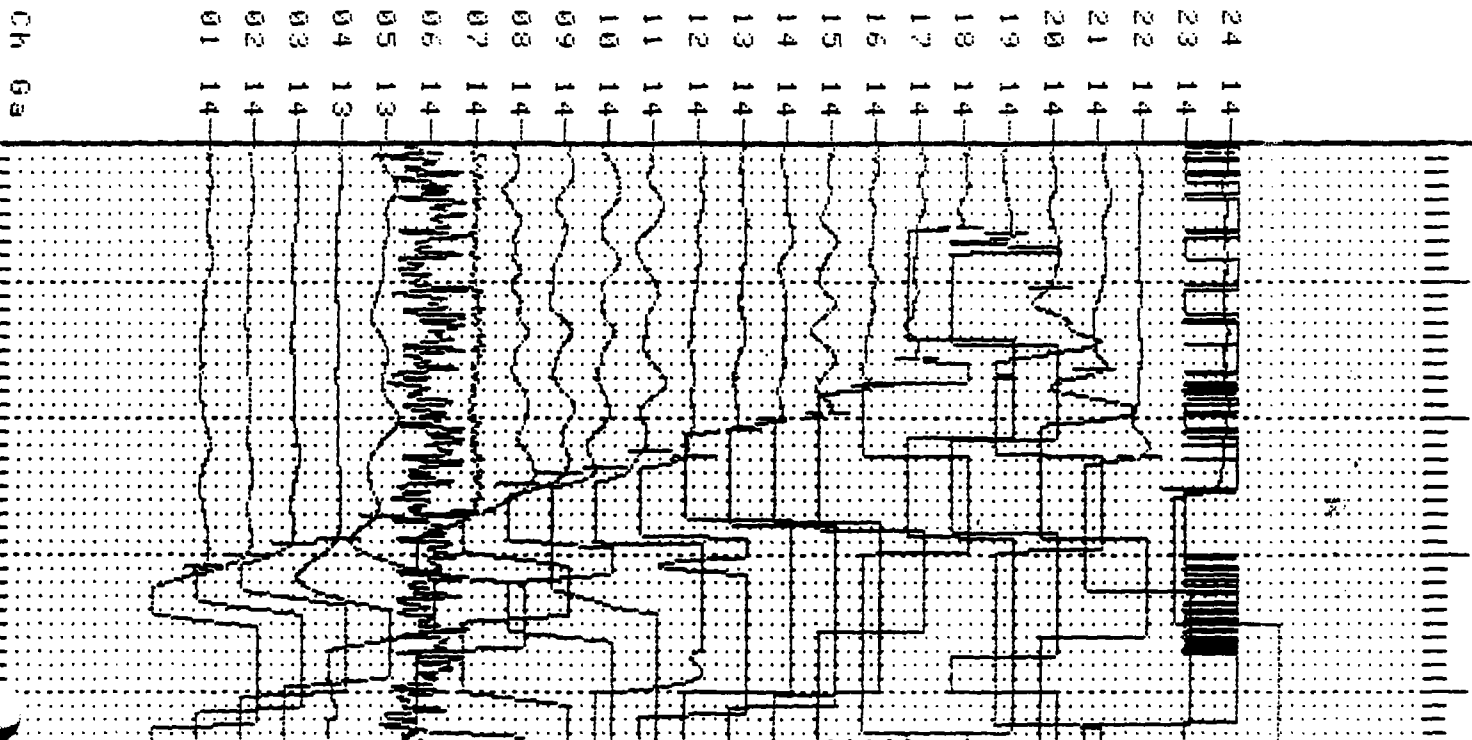
ABEM Terraloc Seismic System Record-000356 Date-910422 Time-09:33
 Shot pos.: 00701 Layout start: 300 Layout end: 1200
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000356 Date-910422 Time-09:33

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 9000701
04	0000	Layout start: 300
05	0000	Layout end: 1200
06	0000	Profile No.: 3
07	0000	Note: 18292-04
08	0000	Operator: 00001
09	0000	
10	0000	
11	0000	
12	0000	
13	0000	
14	0000	
15	0000	
16	0000	
17	0000	
18	0000	
19	0000	
20	0000	
21	0000	
22	0000	
23	0000	
24	0000	

ABEM Terraloc Seismic System Record-000357 Date-910422 Time-09:45
 Shot pos.: 1100 Layout start: 800 Layout end: 1200
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

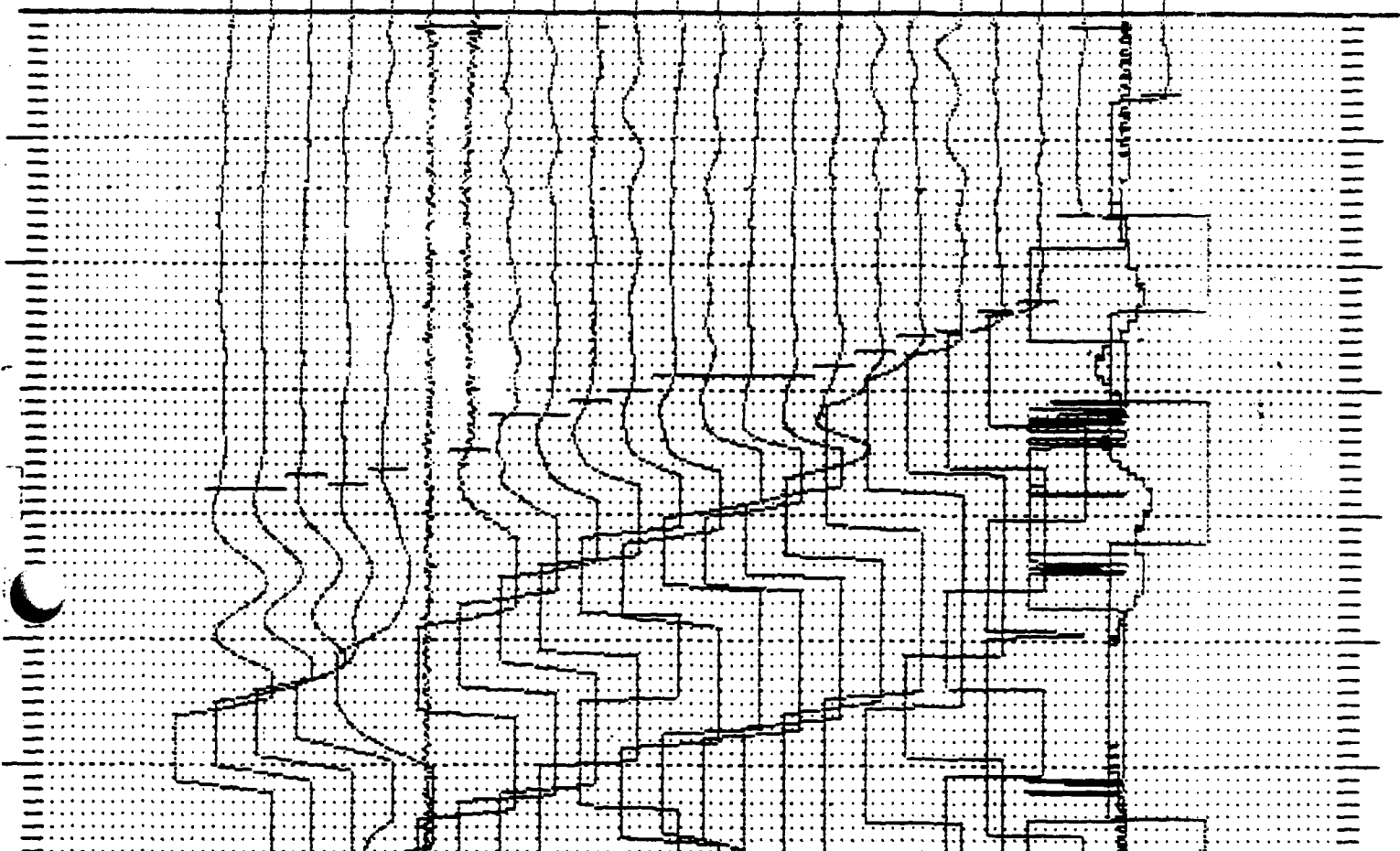


Listing of markers: Record-000357 Date-910422 Time-09:45

Trace No	Marker time (ms)	Field notes
01	0	Record time: 200 ms
02	0	Delay time: 0000 ms
03	0	Shot pos.: 1100
04	0	Layout start: 800
05	0	Layout end: 1200
06	0	Profile No.: 3
07	0	Note: 18292-04
08	0	Operator: 00001
09	0	
10	0	
11	0	
12	0	
13	0	
14	0	
15	0	
16	0	
17	0	
18	0	
19	0	
20	0	
21	0	
22	0	
23	0	
24	0	

TREN Terraloc Seismic System Record-000356 Date-910422 Time-10:01
 Shot pos.: 1200 Layout start: 800 Layout end: 1200
 Profile No.: 0 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000356 Date-910422 Time-10:01

Trace No	Marker	time (ms)	Field notes																				
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24

SHOT HOLE	POWDER	DEPTH	DISK NO.	FILE NAME	SOIL S - M - H	TIME
12+00	1/3 KP	3'	4	359	S	10:41
13+00				360		10:53
14+00				361		11:05
15+00				362		11:14
16+00	↓	↓	↓	363	↓	

LINE H-H (Profile 3)

LOCATION off Brown Farm Rd - Lyndon VT

JOB NO. 18292-04 TECHNICIAN JB/FF DATE 22 Apr 91

SEISMOGRAPH NO. ABEM 8224001 AMPLIFIER NO. _____

SPREAD LENGTH, 400' FILTERS LOW AP HIGH

RECORD NUMBER _____ TO _____

16 +00
STATION
N
W
S

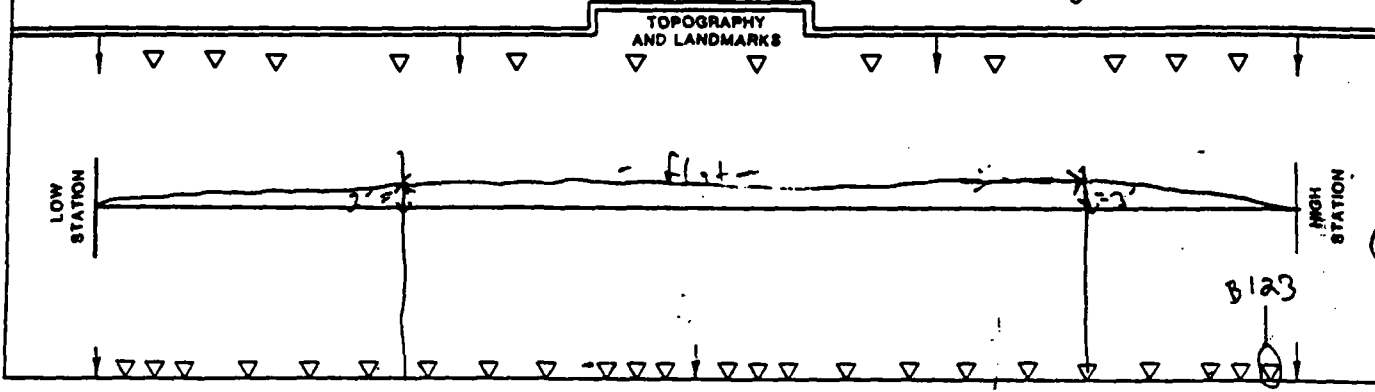
TOTAL CAPS INSTRUMENTATION LOCATED AT STATION 11+00

TOTAL POWDER

INCLUDE RESHOTS

THE SPACE BELOW IS FOR LINE INTERSECTIONS, BORING LOCATIONS, GROUND CONDITIONS (VISIBLE OUTCROP, PLOWED FIELD, FILL AREA, ROCKY, SANDY, CLAYEY, WET, DRY, ETC.)

H4 DAT



RECORDS CHECKED BY

RECORDS READ BY

N
E
S
STATION
10 +00

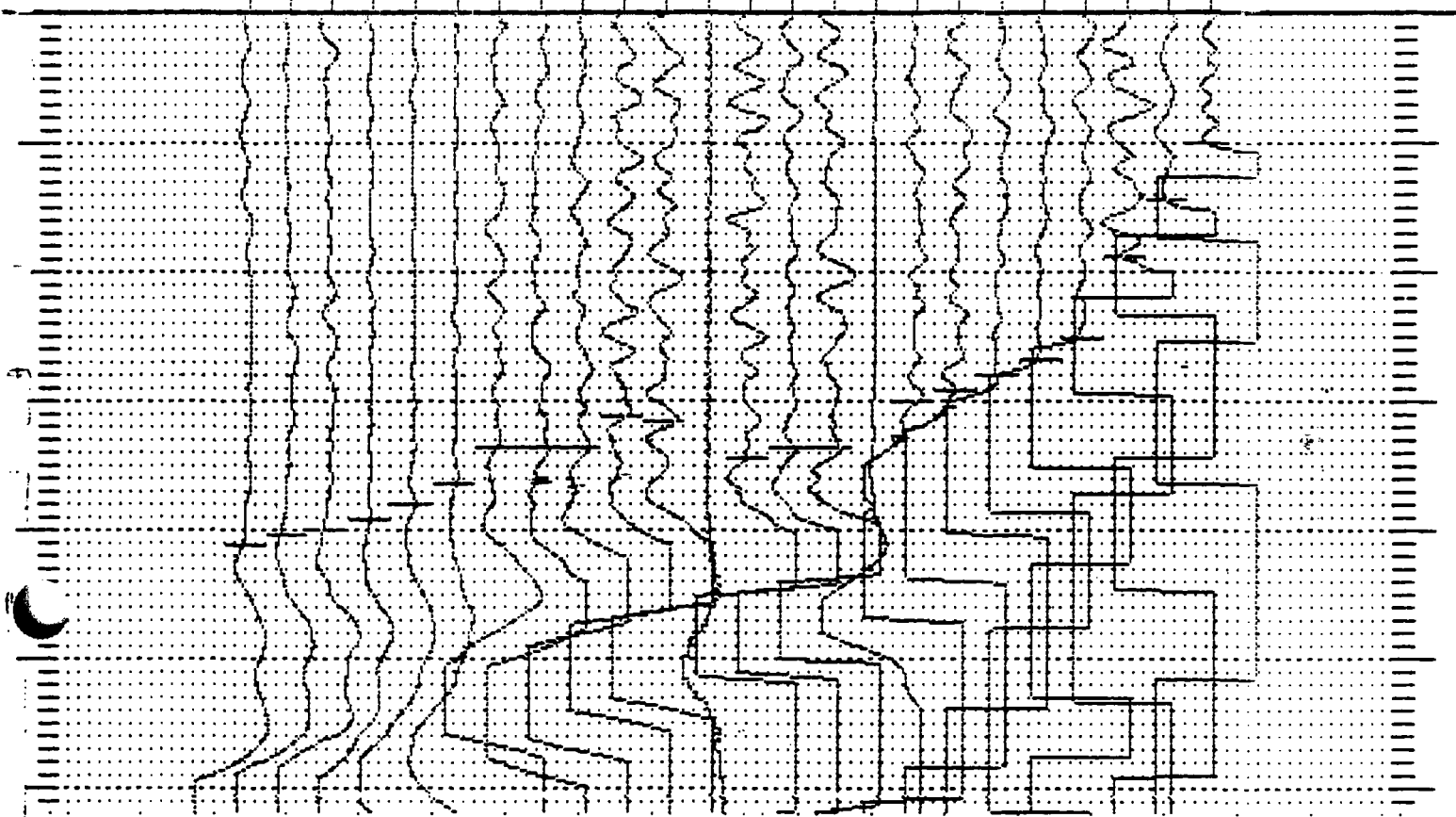
Shot pos.: 1200 Layout start: 1200 Layout end: 1600

Profile No.: 3 Note: 10292-04 Operator: 00001

Record time: 200 ms Delay time: 0000 ms Analog filter: Off

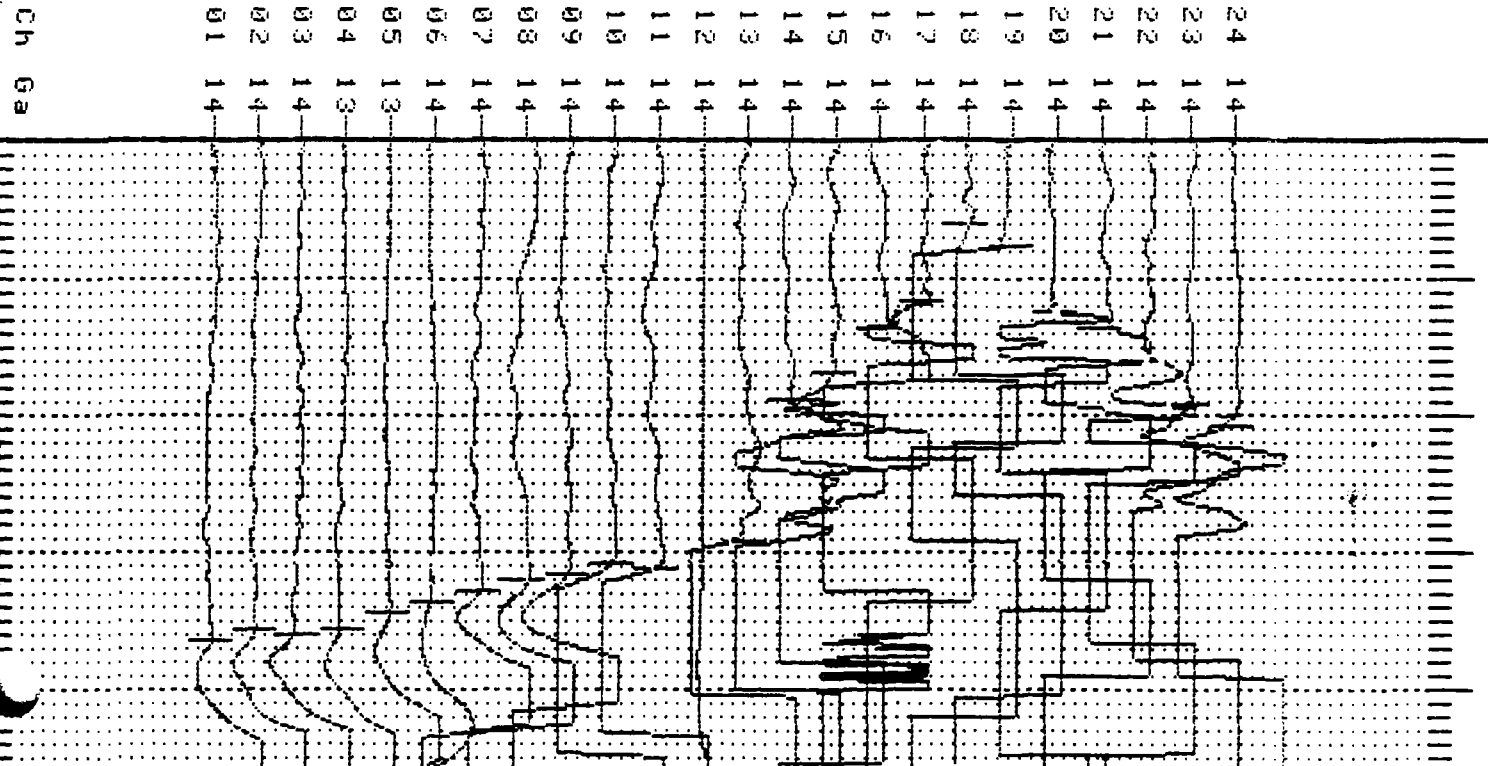
Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Gs	14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers:			Record-000359	Date-910422	Time-10:41
Trace No	Marker	time (ms)	Field notes		
01	00000	00000	Record time: 200 ms		
02	00000	00000	Delay time: 0000 ms		
03	00000	00000	Shot pos.: 1200		
04	00000	00000	Layout start: 1200		
05	00000	00000	Layout end: 1600		
06	00000	00000	Profile No.: 3		
07	00000	00000	Note: 10292-04		
08	00000	00000	Operator: 00001		

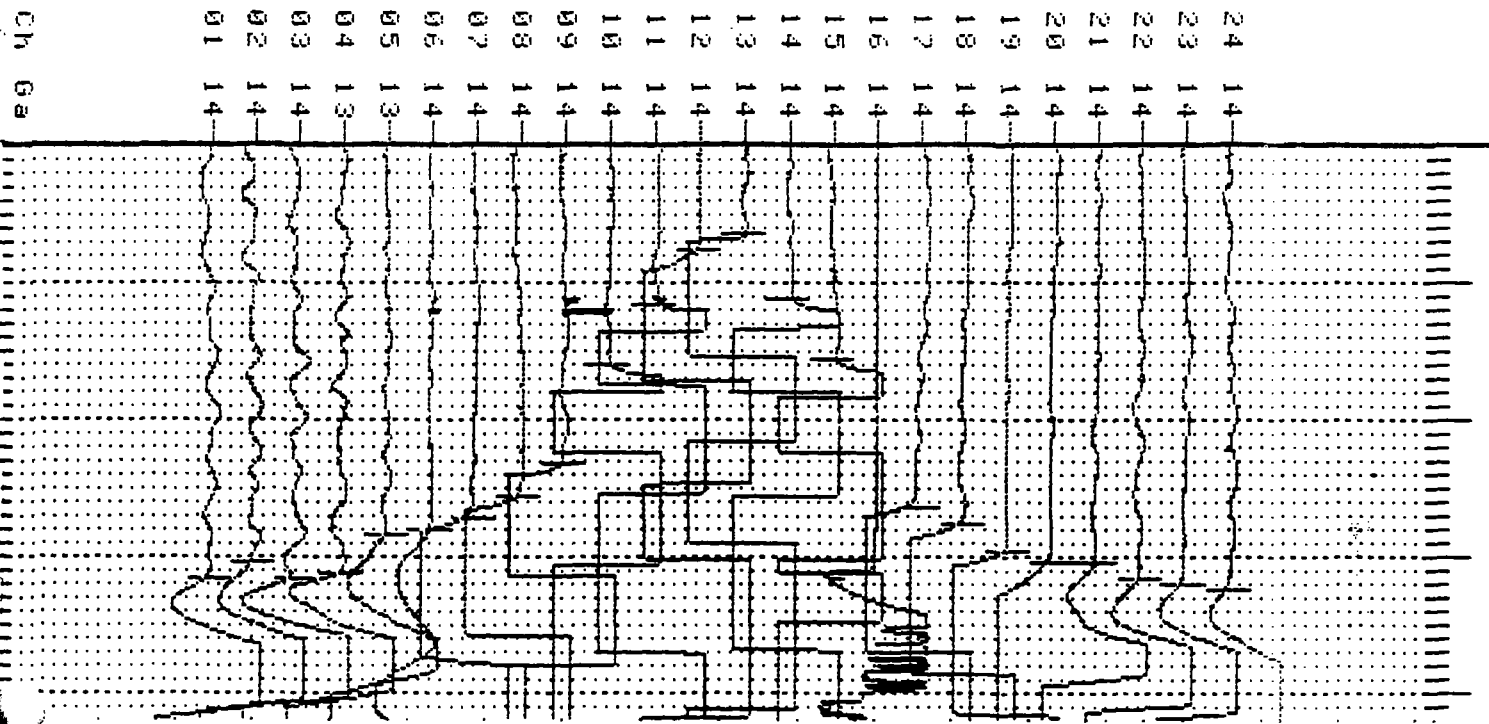
Shot pos.: 1300 Layout start: 1200 Layout end: 1600
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000360 Date-910422 Time-10:53

Trace No	Marker time (ms)	Field notes																						
01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	
14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14

Shot pos.: 1400 Layout start: 1200 Layout end: 1600
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



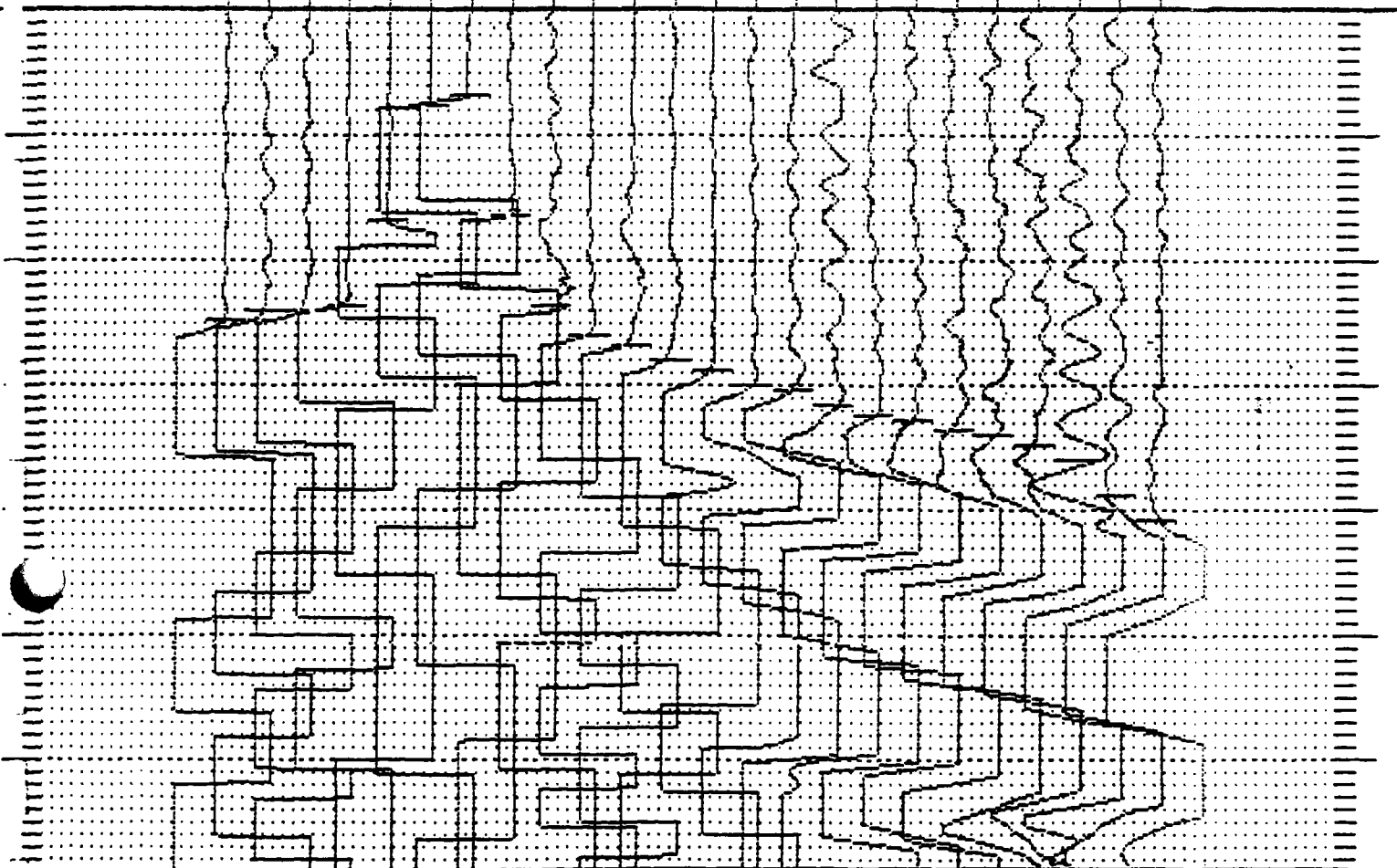
Listing of markers: Record-000361 Date-910422 Time-11:05

Trace No	Marker time (ms)	Field notes
01	1400	Record time: 200 ms
02	1400	Delay time: 0000 ms
03	1400	Shot pos.: 1400
04	1400	Layout start: 1200
05	1400	Layout end: 1600
06	1400	Profile No.: 3
07	1400	Note: 18292-04
08	1400	Operator: 00001
09	1400	
10	1400	
11	1400	
12	1400	
13	1400	
14	1400	
15	1400	
16	1400	
17	1400	
18	1400	
19	1400	
20	1400	
21	1400	
22	1400	
23	1400	
24	1400	

ABEM Terraloc Seismic System

ABEM Terraloc Seismic System Record-000362 Date-910422 Time-11:14
 Shot pos.: 1500 Layout start: 1200 Layout end: 1600
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001

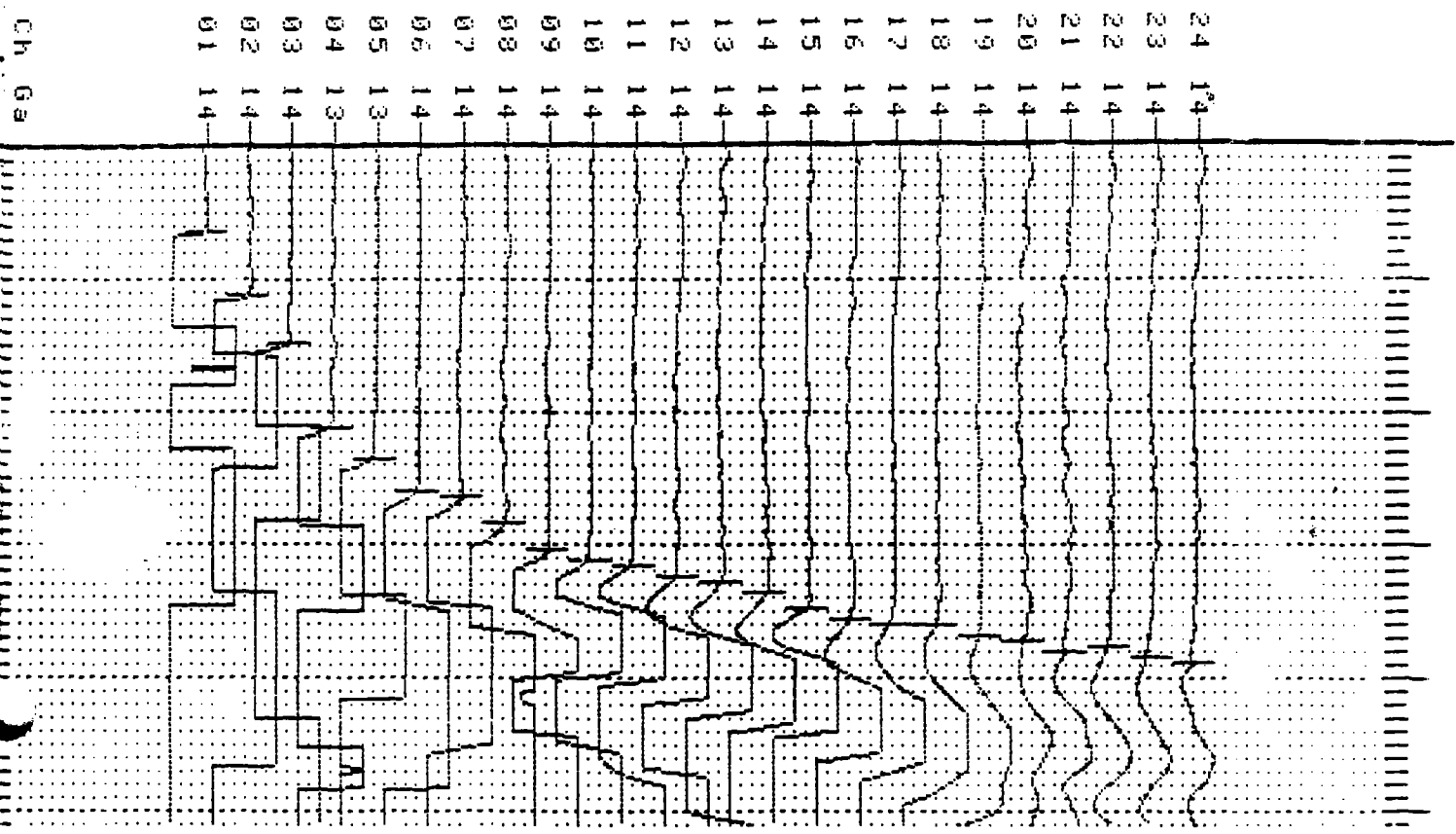
Ch	01	02	03	04	05	06	07	08	09	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24
Ge	14	14	14	13	13	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14



Listing of markers: Record-000362 Date-910422 Time-11:14

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1500
04	0000	Layout start: 1200
05	0000	Layout end: 1600
06	0000	Profile No.: 3
07	0000	Note: 18292-04
08	0000	Operator: 00001

ABEM Terraloc Seismic System Record-000363 Date-910422 Time-11:22
 Shot pos.: 1600 Layout start: 1200 Layout end: 1600
 Profile No.: 3 Note: 18292-04 Operator: 00001
 Record time: 200 ms Delay time: 0000 ms Analog filter: Off
 Display mode: Normal, Low-cut: Off Hz High-cut: Off Hz Shots: 001



Listing of markers: Record-000363 Date-910422 Time-11:22

Trace No	Marker time (ms)	Field notes
01	0000	Record time: 200 ms
02	0000	Delay time: 0000 ms
03	0000	Shot pos.: 1600
04	0000	Layout start: 1200
05	0000	Layout end: 1600
06	0000	Profile No.: 3
07	0000	Note: 18292-04
08	0000	Operator: 00001