Appendix G

Seismic Survey Results

HAGER-RICHTER
GEOSCIENCE, INC.

SEISMIC REFRACTION SURVEY
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

Prepared for:

AECOM
Two City Center, Suite 200
Portland, Maine 04101

Prepared by:

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File 19RG66A
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File 19RG66A

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RE: Seismic Refraction Survey
Garfield Avenue Group Sites
Jersey City, New Jersey

Dear Mr. Schuele:

In this report, we summarize the results of a seismic refraction survey conducted by Hager-Richter Geoscience, Inc. (HRGS) in support of a hydrogeology investigation being conducted by AECOM of the Garfield Avenue Group (GAG) Sites in Jersey City, New Jersey in November-December 2021. The scope of work and areas of interest were specified by AECOM.

INTRODUCTION

The site is a former industrial site located in Jersey City, New Jersey. The site is bounded by Garfield Avenue to the west, the Hudson-Bergen Light rail to the north, Pacific Avenue to the east, and Cavent Point Avenue to the south. Figure 1 shows the general location of the Site. AECOM required a seismic refraction survey determine the depth and configuration of bedrock across the site.

Seismic data were acquired along twelve (12) transects. The locations of the seismic refraction lines are shown in Plate 1. Bedrock in the study area was identified as diabase on the west side of the site and sandstone/siltstone from the Stockton and Lockatong formations for the central and eastern portions of the site. Based on borings provided by AECOM, bedrock is present at a depth of about 6 feet on the west side and at about 120 feet on the east of the site.

OBJECTIVE

The objective of the seismic refraction survey was to determine the depth and configuration of the bedrock surface in the accessible portions of the specified area of interest at the site.

THE SURVEY

HRGS personnel conducted the geophysical survey on November 22-24, 29, 30, December 1-3 and 6, 2021. José Carlos Cambero Calzada, P.G., Amanda Fabian, P.G., Alexis Martinez, Mikko Aarnio and Justin Covert of HRGS, conducted the seismic refraction survey. The project was coordinated with Mr. Schuele and Mr. William Spronz, also of AECOM. Preliminary results for the survey were submitted to AECOM on January 24, 2022. Original data and field notes reside in the HRGS files and will be retained for a minimum of three years.

The geophysical survey was conducted using the seismic refraction method. Seismic refraction data were acquired twelve (12) transects identified as Seismic Lines 1, 2, 3, 4, 5A, 5B, 6, 7, 8A, 8B, 8C and 9 totaling 9,170 feet. The locations of the seismic lines are shown in Plate 1. The positions of the start, middle and end points of the seismic transects were surveyed with a hand-held GPS system and their locations were superimposed on a site plan provided by AECOM. Surface elevations were taken from site plans provided by AECOM. Surface elevation along the seismic lines varies between about 10 and 17 feet above sea level.

EQUIPMENT AND PROCEDURES

The seismic refraction survey was conducted using our 48-channel seismograph (two 24-channel Geometrics Geodes) coupled to 48 14-Hz geophones. Geophone spacing of 10 was used for the seismic lines. A PEG – 40Kg Propelled Energy Generator mounted on a vehicle was used as the energy source. Between six and seven shot points were used per seismic spread - three located internal to the spread, one at each end of the spread, and offset shots located in-line but outside of each end of the geophone spread, where access allowed. The seismograph is connected to, and controlled by, a notebook PC computer. The software provides for the acquisition, display, plotting, filtering, and storage of seismic data.

The seismic refraction data were interpreted with the Generalized Reciprocal Method (GRM) For the GRM interpretation, we used IXRefraX, commercially licensed software from Interpex Limited. GRM allows the depth to bedrock to be determined for *each* geophone location, rather than only at the shot points as for most other methods, and it is less sensitive to the presence of dipping interfaces and hidden layers. The GRM method requires at least one shot at each end of the cable. This configuration provides reversed profiles.

LIMITATIONS OF THE METHOD

IN GENERAL, THE ACCURACY (STANDARD DEVIATION) OF THE APPARENT DEPTHS OF RELATIVELY COMPETENT BEDROCK DETERMINED BY THE SEISMIC REFRACTION METHOD IS ABOUT ± 10% OF THE APPARENT DEPTH OF BEDROCK, OR ± 2 FEET, WHICHEVER IS GREATER. THE BEDROCK MODEL SHOWN AS A PROFILE OR LISTED AS TABULAR DATA SHOULD NOT BE USED SOLELY FOR CONTRACT BEDROCK REMOVAL QUANTITIES.

As with all geophysical methods, the seismic refraction method assumes that the local geology is relatively uncomplicated. In particular, the seismic refraction method assumes that interfaces between geologic materials correlate with sharp increases in seismic velocity and that the interfaces between geologic units are relatively flat lying. The method is not very sensitive to lateral variations within layers, and relatively subtle features such as fracture zones within bedrock generally cannot be detected unless there is a topographic expression of the feature and/or a significant drop in bedrock velocity. The accuracy of the method is degraded in areas with strong topographic relief and/or where the interfaces have apparent dips greater than about 20°. ***In general, the accuracy of depths determined is estimated to be about 10% or 2 feet, whichever is greater. The results of this survey should not be relied upon for contract bedrock removal quantities.***

Where two materials do not exhibit contrasting velocities, or where velocities gradually increase with depth, a clear refracted signal is not generated, and the seismic refraction method cannot be used to distinguish the two materials. In some cases, the "geophysical contact" between materials with contrasting velocities does not correlate exactly with the "geologic contact." For example, where a highly weathered bedrock is overlain by a dense material such as till, the velocity range of the weathered bedrock might overlap or approach the velocity range of the till, and the two materials cannot be distinguished seismically. In such cases, the depth determined by seismic refraction is the depth of *competent* bedrock, which might be located at some depth below the geologic contact.

The depth relations of the water table and bedrock may constitute a significant problem for the seismic refraction technique. This problem is that of a "blind layer." A blind layer occurs where the thickness of the saturated overburden is less than about half the depth of bedrock. In such cases, the water-saturated material immediately above bedrock is "blind" in the sense that no refracted seismic energy from it will be received as a first arrival of seismic energy, and all methods used to reduce the seismic data to determine the depth of bedrock, the objective of this survey, use *only* first arrivals. Thus, the saturated layer will not be detected where it is close to bedrock, and most methods of seismic data reduction will indicate that bedrock is considerably shallower than it is. Although GRM, the method used by HRG to reduce the seismic refraction data, does not use first arrivals through the water saturated zone (because there is none to use) in such cases, GRM determines the depth of bedrock correctly by using the *average* velocity of the saturated and unsaturated zones.

A "hidden layer" occurs where a lower velocity material underlies a higher velocity material, a common situation in stratified sediments. An example is where sands are present under layers of clay or till. As in the case of a "blind layer," most methods of seismic refraction data reduction will indicate that bedrock is deeper than it is if a hidden layer is present but not detected. Internal tests in the seismic refraction data reduction software that we use (IXRefraX by Interpex) indicate that such layers might be present, and an average velocity of the two layers is used to determine the depth of bedrock.

RESULTS

General. The seismic refraction survey consisted of twelve seismic lines, identified as Seismic Lines 1, 2, 3, 4, 5A, 5B, 6, 7, 8A, 8B, 8C and 9. The locations of the seismic lines are shown in Plate 1. The results of the survey are shown in profile form in Figures 2-11 and are listed in Table 1.

Data Quality. The quality of the seismic refraction data ranges from fair to very good. We note that most of the seismic data were negatively impacted by traffic along Garfield and Pacific Avenues and ongoing construction activities at the site. A measure of the accuracy of the data can be obtained by comparing the results at seismic line intersections or by comparing the seismically determined depths with depths in borings that intersect bedrock. The locations and bedrock depths based on the information from test borings were provided by AECOM. Sixteen Seismic Line intersections were also available for the subject site.

As reported in Table 2A, the average and standard deviation of the seismically determined bedrock depth differences at seismic line intersections are 5.7% and 4.7% ft, respectively. Also, as shown in Table 2B, the average and standard deviation of the differences between the seismically determined bedrock depths and the depths of bedrock from nearby borings are 11% and 9%, respectively. We note that some of the borings used for quality control were somewhat far from the seismic lines, and those contributed negatively to the average. As noted above, the depth determined by seismic refraction is the depth of competent bedrock, which might be located at a depth somewhat below the depth of refusal. As indicated in the limitations section, the accuracy of depths determined is estimated to be in general about 10% or 2 feet, whichever is greater. In this case, the accuracy is within the typical levels.

Interpretation of Velocities. Figures 2-11 show the seismic refraction results. Materials with three distinct velocity ranges were detected. The upper material exhibits a compressional wave velocity range of about 1,000 feet per second (fps) to 2,000 fps and is interpreted to consist of unsaturated soils. The middle layer exhibits a compressional wave velocity range of about 3,400 feet per second (fps) to 7,200 fps and is interpreted to consist of partially saturated/saturated soils/hard till. The bottommost material exhibits a compressional wave velocity range of about 8,100 feet per second (fps) to 25,800 fps and is interpreted to consist of relatively competent sandstone/siltstone to the lower end, and diabase at the higher end. Plate 2 shows a color bedrock compressional wave velocity distribution plot for the subject site. In general, higher velocity

values (orange-red) correspond to locations where diabase is present, and the lower velocities (yellow-green-blue) correspond to locations where sedimentary rock is present. The inferred contact between the diabase (igneous rock) and the sedimentary rock, based on the change in seismic velocity and bedrock description included in boring logs provided by AECOM is shown in Plate 2.

Bedrock Depths and Configuration. As indicated above, the results of the seismic refraction survey are shown in profile form in Figures 2-11 and are listed in Table 1. The depth of competent bedrock varies between 25 and 133 feet below ground surface, with increasing depth to the east. The elevation of competent bedrock in the locations surveyed varies between approximately -10 feet and -121feet, for an apparent relief of 111 feet.

Plates 3 and 4 show color contour plots of bedrock elevations and depths, respectively. The surfaces were generated based on the seismic refraction data and information from borings installed by AECOM and others. The contours shown represent non-unique models for bedrock depth/elevation (i.e., different valid conceptual models can be developed to fit the data set), and the elevation of competent bedrock at any particular location may differ significantly from that shown.

CONCLUSIONS

Based on the seismic refraction survey conducted for AECOM by Hager-Richter Geoscience, Inc at the Garfield Avenue Group Sites in Jersey City, New Jersey in 2021, we conclude the following:

- The depth of competent bedrock varies between approximately 25 and 133 feet below ground surface and deepens to the east.

- Bedrock elevation in the area surveyed varies between -10 feet and -121 feet, an apparent relief of about 111 feet.

- The approximate contact between diabase and sedimentary rock was determined based on the velocity of compressional waves.

LIMITATIONS ON USE OF THE REPORT

This Report was prepared for the exclusive use of AECOM and its client (collectively Client). No other party shall be entitled to rely on this Report or any information, documents, records, data, interpretations, advice or opinions given to Client by Hager-Richter Geoscience, Inc. (HRGS) in the performance of its work. The Report relates solely to the specific project for which HRGS has been retained and shall not be used or relied upon by Client or any third party for any variation or extension of this project, any other project or any other purpose without the

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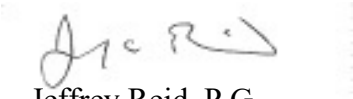
HRGS has used reasonable care, skill, competence, and judgment in the preparation of this Report consistent with professional standards for those providing similar services at the same time, in the same locale, and under like circumstances. Unless otherwise stated, the work performed by HRGS should be understood to be exploratory and interpretational in character and any results, findings or recommendations contained in this Report or resulting from the work proposed may include decisions which are judgmental in nature and not necessarily based solely on pure science or engineering. It should be noted that our conclusions might be modified if subsurface conditions were better delineated with additional subsurface exploration including, but not limited to, test pits, soil borings with collection of soil and water samples, and laboratory testing.

Except as expressly provided in this limitations section, HRGS makes no other representation or warranty of any kind whatsoever, oral or written, expressed or implied; and all implied warranties of merchantability and fitness for a particular purpose, are hereby disclaimed.

If you have any questions or comments on this report, please contact us at your convenience. It has been a pleasure to work with you on this project.

Sincerely yours,
HAGER-RICHTER GEOSCIENCE, INC.

José Carlos Cambero Calzada, P.G.
Senior Geophysicist



Jeffrey Reid, P.G.
Owner / Principal Geophysicist

Attachments: Tables 1 - 2
Figures 1 - 11
Plates 1 - 4

Table 1 - Seismic Refraction Results

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
1	611129.8	683932.5	0	24754	65.1	12	-53.1
1	611136.6	683926.2	10	24754	65.1	12.8	-52.4
1	611143.4	683919.9	20	24754	63.7	13.5	-50.2
1	611150.2	683913.6	30	24754	62.3	14.3	-48
1	611157	683907.2	40	24754	61.2	15	-46.2
1	611164.4	683900.1	50	24754	60.1	14.8	-45.3
1	611171.9	683892.9	60	24754	57.4	14.6	-42.8
1	611179.4	683885.8	70	24754	54.8	14.4	-40.3
1	611186.9	683878.7	80	24754	52.1	14.2	-37.8
1	611194.3	683871.6	90	24754	49.4	14	-35.3
1	611201.6	683864.6	100	15959	49.7	14	-35.7
1	611208.9	683857.6	110	17451	43.7	14.1	-29.6
1	611216.2	683850.7	120	17451	40.1	14.1	-26
1	611223.4	683843.8	130	17451	40.5	14.2	-26.3
1	611230.7	683836.8	140	17451	40.7	14.2	-26.5
1	611237.9	683829.9	150	17451	38.7	14.3	-24.4
1	611245.2	683822.9	160	17451	41.4	14.3	-27.1
1	611252.5	683816.1	170	17451	40.7	14.3	-26.4
1	611259.8	683809.1	180	17451	42.2	14.4	-27.8
1	611267	683802.2	190	17451	43.6	14.4	-29.1
1	611274.2	683795.2	200	17451	47.1	14.5	-32.6
1	611281.5	683788.3	210	17451	51.8	14.5	-37.3
1	611288.8	683781.4	220	17451	52.6	14.6	-38
1	611296.1	683774.4	230	17504	50.6	14.6	-36
1	611303.3	683767.5	240	17529	55.1	14.7	-40.5
1	611310.6	683760.6	250	17529	57.1	14.7	-42.4
1	611317.8	683753.6	260	17529	55.3	14.7	-40.5
1	611325.1	683746.8	270	17529	56.2	14.8	-41.4
1	611332.4	683739.8	280	17529	55.8	14.8	-41
1	611339.6	683732.9	290	16805	55	14.9	-40.1
1	611346.9	683725.9	300	16805	49.3	14.9	-34.4
1	611354.1	683719	310	16805	49.4	15	-34.4
1	611361.4	683712.1	320	16805	47.3	15	-32.3
1	611369.1	683705.8	330	16805	49.4	14.6	-34.8
1	611376.6	683699.4	340	16805	48.3	14.2	-34

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
1	611384.2	683693.1	350	16805	50.2	13.9	-36.3
1	611391.8	683686.7	360	16805	54.3	13.5	-40.8
1	611399.4	683680.3	370	16805	56.9	13.1	-43.8
1	611407.1	683673.9	380	15367	70.7	12.7	-57.9
1	611414.6	683667.6	390	15367	74	12.4	-61.6
1	611422.2	683661.2	400	13643	74.2	12	-62.2
1	611429.5	683654.3	410	13643	76.3	12	-64.3
1	611436.7	683647.3	420	13643	78.4	12	-66.4
1	611443.9	683640.4	430	13643	82.2	12	-70.2
1	611451.2	683633.4	440	13643	82.3	12	-70.3
1	611458.4	683626.4	450	13643	76	12	-64
1	611465.6	683619.5	460	13643	76.2	12	-64.2
1	611472.8	683612.6	470	14311	82.9	12	-70.9
1	611480.1	683605.6	480	15049	91.2	12	-79.2
1	611487.3	683598.6	490	15049	91.4	12	-79.4
1	611494.5	683591.7	500	15049	91.6	12	-79.6
1	611501.8	683584.7	510	15049	91.9	12	-79.9
1	611509	683577.8	520	15049	92.1	12	-80.1
1	611516.2	683570.8	530	15049	87.8	12	-75.8
1	611523.4	683563.8	540	15049	84.2	12	-72.2
1	611530.6	683556.9	550	14851	83.8	12	-71.8
1	611537.9	683549.9	560	16629	66.5	12	-54.5
1	611545.1	683542.9	570	16629	63.1	12	-51.1
1	611552.3	683536	580	16629	49.1	12	-37.1
1	611559.6	683529	590	16629	48.3	12	-36.3
1	611566.8	683522.1	600	16629	48.4	12	-36.4
1	611574	683515.1	610	16629	49	12	-37
1	611581.2	683508.1	620	16629	50.6	12	-38.6
1	611588.5	683501.2	630	16629	49.6	12	-37.6
1	611595.7	683494.2	640	16629	47	12	-35
1	611602.9	683487.4	650	16629	46.9	12.1	-34.8
1	611609.9	683480.6	660	17217	49.2	12.3	-36.9
1	611617	683473.8	670	17217	52.5	12.5	-40
1	611624.1	683467	680	17217	55.4	12.6	-42.7
1	611631.1	683460.2	690	17217	60.2	12.8	-47.3
1	611638.2	683453.4	700	17217	58.6	13	-45.6
1	611645.4	683446.4	710	17217	63.4	12.8	-50.6

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
1	611652.6	683439.4	720	17217	65.5	12.6	-52.9
1	611659.7	683432.4	730	18181	62.4	12.5	-50
1	611666.9	683425.3	740	18181	62.6	12.3	-50.3
1	611674.1	683418.3	750	17468	58.5	12.1	-46.4
1	611681.2	683411.3	760	17468	58.3	11.9	-46.4
1	611688.4	683404.2	770	17468	58.9	11.8	-47.2
1	611695.6	683397.2	780	17468	60.5	11.6	-48.9
1	611702.8	683390.2	790	17468	65.1	11.4	-53.7
1	611709.9	683383.2	800	17468	64.9	11.2	-53.7
1	611717.1	683376.1	810	17468	66.2	11	-55.2
1	611724.2	683369.2	820	17468	65.8	11.2	-54.6
1	611731.3	683362.2	830	16867	75.1	11.4	-63.6
1	611738.4	683355.2	840	18629	74.7	11.7	-63
1	611745.5	683348.2	850	17719	77.7	11.9	-65.8
1	611752.6	683341.2	860	17719	75.2	12.1	-63.1
1	611759.6	683334.2	870	17719	72.7	12.4	-60.3
1	611766.8	683327.3	880	17719	71.1	12.6	-58.5
1	611773.8	683320.3	890	17719	69.5	12.8	-56.7
1	611780.9	683313.4	900	16764	69.7	13.1	-56.7
1	611788	683306.4	910	16764	69.7	13.3	-56.4
1	611795.1	683299.4	920	16764	69.7	13.5	-56.2
1	611802.2	683292.4	930	16764	69.7	13.8	-56
1	611809.2	683285.4	940	16764	69.7	14	-55.7
2	610953.4	683744.6	0	21264	40.9	11	-29.9
2	610961.6	683738.9	10	21264	40.9	11.8	-29.2
2	610969.9	683733.1	20	21264	40.9	12.5	-28.4
2	610978.1	683727.4	30	21264	40.9	13.2	-27.7
2	610986.3	683721.6	40	19918	41.1	14	-27.1
2	610994.5	683715.9	50	19918	49.9	14	-35.9
2	611002.6	683710.2	60	19918	51.3	14	-37.3
2	611010.8	683704.5	70	19918	52.7	14	-38.7
2	611019	683698.8	80	19918	54.1	14	-40.1
2	611027.1	683693.1	90	19918	55.4	14	-41.4
2	611035.3	683687.4	100	19918	56.8	14	-42.8
2	611043.5	683681.7	110	19918	58.2	14	-44.2
2	611051.6	683676	120	19918	56.7	14	-42.7
2	611059.8	683670.2	130	19918	58.1	14	-44.1

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
2	611068	683664.6	140	19918	59.5	14	-45.5
2	611076.2	683658.9	150	19918	60.9	14	-46.9
2	611084.3	683653.1	160	19918	62.2	14	-48.2
2	611092.5	683647.4	170	19918	63.6	14	-49.6
2	611100.7	683641.8	180	21384	68.8	14	-54.8
2	611108.8	683636	190	21384	68.4	14	-54.4
2	611117	683630.3	200	21384	67.3	14	-53.3
2	611125.2	683624.6	210	21384	65.2	13.9	-51.3
2	611133.4	683618.9	220	21384	64.7	13.9	-50.9
2	611141.5	683613.1	230	21384	62.8	13.8	-49
2	611149.7	683607.4	240	21384	61.7	13.7	-48
2	611157.9	683601.6	250	21384	63.9	13.6	-50.3
2	611166.1	683595.9	260	24224	61	13.6	-47.4
2	611174.2	683590.2	270	24224	59.9	13.5	-46.4
2	611182.4	683584.4	280	24224	58.7	13.4	-45.3
2	611190.6	683578.8	290	24224	56.7	13.3	-43.4
2	611198.8	683573	300	24224	58.1	13.2	-44.8
2	611206.9	683567.2	310	24224	59	13.2	-45.8
2	611215.1	683561.6	320	24262	59.2	13.1	-46.1
2	611223.2	683555.8	330	24262	59.6	13	-46.6
2	611231.4	683550.1	340	24262	58.2	12.9	-45.2
2	611239.6	683544.4	350	24262	58.9	12.9	-46
2	611247.8	683538.6	360	24262	56.6	12.8	-43.8
2	611256	683532.9	370	21965	61.7	12.7	-49
2	611264.1	683527.1	380	21965	61.7	12.6	-49.1
2	611272.3	683521.4	390	22675	61.7	12.6	-49.1
2	611280.5	683515.7	400	22675	62.6	12.5	-50.1
2	611288.6	683509.9	410	22675	63.5	12.4	-51.1
2	611296.8	683504.1	420	22675	64.3	12.4	-52
2	611304.9	683498.3	430	22675	65.3	12.3	-53
2	611313.1	683492.5	440	22675	66.2	12.2	-54
2	611321.2	683486.8	450	22675	67.1	12.1	-55
2	611329.3	683480.9	460	22675	68	12.1	-56
2	611337.4	683475.1	470	20589	67.7	12	-55.7
2	611345.6	683469.3	480	18854	67.7	11.9	-55.8
2	611353.7	683463.6	490	18854	69.5	11.8	-57.7
2	611361.9	683457.8	500	18854	73.5	11.8	-61.7

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
2	611370	683451.9	510	18854	71.1	11.7	-59.4
2	611378.1	683446.2	520	18854	73.1	11.6	-61.5
2	611386.2	683440.4	530	18854	71.9	11.5	-60.4
2	611394.4	683434.6	540	18854	71.1	11.4	-59.7
2	611402.5	683428.8	550	18854	70.3	11.4	-58.9
2	611410.6	683423	560	18854	66.1	11.3	-54.8
2	611418.8	683417.2	570	21820	66.2	11.2	-55
2	611426.9	683411.4	580	21820	66.8	11.1	-55.7
2	611435.1	683405.6	590	21820	66.7	11.1	-55.7
2	611443.2	683399.8	600	21820	66.7	11	-55.7
2	611451.4	683394.1	610	21820	64	11	-53
2	611459.5	683388.3	620	21820	64.8	11	-53.8
2	611467.7	683382.6	630	21820	64.5	11	-53.5
2	611475.9	683376.8	640	21820	62	11	-51
2	611484	683371.1	650	21820	60.4	11	-49.4
2	611492.2	683365.3	660	21820	60.4	11	-49.4
2	611500.4	683359.6	670	21820	63.3	11	-52.3
2	611508.6	683353.8	680	21820	66.5	11	-55.5
2	611516.7	683348.1	690	21820	65.4	11	-54.4
2	611524.9	683342.3	700	13416	69.4	11	-58.4
2	611533.1	683336.6	710	13416	70.9	11	-59.9
2	611541.2	683330.8	720	12911	69.9	11	-58.9
2	611549.4	683325.1	730	12911	71.4	11	-60.4
2	611557.6	683319.3	740	12911	70	11	-59
2	611565.8	683313.6	750	12911	69.9	11	-58.9
2	611573.9	683307.8	760	12911	74.3	11	-63.3
2	611582.1	683302.1	770	12911	74.8	11	-63.8
2	611590.2	683296.3	780	12911	72.4	11	-61.4
2	611598.4	683290.6	790	12911	74.1	11	-63.1
2	611606.6	683284.8	800	12911	73.4	11	-62.4
2	611614.8	683279.1	810	11827	71.9	11.2	-60.7
2	611622.9	683273.4	820	11827	70	11.4	-58.6
2	611631.1	683267.6	830	11827	67.2	11.6	-55.6
2	611639.2	683261.9	840	11827	68	11.8	-56.2
2	611647.4	683256.1	850	11827	68.3	12	-56.3
2	611655.6	683250.4	860	11827	68.3	12.2	-56.1
2	611663.8	683244.7	870	11827	68.6	12.4	-56.2

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
2	611671.9	683238.9	880	11827	68.3	12.6	-55.7
2	611680.1	683233.2	890	11827	68	12.8	-55.2
2	611688.2	683227.5	900	11827	68.6	13	-55.6
2	611696.2	683221.6	910	15770	68.6	13.2	-55.3
2	611704.2	683215.8	920	15770	69.1	13.5	-55.6
2	611712.3	683209.8	930	15770	69.1	13.8	-55.4
2	611720.3	683203.9	940	15770	69.1	14	-55.1
3	610881.6	683627.2	0	25777	59.7	10	-49.7
3	610889.2	683620.8	10	25777	59.7	10.8	-48.9
3	610896.9	683614.3	20	25777	59.7	11.6	-48.1
3	610904.6	683607.9	30	25777	59.7	12.3	-47.3
3	610912.2	683601.4	40	25777	59.7	13.1	-46.5
3	610919.9	683594.9	50	25777	59.7	13.9	-45.8
3	610927.5	683588.6	60	25777	66.1	14.1	-52
3	610935.1	683582.1	70	25777	66	14.1	-51.9
3	610942.8	683575.7	80	25777	65.9	14.2	-51.7
3	610950.4	683569.3	90	25777	65.8	14.3	-51.6
3	610958	683562.9	100	25777	65.8	14.3	-51.4
3	610965.6	683556.4	110	25777	65.7	14.4	-51.3
3	610973.3	683550.1	120	24616	63.6	14.5	-49.2
3	610980.9	683543.6	130	24616	63.8	14.5	-49.2
3	610988.6	683537.2	140	24616	64.1	14.6	-49.5
3	610996.2	683530.8	150	24616	71.3	14.7	-56.6
3	611003.8	683524.4	160	24286	71.2	14.7	-56.5
3	611011.4	683517.9	170	22327	67.7	14.8	-52.9
3	611019.1	683511.5	180	22327	70.6	14.9	-55.7
3	611026.7	683505.1	190	22327	70.8	14.9	-55.9
3	611034.3	683498.7	200	22327	68.9	15	-53.9
3	611041.9	683492.2	210	22327	70.3	14.9	-55.4
3	611049.6	683485.8	220	22327	72.3	14.8	-57.5
3	611057.2	683479.3	230	22327	71.1	14.7	-56.4
3	611064.9	683472.9	240	22327	66.4	14.6	-51.8
3	611072.6	683466.4	250	22327	65.1	14.5	-50.6
3	611080.2	683460	260	21138	66.7	14.4	-52.3
3	611087.9	683453.6	270	21138	65.9	14.3	-51.6
3	611095.5	683447.1	280	21138	62.3	14.2	-48.1
3	611103.2	683440.6	290	21138	54.4	14.1	-40.3

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
3	611110.8	683434.2	300	21138	48	14	-34
3	611118.4	683427.8	310	21138	42	13.9	-28.1
3	611126.1	683421.3	320	21138	43.4	13.8	-29.6
3	611133.8	683414.8	330	21138	44.7	13.7	-31
3	611141.4	683408.4	340	21138	45.2	13.6	-31.6
3	611149.1	683401.9	350	17357	41.4	13.5	-27.9
3	611156.7	683395.5	360	17357	42.9	13.4	-29.5
3	611164.4	683389.1	370	17357	43.9	13.3	-30.6
3	611172	683382.6	380	17357	43.6	13.2	-30.4
3	611179.7	683376.1	390	17357	43.2	13.1	-30.1
3	611187.3	683369.7	400	17357	43	13	-30
3	611194.9	683363.2	410	17357	40.9	12.8	-28.1
3	611202.6	683356.6	420	17357	42.4	12.6	-29.8
3	611210.1	683350.1	430	19125	55.4	12.5	-43
3	611217.8	683343.6	440	19305	54.3	12.3	-42
3	611225.4	683337.1	450	18899	53.2	12.1	-41.1
3	611233	683330.6	460	18899	57.7	11.9	-45.8
3	611240.6	683324	470	18899	62.3	11.7	-50.6
3	611248.2	683317.5	480	17232	60.3	11.5	-48.8
3	611255.8	683311	490	16754	52.1	11.4	-40.7
3	611263.4	683304.4	500	16754	50.7	11.2	-39.5
3	611271.1	683297.9	510	16754	42.1	11	-31.1
3	611278.6	683291.5	520	16754	39.6	11.1	-28.5
3	611286.2	683285.1	530	16754	38.8	11.2	-27.5
3	611293.8	683278.7	540	17008	37.4	11.3	-26
3	611301.4	683272.2	550	17008	37.4	11.4	-26
3	611309.1	683265.9	560	17008	42.8	11.6	-31.2
3	611316.6	683259.4	570	17008	40.8	11.7	-29.1
3	611324.2	683253	580	17515	41.7	11.8	-29.9
3	611331.8	683246.6	590	17515	42.3	11.9	-30.4
3	611339.4	683240.2	600	17515	41.2	12	-29.2
3	611347.1	683233.8	610	17515	40.8	11.9	-28.9
3	611354.7	683227.3	620	17515	41.3	11.9	-29.4
3	611362.3	683220.9	630	17515	43	11.9	-31.1
3	611369.9	683214.4	640	15503	47.5	11.8	-35.7
3	611377.5	683208	650	15503	51.7	11.8	-39.9
3	611385.1	683201.5	660	15503	53.6	11.7	-41.9

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
3	611392.8	683195.1	670	15503	53.3	11.6	-41.6
3	611400.4	683188.6	680	15503	49.9	11.6	-38.3
3	611408	683182.2	690	14293	47.7	11.6	-36.1
3	611415.6	683175.8	700	14293	45.9	11.5	-34.4
3	611423.2	683169.3	710	14293	45.5	11.4	-34
3	611430.9	683162.9	720	14293	46.3	11.4	-34.9
3	611438.5	683156.4	730	14293	49.1	11.4	-37.8
3	611446.1	683150	740	14293	50.5	11.3	-39.2
3	611453.8	683143.5	750	13543	51.1	11.2	-39.9
3	611461.3	683137.1	760	15706	67.8	11.2	-56.6
3	611468.9	683130.6	770	15706	68.5	11.1	-57.4
3	611476.6	683124.2	780	14722	69.8	11.1	-58.7
3	611484.2	683117.8	790	14722	80.1	11.1	-69
3	611491.8	683111.3	800	13580	80.1	11	-69.1
3	611499.4	683104.9	810	13580	80.9	11.1	-69.8
3	611507.1	683098.6	820	13580	81.7	11.2	-70.5
3	611514.6	683092.1	830	13580	82.5	11.3	-71.2
3	611522.2	683085.8	840	13580	82.5	11.4	-71.1
3	611529.9	683079.4	850	13580	80.5	11.5	-69
3	611537.5	683073	860	13580	80.5	11.5	-68.9
3	611545.1	683066.6	870	13580	80.5	11.6	-68.8
3	611552.8	683060.2	880	13580	80.5	11.7	-68.7
3	611560.3	683053.8	890	13580	80.5	11.8	-68.6
3	611567.9	683047.4	900	13580	80.5	11.9	-68.5
3	611575.6	683041.1	910	13580	80.5	12	-68.5
4	610760.4	683423.1	0	24187	40.5	11	-29.5
4	610768.1	683416.6	10	24187	40.5	11.8	-28.8
4	610775.8	683410.1	20	24187	40.5	12.5	-28
4	610783.5	683403.6	30	24187	40.5	13.3	-27.2
4	610791.2	683397.1	40	24187	40.5	14.1	-26.4
4	610798.8	683390.6	50	24187	40.5	14.8	-25.7
4	610806.4	683384.1	60	24187	39.8	14.9	-24.9
4	610813.9	683377.6	70	24187	43.4	14.9	-28.6
4	610821.4	683371.1	80	20814	46	14.8	-31.2
4	610828.9	683364.6	90	14333	59.2	14.7	-44.4
4	610836.4	683358.1	100	14333	62.8	14.7	-48.2
4	610843.9	683351.6	110	14333	62.4	14.6	-47.8

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
4	610851.4	683345.1	120	14333	62.5	14.5	-48
4	610858.9	683338.5	130	14333	63.6	14.5	-49.1
4	610866.4	683332	140	14333	64.2	14.4	-49.8
4	610873.9	683325.5	150	14333	64.3	14.3	-50
4	610881.4	683319	160	14333	65.7	14.3	-51.4
4	610888.9	683312.5	170	14333	65.2	14.2	-51
4	610896.4	683305.9	180	14333	66	14.1	-51.9
4	610903.9	683299.4	190	14333	64	14.1	-49.9
4	610911.4	683292.9	200	14333	65.7	14	-51.7
4	610918.9	683286.4	210	14333	68.8	13.9	-54.9
4	610926.5	683279.9	220	14333	69.1	13.8	-55.3
4	610934.1	683273.3	230	14540	73.6	13.7	-59.9
4	610941.6	683266.8	240	14540	73.4	13.6	-59.8
4	610949.1	683260.2	250	14941	74.4	13.5	-60.9
4	610956.7	683253.7	260	14941	73.3	13.4	-59.9
4	610964.2	683247.1	270	14941	70	13.3	-56.7
4	610971.8	683240.6	280	14941	66.5	13.2	-53.3
4	610979.4	683234.1	290	14941	65.8	13.1	-52.7
4	610986.9	683227.5	300	14941	65.5	13	-52.5
4	610994.4	683220.9	310	14941	67.8	12.9	-54.9
4	611002	683214.4	320	14941	67.3	12.8	-54.5
4	611009.6	683207.9	330	14941	67.2	12.7	-54.5
4	611017.1	683201.3	340	13573	59.7	12.6	-47.1
4	611024.7	683194.8	350	13573	59.4	12.5	-46.9
4	611032.2	683188.2	360	13573	53	12.4	-40.6
4	611039.8	683181.7	370	13573	53.4	12.3	-41.1
4	611047.3	683175.1	380	15597	47.7	12.2	-35.5
4	611054.9	683168.6	390	15597	46	12.1	-33.9
4	611062.4	683162.1	400	16032	45.2	12	-33.2
4	611069.9	683155.5	410	16032	47.5	12	-35.5
4	611077.4	683148.9	420	16032	48.3	12	-36.3
4	611084.9	683142.3	430	16032	51.5	12	-39.5
4	611092.4	683135.8	440	16032	56.2	12	-44.2
4	611099.9	683129.2	450	16032	56.4	12	-44.4
4	611107.4	683122.6	460	14645	54.9	12	-42.9
4	611114.9	683116.1	470	14645	49.2	12	-37.2
4	611122.4	683109.4	480	14645	46.8	12	-34.8

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
4	611129.9	683102.9	490	14272	44.9	12	-32.9
4	611137.4	683096.3	500	14272	44.9	12	-32.9
4	611144.9	683089.7	510	14272	46.8	11.9	-34.9
4	611152.4	683083.1	520	14272	48.6	11.8	-36.8
4	611159.9	683076.5	530	14272	48.7	11.7	-37
4	611167.4	683069.9	540	14272	42.7	11.6	-31.1
4	611175	683063.3	550	14272	40.2	11.5	-28.7
4	611182.5	683056.7	560	14272	42.2	11.4	-30.8
4	611190	683050.1	570	14272	44	11.3	-32.7
4	611197.5	683043.5	580	14272	45.2	11.2	-34
4	611205.1	683036.9	590	13955	48.5	11.1	-37.4
4	611212.6	683030.3	600	13955	54.9	11	-43.9
4	611220	683023.7	610	13955	60.6	11.1	-49.6
4	611227.4	683017.1	620	13955	62.3	11.1	-51.2
4	611234.9	683010.4	630	13955	64.5	11.1	-53.4
4	611242.3	683003.8	640	13955	66.2	11.2	-55
4	611249.8	682997.1	650	14264	65.8	11.2	-54.6
4	611257.1	682990.5	660	13711	62.8	11.3	-51.5
4	611264.6	682983.9	670	13711	61.2	11.4	-49.9
4	611272	682977.2	680	19567	69.6	11.4	-58.2
4	611279.4	682970.6	690	19567	69.7	11.4	-58.2
4	611286.9	682964	700	17271	72.3	11.5	-60.8
4	611294.3	682957.3	710	17271	74.5	11.6	-63
4	611301.8	682950.7	720	17271	76.8	11.6	-65.2
4	611309.2	682944.1	730	17271	79.1	11.6	-67.4
4	611316.6	682937.4	740	17271	83.1	11.7	-71.4
4	611324	682930.8	750	17271	85.3	11.8	-73.5
4	611331.4	682924.2	760	17271	87.5	11.8	-75.7
4	611338.9	682917.5	770	17271	89.7	11.9	-77.9
4	611346.3	682910.9	780	17271	91.9	11.9	-80
4	611353.8	682904.2	790	17271	94.4	11.9	-82.5
4	611361.2	682897.6	800	17271	100.1	12	-88.1
4	611368.8	682891.1	810	17271	99.2	12	-87.2
4	611376.3	682884.5	820	17271	102.4	12	-90.4
4	611383.9	682877.9	830	17271	104	12	-92
4	611391.4	682871.4	840	17271	108.3	12	-96.3
5A	610655.9	683185.2	0	23431	43.9	13	-30.9

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
5A	610663.4	683178.7	10	23431	43.9	12.9	-31
5A	610670.9	683172.2	20	23431	43.9	12.9	-31
5A	610678.4	683165.6	30	23431	43.9	12.9	-31.1
5A	610685.9	683159.1	40	23431	43.5	12.8	-30.7
5A	610693.5	683152.5	50	23431	43.2	12.8	-30.4
5A	610701	683146	60	23431	42.8	12.7	-30.1
5A	610708.5	683139.4	70	13140	46.4	12.6	-33.7
5A	610716.1	683132.9	80	13140	49	12.6	-36.4
5A	610723.6	683126.4	90	13140	48.6	12.6	-36
5A	610731.1	683119.8	100	14111	51.6	12.5	-39.1
5A	610738.6	683113.2	110	14111	54.8	12.4	-42.4
5A	610746.1	683106.8	120	14111	55.6	12.4	-43.2
5A	610753.7	683100.2	130	14111	54.9	12.4	-42.6
5A	610761.2	683093.6	140	14111	56.7	12.3	-44.4
5A	610768.7	683087.1	150	14111	57.1	12.2	-44.9
5A	610776.2	683080.6	160	14111	56	12.2	-43.8
5A	610783.8	683074	170	14111	59.8	12.1	-47.6
5A	610791.2	683067.4	180	14111	65.6	12.1	-53.5
5A	610798.8	683060.9	190	14111	68.1	12.1	-56.1
5A	610806.3	683054.4	200	14111	68.4	12	-56.4
5A	610813.8	683047.8	210	14111	65.9	12	-53.9
5A	610821.2	683041.1	220	14111	63.4	12	-51.4
5A	610828.7	683034.4	230	14718	65.9	12	-53.9
5A	610836.1	683027.8	240	16379	65.5	12	-53.5
5A	610843.6	683021.1	250	16379	66.6	12	-54.6
5A	610851.1	683014.4	260	16379	65.8	12	-53.8
5A	610858.5	683007.8	270	16379	64.3	12	-52.3
5A	610865.9	683001.1	280	16379	67.8	12	-55.8
5A	610873.4	682994.5	290	16379	68.9	12	-56.9
5A	610880.9	682987.8	300	16379	74.1	12	-62.1
5A	610888.3	682981.1	310	16379	72	12	-60
5A	610895.8	682974.5	320	18628	75.9	12	-63.9
5A	610903.2	682967.9	330	18628	72.6	12	-60.6
5A	610910.7	682961.2	340	18628	67.5	12	-55.5
5A	610918.1	682954.5	350	18628	68.6	12	-56.6
5A	610925.6	682947.9	360	18628	74.2	12	-62.2
5A	610933.1	682941.2	370	14078	81.6	12	-69.6

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
5A	610940.5	682934.6	380	14131	83.1	12	-71.1
5A	610948	682927.9	390	14131	84.2	12	-72.2
5A	610955.4	682921.2	400	14131	84.2	12	-72.2
5A	610962.9	682914.4	410	14131	83.8	11.9	-71.9
5A	610970.4	682907.6	420	14131	82	11.7	-70.3
5A	610977.9	682900.8	430	14131	80.2	11.6	-68.6
5A	610985.4	682893.9	440	14131	79.1	11.4	-67.7
5A	610992.9	682887.1	450	14131	80.2	11.3	-68.9
5A	611000.4	682880.3	460	14131	81.6	11.1	-70.5
5A	611007.9	682873.5	470	14131	80.8	11	-69.8
5B	610858.2	682847.2	0	17239	84.5	14	-70.5
5B	610868.2	682847.3	10	17239	80.1	13.8	-66.3
5B	610878.2	682847.4	20	17239	80.1	13.6	-66.5
5B	610888.2	682847.4	30	17239	80.1	13.4	-66.7
5B	610898.2	682847.6	40	17239	80.9	13.2	-67.7
5B	610908.2	682847.6	50	17239	80.9	13	-67.9
5B	610918.1	682847.7	60	17239	81.4	12.8	-68.6
5B	610928.1	682847.8	70	17239	80.1	12.6	-67.5
5B	610938.1	682847.8	80	17239	80.6	12.4	-68.2
5B	610948.1	682847.9	90	17239	80.6	12.2	-68.4
5B	610958.1	682847.9	100	16394	82.9	12	-70.9
5B	610968.1	682848	110	16302	81	11.8	-69.2
5B	610978.1	682848.1	120	16302	85.1	11.6	-73.5
5B	610988.1	682848.2	130	16302	86.9	11.4	-75.5
5B	610998	682848.2	140	16302	87.5	11.2	-76.3
5B	611008	682848.3	150	16302	89.6	11	-78.6
5B	611018	682848.4	160	16302	88.8	11	-77.8
5B	611028	682848.6	170	16302	91.7	11	-80.7
5B	611038	682848.7	180	16302	93.5	11	-82.5
5B	611048	682848.8	190	16336	97.2	11	-86.2
5B	611058	682848.9	200	16336	95.9	11	-84.9
5B	611068	682849	210	16336	92.2	11	-81.2
5B	611078	682849.1	220	16336	90.6	11	-79.6
5B	611088.1	682849.2	230	16336	87.3	11	-76.3
5B	611098.1	682849.4	240	16336	84.3	11	-73.3
5B	611108.1	682849.5	250	16336	82.3	11	-71.3
5B	611118.1	682849.6	260	16336	82.9	11	-71.9

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
5B	611128.1	682849.7	270	16336	79.1	11	-68.1
5B	611138.1	682849.8	280	16336	79.4	11	-68.4
5B	611148.1	682849.9	290	16336	79.8	11	-68.8
5B	611158.1	682850.1	300	16336	80.5	11	-69.5
5B	611168	682850.1	310	16336	77.2	11.1	-66.2
5B	611177.9	682850	320	16336	78.6	11.1	-67.5
5B	611187.9	682850	330	16654	86.9	11.2	-75.7
5B	611197.8	682849.9	340	16654	87.1	11.2	-75.9
5B	611207.8	682849.9	350	16654	94.3	11.3	-83
5B	611217.7	682849.9	360	16654	103.4	11.4	-92
5B	611227.6	682849.9	370	16529	110.7	11.4	-99.3
5B	611237.6	682849.8	380	16529	116.6	11.5	-105.1
5B	611247.6	682849.8	390	16070	118.5	11.5	-106.9
5B	611257.5	682849.8	400	16070	120.7	11.6	-109.1
5B	611267.4	682849.8	410	16070	120.7	11.6	-109.1
5B	611277.4	682849.7	420	16070	120.7	11.7	-109
5B	611287.3	682849.7	430	16070	120.1	11.8	-108.3
5B	611297.2	682849.6	440	16070	120.1	11.8	-108.3
5B	611307.2	682849.6	450	16070	120.1	11.9	-108.2
5B	611317.1	682849.6	460	16070	120.1	11.9	-108.2
5B	611327.1	682849.6	470	16070	120.1	12	-108.1
6	610543.1	682816.6	0	18998	25	15	-10
6	610553.1	682817.4	10	18998	28.2	15.1	-13
6	610563.1	682818.1	20	18998	30	15.2	-14.8
6	610573	682818.9	30	18998	33.7	15.3	-18.3
6	610583	682819.7	40	18998	37.7	15.4	-22.3
6	610592.9	682820.5	50	18998	43.2	15.5	-27.7
6	610602.9	682821.2	60	18998	45.9	15.7	-30.3
6	610612.9	682822.1	70	18998	48.2	15.8	-32.4
6	610622.9	682822.9	80	18998	50.2	15.9	-34.3
6	610632.8	682823.6	90	18998	53.3	16	-37.3
6	610642.8	682824.4	100	18998	56.1	16.1	-40
6	610652.8	682825.2	110	18998	57.6	16.2	-41.4
6	610662.8	682826	120	18998	62.9	16.3	-46.6
6	610672.7	682826.8	130	18998	61.5	16.4	-45
6	610682.6	682827.5	140	18998	63.3	16.5	-46.8
6	610692.5	682828.1	150	18884	65.1	16.2	-48.9

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
6	610702.3	682828.7	160	18884	65.5	16	-49.6
6	610712.2	682829.2	170	18884	67.4	15.7	-51.7
6	610722.1	682829.8	180	18884	67.8	15.5	-52.3
6	610731.9	682830.4	190	19201	69	15.2	-53.8
6	610741.8	682831	200	19201	69	15	-54
6	610751.8	682831.8	210	14516	71.9	14.9	-57
6	610761.8	682832.6	220	14516	70.6	14.8	-55.8
6	610771.8	682833.4	230	14516	71	14.7	-56.3
6	610781.8	682834.2	240	14516	73.8	14.6	-59.2
6	610791.8	682835	250	14516	74.2	14.5	-59.7
6	610801.8	682835.8	260	14516	76.1	14.4	-61.7
6	610811.8	682836.6	270	14516	75.1	14.3	-60.8
6	610821.8	682837.4	280	14516	73.7	14.2	-59.5
6	610831.8	682838.2	290	14516	76.5	14.1	-62.4
6	610841.8	682839	300	14516	74.5	14	-60.5
6	610851.8	682839.8	310	14516	75	13.9	-61.1
6	610861.8	682840.6	320	16171	75.6	13.8	-61.8
6	610871.8	682841.4	330	16171	74.2	13.7	-60.5
6	610881.8	682842.2	340	16171	77	13.6	-63.4
6	610891.9	682843	350	16171	77.9	13.5	-64.4
6	610901.9	682843.8	360	18256	78.2	13.4	-64.8
6	610911.9	682844.6	370	18256	78.6	13.3	-65.3
6	610921.9	682845.4	380	16069	80	13.2	-66.8
6	610931.9	682846.2	390	16069	82.2	13.1	-69.1
6	610941.9	682847	400	16069	84.4	13	-71.4
6	610951.8	682847.9	410	16065	84.5	12.7	-71.7
6	610961.7	682848.8	420	16065	90.1	12.4	-77.7
6	610971.6	682849.7	430	16065	94.6	12.1	-82.5
6	610981.5	682850.6	440	16065	100.7	11.9	-88.9
6	610991.4	682851.4	450	16065	100.7	11.6	-89.1
6	611001.3	682852.4	460	16065	100.7	11.3	-89.4
6	611011.2	682853.2	470	16065	102.5	11	-91.5
7	610520.6	682524.9	0	18196	69.7	17	-52.7
7	610529.5	682520.2	10	18196	70.1	16.3	-53.8
7	610538.4	682515.6	20	18196	68.3	15.7	-52.6
7	610547.2	682510.9	30	18196	69.2	15	-54.2
7	610556.1	682506.2	40	18196	69.7	14.4	-55.3

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
7	610565	682501.6	50	18196	71.9	13.7	-58.2
7	610573.9	682497	60	18196	75.1	13.1	-62.1
7	610582.7	682492.3	70	16585	78.8	12.4	-66.4
7	610591.6	682487.7	80	13799	85.6	12	-73.6
7	610600.4	682483.1	90	13799	84.7	12	-72.7
7	610609.2	682478.5	100	13799	85.2	12	-73.2
7	610618.1	682473.9	110	13799	84.2	12	-72.2
7	610626.9	682469.3	120	13799	84.2	12	-72.2
7	610635.8	682464.7	130	13880	78.3	12	-66.3
7	610644.6	682460.1	140	13880	77	12	-65
7	610653.4	682455.5	150	13880	72.2	12	-60.2
7	610662.3	682450.9	160	13880	68.2	12	-56.2
7	610671.1	682446.2	170	13880	66.2	12	-54.2
7	610680	682441.6	180	13880	65.7	12	-53.7
7	610688.8	682436.9	190	13880	66.5	12	-54.5
7	610697.7	682432.2	200	13880	67.1	12	-55.1
7	610706.6	682427.6	210	15120	69.2	12	-57.2
7	610715.4	682423	220	15120	71.8	12	-59.8
7	610724.2	682418.3	230	15120	71	12	-59
7	610733.1	682413.7	240	15120	74.7	12	-62.7
7	610741.9	682409.1	250	15120	75.8	12	-63.8
7	610750.8	682404.4	260	15120	76.9	12	-64.9
7	610759.6	682399.8	270	13239	79.4	12	-67.4
7	610768.5	682395.1	280	13239	79.3	12	-67.3
7	610777.3	682390.4	290	11409	84.9	12	-72.9
7	610786.2	682385.8	300	11409	83.8	12	-71.8
7	610795	682381.2	310	11409	82.4	12	-70.4
7	610803.8	682376.6	320	11409	82.4	12	-70.4
7	610812.6	682371.9	330	11409	82.4	12	-70.4
7	610821.4	682367.2	340	11409	82.4	12	-70.4
7	610830.3	682362.6	350	13400	84.2	12	-72.2
7	610839.1	682358	360	13400	85.6	12	-73.6
7	610847.9	682353.3	370	12631	87	12	-75
7	610856.8	682348.7	380	12631	87.4	12	-75.4
7	610865.6	682344.1	390	12631	88.3	12	-76.3
7	610874.4	682339.4	400	12631	87	12	-75
7	610883.2	682334.8	410	12631	84.2	12	-72.2

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
7	610892	682330.1	420	12631	84.2	12	-72.2
7	610900.9	682325.5	430	12631	81.4	12	-69.4
7	610909.7	682320.9	440	12631	81.4	12	-69.4
7	610918.5	682316.2	450	12631	81.4	12	-69.4
7	610927.3	682311.6	460	12631	81.4	12	-69.4
7	610936.1	682306.9	470	12631	81.4	12	-69.4
8A	611514.4	683819.8	0	13798	66.2	14.5	-51.7
8A	611508.8	683811.6	10	13798	66.2	14.5	-51.7
8A	611503.1	683803.3	20	13798	66.2	14.4	-51.7
8A	611497.4	683795.1	30	13798	66.2	14.4	-51.8
8A	611491.7	683786.8	40	13798	66.2	14.4	-51.8
8A	611485.9	683778.6	50	13798	66.2	14.3	-51.8
8A	611480.2	683770.4	60	13798	66.5	14.3	-52.2
8A	611474.6	683762.1	70	13798	66.5	14.3	-52.2
8A	611468.9	683753.9	80	13798	67.6	14.2	-53.3
8A	611463.2	683745.6	90	15859	67.7	14.2	-53.5
8A	611457.5	683737.4	100	15859	71.5	14.2	-57.4
8A	611451.8	683729.1	110	15859	70.6	14.1	-56.4
8A	611446.1	683720.9	120	15859	70.2	14.1	-56.1
8A	611440.4	683712.6	130	15859	70.2	14.1	-56.1
8A	611434.7	683704.4	140	15859	74.1	14	-60
8A	611429	683696.1	150	15859	73.8	14	-59.7
8A	611423.4	683688.1	160	15859	74.8	13.6	-61.2
8A	611417.9	683680	170	17057	73.8	13.1	-60.7
8A	611412.2	683671.9	180	18767	73.5	12.5	-61
8A	611406.7	683663.9	190	18767	74.4	12	-62.3
8A	611401.1	683655.8	200	18767	74.5	11.5	-63
8A	611395.2	683647.8	210	18767	74.6	11.6	-63
8A	611389.2	683639.7	220	18767	73.5	11.6	-61.9
8A	611383.3	683631.7	230	18767	74.9	11.7	-63.1
8A	611377.4	683623.6	240	18767	72.3	11.8	-60.5
8A	611371.5	683615.6	250	18767	72.1	11.9	-60.3
8A	611365.6	683607.5	260	18767	74.2	11.9	-62.3
8A	611359.6	683599.4	270	18767	74.7	12	-62.7
8A	611353.7	683591.4	280	18767	73.2	12.1	-61.1
8A	611347.8	683583.4	290	18767	72	12.2	-59.8
8A	611341.9	683575.3	300	18767	72.3	12.2	-60.1

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
8A	611335.9	683567.2	310	16413	74.8	12.3	-62.5
8A	611330	683559.2	320	16413	73.8	12.4	-61.4
8A	611324.1	683551.2	330	16413	70.7	12.5	-58.2
8A	611318.1	683543.1	340	16413	66.5	12.6	-54
8A	611312.2	683535.1	350	16413	65.6	12.6	-53
8A	611306.2	683527	360	16413	64.9	12.7	-52.2
8A	611300.4	683518.9	370	16413	64.6	12.8	-51.9
8A	611294.4	683510.9	380	16413	62.5	12.9	-49.6
8A	611288.5	683502.9	390	16413	61	12.9	-48.1
8A	611282.6	683494.8	400	16413	57.6	13	-44.6
8A	611276.7	683486.7	410	17227	56.5	12.8	-43.7
8A	611270.8	683478.6	420	17227	56.1	12.6	-43.5
8A	611264.9	683470.4	430	20755	56.1	12.5	-43.7
8A	611259	683462.3	440	20755	56.1	12.3	-43.8
8A	611253.1	683454.1	450	21908	55.8	12.1	-43.7
8A	611247.2	683446	460	21908	55.2	11.9	-43.2
8A	611241.3	683437.9	470	21908	54.5	11.8	-42.8
8A	611235.4	683429.8	480	17061	55.7	11.6	-44.1
8A	611229.5	683421.7	490	17061	55.1	11.6	-43.5
8A	611223.6	683413.6	500	17061	54.4	11.7	-42.7
8A	611217.7	683405.6	510	17061	52.2	11.8	-40.4
8A	611211.8	683397.6	520	17533	49.1	12	-37.1
8A	611205.9	683389.5	530	16849	46.5	12.1	-34.4
8A	611200.1	683381.4	540	16849	45.9	12.2	-33.7
8A	611194.1	683373.4	550	16849	48.7	12.3	-36.4
8A	611188.2	683365.4	560	16425	48.8	12.5	-36.3
8A	611182.4	683357.3	570	16425	48	12.6	-35.4
8A	611176.5	683349.2	580	16425	48	12.7	-35.3
8A	611170.6	683341.2	590	16425	47.4	12.9	-34.5
8A	611164.7	683333.2	600	17012	49.8	13	-36.8
8A	611158.8	683325.1	610	17012	50.9	13.1	-37.8
8A	611152.8	683317.1	620	17012	53.9	13.1	-40.8
8A	611146.9	683309.1	630	17012	54.3	13.2	-41.1
8A	611140.9	683301	640	17012	53.6	13.2	-40.3
8A	611135	683292.9	650	17012	54.5	13.3	-41.2
8A	611129.1	683284.9	660	17012	52.4	13.4	-39.1
8A	611123.1	683276.9	670	17012	51.9	13.4	-38.5

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
8A	611117.2	683268.8	680	17012	50.1	13.5	-36.7
8A	611111.2	683260.8	690	17012	51.2	13.5	-37.7
8A	611105.3	683252.7	700	17012	50.9	13.6	-37.3
8A	611099.4	683244.7	710	17012	53.9	13.6	-40.3
8A	611093.4	683236.6	720	17012	54.1	13.7	-40.4
8A	611087.5	683228.6	730	15261	56	13.8	-42.2
8A	611081.6	683220.5	740	15261	57	13.8	-43.2
8A	611075.6	683212.5	750	15261	58.6	13.9	-44.7
8A	611069.7	683204.4	760	15261	56.5	13.9	-42.5
8A	611063.8	683196.4	770	15261	57.2	14	-43.2
8A	611057.8	683188.4	780	15261	56.1	13.9	-42.2
8A	611051.8	683180.4	790	15261	56.8	13.8	-43
8A	611045.9	683172.4	800	15261	55.8	13.8	-42
8A	611039.9	683164.3	810	15261	57.9	13.7	-44.2
8A	611033.9	683156.3	820	15261	58.2	13.6	-44.6
8A	611028	683148.3	830	15261	59.5	13.5	-46
8A	611022.1	683140.3	840	16599	63.2	13.5	-49.7
8A	611016.1	683132.3	850	16599	63.9	13.4	-50.5
8A	611010.1	683124.3	860	16599	64.2	13.3	-50.9
8A	611004.2	683116.2	870	16599	66	13.2	-52.8
8A	610998.2	683108.2	880	16599	64	13.2	-50.9
8A	610992.2	683100.2	890	16599	65.3	13.1	-52.2
8A	610986.3	683092.2	900	16960	63.5	13	-50.5
8A	610980.4	683084.1	910	16960	63.9	12.8	-51.1
8A	610974.6	683075.9	920	16593	66.5	12.6	-53.9
8A	610968.6	683067.8	930	16593	66.5	12.4	-54.1
8A	610962.8	683059.6	940	16593	66.5	12.2	-54.3
8A	610956.9	683051.5	950	16593	66.5	12	-54.5
8B	610948.8	683047	60	24149	73.6	12	-61.6
8B	610942.1	683039.6	70	24149	74	12.1	-61.9
8B	610935.3	683032.2	80	24149	72.9	12.2	-60.7
8B	610928.6	683024.8	90	23129	74	12.3	-61.6
8B	610921.8	683017.4	100	23386	73.4	12.4	-60.9
8B	610915.1	683009.9	110	23386	72.1	12.5	-59.6
8B	610908.3	683002.6	120	23386	72.1	12.6	-59.5
8B	610901.6	682995.1	130	23386	72.1	12.8	-59.4
8B	610894.8	682987.7	140	23386	72.1	12.9	-59.3

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
8B	610888.1	682980.3	150	23386	72.9	13	-59.9
8B	610881.3	682972.9	160	23386	71.8	13.1	-58.7
8B	610874.6	682965.5	170	23386	72.1	13.2	-58.9
8B	610867.8	682958.1	180	23386	72.5	13.3	-59.2
8B	610861.1	682950.7	190	23386	73.5	13.4	-60.2
8B	610854.3	682943.2	200	25872	77.6	13.5	-64.1
8B	610847.8	682935.8	210	25872	76.4	13.6	-62.8
8B	610841.1	682928.2	220	25872	76.3	13.8	-62.6
8B	610834.6	682920.7	230	25872	77.9	13.9	-64
8B	610828	682913.2	240	25872	79.4	14.1	-65.3
8B	610821.4	682905.6	250	25872	79.8	14.2	-65.6
8B	610814.8	682898.1	260	25872	80.1	14.4	-65.8
8B	610808.2	682890.6	270	25872	80.5	14.5	-66
8B	610801.7	682883.1	280	25872	80.2	14.6	-65.5
8B	610795.1	682875.6	290	22322	80.9	14.8	-66.2
8B	610788.5	682868.1	300	22322	80.6	14.9	-65.7
8B	610781.9	682860.5	310	22322	80.8	15	-65.8
8B	610775.4	682853	320	22322	76.6	15.2	-61.5
8B	610768.9	682845.4	330	22322	75.2	15.3	-59.9
8B	610762.3	682837.9	340	22322	76.2	15.4	-60.9
8B	610755.8	682830.4	350	22322	79.1	15.5	-63.7
8B	610749.2	682822.9	360	23577	82.2	15.6	-66.6
8B	610742.7	682815.3	370	23577	82.6	15.7	-66.9
8B	610736.1	682807.8	380	23577	82.2	15.8	-66.4
8B	610729.6	682800.2	390	23577	84.7	15.9	-68.8
8B	610723.1	682792.8	400	23350	83.8	16	-67.8
8B	610716.3	682785.4	410	23350	85	15.9	-69.1
8B	610709.6	682778	420	23350	85.7	15.8	-69.9
8B	610702.9	682770.6	430	23350	89.1	15.8	-73.3
8B	610696.2	682763.2	440	23350	87.7	15.7	-72.1
8B	610689.4	682755.8	450	23350	87.1	15.6	-71.5
8B	610682.8	682748.4	460	23653	83.5	15.5	-68
8B	610676	682741.1	470	23653	83.5	15.5	-68
8B	610669.3	682733.7	480	23910	83.5	15.4	-68.1
8B	610662.6	682726.3	490	23910	90.2	15.3	-74.9
8B	610655.9	682718.9	500	23910	90.2	15.2	-75
8B	610649.1	682711.5	510	23910	90.2	15.2	-75.1

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
8B	610642.4	682704.1	520	23910	90.2	15.1	-75.2
8B	610635.7	682696.8	530	23910	90.2	15	-75.2
8C	610718.2	682876.1	0	13150	60.5	13.5	-47
8C	610713.8	682867.1	10	13150	60.5	14.4	-46.1
8C	610709.2	682858.1	20	13150	60.5	15.3	-45.2
8C	610704.7	682849.1	30	13150	60.5	16	-44.5
8C	610700.2	682840.3	40	13150	60.5	15.9	-44.5
8C	610695.8	682831.5	50	13150	60.5	15.9	-44.6
8C	610691.3	682822.8	60	14469	62.5	15.8	-46.7
8C	610686.8	682813.9	70	16953	56.4	15.8	-40.7
8C	610682.4	682805.1	80	16953	56.1	15.7	-40.4
8C	610677.9	682796.3	90	16953	56.5	15.6	-40.9
8C	610673.4	682787.5	100	16953	59.2	15.6	-43.6
8C	610668.9	682778.7	110	16953	52.8	15.5	-37.3
8C	610664.5	682769.9	120	16452	56.9	15.5	-41.4
8C	610660	682761.1	130	16452	51	15.4	-35.6
8C	610655.6	682752.3	140	16452	51.3	15.3	-36
8C	610651.1	682743.5	150	16452	54.6	15.3	-39.3
8C	610646.6	682734.7	160	16452	59.4	15.2	-44.1
8C	610642.1	682725.9	170	16452	64.1	15.2	-48.9
8C	610637.7	682717.1	180	16452	76.1	15.1	-61
8C	610633.2	682708.3	190	16452	81.6	15.1	-66.6
8C	610628.8	682699.5	200	16452	84.9	15	-69.9
8C	610624.1	682690.6	210	16495	89.6	15.1	-74.5
8C	610619.6	682681.6	220	16495	91.5	15.2	-76.3
8C	610614.9	682672.7	230	16495	93.7	15.3	-78.4
8C	610610.3	682663.7	240	16495	94.8	15.4	-79.4
8C	610605.8	682654.8	250	16495	91.9	15.5	-76.4
8C	610601.1	682645.8	260	16495	95.8	15.6	-80.2
8C	610596.5	682636.9	270	16495	96.5	15.7	-80.8
8C	610591.9	682627.9	280	16495	92.6	15.8	-76.8
8C	610587.3	682619	290	16495	94	15.9	-78.1
8C	610582.7	682610	300	16495	95.6	16	-79.6
8C	610578.1	682601.1	310	16495	98	16.1	-81.9
8C	610573.5	682592.1	320	16495	94.1	16.2	-77.9
8C	610568.9	682583.2	330	19331	75.8	16.3	-59.5
8C	610564.2	682574.2	340	19331	75.9	16.4	-59.5

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
8C	610559.6	682565.3	350	18348	77.1	16.5	-60.6
8C	610555.1	682556.4	360	18487	80.6	16.6	-64
8C	610550.4	682547.4	370	18487	78.3	16.7	-61.6
8C	610545.8	682538.4	380	18487	76	16.8	-59.2
8C	610541.2	682529.5	390	18487	73.8	16.9	-56.9
8C	610536.6	682520.6	400	18487	71.5	17	-54.5
8C	610532.1	682511.4	410	18487	68.4	17	-51.4
8C	610527.5	682502.3	420	18487	65.4	17	-48.4
8C	610522.9	682493.2	430	18487	61.8	17	-44.8
8C	610518.4	682484.1	440	18993	61.6	17	-44.6
8C	610513.9	682474.9	450	18993	61.6	17	-44.6
8C	610509.3	682465.8	460	18993	61.6	17	-44.6
8C	610504.8	682456.7	470	18993	61.6	17	-44.6
9	611865	683418.3	0	16800	41.3	11	-30.3
9	611858	683411.2	10	16800	41.3	11	-30.3
9	611851.1	683404.1	20	16800	41.3	11.1	-30.3
9	611844.1	683396.9	30	16800	41.3	11.1	-30.2
9	611837.1	683389.8	40	16800	44.3	11.1	-33.2
9	611830.1	683382.6	50	16957	48	11.2	-36.8
9	611823.1	683375.5	60	16957	51.7	11.2	-40.5
9	611816.2	683368.4	70	15132	52.7	11.2	-41.5
9	611809.2	683361.2	80	14279	51.7	11.3	-40.4
9	611802.2	683354.1	90	14279	57.3	11.3	-46
9	611795.2	683346.9	100	14279	56.6	11.3	-45.3
9	611788.2	683339.8	110	14279	60.8	11.4	-49.4
9	611781.3	683332.7	120	14279	63.1	11.4	-51.7
9	611774.3	683325.6	130	14279	62.7	11.4	-51.3
9	611767.4	683318.4	140	14279	64	11.5	-52.6
9	611760.4	683311.2	150	14279	64.3	11.5	-52.8
9	611753.4	683304.1	160	14279	66.7	11.5	-55.1
9	611746.4	683297	170	14279	68.8	11.6	-57.3
9	611739.4	683289.9	180	14279	69.1	11.6	-57.5
9	611732.5	683282.8	190	14279	68.4	11.6	-56.8
9	611725.5	683275.6	200	14279	67	11.7	-55.3
9	611718.5	683268.5	210	14279	66.2	11.7	-54.5
9	611711.6	683261.3	220	14279	66.2	11.7	-54.5
9	611704.6	683254.2	230	13926	65.5	11.8	-53.7

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
9	611697.6	683247.1	240	13962	68.4	11.8	-56.6
9	611690.6	683239.9	250	13962	69.1	11.8	-57.3
9	611683.6	683232.8	260	13962	68.4	11.9	-56.5
9	611676.7	683225.6	270	13962	67	11.9	-55.1
9	611669.7	683218.5	280	13962	67.7	11.9	-55.7
9	611662.8	683211.4	290	13962	67	12	-55
9	611655.8	683204.2	300	13962	68.4	12	-56.4
9	611648.8	683197.1	310	13962	68.4	12	-56.4
9	611641.8	683189.9	320	15591	72.1	12	-60.1
9	611634.9	683182.8	330	15591	74.3	12	-62.3
9	611627.9	683175.6	340	15591	72.8	12	-60.8
9	611620.9	683168.5	350	15591	77.1	12	-65.1
9	611613.9	683161.3	360	15591	80.1	12	-68.1
9	611607	683154.1	370	15591	80.8	12	-68.8
9	611600	683147	380	15591	80.8	12	-68.8
9	611593.1	683139.9	390	12854	79.3	12	-67.3
9	611586.1	683132.7	400	12854	83	12	-71
9	611579.1	683125.5	410	12854	85.2	12	-73.2
9	611572.2	683118.4	420	12854	85.2	12	-73.2
9	611565.2	683111.2	430	12854	83.7	12	-71.7
9	611558.2	683104.1	440	12854	83	12	-71
9	611551.2	683096.9	450	12854	86.6	12	-74.6
9	611544.3	683089.8	460	12854	84.5	12	-72.5
9	611537.3	683082.6	470	12140	83	12	-71
9	611530.4	683075.4	480	11812	83	12	-71
9	611523.4	683068.2	490	11812	84.5	12	-72.5
9	611516.4	683061.1	500	11812	88.4	12	-76.4
9	611509.3	683054.1	510	11812	87.8	12	-75.8
9	611502.1	683047.1	520	11812	87.2	12	-75.2
9	611495	683040	530	11812	86.6	12	-74.6
9	611487.9	683033	540	11812	85.3	12	-73.3
9	611480.8	683025.9	550	11812	85.2	12	-73.2
9	611473.6	683018.9	560	12477	88.1	12	-76.1
9	611466.4	683011.9	570	10073	89.6	12	-77.6
9	611459.3	683004.9	580	10073	88.8	12	-76.8
9	611452.1	682997.8	590	10073	91	12	-79
9	611445	682990.8	600	10073	91	12	-79

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
9	611437.9	682983.8	610	10073	93.9	12	-81.9
9	611430.7	682976.7	620	10073	95.4	12	-83.4
9	611423.6	682969.7	630	10073	96.1	12	-84.1
9	611416.4	682962.6	640	10073	95.4	12	-83.4
9	611409.2	682955.6	650	10073	96.9	12	-84.9
9	611402.1	682948.6	660	10073	95.4	12	-83.4
9	611395	682941.6	670	10073	101	12	-89
9	611387.9	682934.5	680	12616	99.1	12	-87.1
9	611380.7	682927.5	690	12616	93.9	12	-81.9
9	611373.6	682920.4	700	12289	93.9	12	-81.9
9	611366.4	682913.4	710	12289	93.2	12	-81.2
9	611359.3	682906.5	720	12289	94.7	12	-82.7
9	611352.2	682899.5	730	12525	103.3	12	-91.3
9	611345.1	682892.5	740	12525	105.1	12	-93.1
9	611337.9	682885.5	750	12525	109.7	12	-97.7
9	611330.8	682878.6	760	12525	107.9	12	-95.9
9	611323.7	682871.6	770	12525	107.8	12	-95.8
9	611316.6	682864.6	780	12525	107.1	12	-95.1
9	611309.4	682857.6	790	12525	105.6	12	-93.6
9	611302.3	682850.6	800	12525	110	12	-98
9	611295.2	682843.6	810	12525	111.4	12	-99.4
9	611288.1	682836.7	820	12525	115.1	12	-103.1
9	611280.9	682829.7	830	12525	116.6	12	-104.6
9	611273.8	682822.7	840	12525	116.6	12	-104.6
9	611266.7	682815.8	850	11774	118	12	-106
9	611259.6	682808.8	860	11774	118.7	12	-106.7
9	611252.4	682801.8	870	11774	121.7	12	-109.7
9	611245.3	682794.8	880	11774	122.4	12	-110.4
9	611238.2	682787.8	890	11774	120.9	12	-108.9
9	611231.1	682780.8	900	11774	122.4	12	-110.4
9	611224	682773.8	910	11774	122.4	12	-110.4
9	611216.9	682766.7	920	11774	121.7	12	-109.7
9	611209.9	682759.6	930	11774	120.2	12	-108.2
9	611202.8	682752.5	940	11774	120.2	12	-108.2
9	611231.1	682780.8	900	9137	125.3	12	-113.3
9	611224	682773.8	910	9137	123.9	12	-111.9
9	611216.9	682766.7	920	9137	120.2	12	-108.2

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
9	611209.9	682759.6	930	9137	121.7	12	-109.7
9	611202.8	682752.5	940	9137	119.5	12	-107.5
9	611195.8	682745.4	950	9137	123.1	12	-111.1
9	611188.6	682738.4	960	9137	118	12	-106
9	611181.6	682731.3	970	9137	120.2	12	-108.2
9	611174.5	682724.2	980	9137	115.1	12	-103.1
9	611167.4	682717.1	990	9137	113.6	12	-101.6
9	611160.4	682710.1	1000	9171	113.6	12	-101.6
9	611153.3	682703	1010	8121	110	12	-98
9	611146.2	682695.9	1020	8121	112.2	12	-100.2
9	611139.2	682688.8	1030	8121	111.2	12	-99.2
9	611132.1	682681.8	1040	8121	108.4	12	-96.4
9	611125	682674.7	1050	8121	109.4	12	-97.4
9	611117.9	682667.6	1060	8121	109.4	12	-97.4
9	611110.9	682660.6	1070	8121	110.3	12	-98.3
9	611103.8	682653.4	1080	8121	112.9	12	-100.9
9	611096.8	682646.4	1090	8121	111.4	12	-99.4
9	611089.7	682639.3	1100	8121	114.4	12	-102.4
9	611082.6	682632.2	1110	8121	119.2	12	-107.2
9	611075.4	682625.2	1120	8121	119.7	12	-107.7
9	611068.2	682618.2	1130	8121	120.3	12	-108.3
9	611061.1	682611.2	1140	8121	126.7	12	-114.7
9	611053.9	682604.1	1150	9157	129.4	12	-117.4
9	611046.8	682597.1	1160	9157	130.4	12	-118.4
9	611039.7	682590.1	1170	9157	132.6	12	-120.6
9	611032.5	682583.1	1180	9157	131.2	12	-119.2
9	611025.4	682576	1190	9157	128.2	12	-116.2
9	611018.2	682569	1200	9157	128.9	12	-116.9
9	611011.1	682562	1210	9157	128.9	12	-116.9
9	611003.9	682554.9	1220	9157	129.7	12	-117.7
9	610996.8	682547.9	1230	9157	126.1	12	-114.1
9	610989.6	682540.9	1240	9157	125.3	12	-113.3
9	610982.5	682533.9	1250	10716	120.3	12	-108.3
9	610975.3	682526.8	1260	10716	117.4	12	-105.4
9	610968.2	682519.8	1270	10716	112.5	12	-100.5
9	610961.1	682512.8	1280	10716	116.7	12	-104.7
9	610953.9	682505.8	1290	10716	113.4	12	-101.4

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
9	610946.8	682498.7	1300	10716	103.9	12	-91.9
9	610939.2	682492.1	1310	10716	101.2	12.1	-89.2
9	610931.8	682485.6	1320	10716	104.8	12.1	-92.7
9	610924.3	682479.1	1330	10716	108.3	12.1	-96.2
9	610916.9	682472.5	1340	11339	106	12.2	-93.8
9	610909.4	682466	1350	11339	94.6	12.2	-82.4
9	610901.9	682459.4	1360	10058	95.7	12.3	-83.4
9	610894.4	682452.9	1370	10058	101.2	12.4	-88.8
9	610886.9	682446.3	1380	11055	100.2	12.4	-87.8
9	610879.5	682439.8	1390	11055	99.4	12.4	-86.9
9	610872	682433.2	1400	11055	98.4	12.5	-85.9
9	610864.5	682426.7	1410	12628	100.2	12.6	-87.7
9	610857.1	682420.2	1420	11633	98.4	12.6	-85.8
9	610849.6	682413.6	1430	11633	95.4	12.6	-82.7
9	610842.1	682407.1	1440	11633	95.1	12.7	-82.4
9	610834.6	682400.5	1450	11633	96.5	12.8	-83.7
9	610827.1	682394	1460	11633	90.2	12.8	-77.4
9	610819.7	682387.4	1470	11633	87.7	12.9	-74.9
9	610812.2	682380.9	1480	11633	86.7	12.9	-73.8
9	610804.8	682374.4	1490	11633	82.3	12.9	-69.3
9	610797.2	682367.8	1500	11952	82.3	13	-69.3
9	610789.8	682361.2	1510	11952	79.3	13	-66.4
9	610782.4	682354.6	1520	11952	67.4	12.9	-54.5
9	610775	682347.9	1530	11952	65	12.9	-52.1
9	610767.6	682341.2	1540	11952	61.6	12.8	-48.7
9	610760.2	682334.6	1550	11952	61.1	12.8	-48.3
9	610752.8	682328	1560	11952	61.4	12.7	-48.7
9	610745.3	682321.3	1570	11952	53.9	12.7	-41.3
9	610737.9	682314.7	1580	11952	52.7	12.6	-40
9	610730.5	682308.1	1590	11952	57.5	12.6	-44.9
9	610723.1	682301.4	1600	11952	61.8	12.5	-49.3
9	610715.7	682294.8	1610	11952	68.2	12.5	-55.7
9	610708.2	682288.1	1620	11531	78.6	12.4	-66.2
9	610700.8	682281.5	1630	11531	78.6	12.4	-66.2
9	610693.4	682274.9	1640	12432	77.8	12.3	-65.5
9	610686	682268.2	1650	12432	77.4	12.3	-65.1
9	610678.6	682261.6	1660	10398	78.4	12.2	-66.1

Seismic Line	Easting (ft)	Northing (ft)	Station (ft)	Bedrock Velocity (ft/s)	Bedrock Depth (ft)	Surface Elevation (ft)	Bedrock Elevation (ft)
9	610671.2	682254.9	1670	10398	77.4	12.2	-65.2
9	610663.8	682248.3	1680	10184	79.3	12.1	-67.2
9	610656.3	682241.6	1690	10184	80.2	12.1	-68.1
9	610648.9	682235	1700	10184	75.6	12	-63.6
9	610641.5	682228.4	1710	10184	74.7	12	-62.7

Estimated standard deviation of depth of interfaces for seismic lines is normally taken as 10% or 2 feet, whichever is greater. Depths and elevations of bedrock determined here are for competent bedrock. Heavily weathered or highly fractured bedrock may occur at shallower depths. The easting and northing coordinates are relative to NJ State Plane NAD83 (CORS96) in US survey feet. Elevations along the seismic lines were determined from plans provided by AECOM and are relative to mean sea level (NAVD88).

Table 2A – Comparison of Bedrock Depths at Seismic Line Crossings

Seismic Line	Location (ft)	Bedrock Depth (ft)	Seismic Line	Location (ft)	Bedrock Depth (ft)	Difference	
						Feet	Percent
1	3+81	72	8	1+79	74	2	2%
1	8+87	70	9	1+33	69	1	1%
2	4+15	64	8	3+86	62	2	3%
2	8+91	64	9	2+60	68	4	6%
3	4+02	43	8	5+57	49	6	12%
3	8+52	81	9	4+76	83	2	2%
4	3+80	48	8	7+98	56	8	14%
4	7+90	94	9	7+71	101	7	7%
5A	3+17	76	8B	0+89	74	2	3%
5B	4+45	120	9	8+35	125	5	4%
6	1+50	65	8C	0+55	61	4	7%
6	2+18	67	8B	2+82	80	13	16%
6	3+95	82	5B	0+76	86	4	5%
7	3+20	82	9	14+87	82	0	0%
8B	4+70	90	8C	1+97	85	5	6%
8C	4+02	71	8C	0+15	69	2	3%
Average						4.2	5.7%
Standard Deviation						3.3	4.7%

Table 2B - Comparison of Bedrock Depth at Boring Locations

Seismic Line Location / Boring			Distance from Seismic Line to Boring	Bedrock Depths (feet)		Difference	
				Boring	Seismic Line	Feet	Percent
114-BSB-01 0+41	/	Line 1	12' S	63	61	2.0	3%
114-MW45C 3+83	/	Line 1	2' N	71	72	1.0	1%
114-MW52C 1+75	/	Line 3	20' N	76	69	7.0	10%
HAL-P3-IRM-0061-B 8+76	/	Line 3	10' S	84	80	4.0	5%
114-MW68C 1+36	/	Line 4	17' S	73	64	9.0	14%
114-MW60C 7+85	/	Line 4	15' S	119.5	94	25.5	27%
132-MW2B 0+11	/	Line 6	6' S	31	30	1.0	3%
132-P3-MW001D 2+45	/	Line 6	26' S	88	74	14.0	19%
133-MW1C 1+650	/	Line 9	21' N	77	77	0.0	0%
114MW60C 7+40	/	Line 9	6' W	119.5	102.7	16.8	16%
SB-58 2+18	/	Line 9	12' E	70	62	8.0	13%
GT-9C 6+35	/	Line 8	16' W	67	54	13.0	24%
143-P3-IRM-0041-B 1+39	/	Line 5A	7' N	61	57	4.0	7%
					Average	8.1	11%
					Standard Deviation	7.5	9%

Bedrock information from boring program provided by AECOM

N

H-R

APPROXIMATE SCALE (feet)

0 2000 4000

NJ

LOCATION

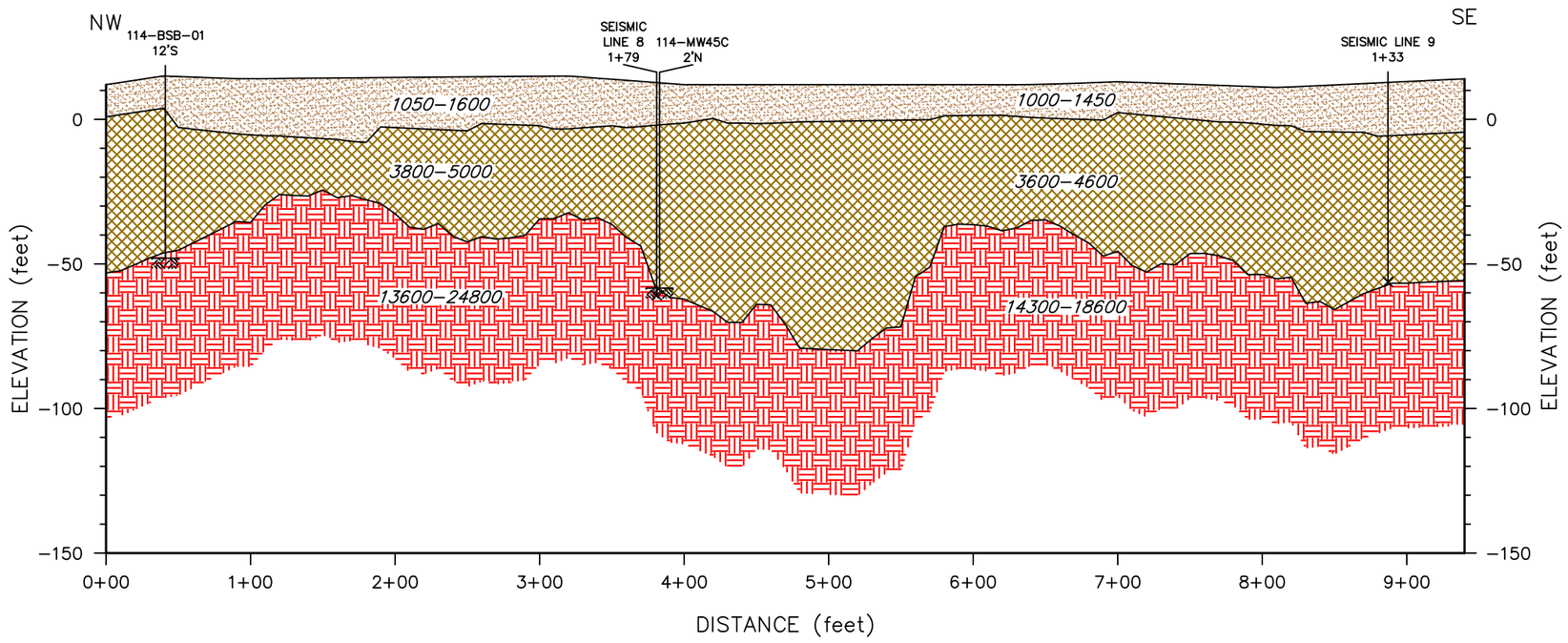
NOTE:

Modified from Google Earth Pro aerial photograph.

Figure 1
General Site Location
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

LEGEND

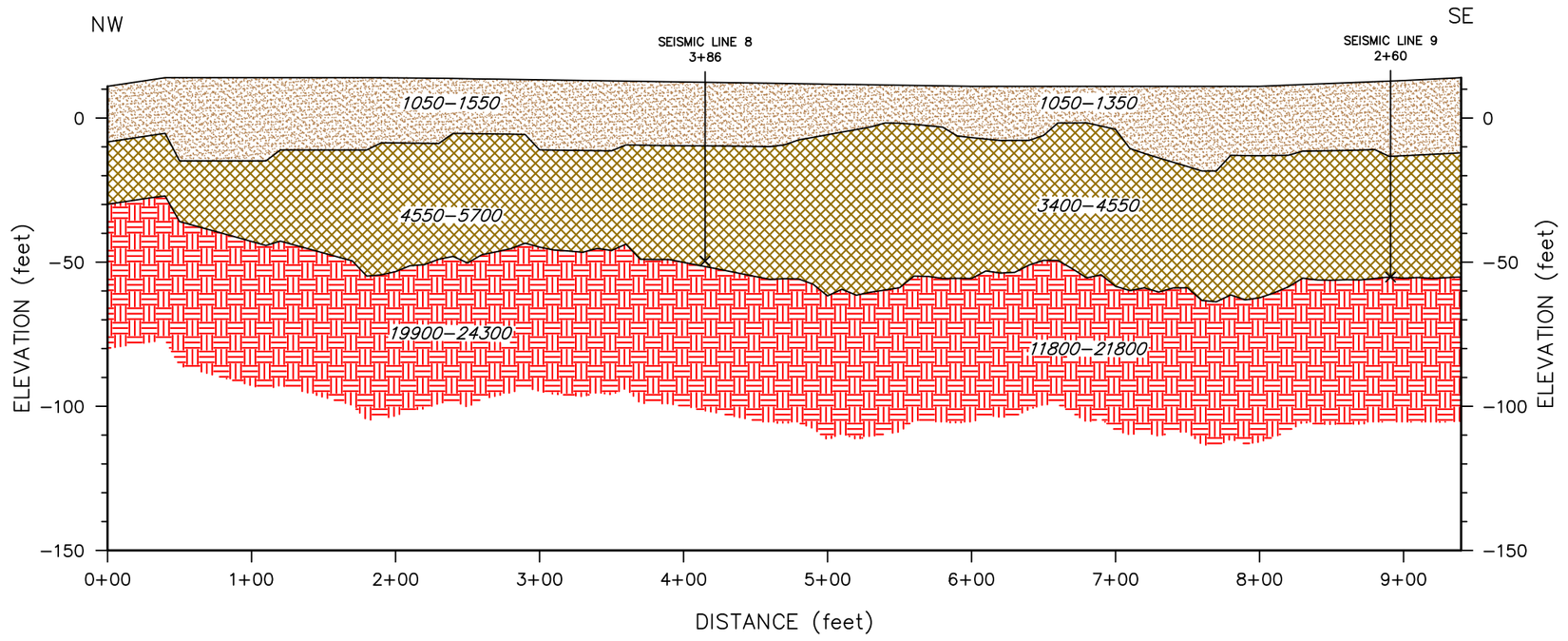
- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

Figure 2
Seismic Line 1
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

LEGEND

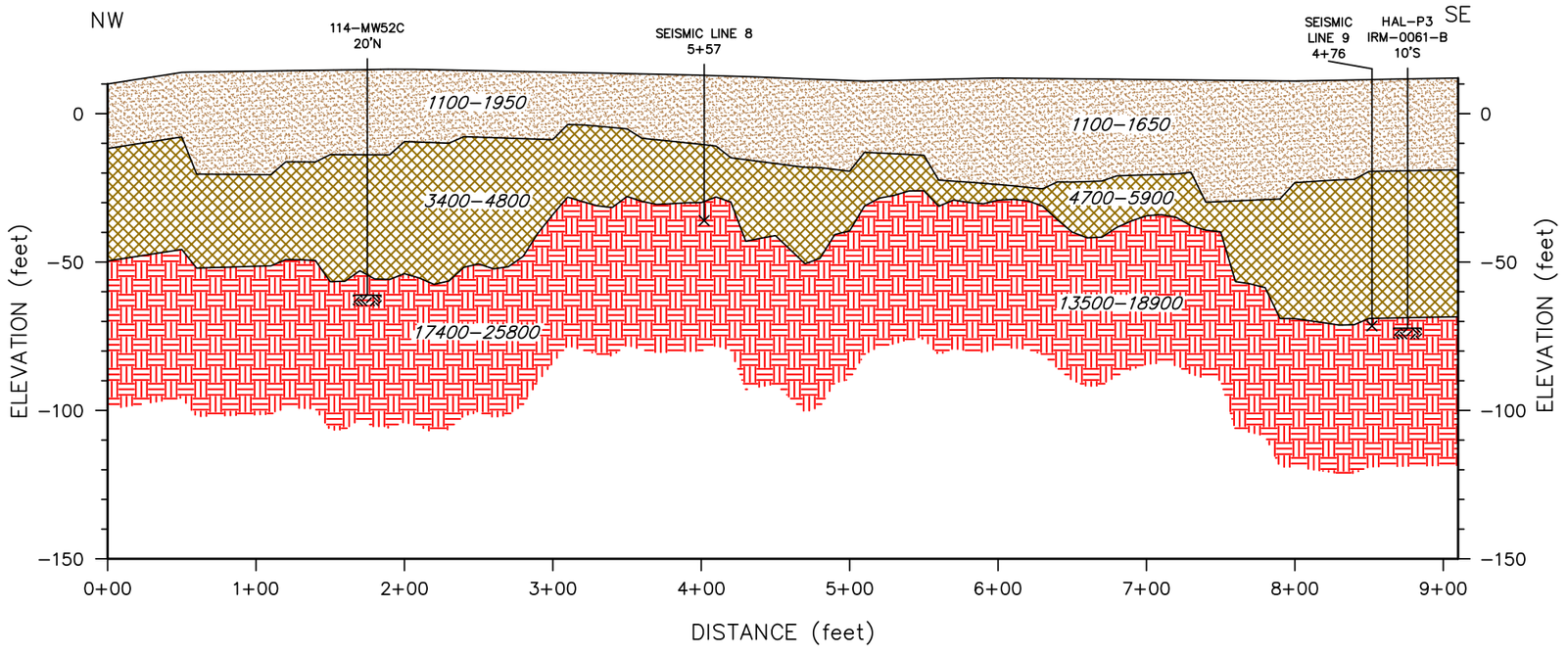
- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* — Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

Figure 3
Seismic Line 2
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

LEGEND

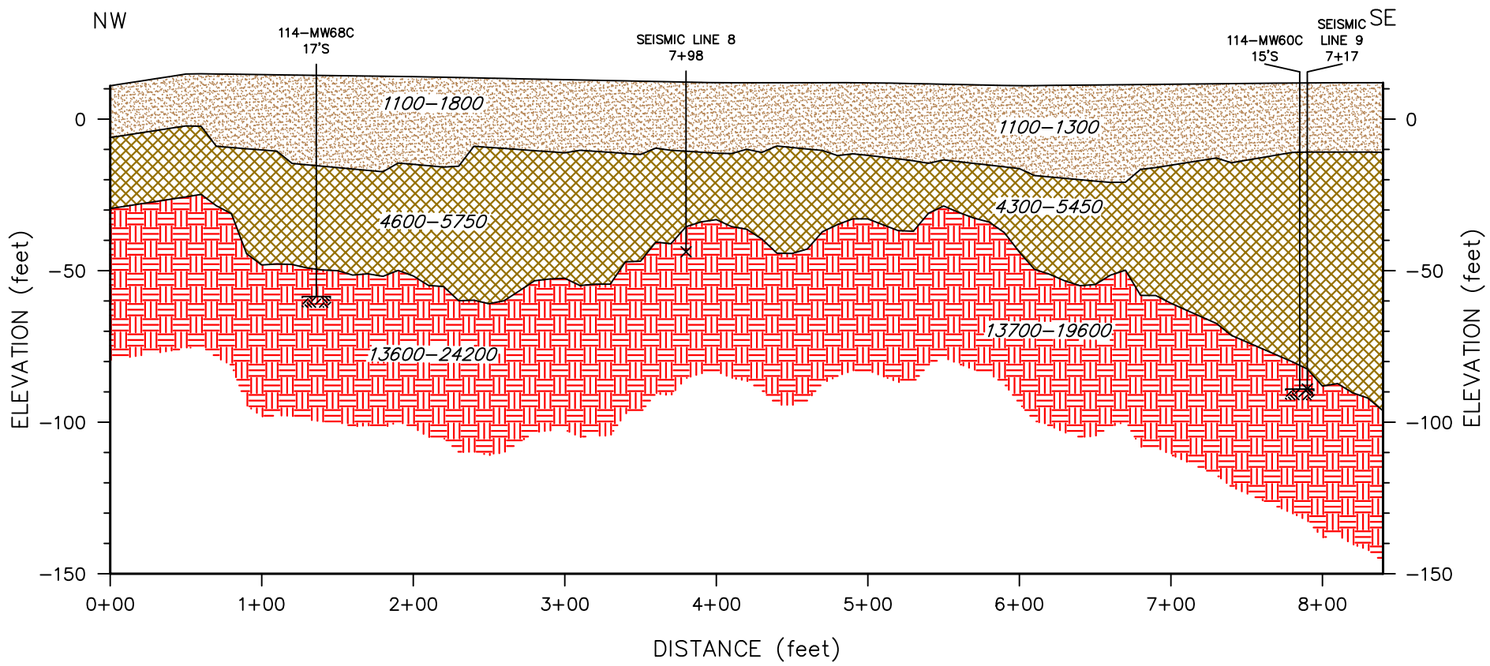
- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

Figure 4
Seismic Line 3
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

LEGEND

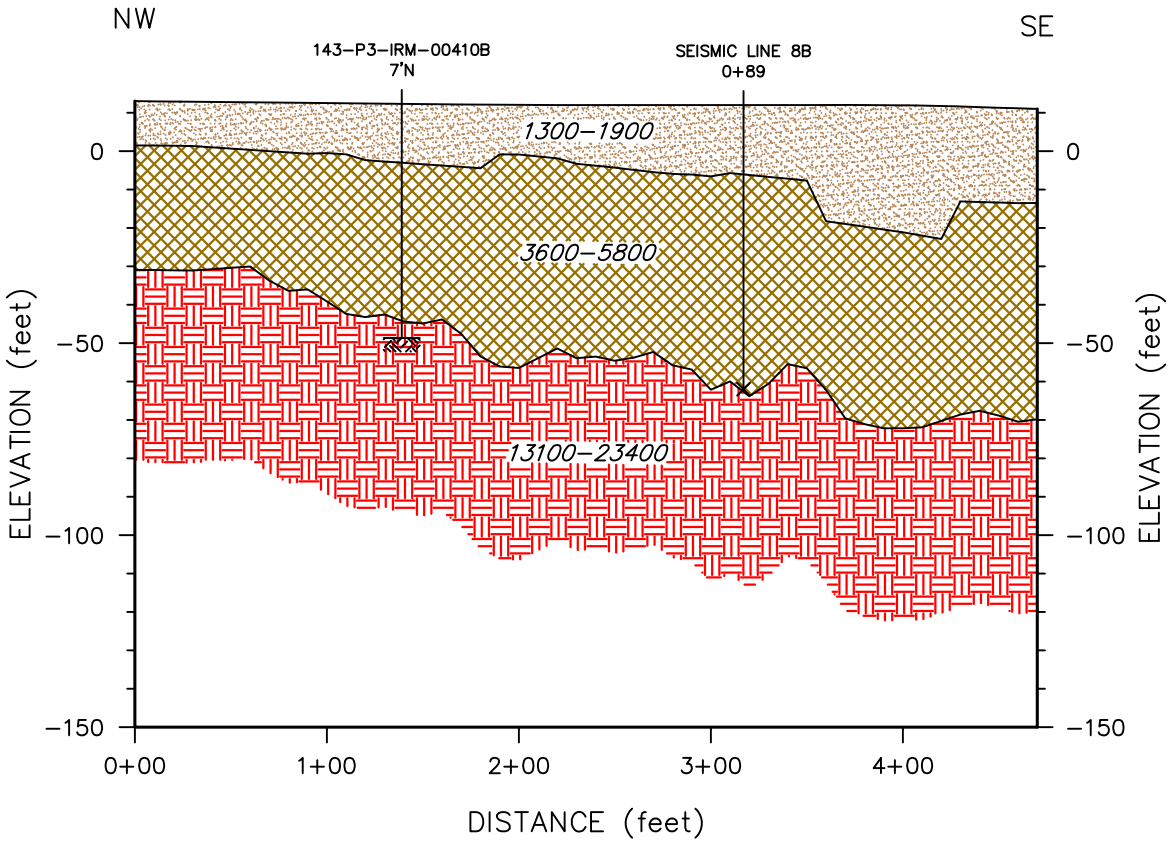
- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

Figure 5
Seismic Line 4
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



LEGEND

- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- 13600–24800 — Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

HORIZONTAL SCALE (feet)

0 100 200

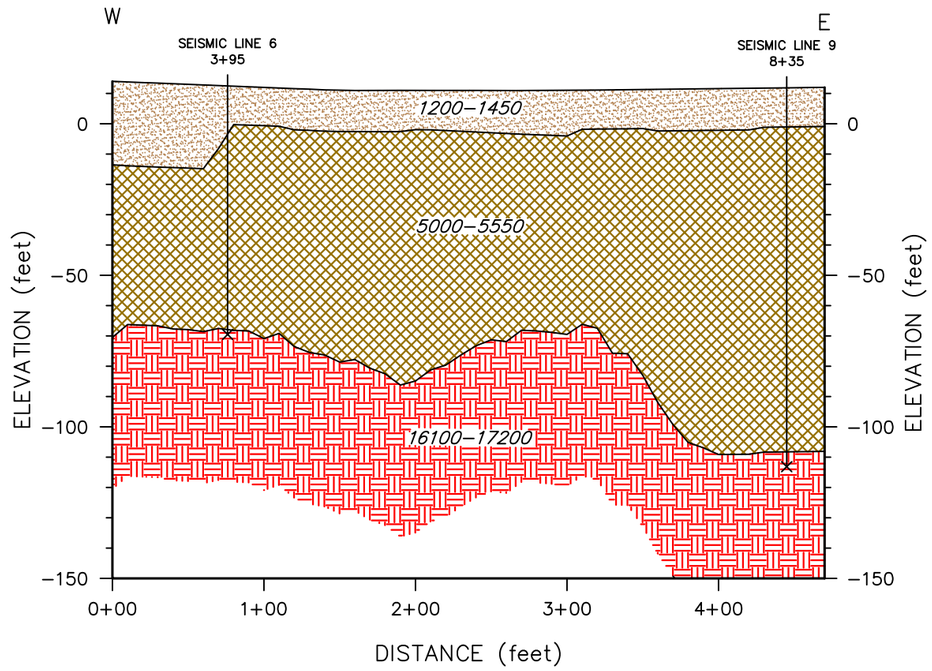
Vertical Exaggeration = 2X

Figure 6
Seismic Line 5A
Garfield Avenue Group Sites
Jersey City, New Jersey

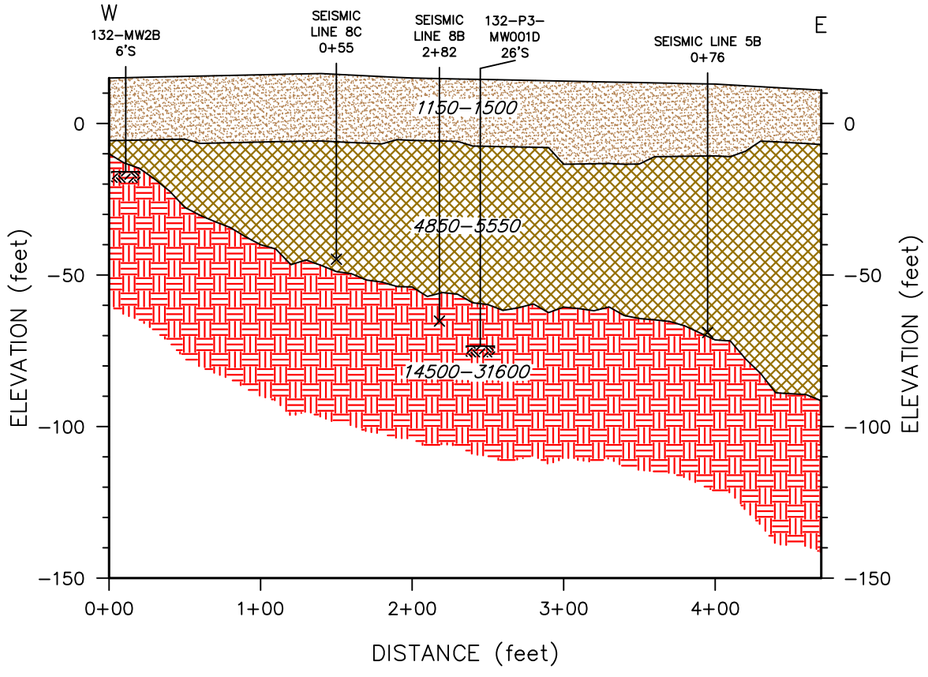
File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ

SEISMIC LINE 5B



SEISMIC LINE 6



LEGEND

- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* — Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

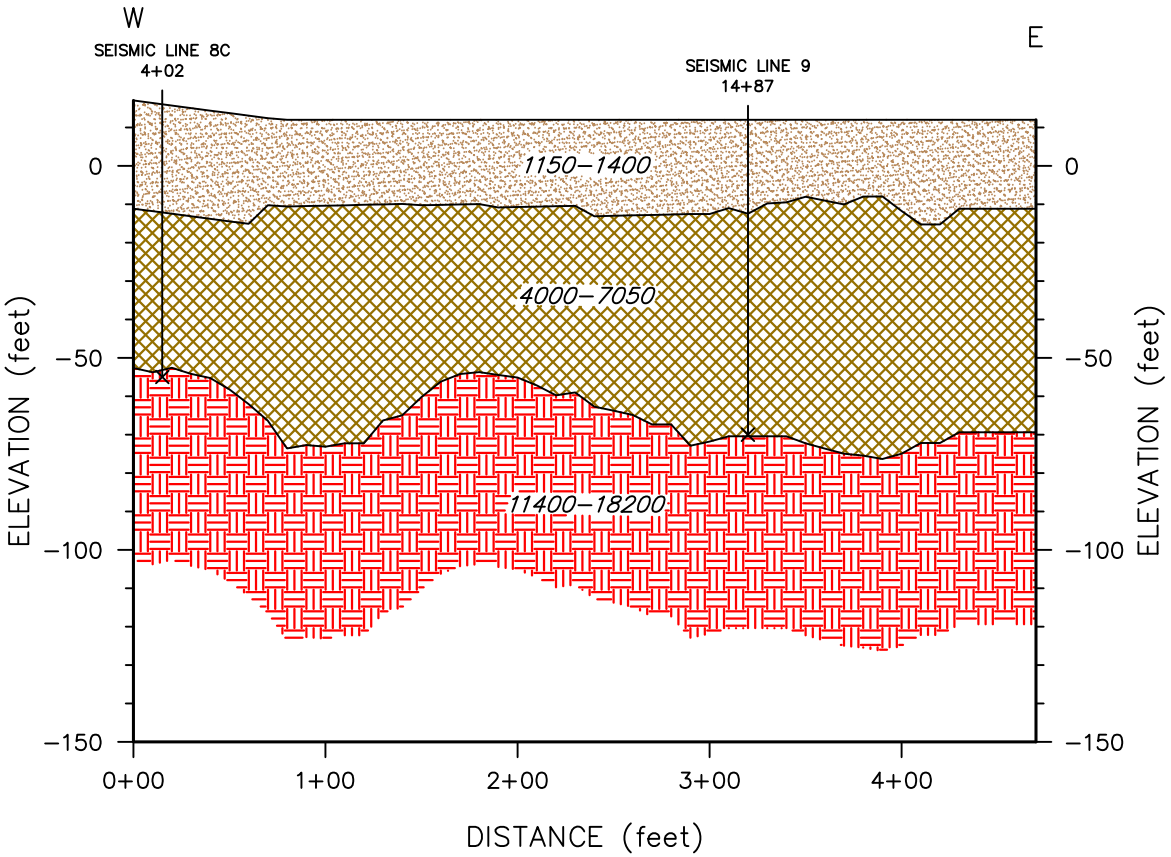
NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

Figure 7
Seismic Lines 5B & 6
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



LEGEND

- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- 13600–24800 — Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

HORIZONTAL SCALE (feet)

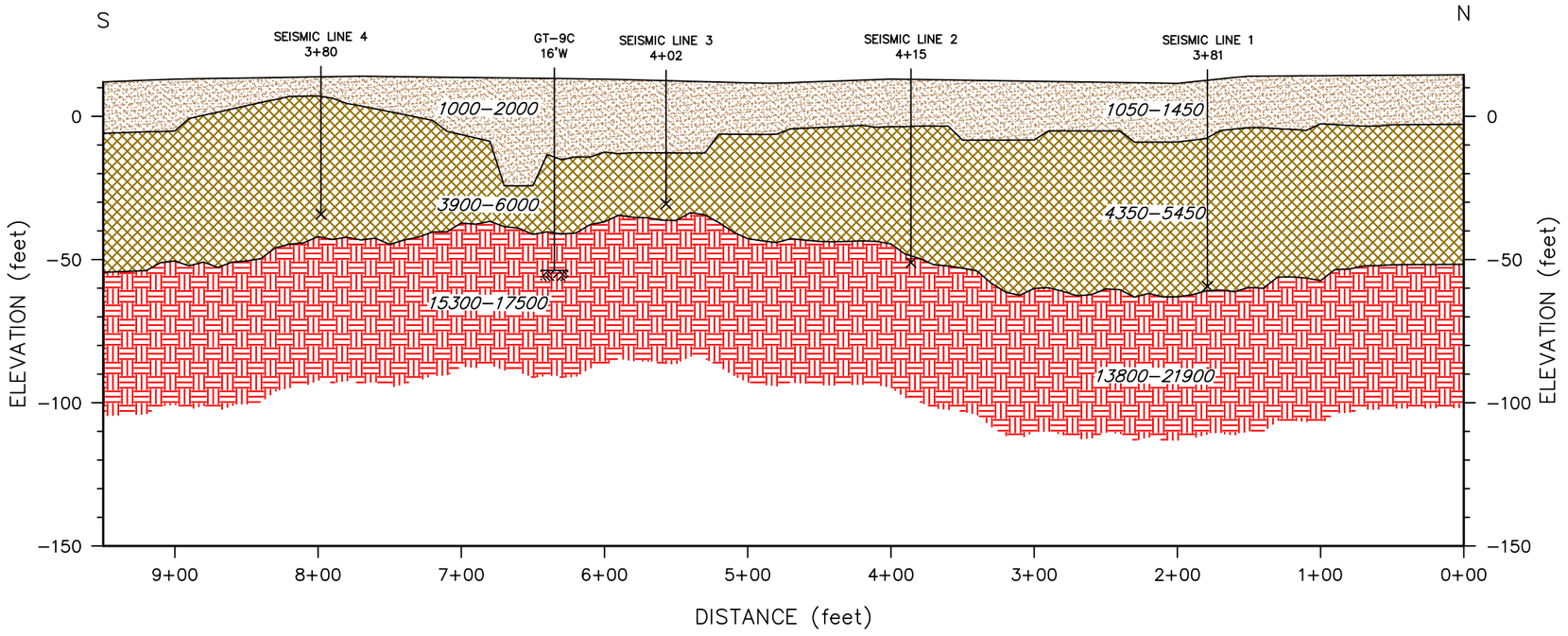
0 100 200

Vertical Exaggeration = 2X

Figure 8
Seismic Line 7
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

LEGEND

- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600-24800* Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114-BSB-01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

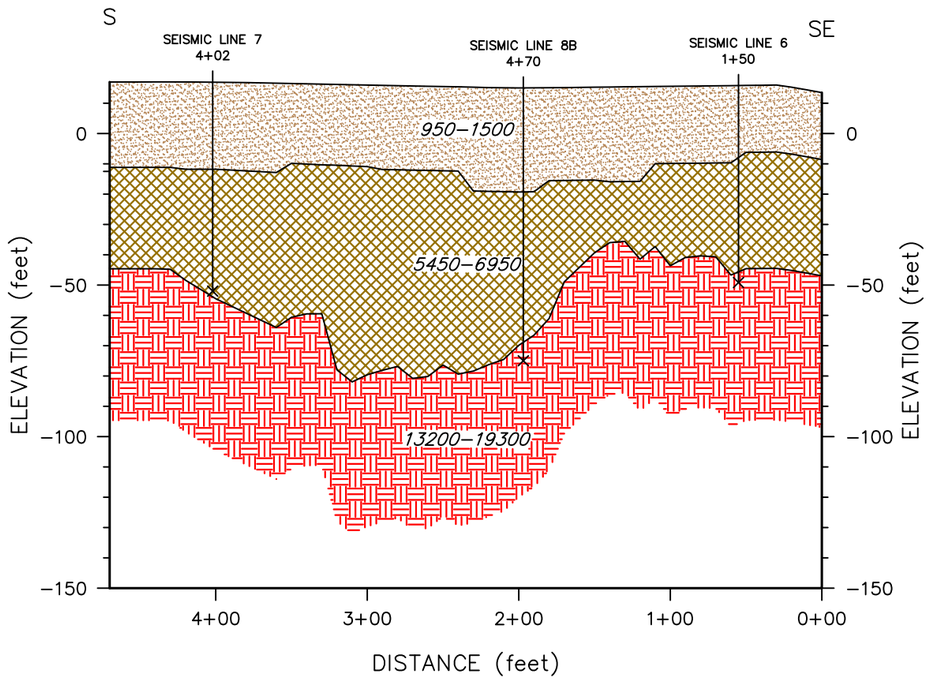
HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

Figure 9
Seismic Line 8
Garfield Avenue Group Sites
Jersey City, New Jersey

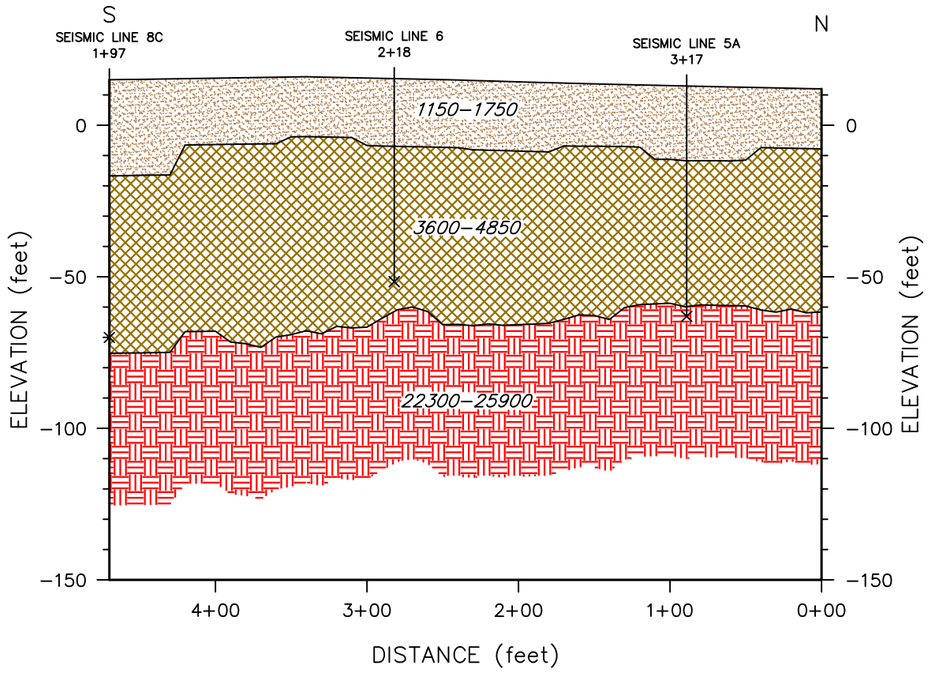
File 19RG66A | February, 2022

HAGER-RICHTER
Salem, NH | Fords, NJ

SEISMIC LINE 8C



SEISMIC LINE 8B



LEGEND

- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* — Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

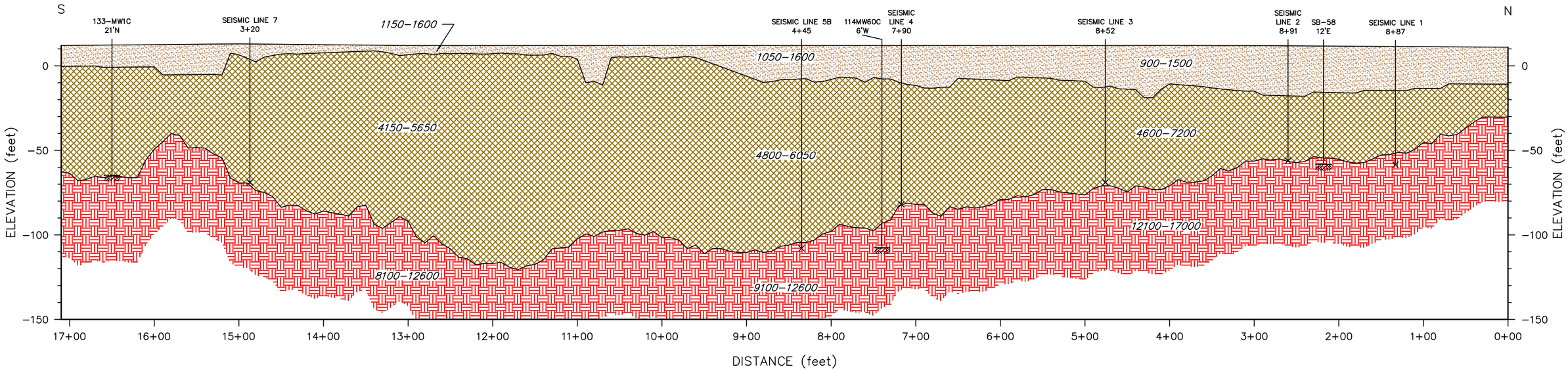
NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

Figure 10
Seismic Lines 8C & 8B
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ



NOTES:

1. Estimated accuracy (standard deviation) of depth of bedrock is ±10% or 2 feet, whichever is greater.
2. The depths determined for bedrock are depths of competent rock; weathered and/or fractured bedrock might occur at shallower depths.
3. Surface elevations estimated from plans provided by Aecom, LLC.
4. Data were analyzed using the Generalized Reciprocal Method.

LEGEND

- Unsaturated soils
- Unsaturated/ saturated soils
- Bedrock
- *13600–24800* Velocity (fps)
- Interface determined from seismic refraction data
- SEISMIC LINE 7 5+64 — Intersecting seismic line with depth of bedrock
- 114–BSB–01 12'S — Boring with identification, distance and direction from traverse, and depth of bedrock based on logs provided by Aecom, LLC.

HORIZONTAL SCALE (feet)
0 100 200
Vertical Exaggeration = 2X

Figure 11
Seismic Line 9
Garfield Avenue Group Sites
Jersey City, New Jersey

File 19RG66A | February, 2022

HAGER–RICHTER
Salem, NH | Fords, NJ

NOTE:

Modified from site plan provided by Aecom, LLC, identified as 2021-11-11 PPG GAG_Site Conditions_Hager-Richter_Approx.dwg.

SCALE (feet)

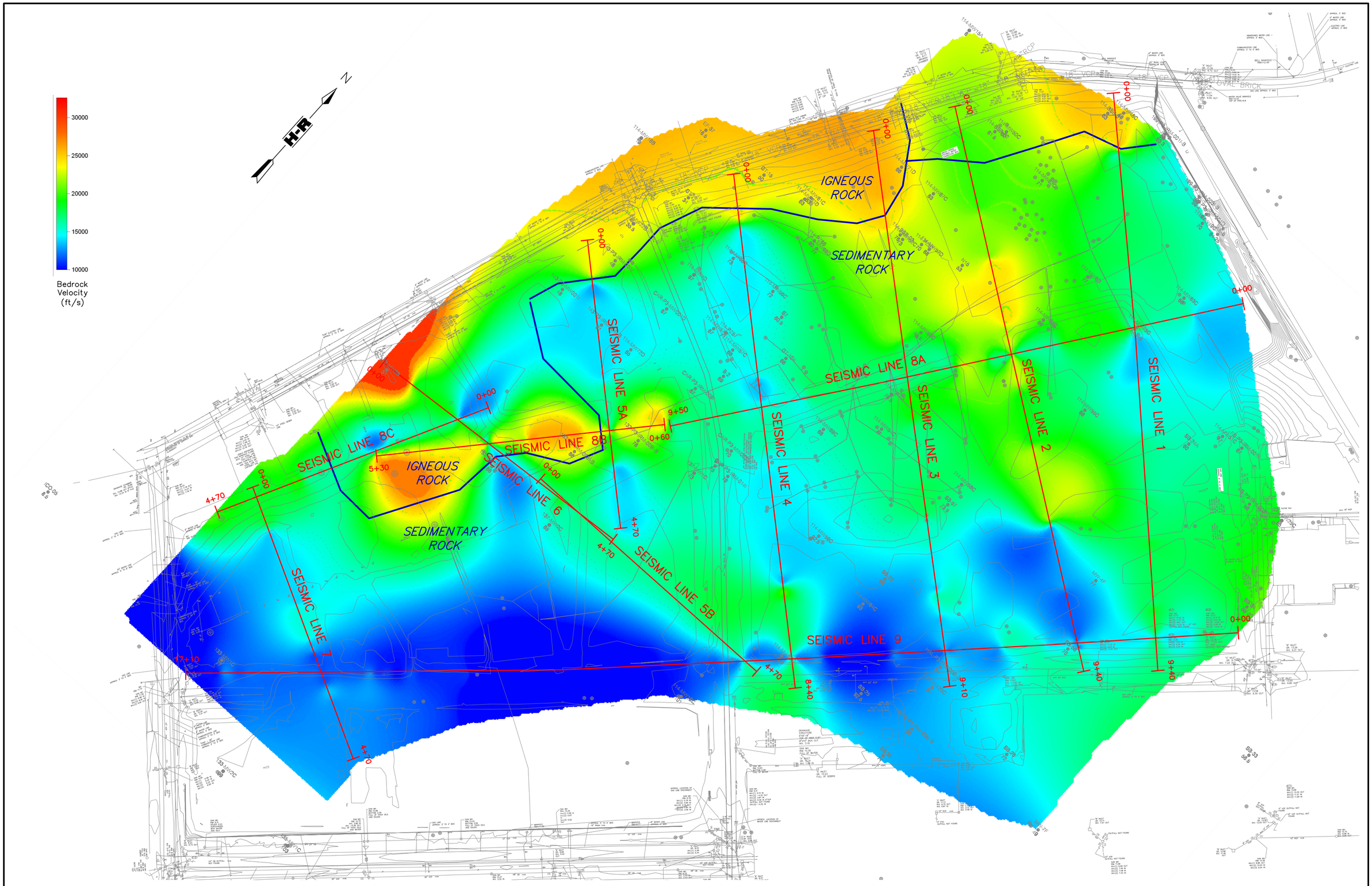
0 100 200

LEGEND

SEISMIC LINE

BORING

PLATE 1 SITE PLAN GARFIELD AVENUE GROUP SITES JERSEY CITY, NEW JERSEY	
FILE 19RG66A	FEBRUARY, 2022
HAGER-RICHTER SALEM, NH | FORDS, NJ	



NOTE:

Modified from site plan provided by Aecom, LLC, identified as 2021-11-11 PPG GAG_Site Conditions_Hager-Richter_Approx.dwg.

SCALE (feet)

0 100 200

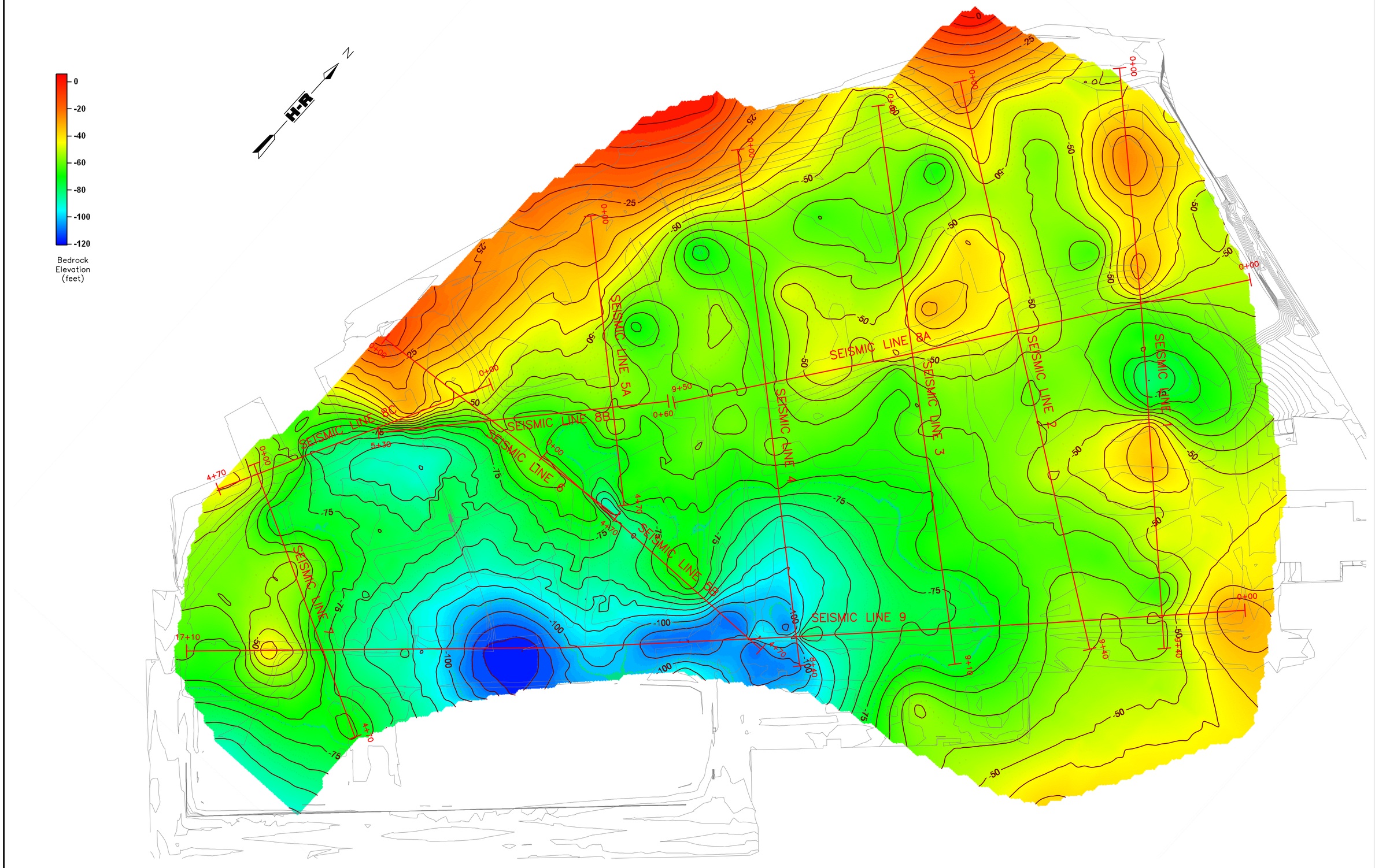
LEGEND

- SEISMIC LINE
- BORING
- INTERPRETED CONTACT BETWEEN IGNEOUS AND SEDIMENTARY ROCK

PLATE 2
BEDROCK VELOCITY
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

FILE 19RG66A | FEBRUARY, 2022

HAGER-RICHTER
SALEM, NH | FORDS, NJ



NOTES:

1. Modified from site plan provided by Aecom, LLC, identified as 2021-11-11 PPG GAG_Site Conditions_Hager-Richter_Approx.dwg.
2. Contour Interval = 5 Feet.
3. The bedrock elevations shown on this plot represent a non-unique model. The contours represent interpolations based on the available data, including electrical resistivity imaging data and boring information. The elevations of the bedrock surface at any particular location may differ from that shown. Bedrock elevations based on additional data may differ significantly.

SCALE (feet)
0 100 200

LEGEND
SEISMIC LINE
BORING

PLATE 3
BEDROCK ELEVATION
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

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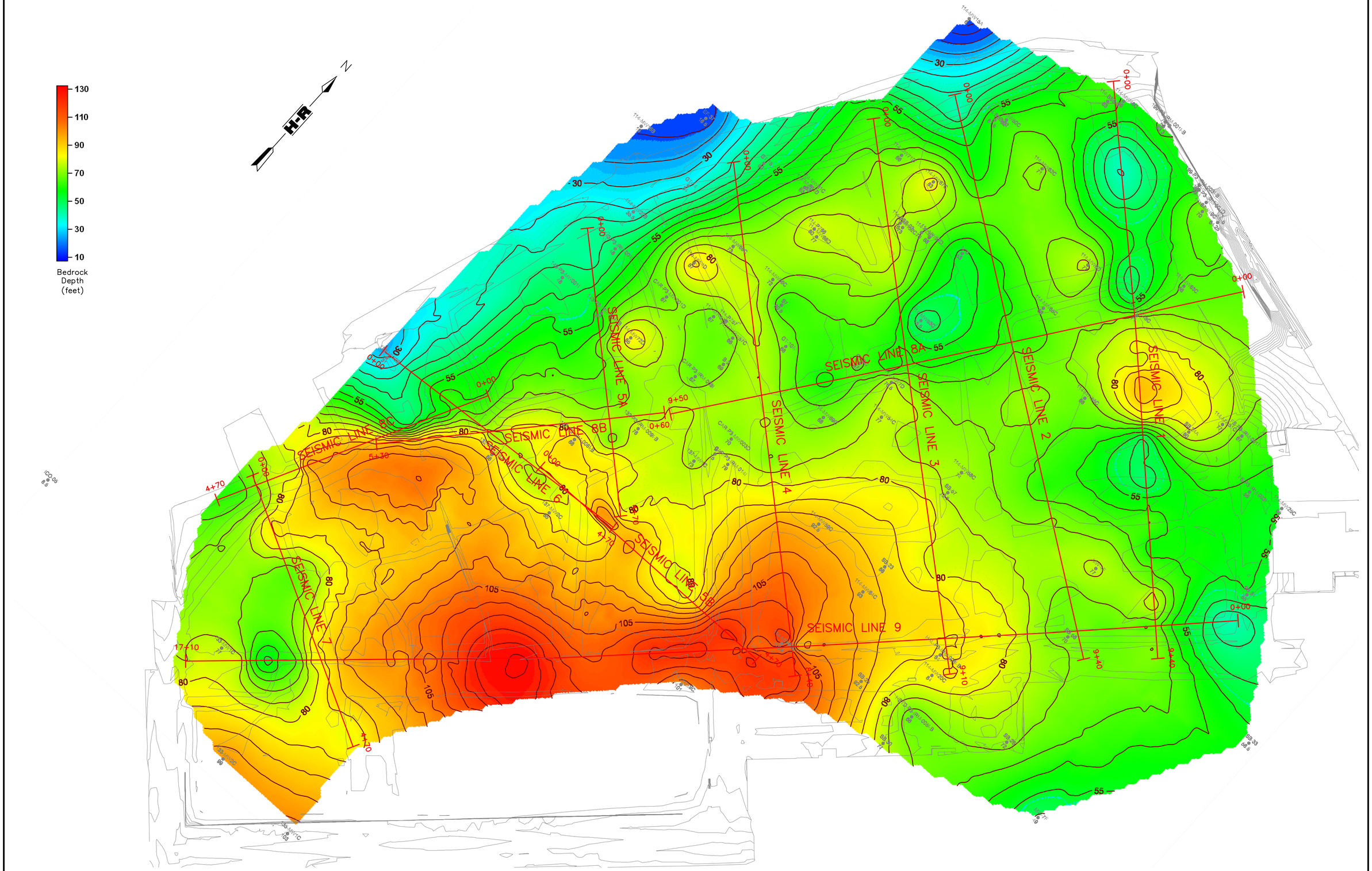

NOTES:

1. Modified from site plan provided by Aecom, LLC, identified as 2021–11–11 PPG GAG_Site Conditions_Hager–Richter_Approx.dwg.
2. Contour Interval = 5 Feet.
3. The bedrock depths shown on this plot represent a non–unique model. The contours represent interpolations based on the available data, including electrical resistivity imaging data and boring information. The depths of the bedrock surface at any particular location may differ from that shown. Bedrock depths based on additional data may differ significantly.

SCALE (feet)
0 100 200

LEGEND
SEISMIC LINE
BORING

PLATE 4
BEDROCK DEPTH
GARFIELD AVENUE GROUP SITES
JERSEY CITY, NEW JERSEY

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