ADDENDUM NO. 1

CITY OF PENDLETON
Connector Road Waterlines Project
Issued: November 13, 2023

Bid Opening Date: DECEMBER 7, 2023 @ 2:00 pm

TO ALL PLANHOLDERS:

This Addendum provides the following clarifications/revisions, corrections and changes to the Bid Documents. All bidders shall acknowledge receipt and acceptance of this Addendum by completing the spaces and signing where indicated below and submitting it with the Proposal. Bids submitted without signing for the Addendum may be considered informal.

1. **SUPPLEMENTARY INFORMATION,** Geotechnical Engineering Evaluation, is missing from the **TECHNICAL SPECIFICATIONS.** The final report from Geo Engineers, dated January 19, 2023, is attached:

CITY OF PENDLETON

11/13/2023

Bob Patterson, PE
Public Works Director
City of Pendleton
500 SW Dorion Avenue
Pendleton, OR 97801

BIDDER'S ACKNOWLEDGMENT:

_____
Company Name (please print)

_____
Bidder's Name (please print)

_____
Signature

_____
Title

_____
Address

_____
City, State

Geotechnical Engineering Evaluation

Connector Road Water Line
City of Pendleton Water and Sewer System Upgrades

for
Consor

January 19, 2023

GeoEngineers
Earth Science + Technology

Geotechnical Engineering Evaluation

Connector Road Water Line
City of Pendleton Water and Sewer System Upgrades

Pendleton, Oregon

for
Consor

January 19, 2023

GeoEngineers

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Spokane, Washington 99202
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Geotechnical Engineering Evaluation

Connector Road Water Line
City of Pendleton Water and Sewer System Upgrades
Pendleton, Oregon

File No. 8946-003-05

January 19, 2023

Prepared for:

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1.0 INTRODUCTION

1.1 Overview

This report presents the results of our geotechnical investigation and recommendations for the proposed Connector Road Water Line project in Pendleton, Oregon. This portion of the project consists of an approximate 1,100-lineal-foot segment extending east from the intersection of State Highway 11 (SH 11) and SE Kirk Avenue. The approximate site location is shown in the Vicinity Map, Figure 1. Project Stationing starts at approximate Station 1+00 at the intersection of SH 11 and extends to Station 12+00 at the east end of the segment.

Within the project limits, plans include excavation in the range of less than 1 foot to about 13 feet to establish final site grades. The bottom of the proposed water line trench will be situated about 6 feet below proposed grades. Therefore, the bottom of the proposed water line trench will be situated between about 6 feet and 18½ feet below existing site grades.

2.0 SCOPE OF SERVICES

Our services were completed in accordance with our agreement with the Task Order dated November 2, 2022. The purpose of our geotechnical engineering evaluation was to provide subsurface information and recommendations for earthwork based on subsurface exploration, laboratory testing and engineering analyses.

Our specific scope of services included:

- Observation of test pits excavated by the City of Pendleton.
- Limited geotechnical laboratory testing.
- Geotechnical engineering recommendations, including:
    - Site preparation and earthwork, including trench excavation and pipe installation.
    - Placement of backfill and structural fill, including fill type and compaction requirements.
    - Potential to reuse excavated soils as backfill.
    - Potential areas of settlement and vibration impacts during construction.
    - Geotechnical considerations for temporary excavation support, including opinions regarding feasible shoring systems and construction installation methods.
    - Recommendations for utility foundation support.
    - Recommendations for temporary site drainage during and following construction, and permanent site drainage.
    - Recommendations for additional subsurface explorations.

3.0 FIELD EXPLORATION AND LABORATORY TESTING

We explored subsurface conditions at the site on November 3, 2022 by excavating 10 test pits (TP-1 through TP-10). The test pits were excavated to depths in the range of about 4 to 10 feet below existing site grade using a rubber-tired backhoe owned and operated by the City of Pendleton. The approximate locations of our explorations are shown in the Site Plan, Figure 2.

We collected and returned representative samples from the test pits to our laboratory for examination and testing. Detailed descriptions of our site exploration and laboratory testing programs along with exploration logs and laboratory test results are presented in Appendix A.

4.0 SITE CONDITIONS

4.1 Surface Conditions

The proposed water line alignment is located along the existing alignment of SE Kirk Avenue. From the intersection with State Highway 11, SE Kirk Avenue slopes up towards the east at an approximate 10 to 12 percent grade. Ground surface ranges from about Elevation 1,285 near the SH 11 intersection at Station 1+00, to about Elevation 1,350 east of Station 9+00 near the east end of the segment. The existing two-lane asphalt-paved road is about 36 feet wide with curb and gutter. A sidewalk is situated along the north side of the road.

From SH-11 to about Station 1+00, ground surface slopes down to the north and south. From about Station 1+00 to 2+00, the ground surface slopes up to the north of the road and down to the south. From approximately Station 2+00 to 6+00, the road is situated within an existing cut and ground surface slopes up to both the north and south from the edge of the road. East of approximate Station 6+00, ground surface to the north of the road is relatively level, and the ground surface slopes up to the south of the road.

4.2 Geologic Mapping

The Oregon Department of Geology and Mineral Industries (DOMAGI) maps the site as the McKay Formation. This geologic unit consists of conglomerate with sandstone and siltstone interbeds. Conglomerate is a sedimentary rock consisting predominantly of rounded to subrounded gravel with variable silt, sand, cobble and boulder content that has been cemented or welded into a rock mass. This geologic unit overlies or is interbedded with basalt flows of the Saddle Mountains member of the Columbia River Basalt Group. The McKay Formation is often mantled by relatively thin layers of wind-blown silt (loess) deposits.

4.3 Subsurface Conditions

Existing Pavement. Test pits TP-1 through TP-8 were excavated within the existing roadway. At each test pit location, we encountered about 3 inches of asphalt concrete (AC) pavement, underlain by about 5 inches of aggregate base course.

Topsoil. Test pits TP-9 and TP-10 were excavated within undisturbed areas. At these two locations, we encountered about 4 to 6 inches of topsoil consisting of dark brown soft silt with organic matter.

Fill. At the locations of test pits TP-1 and TP-2, below the pavement, we encountered fill consisting of brown dense gravel with variable silt, sand and cobble content. We also encountered trace debris (wood) in TP-1

at a depth of about 3 feet. Below 3 feet in TP-1, the gravel consisted of black silty gravel with sand and occasional cobbles, which extended to the depth explored (10 feet). The soil had a distinct organic odor. While we did not observe debris, it is possible this gravel also was fill. In TP-2, we encountered and broke a buried stormwater pipe at a depth of about 3½ feet. The fill extended to a depth of about 4 feet below site grade.

Silt. At the locations of test pits TP-8, TP-9 and TP-10, below the pavement or topsoil, where present, we encountered stiff to hard light brown silt with sand and occasional gravel, which extended to depths in the range of about 2½ feet to 7 feet below ground surface (bgs).

Conglomerate. Below the existing pavement section, topsoil, fill or silt, where present, we encountered conglomerate consisting predominantly of cemented gravel with variable silt, sand and cobble content. Interbeds of very stiff to hard silt or dense silty sand also were encountered in several of the test pits as discussed below. Where encountered, the conglomerate extended to the depths explored until backhoe refusal was reached.

Weathered Claystone, Siltstone, Sandstone Interbeds. At the locations of test pits TP-2, TP-4 and TP-6, we encountered layers of very stiff to hard silt, clay and dense silty sand interbedded between layers of cemented gravel. We identified these layers as possible interbedded layers of weathered siltstone, claystone and sandstone. At the location of TP-3, this unit extended from below the pavement to the depth explored. This material was slightly different in texture than the silt observed in test pits TP-8 through TP-10.

Table 1 below presents a summary of the depths of the conglomerate unit at the test pit locations.

TABLE 1. TEST PIT SUMMARY

Test Pit No.	Approximate Station[1]	Approximate Depth to top of Conglomerate Unit (feet)	Approximate Depth to Refusal (feet)	Approximate Planned Water Line Depth Below Existing Grade (feet)
TP-1	2+00	NE (>10 feet), Note gravel was encountered at shallow depth, but does not appear to be conglomerate	NE (>10 feet)	6
TP-2	3+00	4½	7	8
TP-3	4+00	Less than 1?	9½	12
TP-4	5+00	Less than 1	6½	17
TP-5	6+00	Less than 1	6	19
TP-6	7+00	Less than 1	6½	19
TP-7	8+00	Less than 1	5	17
TP-8	9+00	3½	5	13
TP-9	10+00	2½	4	9
TP-10	11+40	7	7½	6

Notes:

Stationing based on 50% plans provided by Consor dated September 2022. Station 1+00 is located at the centerline of the SH-11/SE Kirk Avenue intersection.

4.3.1 Groundwater Conditions

We did not encounter groundwater during exploration with the depths explored. Review of reports on the Oregon Water Resources Department on-line well report mapping tool indicates the regional groundwater table is many tens of feet bgs.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Earthwork

5.1.1 Excavation

We anticipate larger excavators or dozers with toothed buckets or dedicated rippers could be required to excavate through the conglomerate to achieve planned finished site grades within cut areas and to reach planned water line elevations within trenches.

Site soil is highly moisture sensitive and will be difficult to work or compact if moisture contents are greater or less than the optimum moisture content by about 3 percentage points at the time of earthwork. When the moisture content of the soil is more than a few percent above the optimum moisture content, the soil could become muddy and unstable. Operation of equipment on such unstable soil without causing disturbance will be difficult, and it will be difficult or impossible to meet the required compaction criteria for subgrade soil or on-site soil used as trench backfill. Disturbance of near-surface soil should be expected if earthwork is performed during periods of wet weather. We recommend scheduling site preparation and earthwork activities during extended periods of dry weather when the soil should: (1) be less susceptible to disturbance; (2) provide better support for construction equipment; and (3) be more likely to meet the required compaction criteria.

If earthwork activities cause excessive subgrade disturbance, removal of the disturbed soil and moisture-conditioning such as scarifying or windrowing and waiting for the soil to dry, mixing with drier or less moisture sensitive soil, or replacement with structural fill might be necessary. Similar measures might be required for soil excavated from utility trenches that is intended for reuse as trench backfill if such soil is more than about 3 percentage points wet of optimum at the time of earthwork.

More ground disturbance should be expected if earthwork is conducted during periods of wet weather when the moisture content of the site soil could exceed optimum. All excavations should be backfilled with compacted structural fill. We recommend contingencies be included in the project plans and budget to account for potential off-site removal and disposal of excavated soil and importing of suitable granular backfill in the event portions of the on-site soil is unsuitable for reuse at the time of earthwork.

5.1.2 Temporary Cut Slopes and Shoring

In our opinion, the conglomerate classifies as a Type A soil for excavation purposes. Therefore, temporary excavations of about 0.75H:1V (horizontal to vertical) should be feasible within the conglomerate. In our opinion, uncemented gravel or silt classifies as Type C soil for excavation purposes. Therefore, temporary excavations of 1.5H:1V should be anticipated within these soils.

Temporary cut slope guidance assumes that all surface loads are kept a minimum distance of at least one-half the depth of the cut away from the top of the slope. Flatter slopes will be necessary if surface loads

are imposed above the cuts a distance equal to or less than one-half the depth of the cut. It is the contractor's responsibility to monitor and adjust the inclination of temporary excavated slopes and assure site safety during the proposed construction.

While this report describes certain approaches to excavation, the contract documents should specify that the contractor is responsible for selecting excavation methods, monitoring the excavations for safety, reducing temporary slope inclinations to improve stability, and providing shoring, as required, to protect personnel. Additionally, we strongly recommend trench boxes or shields be used in conjunction with temporary slopes during trenching operations to provide protection to workers.

We anticipate that shoring systems will not be necessary for this project. Additionally, due to the cemented nature of the conglomerate, typical shoring systems such as sheet pile walls are not feasible, in our opinion. If shoring systems are required, soldier pile walls could be feasible but would require pre-drilling to install piles.

5.1.3 Temporary Drainage

We do not anticipate encountering groundwater during construction. We anticipate site materials have very low permeability. Therefore, excavations should be graded to promote runoff to suitable discharge points and provided with suitable ditches and sumps to collect and remove surface water that does collect within these excavations.

5.1.4 Pipe Bedding

We recommend providing a minimum 4-inch-thick bedding layer of suitable sand between the pipe and bottom of the excavation. Suitable select backfill should be placed and compacted within the pipe zone backfill limits. Pipe bedding should be compacted to a dense condition in accordance with City of Pendleton Standard Specifications

5.1.5 Trench Backfill and Compaction

Pipe and trench backfilling should be conducted in accordance with the City of Pendleton Standard Specifications unless other project specifications take precedence.

We recommend that imported bedding and select backfill meeting City of Pendleton Standard Specifications be placed and compacted within the pipe zone (at least 12 inches above the top of the pipe). In our opinion, excavated material should not be used to backfill within 12 inches of the pipe, but should be suitable for reuse as trench backfill above the pipe zone area. Based on the results of the test pits, we anticipate that excavated conglomerate will generally resemble gravel with variable silt, sand and cobble content. Some additional screening or processing to break the conglomerate apart would be needed if it is excavated in large cobble- or boulder-sized pieces. The silt also should be suitable for reuse as trench backfill although it is highly moisture sensitive. If it is reused, to the extent practicable, we recommend that it be uniformly mixed with gravel or placed at least 2 feet below finished subgrade. Imported fill, if required, should consist of a well-graded sand or sand and gravel mixture with less than about 15 percent passing the No. 200 sieve.

Trench backfill should be placed in maximum 12-inch-thick lifts and compacted to a dense condition. Preliminarily, we recommend backfill be moisture-conditioned to within 3 percentage points of optimum moisture content and compacted to at least 90 percent of the maximum dry density (MDD) based on the

ASTM International (ASTM) D 1557 (modified proctor) laboratory test procedure with the exception that backfill placed less than 2 feet below final pavement subgrade be compacted to at least 95 percent of the MDD.

Excavated conglomerate might be too granular to test using laboratory proctor values. In that case, a field method could be used to establish the MDD standard. This would consist of compacting a test strip. Multiple test locations would be established along the test strip. In-place density tests would be conducted at each test location after each pass of the compaction equipment. Passes of compaction equipment would be made by the contractor until no further increases in density measurements were observed. This final in-place density would be used as the density standard, and future density tests would have to meet or exceed at least 98 percent of the field-determined MDD. Alternatively, the number of passes required to reach this maximum density would be used as the performance standard, and the contractor would be required to make the minimum number of passes as determined from the test strip for each lift of fill.

5.1.6 Permanent Fill Slopes

We recommend that permanent slopes within uncemented soil be inclined no steeper than 2H:1V, and permanent slopes in conglomerate be inclined no steeper than 1.5H:1V. Permanent slopes should be protected from erosion using applicable temporary and permanent erosion control measures. Suitable measures depend in part on the inclination of permanent slopes, If plans include placing topsoil and vegetating slopes for permanent erosion control, we recommend constructing permanent slopes no steeper than 2H:1V in order to prevent erosion and sloughing of topsoil.

5.1.7 Permanent Drainage

Site materials generally exhibit low to very low permeability. We recommend that proposed roads (including subgrade) be crowned with 2 percent cross slopes to promote drainage away from the pavement section, towards curbs and gutters or roadside ditches, which in turn are directed to suitable discharge points. We recommend that design of permanent drainage structures assume that on-site infiltration will be negligible where the conglomerate unit will be present at or within 5 feet of ground surface following site grading. We recommend assuming a long-term infiltration rate of about 0.5 inches per hour (in/hr) for silt soil where at least 5 feet of silt soil is present between finished grade and top of the conglomerate unit.

5.1.8 Settlement and Vibration Impacts

In our opinion, undisturbed materials should not be susceptible to loss of strength or settlement due to construction related vibrations.

5.2 Additional Explorations

We suggest the City of Pendleton consider conducting supplemental explorations using larger excavation equipment to evaluate subsurface conditions in areas where the deepest excavations will be required to install the water line.

6.0 LIMITATIONS

We have prepared this report for Consor for the Connector Road Water Line project in Pendleton, Oregon. This report is not intended for use by others and the information contained herein is not applicable to other sites. Our report, conclusions and interpretations should not be construed as a warranty of the subsurface conditions.

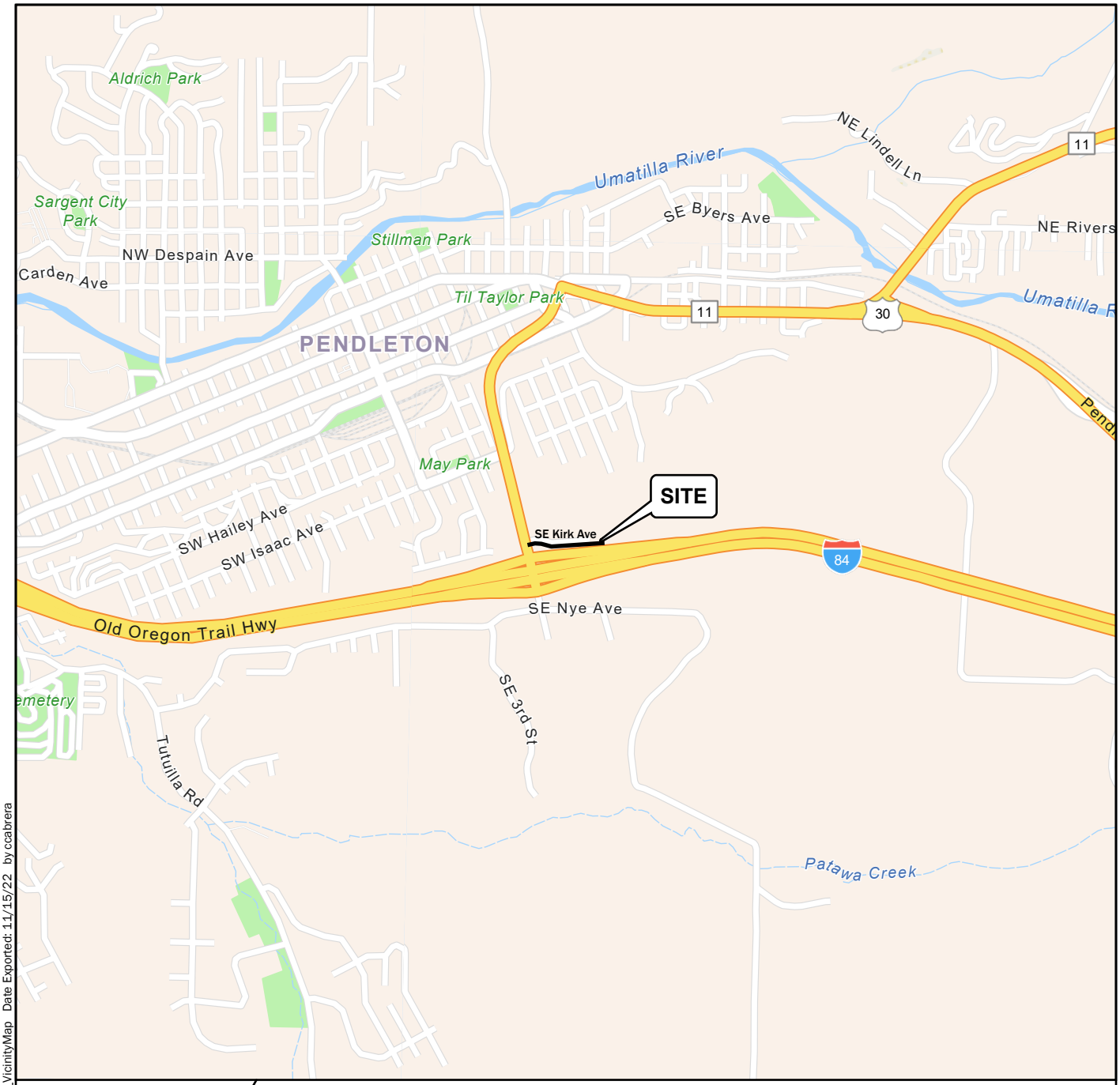
If project conditions change from those assumed in this report, we recommend that we be retained to review our design, conclusions and recommendations and to determine whether they are still appropriate, or to provide supplemental information, as appropriate. When the design has been finalized, we recommend that the project design and specifications be reviewed by our firm to verify that our recommendations have been interpreted and implemented as intended.

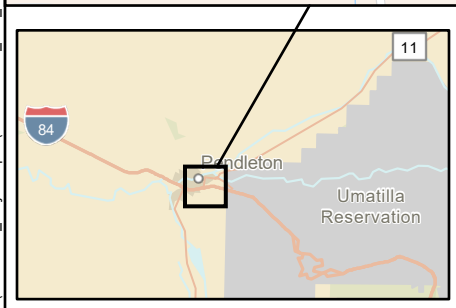
The scope of our services does not include services related to construction safety precautions and our recommendations are not intended to direct the Contractor's methods, techniques, sequences or procedures, except as specifically described in our report for consideration in design.

Within the limitations of scope, schedule and budget, our services have been executed in accordance with generally accepted practices in the field of geotechnical engineering in this area at the time this report was prepared. No warranty or other conditions, express or implied, should be understood. Pease refer to Appendix B for additional information regarding use of this report.

FIGURES

GeoEngineers





N

0 2,000

Feet

Source(s):
- ESRI

Coordinate System: NAD 1983 UTM Zone 11N

Disclaimer: This figure was created for a specific purpose and project. Any use of this figure for any other project or purpose shall be at the user's sole risk and without liability to GeoEngineers. The locations of features shown may be approximate. GeoEngineers makes no warranty or representation as to the accuracy, completeness, or suitability of the figure, or data contained therein. The file containing this figure is a copy of a master document, the original of which is retained by GeoEngineers and is the official document of record.

Vicinity Map

Proposed Connector Road Water Line
Pendleton, Oregon

GeoEngineers

Figure 1

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Legend

Test Pit number and Approximate Location

Source(s):
- ESRI Imagery

Coordinate System: NAD 1983 StatePlane Oregon North FIPS 3601 Feet

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Site Plan

Proposed Connector Road Water Line
Pendleton, Oregon

GeoEngineers

Figure 2

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APPENDICES

GeoEngineers

APPENDIX A
Field Explorations and Laboratory Testing

APPENDIX A
FIELD EXPLORATIONS AND LABORATORY TESTING

General

We explored subsurface conditions at the site by observing the excavation of 10 test pits (TP-1 through TP-10) on November 3, 2022. Approximate exploration locations are shown in the Site Plan, Figure 2. The test pits were excavated to depths in the range of 4 feet to 10 feet below existing ground surface using a rubber-tired John Deere 310SK backhoe owned and operated by the City of Pendleton.

General Soil Sampling Procedures

The explorations were continuously monitored by an experienced representative from GeoEngineers who classified the material encountered, maintained detailed logs of the explorations showing stratigraphic changes and other pertinent information and obtained representative samples. Soil encountered in the explorations was classified in general accordance with ASTM International (ASTM) D 2488 (visual-manual procedure) and the classification chart listed in the Key to Exploration Logs, Figure A-1. Logs of the test pits are presented in the Logs of Test Pits, Figures A-2 through A-11. The logs are based on interpretation of the field and laboratory data and indicate the depth at which subsurface materials, or their characteristics change, although these changes might actually be gradual.

The final exploration locations were established by surveying by the City of Pendleton. Exploration locations and elevations should be considered accurate to the degree implied by the method used.

Geotechnical Laboratory Testing

Samples obtained from the test pits were returned to our laboratory for further examination and testing. Representative soil samples were selected for laboratory tests to evaluate select characteristics of the site soil and to confirm or revise our field classifications. ASTM D 2487 (Classification of Soils for Engineering Purposes) was used to classify the select soil samples, based on laboratory test results.

The test procedures were performed in general accordance with the applicable ASTM test procedures ("in general accordance" means certain local and common descriptive practices and methodologies have been followed). The geotechnical laboratory soil testing program is summarized in Table A-1, Summary of Geotechnical Laboratory Testing.

TABLE A-1. SUMMARY OF GEOTECHNICAL LABORATORY TESTING

Standard Test Method for:	Test Method Designation	Total Tests Performed	Results Location
Atterberg Limits Determination	ASTM D 4318	3	Results presented in the applicable boring logs at the respective sample depths.
Grain Size Analyses	ASTM C 136	3	Presented in Figure A-12. Percent fines and moisture content also shown in boring logs at respective sample depths.
Determining the Amount of Material Finer than 75 µm (No. 200) Sieve in Soils by Washing	ASTM D 1140	5	Percent fines and moisture content presented in the borings logs at the respective sample depths.

SOIL CLASSIFICATION CHART

MAJOR DIVISIONS			SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
COARSE GRAINED SOILS	GRAVEL AND GRAVELLY SOILS	CLEAN GRAVELS (LITTLE OR NO FINES)		GW	WELL-GRADED GRAVELS, GRAVEL - SAND MIXTURES
				GP	POORLY-GRADED GRAVELS, GRAVEL - SAND MIXTURES
	MORE THAN 50% OF COARSE FRACTION RETAINED ON NO. 4 SIEVE	GRAVELS WITH FINES (APPRECIABLE AMOUNT OF FINES)		GM	SILTY GRAVELS, GRAVEL - SAND - SILT MIXTURES
				GC	CLAYEY GRAVELS, GRAVEL - SAND - CLAY MIXTURES
MORE THAN 50% RETAINED ON NO. 200 SIEVE	SAND AND SANDY SOILS	CLEAN SANDS (LITTLE OR NO FINES)		SW	WELL-GRADED SANDS, GRAVELLY SANDS
				SP	POORLY-GRADED SANDS, GRAVELLY SAND
	MORE THAN 50% OF COARSE FRACTION PASSING ON NO. 4 SIEVE	SANDS WITH FINES (APPRECIABLE AMOUNT OF FINES)		SM	SILTY SANDS, SAND - SILT MIXTURES
				SC	CLAYEY SANDS, SAND - CLAY MIXTURES
FINE GRAINED SOILS	SILTS AND CLAYS	LIQUID LIMIT LESS THAN 50		ML	INORGANIC SILTS, ROCK FLOUR, CLAYEY SILTS WITH SLIGHT PLASTICITY
				CL	INORGANIC CLAYS OF LOW TO MEDIUM PLASTICITY, GRAVELLY CLAYS, SANDY CLAYS, SILTY CLAYS, LEAN CLAYS
				OL	ORGANIC SILTS AND ORGANIC SILTY CLAYS OF LOW PLASTICITY
MORE THAN 50% PASSING NO. 200 SIEVE	SILTS AND CLAYS	LIQUID LIMIT GREATER THAN 50		MH	INORGANIC SILTS, MICACEOUS OR DIATOMACEOUS SILTY SOILS
				CH	INORGANIC CLAYS OF HIGH PLASTICITY
				OH	ORGANIC CLAYS AND SILTS OF MEDIUM TO HIGH PLASTICITY
HIGHLY ORGANIC SOILS				PT	PEAT, HUMUS, SWAMP SOILS WITH HIGH ORGANIC CONTENTS

NOTE: Multiple symbols are used to indicate borderline or dual soil classifications

ADDITIONAL MATERIAL SYMBOLS

SYMBOLS GRAPH	SYMBOLS LETTER	TYPICAL DESCRIPTIONS
	AC	Asphalt Concrete
	CC	Cement Concrete
	CR	Crushed Rock/ Quarry Spalls
	SOD	Sod/Forest Duff
	TS	Topsoil

Groundwater Contact

Measured groundwater level in exploration, well, or piezometer

Measured free product in well or piezometer

Graphic Log Contact

Distinct contact between soil strata

Approximate contact between soil strata

Material Description Contact

Contact between geologic units

Contact between soil of the same geologic unit

Sampler Symbol Descriptions

2.4-inch I.D. split barrel / Dames & Moore (D&M)

Standard Penetration Test (SPT)

Shelby tube

Piston

Direct-Push

Bulk or grab

Continuous Coring

Blowcount is recorded for driven samplers as the number of blows required to advance sampler 12 inches (or distance noted). See exploration log for hammer weight and drop.

"P" indicates sampler pushed using the weight of the drill rig.

"WOH" indicates sampler pushed using the weight of the hammer.

Laboratory / Field Tests

%F	Percent fines
%G	Percent gravel
AL	Atterberg limits
CA	Chemical analysis
CP	Laboratory compaction test
CS	Consolidation test
DD	Dry density
DS	Direct shear
HA	Hydrometer analysis
MC	Moisture content
MD	Moisture content and dry density
Mohs	Mohs hardness scale
OC	Organic content
PM	Permeability or hydraulic conductivity
PI	Plasticity index
PL	Point load test
PP	Pocket penetrometer
SA	Sieve analysis
TX	Triaxial compression
UC	Unconfined compression
UU	Unconsolidated undrained triaxial compression
VS	Vane shear

Sheen Classification

NS	No Visible Sheen
SS	Slight Sheen
MS	Moderate Sheen
HS	Heavy Sheen

NOTE: The reader must refer to the discussion in the report text and the logs of explorations for a proper understanding of subsurface conditions. Descriptions on the logs apply only at the specific exploration locations and at the time the explorations were made; they are not warranted to be representative of subsurface conditions at other locations or times.

Key to Exploration Logs

GeoEngineers

Figure A-1

Date Excavated	11/3/2022	Total Depth (ft)	10	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)		Coordinate System Horizontal Datum		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches of asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
	1				GM	Brown silty fine to coarse gravel with sand, occasional cobbles and trace debris (dimensional wood chunk) (fill)			
	2		1						
	3								
	4		2 SA		GM	Black silty fine to coarse gravel with sand and occasional cobbles (dense, moist)	11	26	Organic odor
	5								
	6								
	7								
	8								
	9		3						
	10								

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-1

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-2
Sheet 1 of 1

Date Excavated	11/3/2022	Total Depth (ft)	7	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)		Coordinate System Horizontal Datum		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
	1				GP-GM	Brown fine to coarse gravel with silt and sand (dense, moist) (fill)			
	2								
	3				SM	Dark brown silty fine to medium sand (loose, moist)			Stormwater pipe encountered at 3½ feet
	4								
	5				GP-GM	Brown-red cemented fine to coarse gravel with silt and sand (very dense, moist) (weathered conglomerate?)			
					ML	Gray silt with sand and occasional gravel (very stiff to hard, moist) (weathered siltstone interbed?)			
	6		2 MC; AL				49		AL (non-plastic)
	7		3		Conglo-merate	Conglomerate; brown-tan, fine to coarse grained, slightly weathered, medium hard			Upon excavation, reworks to fine to coarse gravel with silt, sand and occasional cobbles (GP-GM)

Test pit terminated at approximately 7 feet due to backhoe refusal

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-2

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-3
Sheet 1 of 1

Date Excavated 11/3/2022	Total Depth (ft) 9.5	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed	
Surface Elevation (ft) Vertical Datum Undetermined		Easting (X) Northing (Y)		Coordinate System Horizontal Datum	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
					ML	Brown sandy silt (hard, moist) (weathered siltstone interbed?)			
	1		1 MC				46		
	2								
	3								
	4								
	5		2						
	6								
	7								
	8		3 MC; AL				26		AL (non-plastic)
	9								

Test pit terminated at approximately 9½ feet due to backhoe refusal

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-3

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-4
Sheet 1 of 1

Date Excavated	11/3/2022	Total Depth (ft)	6.5	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)		Coordinate System Horizontal Datum		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
	1				GP	Red-brown weakly cemented fine to coarse gravel with silt, sand and occasional cobbles (very dense, moist) (weathered conglomerate)			
	2		1				7	1	
	3				SM	Brown cemented silty fine to coarse sand with gravel (very dense, moist) (weathered siltstone/sandstone interbed?)			
	4		2 MC				13		
	5								
	6		3		Conglo-merate	Conglomerate; red-brown, fine to coarse grained, moderately weathered, medium hard			Upon excavation, reworks to fine to coarse gravel with silt, sand and occasional cobbles (GP-GM)

Test pit terminated at approximately 6½ feet due to backhoe refusal

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-4

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-5
Sheet 1 of 1

Date Excavated	11/3/2022	Total Depth (ft)	6	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)		Coordinate System Horizontal Datum		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
	1		1		Conglo-merate	Conglomerate; brown-gray, fine to coarse grained, moderately weathered, soft to medium hard			Upon excavation, reworks to fine to coarse gravel with sand and occasional cobbles (GP)
	2								
	3								
	4					Grades to tan-brown, slightly weathered, medium hard to hard			
	5		2 SA				7	0	
	6					Test pit terminated at approximately 6 feet due to backhoe refusal			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-5

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-6
Sheet 1 of 1

Date Excavated 11/3/2022	Total Depth (ft) 6.5	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed	
Surface Elevation (ft) Vertical Datum Undetermined		Easting (X) Northing (Y)		Coordinate System Horizontal Datum	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
	1		1		GP-GM	Brown fine to coarse gravel with silt and sand (very dense, moist) (weathered conglomerate?)			
	2								
	3		2		CL	Gray clay with sand and occasional gravel (hard, moist) (weathered claystone interbed?)			
	4								
	5		3 %F		GP-GM	Brown cemented fine to coarse gravel with silt and sand (very dense, moist) (slightly oxidized) (weathered conglomerate)	13	7	
	6		4		Conglo-merate	Conglomerate; red-brown, fine to coarse grained, moderately weathered, medium hard, oxidized, cemented			Upon excavation, reworks to fine to coarse gravel with silt, sand and occasional cobbles

Test pit terminated at approximately 6½ feet due to backhoe refusal

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-6

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-7
Sheet 1 of 1

Date Excavated 11/3/2022	Total Depth (ft) 5	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed	
Surface Elevation (ft) Vertical Datum Undetermined		Easting (X) Northing (Y)		Coordinate System Horizontal Datum	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
	1		1 %F		GP	Brown cemented fine to coarse gravel with sand (very dense, moist) (weathered conglomerate)	7	1	
	2								
	3								
	4		2						
	5					Test pit terminated at approximately 5 feet due to backhoe refusal			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-7

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-8
Sheet 1 of 1

Date Excavated	11/3/2022	Total Depth (ft)	5	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)		Coordinate System Horizontal Datum		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
					AC	Approximately 3 inches asphalt concrete pavement			
					CR	Approximately 5 inches crushed surface base course			
			1		ML	Light brown silt with sand and gravel (very hard, moist) (cemented)			
	1								
	2		2						
	3								
					GM	Brown cemented silty fine to coarse gravel with sand and occasional cobbles (very dense, moist) (weathered conglomerate)			
	4		3 %F				16	18	
	5					Test pit terminated at approximately 5 feet due to backhoe refusal			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-8

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-9
Sheet 1 of 1

Date Excavated	11/3/2022	Total Depth (ft)	4	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)			Coordinate System Horizontal Datum	

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
	0				TS	Approximately 4 inches dark brown silt with trace sand and organic matter (roots) (very soft, moist)			
					ML	Light brown silt with trace sand and occasional gravel (very stiff, dry to moist)			
	1								
	2								
					Conglo-merate	Conglomerate; white-brown, fine to coarse grained, slightly weathered, medium hard to hard, blocky and irregular fracture pattern			Upon excavation, reworks to fine to coarse gravel with silt, sand and occasional cobbles
	3								
	4					Test pit terminated at approximately 4 feet due to backhoe refusal			

Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-9

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-10
Sheet 1 of 1

Date Excavated	11/3/2022	Total Depth (ft)	7.5	Logged By BKH Checked By DRL	Excavator Equipment John Deere 310SK Backhoe	Groundwater not observed Caving not observed
Surface Elevation (ft) Vertical Datum	Undetermined	Easting (X) Northing (Y)		Coordinate System Horizontal Datum		

Elevation (feet)	Depth (feet)	SAMPLE: Testing Sample	SAMPLE: Sample Name Testing	Graphic Log	Group Classification	MATERIAL DESCRIPTION	Moisture Content (%)	Fines Content (%)	REMARKS
			1		TS	Dark brown silt with organic matter (roots) (very soft, moist) (topsoil)			
					ML	Brown silt (very stiff, dry to moist)			
	1								
	2		2						
	3					Becomes soft			
	4								
	5								
	6		3 MC; AL			Becomes very stiff	12		AL (non-plastic)
	7								
			4		Conglo-merate	Conglomerate; white-brown, fine to coarse grained, slightly weathered, medium hard, moderately to thickly bedded			
						Test pit terminated at approximately 7½ feet due to backhoe refusal			

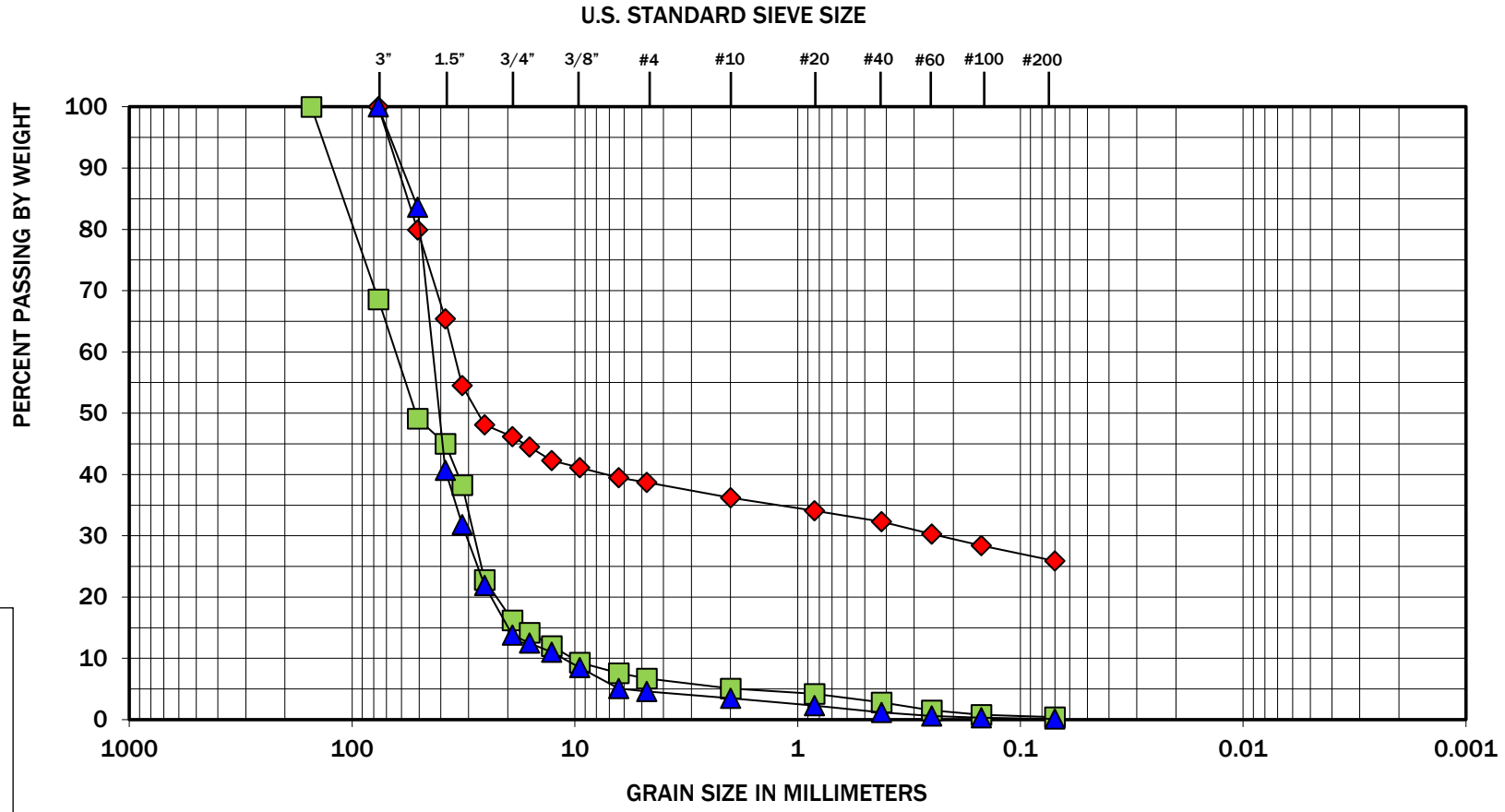
Notes: See Figure A-1 for explanation of symbols.
The depths on the test pit logs are based on an average of measurements across the test pit and should be considered accurate to ½ foot.
Coordinates Data Source: Horizontal approximated based on . Vertical approximated based on .

Log of Test Pit TP-10

GeoEngineers

Project: Proposed Connector Road Water Line
Project Location: Pendleton, Oregon
Project Number: 8946-003-05

Figure A-11
Sheet 1 of 1



COBBLES	GRAVEL		SAND			SILT OR CLAY
	COARSE	FINE	COARSE	MEDIUM	FINE	

Symbol	Boring Number	Depth (feet)	Moisture (%)	Soil Description
◆	TP-1	4 – 5	11	Silty coarse gravel
■	TP-4	2 – 3	7	Coarse gravel with silt and cobbles
▲	TP-5	5 – 6	7	Coarse gravel with trace silt
●				

Note: This report may not be reproduced, except in full, without written approval of GeoEngineers, Inc. Test results are applicable only to the specific sample on which they were performed, and should not be interpreted as representative of any other samples obtained at other times, depths or locations, or generated by separate operations or processes.

The grain size analysis results were obtained in general accordance with ASTM D 6913.

GeoEngineers

Proposed Connector Road Water Line
Pendleton, Oregon

Sieve Analysis Results

Figure A-12

APPENDIX B
Report Limitations and Guidelines for Use

APPENDIX B
REPORT LIMITATIONS AND GUIDELINES FOR USE[1]

This appendix provides information to help you manage your risks with respect to the use of this report.

Read These Provisions Closely

It is important to recognize that the geoscience practices (geotechnical engineering, geology, and environmental science) rely on professional judgment and opinion to a greater extent than other engineering and natural science disciplines, where more precise and/or readily observable data may exist. To help clients better understand how this difference pertains to our services, GeoEngineers includes the following explanatory "limitations" provisions in its reports. Please confer with GeoEngineers if you need to know more how these "Report Limitations and Guidelines for Use" apply to your project or site.

Geotechnical Services are Performed for Specific Purposes, Persons and Projects

This report has been prepared for Consor and for the project specifically identified in the report. The information contained herein is not applicable to other sites or projects.

GeoEngineers structures its services to meet the specific needs of its clients. No party other than the party to whom this report is addressed may rely on the product of our services unless we agree to such reliance in advance and in writing. Within the limitations of the agreed scope of services for the project, and its schedule and budget, our services have been executed in accordance with the Task Order between Consor and GeoEngineers dated November 2, 2022 and generally accepted geotechnical practices in this area at the time this report was prepared. We do not authorize, and will not be responsible for, the use of this report for any purposes or projects other than those identified in the report.

A Geotechnical Engineering or Geologic Report is based on a Unique Set of Project-Specific Factors

This report has been prepared for the proposed Connector Road Water Line project located in Pendleton, Oregon. GeoEngineers considered a number of unique, project-specific factors when establishing the scope of services for this project and report. Unless GeoEngineers specifically indicates otherwise, it is important not to rely on this report if it was:

- not prepared for you,
- not prepared for your project,
- not prepared for the specific site explored, or
- completed before important project changes were made.

For example, changes that can affect the applicability of this report include those that affect:

- the function of the proposed structure;
- elevation, configuration, location, orientation, or weight of the proposed structure;
- composition of the design team; or

[1] Developed based on material provided by ASFE, Professional Firms Practicing in the Geosciences; www.asfe.org.

- project ownership.

If changes occur after the date of this report, GeoEngineers cannot be responsible for any consequences of such changes in relation to this report unless we have been given the opportunity to review our interpretations and recommendations. Based on that review, we can provide written modifications or confirmation, as appropriate.

Environmental Concerns are Not Covered.

Unless environmental services were specifically included in our scope of services, this report does not provide any environmental findings, conclusions, or recommendations, including but not limited to, the likelihood of encountering underground storage tanks or regulated contaminants.

Subsurface Conditions Can Change

This geotechnical or geologic report is based on conditions that existed at the time the study was performed. The findings and conclusions of this report may be affected by the passage of time, by man-made events such as construction on or adjacent to the site, new information or technology that becomes available subsequent to the report date, or by natural events such as floods, earthquakes, slope instability or groundwater fluctuations. If more than a few months have passed since issuance of our report or work product, or if any of the described events may have occurred, please contact GeoEngineers before applying this report for its intended purpose so that we may evaluate whether changed conditions affect the continued reliability or applicability of our conclusions and recommendations.

Geotechnical and Geologic Findings are Professional Opinions.

Our interpretations of subsurface conditions are based on field observations from widely spaced sampling locations at the site. Site exploration identifies the specific subsurface conditions only at those points where subsurface tests are conducted or samples are taken. GeoEngineers reviewed field and laboratory data and then applied its professional judgment to render an informed opinion about subsurface conditions at other locations. Actual subsurface conditions may differ, sometimes significantly, from the opinions presented in this report. Our report, conclusions and interpretations are not a warranty of the actual subsurface conditions.

Geotechnical Engineering Report Recommendations are Not Final.

We have developed the following recommendations based on data gathered from subsurface investigation(s). These investigations sample just a small percentage of a site to create a snapshot of the subsurface conditions elsewhere on the site. Such sampling on its own cannot provide a complete and accurate view of subsurface conditions for the entire site. Therefore, the recommendations included in this report are preliminary and should not be considered final. GeoEngineers' recommendations can be finalized only by observing actual subsurface conditions revealed during construction. GeoEngineers cannot assume responsibility or liability for the recommendations in this report if we do not perform construction observation.

We recommend that you allow sufficient monitoring, testing and consultation during construction by GeoEngineers to confirm that the conditions encountered are consistent with those indicated by the explorations, to provide recommendations for design changes if the conditions revealed during the work differ from those anticipated, and to evaluate whether earthwork activities are completed in accordance

with our recommendations. Retaining GeoEngineers for construction observation for this project is the most effective means of managing the risks associated with unanticipated conditions. If another party performs field observation and confirms our expectations, the other party must take full responsibility for both the observations and recommendations. Please note, however, that another party would lack our project-specific knowledge and resources.

A Geotechnical Engineering or Geologic Report Could Be Subject to Misinterpretation

Misinterpretation of this report by members of the design team or by contractors can result in costly problems. GeoEngineers can help reduce the risks of misinterpretation by conferring with appropriate members of the design team after submitting the report, reviewing pertinent elements of the design team's plans and specifications, participating in pre-bid and preconstruction conferences, and providing construction observation.

Do Not Redraw the Exploration Logs

Geotechnical engineers and geologists prepare final boring and testing logs based upon their interpretation of field logs and laboratory data. The logs included in a geotechnical engineering or geologic report should never be redrawn for inclusion in architectural or other design drawings. Photographic or electronic reproduction is acceptable but separating logs from the report can create a risk of misinterpretation.

Give Contractors a Complete Report and Guidance

To help reduce the risk of problems associated with unanticipated subsurface conditions, GeoEngineers recommends giving contractors the complete geotechnical engineering or geologic report, including these "Report Limitations and Guidelines for Use." When providing the report, you should preface it with a clearly written letter of transmittal that:

- advises contractors that the report was not prepared for purposes of bid development and that its accuracy is limited; and
- encourages contractors to confer with GeoEngineers and/or to conduct additional study to obtain the specific types of information they need or prefer.

Contractors are Responsible for Site Safety on Their Own Construction Projects

Our geotechnical recommendations are not intended to direct the contractor's procedures, methods, schedule, or management of the work site. The contractor is solely responsible for job site safety and for managing construction operations to minimize risks to on-site personnel and adjacent properties.

Biological Pollutants

GeoEngineers' Scope of Work specifically excludes the investigation, detection, prevention, or assessment of the presence of Biological Pollutants. Accordingly, this report does not include any interpretations, recommendations, findings, or conclusions regarding the detecting, assessing, preventing, or abating of Biological Pollutants, and no conclusions or inferences should be drawn regarding Biological Pollutants as they may relate to this project. The term "Biological Pollutants" includes, but is not limited to, molds, fungi, spores, bacteria, and viruses, and/or any of their byproducts.

A Client that desires these specialized services is advised to obtain them from a consultant who offers services in this specialized field.

GeoEngineers